EXHIBIT OSS – 64

Bellsouth Telecommunications, Inc.
OSS Evaluation – Georgia
KPMG Master Test Plan Final Report

KPMG Consulting

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March 20, 2001

Mr. Reece McAlister
Executive Secretary
Georgia Public Service Commission
244 Washington Street
Atlanta, GA 30334

RE: Investigation into Development of Electronic Interfaces for BellSouth's Operational Support Systems; Docket No. 8354-U

Enclosed please find an original and twenty (20) copies, as well as electronic copies, of KPMG Consulting, Inc.'s documents:

- *BellSouth – Georgia OSS Evaluation Master Test Plan Final Report;*
- *BellSouth – Georgia OSS Evaluation Supplemental Test Plan Final Report;*
- *BellSouth – Georgia OSS Evaluation Flow-Through Evaluation Final Report;* and
- *BellSouth – Georgia OSS Evaluation – KPMG Consulting Letter of Professional Opinion.*

We request that these documents be filed in the above referenced matter.

I would appreciate your filing same and returning five copies stamped "filed" in the enclosed stamped, self-addressed envelope.

Thank you for your assistance in this regard.

Very truly yours,

David Frey
Managing Director

Enclosures

cc: Parties of Record

KPMG Consulting

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March 20, 2001

Mr. Leon Bowles
Director of Telecommunications
Georgia Public Service Commission
244 Washington Street, S.W.
Atlanta, GA 30334-5701

Dear Mr. Bowles:

To support the Georgia Public Service Commission's (GPSC's) consideration of the matter of BellSouth – Georgia's (BellSouth's) compliance with the requirements of Section 271 of *The Telecommunications Act of 1996* in the context of Docket No. 8354-U, KPMG Consulting, Inc. (KCI) is pleased to submit our *Master Test Plan Final Report*, *Supplemental Test Plan Final Report*, and *Flow-Through Evaluation* per the directions provided in your letter dated March 5, 2001.

The *Final Reports* are organized around eight major categories or domains, as outlined in the *MTP* and *STP*: Pre-Ordering, Ordering and Provisioning, Billing, Maintenance and Repair, Capacity Management, Change Management, Metrics, and the Flow-Through Evaluation. The test activities specified in the test plans, with the exception of the metrics evaluations, are complete as of the date of this letter. A supplemental report will be filed with the GPSC upon completion of the remaining metrics evaluations.

KCI evaluated BellSouth across some 1,175 test points in the aforementioned categories. Each test point was assigned one of four possible results: Satisfied, Not Satisfied, No Result Determination Made, or Not Complete. In your letter dated March 5, 2001, you directed us to provide an opinion on which of the test areas remaining "Not Complete" or "Not Satisfied" could have a material adverse impact on competition.

While it is important that KCI's comments in this letter be considered only in the context of the substantial volume of performance detail and evaluative commentary presented in the test results sections of the *Final Reports*, as well as in the exceptions reports and closure statements on file with the GPSC, KCI believes, based on our professional judgment of the test performance observed and recorded during the course of the evaluation, that no deficiencies creating potentially material adverse impacts on competition currently exist in the test categories of Pre-Ordering, Billing, Maintenance and Repair, Capacity Management, Change Management, and Flow-Through.

In the Ordering and Provisioning category all evaluation criteria have been satisfied except for those in three areas: timeliness of responses to fully mechanized orders; timeliness and accuracy of Clarifications to partially mechanized orders; and, accuracy of translation from external (CLEC) to internal (BellSouth) service orders resulting in switch translation and directory listing errors. It is our professional judgment that these evaluation criteria, which have been assigned "Not Satisfied" results in the reports, could potentially have a material adverse impact on a CLEC's ability to compete effectively. As you know, the Commission will be able to monitor these issues on an ongoing basis through the performance measures and/or penalty plans in place that address the timeliness of BellSouth responses, service order accuracy, and percent of provisioning troubles within 30 days.

A number of items remain "Not Complete" as of today in the Metrics category. KCI metrics testing is ongoing; and BellSouth has a number of initiatives in place both to conform to the GPSC's January 16, 2001 directive and to address deficiencies identified to date by KCI. It should be noted that, in our judgment, inaccuracies in metrics reporting would not in and of themselves have a materially adverse impact on competition.

We look forward to responding to any questions you may have concerning the attached reports.

Respectfully,

Michael W. Weeks
Managing Director

BellSouth Telecommunications, Inc.
OSS Evaluation – Georgia

Master Test Plan

Final Report

VERSION 1.0

Submitted by:

KPMG Consulting

March 20, 2001

Table of Contents

Document Control

I. Document Control

A. Distribution

Table I-1.1: Distribution List For Document

Person	Organization
William Stacy	BellSouth Telecommunications, Inc.
Milton McElroy	BellSouth Telecommunications, Inc.
Kathy Wilson-Chu	BellSouth Telecommunications, Inc.
Bennett Ross	BellSouth Telecommunications, Inc.
Raymond Sears	KPMG Consulting, Inc.
Michael Weeks	KPMG Consulting, Inc.
David Frey	KPMG Consulting, Inc.
Nicole Giugno	KPMG Consulting, Inc.
Terry Trudgian	KPMG Consulting, Inc.
Carrie Thielemann	KPMG Consulting, Inc.
Larry Freundlich	KPMG Consulting, Inc.
Brian Rutter	KPMG Consulting, Inc.
Elizabeth Fuccillo	KPMG Consulting, Inc.
Steve Strickland	KPMG Consulting, Inc.
Gregory Pulaski	KPMG Consulting, Inc.

Table I-2.2: Version Control

Version	Date	Reason
1.0	March 20, 2001	Initial release

B. Statement of Limiting Conditions

The following conditions, limitations, and assumptions relate to this draft report:

This report is provided pursuant to the terms and conditions of the consulting services contract between KPMG Consulting, Inc. ("KCI") and Bell South - Georgia.

The information and conclusions presented in this report are based on the information provided to KCI or obtained by KCI in the course of the evaluation. All results and conclusions contained herein are subject to change based on additional work or additional information that is provided to KCI.[1]

The original *Master Test Plan* (*MTP*) governing much of the testing work at BellSouth - Georgia was not authored or developed by KCI. On September 9, 1999, KCI inherited a *MTP* and certain associated work-in-progress that had been performed by two third parties. Therefore, KCI makes no representations or warranties as to the contents of this *MTP* or the testing work that had been done prior to September 9, 1999. Furthermore, KCI has not independently verified the accuracy or completeness of the information and work product provided by these third parties; accordingly KCI expresses no opinion on nor bear any responsibility for this information and work product.

The results contained within this report are made up of a significant number of tests and evaluation criteria and are presented without weighting considerations; as such, none of the individual test results can be considered independently. To draw conclusions based on individual test measures or a limited number of test measures would be inappropriate.

This report assumes that the reader possesses a general understanding of the telecommunication industry and related systems, documentation, and processes, consequently KCI assumes no responsibility for the misuse, misunderstanding, or misinterpretation of the content of the report.

This report has been prepared solely for the purpose stated and should not be used for any other purpose. Except as specifically stated in the report, neither KCI's report nor its contents is to be referred to or quoted, in whole or in part, in any registration statement, prospectus, public filing, loan agreement, or other agreement or document without KCI's prior written approval.

Certain information and assumptions (oral and written) have been provided to KCI by the management of BellSouth and other third parties. KCI has relied on this information in our analysis and in the preparation of the report, and has not

[1] Note that in the metrics domain, test execution activities are still in progress.

independently verified to the accuracy or completeness of the information provided; accordingly KCI expresses no opinion on such data.

KCI has not conducted an audit or review of the historical data provided to us in accordance with generally accepted auditing procedures and/or standards promulgated by the American Institute of Certified Public Accountants ("AICPA").

Evaluation Overview

II. Evaluation Overview

1.0 Objective

The objectives of this Evaluation Overview are to provide:

- Background on the Georgia Public Service Commission's (GPSC's) consideration of BellSouth's compliance with the requirements of Section 271 of *The Telecommunications Act of 1996;*
- A summary of the business processes and supporting functions and interfaces identified for testing by the GPSC and outlined in the *Master Test Plan* (*MTP*) as well as a summary of the test developments preceding KCI's assumption of the role of test manager;
- A summary of the additional testing ordered by the GPSC and described in the *Supplemental Test Plan* (*STP*); and
- A high-level description of the processes KCI followed in evaluating BellSouth's interfaces, systems, policies, procedures, and documentation.

2.0 Audience

KCI anticipates that the audience for this document will fall into two main categories:

- Readers who will utilize this document during an evaluation process (i.e., the GPSC; the FCC and Department of Justice); and
- Other interested parties who have some stake in the result of BellSouth's OSS evaluation and wish to have insight into the test results (e.g., BellSouth, CLECs, and other ILECs).

While many of the above parties have stated an interest in the test and its results, only BellSouth and the GPSC have rights to this document. Third-party reliance on this report is not intended and is explicitly prohibited. It is expected that the GPSC will review this report in forming its own assessment of BellSouth's compliance with the requirements of the Act.

3.0 Background

The Georgia Public Service Commission (GPSC) is considering the matter of BellSouth – Georgia's (BellSouth) compliance with the requirements of Section 271 of The Telecommunications Act of 1996 (the Act) in the context of Docket No. 8354-U. The Act, together with Federal Communications Commission (FCC) interpretations, requires an Incumbent Local Exchange Carrier (ILEC) to:

- Provide non-discriminatory access to its Operational Support Systems (OSS) on appropriate terms and conditions;
- Provide the documentation and support necessary for Competitive Local Exchange Carriers (CLECs) to access and use these systems; and
- Demonstrate that the ILEC's systems are operationally ready and provide an appropriate level of performance.

Compliance with these requirements should allow competitors to obtain pre-ordering information, execute service orders for resold services and unbundled network elements (UNE), manage trouble, and obtain billing information at a level deemed to be non-discriminatory when compared with the ILEC's (in this case, BellSouth's) retail operations.

4.0 Master Test Plan Scope

In its *Order on Petition for Third Party Testing* (*Order*), dated May 20, 1999, the GPSC ordered BellSouth to conduct an independent, third-party test of the readiness of specific aspects of BellSouth's OSS, and related interfaces, documentation, and processes supporting local market entry by the CLECs.

In its *Order*, the GPSC specified that the third-party testing should focus on the following service delivery methods:

- Unbundled Network Element (UNE) analog loops with and without number portability (Interim Number Portability [INP] and Local Number Portability [LNP])
- UNE switch ports
- UNE loop/port combinations

Furthermore, the *Order* specifically identified five OSS functions to be evaluated:

- Pre-ordering;
- Ordering;
- Provisioning;
- Maintenance and Repair; and
- Billing[1].

The *Order* also called for normal- and peak-volume testing of the OSS interfaces supporting pre-ordering, ordering, and maintenance and repair functions for both resale and UNE services. In addition, the *Order* called for a review of BellSouth's *Percent Flow-Through Service Request Report*[2].

Prior to KCI's assumption of the role of test manager on September 9, 1999, a Master Test Plan (*MTP),* outlining the scope of testing called for in the GPSC's *Order,* was filed by BellSouth and approved by the GPSC on May 29, 1999. On June 6, 1999, Hewlett Packard (HP) was named test manager by the GPSC, with KCI named as an auditor of the process. A revised *MTP* was developed by HP and filed with the GPSC on August 16, 1999.

On September 9, 1999, HP, BellSouth, the GPSC, and KCI agreed that KCI would be appointed test manager, assuming responsibility for directing those test activities already in progress and for planning and executing any activities not yet initiated. KCI agreed to assume responsibility for execution of the tests stipulated in the *MTP,* but not for the design of the *MTP* itself. Nevertheless, to improve the clarity of test definitions, KCI filed revisions to the *MTP* with the GPSC on October 15, 1999, December 15, 1999, and March 31, 2000.

5.0 Supplemental Test Plan Scope

On January 12, 2000, the GPSC issued a second *Order* specifying a requirement for BellSouth to develop a *Supplemental Test Plan* (*STP*) to describe additional third-party testing of aspects of BellSouth's OSS supporting local market entry by the CLECs. The *STP*, submitted to the GPSC on January 24, 2000, with revisions filed on March 2, 2000 and again on March 17, 2000, following receipt of CLEC comments, describes the plan for evaluating:

1. The Electronic Interface Change Control Process as applied to the implementation of OSS '99;

[1] In the initial *Master Test Plan* filed by BellSouth with the GPSC on May 29, 1999, BellSouth introduced a Change Management function for evaluation.

[2] The results of this review are presented in KCI's *BellSouth – Georgia Flow-Through Evaluation,* March 12, 2001.

2. Pre-ordering, ordering, and provisioning of xDSL-capable loops;
3. Pre-ordering, ordering and provisioning, maintenance and repair, and billing of Resale services; and
4. Processes and procedures supporting the collection and calculation of performance data.

The results presented in this report pertain only to the areas identified for testing under the *MTP*. Results of the tests described in the *STP* are reported in a separate document, *BellSouth – Georgia OSS Evaluation, Supplemental Test Plan, Final Report.*

6.0 Approach

6.1 Domains

The *MTP* was divided into five domains[3] to facilitate testing of BellSouth's wholesale operations (i.e., those operations selling local services and support to other local service providers, or CLECs) by logical business function. This test organization facilitates parity comparisons, where appropriate, to BellSouth's retail operations (i.e., those operations selling local services and support to end-user customers).

The five test domains were:

- Pre-Ordering (PRE)
- Ordering and Provisioning (O&P)
- Billing (BLG)
- Maintenance and Repair (M&R)
- Change Management (CM)

Performance Measures (Metrics) and Capacity Management evaluations are included in each of the Pre-Ordering, Ordering and Provisioning, Billing, and Maintenance and Repair domains.

Within each domain, specific methods and procedures were applied to evaluate BellSouth's performance *vis-a-vis* specific test targets. Details on the evaluation methods, analysis methods, and results of each evaluation are provided in the individual test sections. A summary of the evaluations and results is provided in Section III, Test Summaries.

[3] While the *MTP* reflects five domains, KCI's testing efforts have combined the functions of pre-ordering and ordering, to more accurately simulate the activities of a real CLEC. However, test results are presented in this report in line with the organization of the *MTP*.

6.2 Test Types

In developing the prior test of Bell Atlantic (now Verizon) - New York's OSS, KCI identified two fundamental types of tests useful in an evaluation of an ILEC's provision of wholesale services to CLECS: transaction-based and operational. These test types have since been used in OSS evaluations in multiple jurisdictions.

6.2.1 Transaction-based Tests

One of the goals of transaction-based testing was to live the CLEC experience. The fundamental idea was to establish a pseudo-CLEC, and to submit pre-order, order, and repair transactions using BellSouth's electronic interfaces[4] -- much like a real CLEC would do. Transaction-driven system testing was utilized extensively in the PRE, O&P, M&R, and BLG domains. These tests are "non-invasive" in that they depend on arms-length interaction (e.g., order submissions, receipt of bills) using publicly available interfaces and documentation.

KCI and Hewlett Packard (HP) combined efforts to accomplish the transaction-driven tests. KCI's role was that of a CLEC operations group, including understanding business rules, creating and tracking orders, monitoring BellSouth performance, entering trouble tickets, and evaluating carrier-to-carrier bills. HP's role was that of a CLEC Information Technology group -- establishing electronic bonding with BellSouth, translating back and forth between business and electronic interface rule formats, and resolving problems with missing orders and responses.

The PRE and O&P transaction-driven tests utilized the Telecommunications Access Gateway (TAG) and Electronic Data Interchange (EDI) interfaces constructed by HP[5]. Bills were processed for the BLG evaluations through the Customer Records Information System (CRIS) and Carrier Access Billing System (CABS) invoicing systems, while usage was processed in the Optional Daily Usage File (ODUF) and Access Daily Usage File (ADUF) systems[6]. M&R trouble tickets were submitted through the Trouble Analysis Facilitation Interface (TAFI) and the Electronic Communications Trouble Administration (ECTA) Gateway[7].

CLEC live test cases provided an alternative test method for transactions that were not practical to provide in our test environment. Moreover, CLEC live test cases provided a different perspective on actual production.

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[4] Interface development was not part of the scope of the test called for in the GPSC's *Order*.
[5] See Section V, "O&P Overview" for a more detailed description of the BellSouth TAG and EDI interfaces.
[6] See Section VI, "Billing Overview" for a more detailed description of the BellSouth billing systems.
[7] See Section VII "M&R Overview" for a more detailed description of the BellSouth TAFI and ECTA interfaces.

6.2.2 Operational Tests

Operational tests focused on the form, structure, and content of the business process under study. This test method was used to evaluate BellSouth's day-to-day operations and operational management practices, including procedural development and procedural change management. These tests are "invasive," in that KCI receives access to documentation, personnel, and procedural descriptions that are not necessarily publicly available.

Operational analysis also evaluated the results of a process to determine if the process appeared to function correctly, in accordance with documentation and expectations. In some cases, KCI reviewed management practices and operating procedures, comparing the results against legal or statutory requirements or against "best practices" identified by KCI.

6.3 Military-style Test Philosophy

In conducting the evaluation, KCI employed a "military-style" test philosophy. In a military-style test, a mindset of "test until you pass" was generally adopted so that a baseline set of working components would be available to the CLECs by the end of the test period. This was believed to be in the best interest of all parties seeking an open, competitive market for local services in Georgia.

The military-style test process works as follows:

- KCI tests a component;
- KCI informs BellSouth of any problems encountered by creating a written exception[8] describing the failed component and the potential impact on a CLEC;
- BellSouth prepares a written response to the exception describing any intended fix;
- After BellSouth fixes are complete, KCI retests the component as required; and
- If the exception is cleared, then the process is considered complete, and KCI prepares a written closure statement for consideration by the GPSC. Otherwise, KCI continues to iterate through the cycle until exception closure is reached.

6.4 Test Bed

In order to accomplish the testing, BellSouth was required to provision a test bed of initial accounts that would represent a market share of BellSouth or other

[8] Note that KCI first issues a "Draft Exception" to BellSouth to substantiate the accuracy of the test data and preliminary analysis.

CLEC accounts that would be lost to our pseudo-CLEC. The notion of a test bed is a logical concept in that the test accounts were created in BellSouth's production systems, not in a separate test system.

KCI and BellSouth cooperated to define the test bed. Using the UNE test scenario descriptions in the *MTP*, KCI developed test cases for each scenario. Based on the test cases, KCI delivered a set of line and account requirements to BellSouth, which it provisioned. These requirements covered a range of customer starting states (e.g., BellSouth retail, CLEC UNE); line counts (single and multi-line); service types (business, residential); and features (e.g., call waiting, call forwarding). The test bed accounts were established across seven central offices (COs), covering different rate centers and switch types. The test bed specifications submitted to BellSouth provided no indication of the subsequent order activity planned by KCI. In addition to the test bed accounts, BellSouth provided KCI with facility and customer information (cable-pair assignments, telephone numbers, and addresses) required when populating specific service requests.

Prior to KCI's assumption of the test manager role, three separate test beds had been established for ordering and provisioning, maintenance and repair, and billing. In some cases, KCI submitted additional requirements to supplement the existing test beds. Prior to the initiation of testing, KCI validated the provisioning of the test bed by BellSouth to ensure the proper start state for the test accounts.

Additional details on the individual test beds are provided in the test domain introductions.

6.5 Blindness

As previously stated, one of the objectives of the test was to live the CLEC experience. Yet, it was virtually impossible for the KCI/HP test to be truly blind to BellSouth. For example, transactions arrive on dedicated telephone circuits, the owners of which are known by BellSouth. Each CLEC has a unique set of IDs assigned by BellSouth that must be included in every transaction.

To partially offset this lack of blindness, KCI instituted certain procedures to help ensure that KCI and HP would not receive treatment from BellSouth that was obviously different from that received by a real CLEC. For example, KCI required that all documents given to us be generally available to all CLECs, and that any training courses attended by KCI personnel for test purposes be available to all CLECs. KCI reported problems using the same help desk mechanisms used by the CLECs.

6.6 Limitations

Although the *MTP* was limited to UNEs for feature/function testing in the pre-ordering, ordering and provisioning, maintenance and repair, and billing domains, it exercised a set of activities that is much broader than that likely to be undertaken by any single CLEC in the near future. However, the test was not intended to be exhaustive because it is neither feasible nor desirable to test all possible permutations and combinations of all features and functions across all offered UNE products.

In some cases it was not practical to simulate certain order types, troubles, and processes in a test situation. Examples include orders with very long interval periods and provisioning of large volumes of test transactions that would exceed the manual capacity of BellSouth's work centers. In some cases, KCI lacked access to facilities or registrations needed to perform certain order types, such as the submission of Local Number Portability (LNP). In this case, KCI, in collaboration with the GPSC, solicited the participation of actual CLECs currently doing business with BellSouth - Georgia to execute LNP service requests.

7.0 Results

As of the date of this report, some test execution activities are ongoing, primarily in the metrics domain. Test results for all domains are based on the information available to KCI at the time of writing. A final report will be prepared by KCI for submission to BellSouth and the GPSC upon completion of all test execution activities and the closure (for evaluation purposes) of all exceptions.

7.1 Evaluation Criteria and Results

Test targets and their corresponding evaluation criteria provided the basis for conducting tests. Evaluation criteria were the norms, benchmarks, standards, and guidelines used to evaluate items identified for testing. Evaluation criteria also provided a framework for identification of the scope of tests, the types of measures that must be made during testing, and the approach necessary to analyze results.

The GPSC voted on June 6, 2000 to approve a set of Service Quality Measurement- (SQM-) related measures and standards to be used for purposes of KCI's evaluation. On January 16, 2001, the GPSC issued an order requiring BellSouth to report a set of measures that differs in some cases from the requirement of the June 6th test standards. In cases where a test evaluation criterion mapped to a BellSouth SQM, the test results were compared against the proposed standards. In cases where a standard does not exist, results were evaluated using explicit evaluation criteria established by KCI, based on its professional judgment. For quantitative evaluation criteria where the test result

did not meet or exceed the established standard or KCI benchmark, KCI conducted a review to determine whether the differential was statistically significant.

Each evaluation criterion was analyzed individually and has its own associated result and comment. The results fell into the following categories:

- Satisfied – KCI's analysis demonstrated that the evaluation criterion was satisfied through existing business operations components (e.g., procedure, system, or document). A criterion was satisfied by meeting a quantitative, qualitative, parity, or existence parameter established for purposes of the test.
- Not Satisfied – KCI's analysis demonstrated that the evaluation criterion was not satisfied through existing business operations components (e.g., procedure, system, or document). A criterion was not satisfied by failing to meet a quantitative, qualitative, parity, or existence parameter established for purposes of the test.
- No Result Determination Made - test results are presented as diagnostic information only.
- Not Complete - test execution is in progress and/or exceptions remain open.

In cases where failure to satisfy the criterion might, in KCI's judgment, present a significant business impact to CLECs, KCI issued an exception. Exceptions were a means of identifying to BellSouth defects in its OSS components. Where applicable to an evaluation criterion, the significant details of an exception are documented in the "Comments" column of *Section 3.0 Results Summary* for each test. Other items worthy of mention that might not present a significant business impact to CLECs are also described in the "Comments" column.

For information on all exceptions, please access the GPSC Web site at:

http://www.psc.state.ga.us/telecom/Third%20Party.htm

KCI must point out that the criteria are not all of equal importance. Some are less important as stand-alone measures, but are important when considered in a group. Other criteria are significant in their own right. A simple numerical counting or averaging of results by result category is misleading and should be avoided.

Test Summaries

III. Test Summaries

This section provides summary information on each test domain. Each domain summary provides a description of the test objective, evaluation methods, analysis methods, and summary results. See Section II, 7.1 "Evaluation Criteria and Results" for definitions of these items.

The following evaluations are summarized in this section:

A. Pre-Ordering (PRE)

B. Ordering and Provisioning (O&P)

C. Billing (BLG)

D. Maintenance and Repair (M&R)

E. Change Management (CM)

F. Performance Measures[1]

[1] The Performance Measures Evaluations were conducted as part of the Pre-Ordering, Ordering and Provisioning, Maintenance and Repair, and Billing Evaluations. These evaluations employed a consistent methodology across the four domains. This methodology is described in this section.

A. Pre-Ordering (PRE)

This section provides a summary of the Pre-Ordering (PRE) domain testing activities. For more information on planned testing, refer to Section IV: *Pre-Ordering Test* in the *Master Test Plan*. For more detailed information on the test design, analysis, and results from the execution of the tests, refer to Section IV: *Pre-Ordering Test Section* in this document.

1.0 PRE-1: TAG Pre-Ordering Functional Test

This section provides a summary of the PRE-1: TAG Pre-Ordering Functional Test.

1.1 Objective

The objective of this test was to evaluate the functionality of the Telecommunications Access Gateway (TAG) for electronically ordered Unbundled Network Elements (UNEs) in accordance with the TAG Documentation.

1.2 Evaluation Methods

In order to accomplish this objective, Pre-Order transactions were developed and submitted via TAG using CLEC data. The test included both stand-alone accounts and integrated pre-order / order transactions.

1.3 Analysis Methods

The data collected from the TAG Pre-Ordering Functional Test were analyzed, and the results were assessed employing test-specific evaluation criteria.

1.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, No Result Determination Made, or Not Satisfied) are provided in Section II.

Table III-A.1: PRE-1: TAG Pre-Ordering Functional Test – Summary Results

Evaluation Criteria – Satisfied	
PRE-1-1-1	TAG pre-order transaction capability is consistently available during scheduled hours of operation.
PRE-1-2-1	BLS's TAG interface provides expected system responses.
PRE-1-2-2	BLS systems or representatives provide required pre-ordering functionality.
PRE-1-3-1	The TAG interface provides timely pre-order responses from BLS's RSAG-TN back end system.
PRE-1-3-2	The TAG interface provides timely pre-order responses from BLS's RSAG-Address back end system.
PRE-1-3-3	The TAG interface provides timely pre-order responses from BLS' DSAP back end system.
PRE-1-3-4	The TAG interface provides timely pre-order responses from BLS's ATLAS back end system.

PRE-1-3-5	The TAG interface provides timely pre-order responses from BLS's CRSECSR and CSRACCTs back end system.
PRE-1-3-6	The TAG interface provides timely pre-order responses from BLS's ATLAS-MLH back end system.
PRE-1-3-7	The TAG interface provides timely pre-order responses from BLS's ATLAS-DID back end system.
PRE-1-3-8	The TAG interface provides timely pre-order responses from BLS's OASIS back end system.
PRE-1-3-9	The TAG interface provides timely pre-order responses to Calculate Due Date (CDD) inquiries.
PRE-1-4-1	BLS system or representative provides clear, accurate, and complete pre-order success responses.
PRE-1-4-2	BLS system or representative provides clear, accurate, and complete back end or TAG API errors.

2.0 PRE-2: Pre-Ordering Performance Results Comparison

This section provides a summary of the PRE-2: Pre-ordering Performance Results Comparison.

2.1 Objective

The first objective of this test was to assess the accuracy and completeness of the Pre-Ordering Service Quality Measurements (SQMs) calculated and reported by BellSouth for the KCI test CLEC. The second objective was to assess the accuracy of the raw data used by BellSouth to perform these calculations.

2.2 Evaluation Methods

In order to accomplish the first objective, KCI calculated the SQMs based on calculation instructions provided by BellSouth. KCI used the raw data provided by BellSouth to perform its calculations and then compared its results to the reported SQM values, using the pre-established evaluation criteria. To accomplish the second objective, KCI collected data on its test transactions and compared the values in the collected data to the raw data values provided by BellSouth to determine whether they agreed, according to the evaluation criteria.

2.3 Analysis Methods

Given the calculation instructions, KCI developed its own computer programs to perform independent calculations of SQMs. To prepare for the data comparisons, KCI mapped its test data elements to the corresponding elements in BellSouth's raw data for Pre-Ordering SQMs.

2.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-A.2: PRE-2: Pre-Ordering Performance Results Comparison – Summary Results

Evaluation Criteria – Satisfied	
PRE-2-1-1	BLS reports are correctly disaggregated and complete - Average OSS Response Time and Response Interval.
PRE-2-1-2	KCI-calculated SQM values agree with BLS-reported SQM values - Average OSS Response Time and Response Interval.
PRE-2-2-1	BLS reports are correctly disaggregated and complete - OSS Interface Availability.
PRE-2-2-2	KCI-calculated SQM values agree with BLS-reported SQM values - OSS Interface Availability.

3.0 PRE-3: Pre-Ordering Documentation Evaluation

This section provides a summary of the PRE-3: Pre-Ordering Documentation Evaluation.

3.1 Objective

The objective of this test was to assess whether the documentation provided by BellSouth adequately assists CLECs in understanding how to implement and use all of the TAG pre-order functions available to them.

3.2 Evaluation Methods

In order to accomplish this objective KCI reviewed the availability, accuracy, and completeness of BellSouth's pre-ordering documentation using a variety of operational analysis techniques.

3.3 Analysis Methods

The data collected from the Pre-Ordering Performance Documentation Evaluation were analyzed, and the results were assessed employing test specific evaluation criteria.

3.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-A.3: PRE-3: Pre-Ordering Performance Documentation Evaluation – Summary Results

Evaluation Criteria – Satisfied	
PRE-3-1-1	BLS documentation is readily available via the BLS Web site or in hardcopy.
PRE-3-1-2	BLS makes updates to documents readily available to the CLECs.
PRE-3-1-3	Training is available for use of documentation.
PRE-3-1-4	Responsibilities and procedures for developing, updating, and correcting documentation are clearly defined.

PRE-3-1-5	Responsibilities and procedures for distributing documentation are clearly defined.
PRE-3-2-1	Document version is indicated clearly within and throughout each document.
PRE-3-2-2	BLS document organization is consistent with its intended use.
PRE-3-2-3	BLS documents contain information that is relevant to its intended audience.
PRE-3-2-4	BLS documents contain tables of contents.
PRE-3-2-5	BLS documents are logically organized with clear page numbering and section labeling.
PRE-3-2-6	BLS documents contain contact / help desk numbers.
PRE-3-2-7	BLS documents clearly indicate purpose and scope.
PRE-3-2-8	Cross-references are clearly stated, directing readers to relevant sources of additional information.
PRE-3-2-9	BLS documents clearly instruct users how to notify BLS of document errors and omissions.
PRE-3-3-1	BLS documents provide description of all error messages and potential steps for resolution.
PRE-3-3-2	BLS documents clearly identify inputs / outputs of the specific processes.
PRE-3-3-3	BLS documents include expected results of process and cycle times.
PRE-3-4-1	BLS documents correctly define all data fields.
PRE-3-4-2	BLS documents accurately define acceptable formats for all data fields.
PRE-3-4-3	BLS documents clearly identify required and optional fields.
PRE-3-4-4	BLS documents clearly describe expected system responses / outputs.
PRE-3-4-5	BLS documents contain methods and procedures to correctly execute processes.

4.0 PRE-4: Pre-Ordering Normal Volume Test

This section provides a summary of the PRE-4: Pre-Ordering Normal Volume Test.

4.1 Objective

The objective of this test was to evaluate the behavior and performance of the TAG interface under "normal" YE01 projected transaction load conditions. This test was executed in a manner consistent with the forecasted daily usage patterns and transaction mix by submitting large volumes of pre-order test cases.

4.2 Evaluation Methods

In order to accomplish this objective, KCI tested BellSouth's interfaces at year-end, 2001 (YE01) projected order volumes in BellSouth's Reengineered Services, Installation and Maintenance Management System (RSIMMS) environment for two ten-hour periods. This test was executed by submitting pre-order requests in support of Resale and UNE orders against BellSouth test-bed accounts and continued through the return of successful pre-order responses, rejections or error notices.

4.3 Analysis Method

The data collected from the Pre-Ordering Normal Volume Test were analyzed, and the results were assessed employing test specific evaluation criteria.

4.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-A.4: PRE-4: Pre-Ordering Normal Volume Test – Summary Results

Evaluation Criteria – Satisfied	
PRE-4-1-1	TAG pre-order transaction capability is consistently available during scheduled hours of operation.
PRE-4-2-1	BLS's TAG interface provides expected system responses.
PRE-4-3-1	The TAG interface provides timely pre-order responses from BLS's Regional Street Access Guide-Telephone Number (RSAG-TN) back-end system.
PRE-4-3-2	The TAG interface provides timely pre-order responses from BLS's RSAG-Address back-end system.
PRE-4-3-3	The TAG interface provides timely pre-order responses from BLS's Direct Order Entry Support Application Program (DSAP) back-end system.
PRE-4-3-4	The TAG interface provides timely pre-order responses from BLS's Application for Telephone Number Load Administration and Selection (ATLAS) back-end system.
PRE-4-3-5	The TAG interface provides timely pre-order responses from BLS's CRSECSR back-end system.
PRE-4-3-6	The TAG interface provides timely pre-order responses from BLS's ATLAS-MLH back-

	end system.
PRE-4-3-7	The TAG interface provides timely pre-order responses from BLS's ATLAS-DID back-end system.
PRE-4-3-8	The TAG interface provides timely pre-order responses from BLS's OASIS back-end system.
PRE-4-3-9	The TAG interface provides timely pre-order responses to Calculate Due Date (CDD) inquiries.
PRE-4-4-1	BLS system provides accurate pre-order success responses.
PRE-4-4-2	BLS system provides accurate back-end or TAG API errors.

5.0 PRE-5: Pre-Ordering Peak Volume Test

This section provides a summary of the PRE-5: Pre-ordering Peak Volume Test.

5.1 Objective

The objective of this test was to evaluate the behavior and performance of the TAG interface under "peak" YE01 projected transaction load conditions. This test was executed in a manner consistent with the forecasted daily usage patterns and transaction mix by submitting large volumes of pre-order test cases.

5.2 Evaluation Methods

In order to accomplish this objective, KCI tested BellSouth's interfaces at year-end, 2001 (YE01) projected order volumes in BellSouth's Reengineered Services, Installation and Maintenance Management System (RSIMMS) environment for two eight-hour periods. This test was executed by submitting pre-order requests in support of Resale and UNE orders against BellSouth test-bed accounts and continued through the return of successful pre-order responses, rejections or error notices.

5.3 Analysis Method

The data collected from the Pre-Ordering Peak Volume Test were analyzed, and the results were assessed employing test specific evaluation criteria.

5.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-A.5: PRE-5: Pre-Ordering Peak Volume Test – Summary Results

Evaluation Criteria – Satisfied	
PRE-5-1-1	TAG pre-order transaction capability is consistently available during scheduled hours of operation.
PRE-5-2-1	BLS's interface provides expected system responses.
PRE-5-3-1	The TAG interface provides timely pre-order responses from BLS's Regional Street Access Guide Telephone Number (RSAG-TN) back-end system.

PRE-5-3-2	The TAG interface provides timely pre-order responses from BLS's RSAG-Address back-end system.
PRE-5-3-3	The TAG interface provides timely pre-order responses from BLS's Direct Order Entry Support Application Program (DSAP) back-end system.
PRE-5-3-4	The TAG interface provides timely pre-order responses from BLS's Application for Telephone Load Administration and Selection (ATLAS) back-end system.
PRE-5-3-5	The TAG interface provides timely pre-order responses from BLS's CRSECSR back-end system.
PRE-5-3-6	The TAG interface provides timely pre-order responses from BLS's ATLAS-MLH back-end system.
PRE-5-3-7	The TAG interface provides timely pre-order responses from BLS's ATLAS-DID back-end system.
PRE-5-3-8	The TAG interface provides timely pre-order responses from BLS's OASIS back-end system.
PRE-5-3-9	The TAG interface provides timely pre-order responses to Calculate Due Date (CDD) inquiries.
PRE-5-4-1	BLS system provides clear and accurate pre-order success responses.
PRE-5-4-2	BLS system provides clear, accurate, and complete back-end or TAG API errors.

6.0 PRE-6: Pre-Order Processing System Capacity Management Evaluation

This section provides a summary for the PRE-6: Pre-Order Processing Systems Capacity Management Evaluation.

6.1 Objective

The objective of this test was to determine the extent to which procedures to accommodate increases in the pre-order TAG interface transaction volumes and users are actively managed.

6.2 Evaluation Methods

In order to accomplish this objective, systems documentation and process flows for pre-order processing were reviewed. Interviews were conducted with system administration personnel responsible for the operation of the pre-order processing systems. These interviews were supplemented with an analysis of BellSouth's documented capacity management procedures as well as collection of evidence of related activities such as periodic capacity management reviews, system reconfiguration/load balancing, load increase induced upgrades, and resource utilization and performance management reporting.

6.3 Analysis Methods

The Pre-Order Processing Systems Capacity Management Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. The data collected from inspections and interviews were analyzed employing the evaluation criteria.

6.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-A.6: PRE-6: Pre-Order Processing System Capacity Management Evaluation – Summary Results

Evaluation Criteria – Satisfied	
PRE-6-1-1	There is an established process for capturing business and transaction volumes.
PRE-6-1-2	There is an established process for capturing resource utilization.
PRE-6-1-3	Resource utilization is monitored for system components and elements.
PRE-6-1-4	Instrumentation and other tools are used to collect resource utilization data.
PRE-6-1-5	Performance is monitored at all applicable levels (e.g. network, database server, application server, client, etc.).
PRE-6-1-6	Instrumentation and other tools are used to monitor performance.
PRE-6-1-7	There is an established process for forecasting business volumes and transactions.
PRE-6-1-8	The business volume tracking and forecasting data is at an appropriate level of detail to use for capacity management.
PRE-6-1-9	There is an established process for reviewing the performance of the business and transaction volume forecasting process.
PRE-6-1-10	There is an established process for verification and validation of performance data.
PRE-6-1-11	Performance monitoring results are compared to service level agreements and other metrics.
PRE-6-1-12	Capacity Management process is defined and documented.
PRE-6-1-13	Resource usage and capacity is considered in the planning process for capacity management.
PRE-6-1-14	Performance monitoring results are considered in the planning process for capacity management.
PRE-6-1-15	Capacity Management procedures define performance metrics to trigger the addition of capacity, load re-balancing or system tuning.

B. Ordering and Provisioning (O&P)

This section provides a summary of the Ordering and Provisioning (O&P) domain testing activities. For more information on planned testing, refer to Section V: *Ordering and Provision Test* in the *Master Test Plan*. For more detailed information on the test design, analysis, and results from the execution of the tests, refer to Section V: Ordering and Provisioning Test Section in this document.

1.0 O&P-1: EDI Functional Test

This section provides a summary of the O&P-1: EDI Functional Test.

1.1 Objective

The objective of this test was to evaluate the existence of EDI functionality for electronically ordered UNEs in accordance with EDI documentation.

1.2 Evaluation Methods

The EDI Functional Test included a checklist of evaluation criteria developed by the test manager during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria, detailed in the Master Test Plan, provided the framework of norms, standards and guidelines for the EDI Functional Test.

1.3 Analysis Methods

The data collected from the EDI Functional Test was analyzed, and the results were assessed employing *test specific evaluation criteria.*

1.4 Summary Results

The following table presents the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-B.1: O&P-1: EDI Functional Test – Summary Results

Evaluation Criteria – Satisfied	
O&P-1-2-2	BLS systems and representatives provide required order functionality.
O&P-1-3-1	BLS's EDI interface provides timely Functional Acknowledgements (FAs).
O&P-1-3-2b	BLS's EDI interface provides timely Partially Mechanized (PM) order clarifications (CLRs).
O&P-1-3-3a	BLS's EDI interface provides timely Flow-Through (FT) Firm Order Confirmations (FOCs).
O&P-1-3-3b	BLS's EDI interface provides timely Non-Flow-Through (NFT) Firm Order Confirmations (FOCs).
O&P-1-3-5	BLS's EDI interface provides timely Jeopardy Notifications.
O&P-1-3-6	BLS's EDI interface provides timely Missed Appointment (MA) notifications .
O&P-1-4-1	BLS systems and representatives provide clear, accurate, and complete Firm Order

Evaluation Criteria – Satisfied	
	Confirmations (FOCs)
O&P-1-4-4	BLS systems and representatives provide clear, accurate, and complete Completion Notifications (CNs).
O&P-1-4-5	BLS systems and representatives return clear and complete Jeopardy Notifications.
O&P-1-4-6	BLS systems provide clear, accurate, and complete Missed Appointment Notifications.
O&P-1-4-7	BLS service order tracking systems (CSOTS) provide accurate LSR status.
O&P-1-5-1	Pre-Order and Order field names and field formats for Service Availability Queries are compatible.
O&P-1-5-2	Pre-Order and Order field names and field formats for Appointment Availability Queries are compatible.
O&P-1-5-3	Pre-Order and Order field names and field formats for Calculate Due Date queries are compatible.
O&P-1-5-4	Pre-Order and Order field names and field formats for Address Validation Query with Telephone Number are compatible.
O&P-1-5-5	Pre-Order and Order field names and field formats for Address Validation Queries are compatible.
O&P-1-5-6	Pre-Order and Order field names and field formats for Telephone Number Availability Queries are compatible.
O&P-1-5-7	Pre-Order and Order field names and field formats for Telephone Number Selection Queries are compatible.
Evaluation Criteria – Not Satisfied	
O&P-1-2-1	The EDI interface provides expected system responses.
O&P-1-3-2a	BLS's EDI interface provides timely Fully Mechanized (FM) order errors (ERRs) / clarifications (CLRs).
O&P-1-4-2	BLS systems and representatives provide clear, accurate and complete order errors (ERRs) / clarifications (CLRs).
Evaluation Criteria – No Result Determination Made	
O&P-1-1-1	EDI order transaction capability is consistently available during scheduled hours of operation.
O&P-1-3-4	BLS's EDI interface provides timely Completion Notifications (CNs) within agreed upon standard intervals.
O&P-1-4-3	Service order provisioning due dates (FOC DDs) identified within BLS's order confirmation delivered through EDI are consistent with the CLEC's valid due date (LSR DDD) request (e.g., a due date selected in accordance with the product's standard interval or acquired from a Calculate Due Date (CDD) pre-order query).

2.0 O&P-2: TAG Functional Test

This section provides a summary for the O&P-2: TAG Functional Test.

2.1 Objective

The objective of this test was to evaluate the existence of TAG functionality for electronically ordered UNEs in accordance with EDI documentation.

2.2 Evaluation Methods

The TAG Functional Test included a checklist of evaluation criteria developed by the test manager during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria, detailed in the Master Test Plan, provided the framework of norms, standards and guidelines for the TAG Functional Test.

2.3 Analysis Methods

The data collected from the TAG Functional Test was analyzed, and the results were assessed employing test specific evaluation criteria.

2.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-B.2: O&P-2: TAG Functional Test – Summary Results

Evaluation Criteria – Satisfied	
O&P-2-1-1	TAG order transaction capability is consistently available during scheduled hours of operation.
O&P 2-2-2	BLS systems and representatives provide required order functionality.
O&P-2-3-1	BLS's TAG interface provides timely Functional Acknowledgements (FAs).
O&P-2-3-2a	BLS's TAG interface provides timely Fully Mechanized (FM) order errors (ERRs) / clarifications (CLRs).
O&P-2-3-2b	BLS's TAG interface provides timely Partially Mechanized (PM) order errors clarifications (CLRs).
O&P-2-3-3b	BLS's TAG interface provides timely Non-Flow-Through (NFT) Firm Order Confirmations (FOCs) .
O&P-2-3-5	BLS's TAG interface provides timely Jeopardy Notifications.
O&P-2-3-6	BLS's TAG interface provides timely Missed Appointment (MA) Notifications.
O&P-2-4-1	BLS systems and representatives provide clear, accurate, and complete Firm Order Confirmations (FOCs)
O&P-2-4-4	BLS systems and representatives provide clear, accurate, and complete Completion Notifications (CNs).
O&P-2-4-5	BLS systems and representatives return clear and complete Jeopardy Notifications.
O&P-2-4-6	BLS systems provide clear, accurate, and complete Missed Appointment Notifications.
O&P-2-4-7	BLS service order tracking systems (CSOTS) provide accurate LSR status.
O&P-2-5-1	Pre-Order and Order field names and field formats for Service Availability Queries are compatible
O&P-2-5-2	Pre-Order and Order field names and field formats for Appointment Availability Queries are compatible.
O&P-2-5-3	Pre-Order and Order field names and field formats for Calculate Due Date queries are compatible.
O&P-2-5-4	Pre-Order and Order field names and field formats for Address Validation Query with Telephone Number are compatible.

O&P-2-5-5	Pre-Order and Order field names and field formats for Address Validation Queries are compatible.
O&P-2-5-6	Pre-Order and Order field names and field formats for Telephone Number Availability Queries are compatible.
O&P-2-5-7	Pre-Order and Order field names and field formats for Telephone Number Selection Queries are compatible.
Evaluation Criteria – Not Satisfied	
O&P-2-2-1	The TAG interface provides expected system responses.
O&P-2-3-3a	BLS's TAG interface provides timely Flow Through (FT) Firm Order Confirmations (FOCs) .
O&P-2-4-2	BLS systems and representatives provide clear, accurate, and complete order rejects (ERRs) / clarifications (CLRs).
Evaluation Criteria – No Result Determination Made	
O&P-2-3-4	BLS's TAG interface provides timely Completion Notifications (CNs) within agreed upon standard intervals.
O&P-2-4-3	Service order provisioning due dates (FOC DDs) identified within BLS's order confirmation delivered through TAG are consistent with the CLEC's valid due date (LSR DDD) request (e.g., a due date selected in accordance with the product's standard interval or acquired from a Calculate Due Date (CDD) pre-order query).

3.0 O&P-3: EDI/TAG Normal Volume Test

This section provides a summary of the O&P-3: EDI / TAG Normal Volume Test.

3.1 Objective

The objective of this test was to evaluate the behavior and performance of the EDI and TAG interfaces under "normal" YE01 projected transaction load conditions. This test was executed in a manner consistent with the forecasted daily usage patterns and transaction mix by submitting large volumes of order test cases.

3.2 Evaluation Methods

The EDI / TAG Normal Volume Performance Test (O&P-3) tested BellSouth's interfaces at year-end, 2001 (YE01) projected order volumes in BellSouth's Reengineered Services, Installation and Maintenance Management System (RSIMMS) environment for two ten-hour periods. This test was executed by submitting Resale and UNE orders against BellSouth test-bed accounts.

In order to fully test the robustness of BellSouth's OSS, the test was conducted simultaneously with the TAG Normal Volume Performance Test (PRE-4). The order transaction loads were distributed geographically across multiple Central Offices in the state of Georgia. BellSouth established and configured customer test accounts prior to initiation of the test.

3.3 Analysis Method

The data collected from the EDI / TAG Normal Volume Test were analyzed, and the results were assessed employing test specific evaluation criteria.

4.0 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-B.3: O&P-3: EDI/TAG Normal Volume Test – Summary Results

Evaluation Criteria – Satisfied	
O&P-3-1-1	EDI order transaction capability is consistently available during scheduled hours of operation.
O&P-3-1-2	TAG order transaction capability is consistently available during scheduled hours of operation.
O&P-3-2-1	The EDI interface provides expected system responses.
O&P-3-2-2	The TAG interface provides expected system responses.
O&P-3-3-2	BLS's TAG interface provides timely Functional Acknowledgements (FAs).
O&P-3-3-3	BLS's EDI interface provides timely Firm Order Confirmations (FOCs).
O&P-3-3-4	BLS's TAG interface provides timely Firm Order Confirmations (FOCs).
O&P-3-4-1	BLS systems provide accurate Firm Order Confirmations (FOCs).
O&P-3-4-2	BLS systems provide accurate order errors (ERRs) / clarifications (CLRs).
Evaluation Criteria – Not Satisfied	
O&P-3-3-1	BLS's EDI interface provides timely Functional Acknowledgements (FAs).

4.0 O&P-4: EDI/TAG Peak Volume Performance Test

This section provides a summary of the O&P-4: EDI / TAG Peak Volume Test.

4.1 Objective

The objective of this test was to evaluate the behavior and performance of the EDI and TAG interfaces under "peak" YE01 projected transaction load conditions. This test was executed in a manner consistent with the forecasted daily usage patterns and transaction mix by submitting large volumes of order test cases.

4.2 Evaluation Methods

The EDI / TAG Peak Volume Performance Test (O&P-4) tested BellSouth's interfaces at year-end, 2001 (YE01) projected order volumes in BellSouth's Reengineered Services, Installation and Maintenance Management System (RSIMMS) environment for two eight-hour periods. This test was executed by submitting Resale and UNE orders against BellSouth test-bed accounts.

In order to fully test the robustness of BellSouth's OSS the test was conducted simultaneously with the TAG Peak Volume Performance Test (PRE-5). The order transaction loads were distributed geographically across multiple Central Offices in the

state of Georgia. BellSouth established and configured customer test accounts prior to initiation of the test.

4.3 Analysis Method

The data collected from the EDI/TAG Peak Volume Test were analyzed, and the results were assessed employing test specific evaluation criteria.

4.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-B.4: O&P-4: EDI/TAG Peak Volume Test – Summary Results

Evaluation Criteria – Satisfied	
O&P-4-1-1	EDI order transaction capability is consistently available during scheduled hours of operation.
O&P-4-1-2	TAG order transaction capability is consistently available during scheduled hours of operation.
O&P-4-2-1	The EDI interface provides expected system responses.
O&P-4-2-2	The TAG interface provides expected system responses.
O&P-4-3-2	BLS's TAG interface provides timely Functional Acknowledgements (FAs).
O&P-4-3-3	BLS's EDI interface provides timely Firm Order Confirmations (FOCs).
O&P-4-3-4	BLS's TAG interface provides timely Firm Order Confirmations (FOCs).
O&P-4-4-1	BLS systems provide accurate Firm Order Confirmations (FOCs).
O&P-4-4-2	BLS systems provide accurate order errors (ERRs)/clarifications (CLRs).
Evaluation Criteria – Not Satisfied	
O&P-4-3-1	BLS's EDI interface provides timely Functional Acknowledgements (FAs).

5.0 O&P-5: Provisioning Verification Test

This section provides a summary of the O&P-5: Provisioning Verification Test.

5.1 Objective

The objective of this test was to evaluate BellSouth's performance in the provisioning of UNEs as described in the Georgia *Order*.

5.2 Evaluation Methods

Operational analysis techniques were used to evaluate BellSouth systems and processes related to provisioning. Observations of live CLEC provisioning activities were made. Test instances utilized in pre-order and order functional testing were verified for provisioning accuracy and coordination.

The Provisioning Verification Test was conducted through post activity validation of Customer Service Records (CSRs), switch translation reports, and Central Office

validation on a sample of accounts. Interviews were held with BellSouth-GA provisioning personnel and with CLECs that purchase UNEs from BellSouth to provide a better understanding of the provisioning process from end-to-end. In addition, Loop "hot cuts" were observed for accuracy of provisioning as well as procedural adherence.

5.3 Analysis Methods

The data collected from the Provisioning Verification Test were analyzed, and the results were assessed employing test specific evaluation criteria.

5.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-B.5: O&P-5: Provisioning Verification Test – Summary Results

Evaluation Criteria – Satisfied	
O&P-5-1-1	Provisioning activity occurs on the date and time (if applicable) confirmed to the CLEC.
O&P-5-2-2	Provisioning was completed accurately for orders placed in O&P-1 EDI Functional Test and O&P-2 TAG Functional Test – Customer Service Record (CSR) Verification.
O&P-5-2-3	Coordinated Customer Conversions (Hot-Cuts) are completed on time by BLS technicians.
O&P-5-2-4	The coordinated provisioning procedures are practiced in the Central Office locations – Methods and Procedures.
O&P-5-2-5	Provisioning was completed accurately for orders placed in O&P-1 EDI Functional Test and O&P-2 TAG Functional Test – Directory Listings
O&P-5-2-6	Jeopardy (Pending Facilities) Notifications provide complete information.
O&P-5-2-7	Design Layout Records are provided for SL2 (Design) Loops.
O&P-5-3-1	Procedures in the coordination process are in place.
O&P-5-3-2	Procedures for Central Office work are defined and utilized.
O&P-5-3-3	Procedures for placing an order into Missed Appointment (MA) Status are defined.
O&P-5-3-4	CLEC procedures for escalation are defined.
O&P-5-3-5	Non-available facilities (Pending Facilities) policy is clearly defined.
O&P-5-3-6	Policy for acceptance of complete orders is clearly stated.
Evaluation Criteria – Not Satisfied	
O&P-5-2-1	Provisioning was completed accurately for orders placed in O&P-1 EDI Functional Test and O&P-2 TAG Functional Test – Switch Translations Verification.

6.0 O&P-6: Order Processing Systems Capacity Management Evaluation

This section provides a summary for the O&P-6: Order Processing Systems Capacity Management Evaluation.

6.1 Objective

The objective of this evaluation was to analyze the capabilities of BellSouth capacity management functions in relation to the order processing applications and determine whether the procedures were adequate to identify and implement capacity increments to satisfy projected customer business volumes on a timely basis.

6.2 Evaluation Methods

The capacity management evaluation began with a review of systems documentation and process flows for order processing. Interviews were conducted with system administration personnel responsible for the operation of EDI, LEO, LESOG, LNP, SOCS, and TAG order processing systems. These interviews were supplemented with an analysis of BellSouth capacity management procedures as well as a collection of evidence of related activities such as: periodic capacity management reviews; system reconfiguration/load balancing; load increase induced upgrades; and resource utilization and performance management reporting.

6.3 Analysis Methods

The Order Processing Systems Capacity Management Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. The data collected from inspections and interviews were analyzed employing test specific evaluation criteria.

6.4 Summary Results

The following tables present the summary results of the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-B.6: O&P-6: Order Processing Systems Capacity Management Evaluation – Summary Results

Evaluation Criteria – Satisfied	
O&P-6-1-1	There is an established process for capturing business and transaction volumes.
O&P-6-1-2	There is an established process for capturing resource utilization.
O&P-6-1-3	Resource utilization is monitored for system components and elements.
O&P-6-1-4	Instrumentation and other tools are used to collect resource utilization data.
O&P-6-1-5	Performance is monitored at all applicable levels (e.g. network, database server, application server, client, etc.).
O&P-6-1-6	Instrumentation and other tools are used to monitor performance.
O&P-6-1-7	There is an established process for forecasting business volumes and transactions.
O&P-6-1-8	The business volume tracking and forecasting data is at an appropriate level of detail to use for capacity management.
O&P-6-1-9	There is an established process for reviewing the performance of the business and transaction volume forecasting process.
O&P-6-1-10	There is an established process for verification and validation of performance data.

O&P-6-1-11	Performance monitoring results are compared to service level agreements and other metrics.
O&P-6-1-12	Capacity Management process is defined and documented.
O&P-6-1-13	Resource usage and capacity is considered in the planning process for capacity management.
O&P-6-1-14	Performance monitoring results are considered in the planning process for capacity management.
O&P-6-1-15	Capacity Management procedures define performance metrics to trigger the addition of capacity, load re-balancing or system tuning.

7.0 O&P-7: Ordering & Provisioning Performance Measures Evaluation

This section provides a summary for the OP-7: Ordering & Provisioning Performance Measures Evaluation.

7.1 Objective

One objective of this test was to assess the accuracy and completeness of the Ordering & Provisioning Service Quality Measurements (SQMs) calculated and reported by BellSouth for the KCI test CLEC. The other objective was to assess the accuracy of the raw data used by BellSouth to perform these calculations.

7.2 Evaluation Methods

In order to accomplish the first objective, KCI calculated the SQMs based on instructions provided by BellSouth. KCI used the raw data provided by BellSouth to perform its calculations and then compared its results to the reported SQM values, using the pre-established evaluation criteria. To accomplish the second objective, KCI collected data on its test transactions and compared the values in the collected data to the raw data values to determine whether they agreed according to the evaluation criteria.

7.3 Analysis Methods

Using the calculation instructions, KCI developed its own computer programs to perform independent calculations of SQMs. To prepare for the data comparisons, KCI mapped its test data elements to the corresponding elements in BellSouth's raw data for Ordering & Provisioning SQMs.

7.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-B.7: OP-7: Ordering & Provisioning Performance Results Comparison Evaluation– Summary Results

Evaluation Criteria – Satisfied	
O&P-7-1-1	BLS reports are correctly disaggregated and complete - Percent Rejected Service Requests.
O&P-7-1-2	KCI-calculated SQM values agree with BLS-reported SQM values - Percent Rejected Service Requests.
O&P-7-2-1	BLS Reports are correctly disaggregated and complete – Reject Interval.
O&P-7-2-2	KCI-calculated SQM values agree with BLS-reported SQM values – Reject Interval.
O&P-7-3-1	BLS reports are correctly disaggregated and complete - Firm Order Confirmation Timeliness.
O&P-7-3-2	KCI-calculated SQM values agree with BLS-reported SQM values - Firm Order Confirmation Timeliness.
O&P-7-4-1	BLS reports are correctly disaggregated and complete - Speed of Answer in Ordering Center.
O&P-7-4-2	KCI-calculated SQM values agree with BLS-reported SQM values - Speed of Answer in Ordering Center.
O&P-7-5-1	BLS reports are correctly disaggregated and complete - Mean Held Order Interval and Distribution Intervals.
O&P-7-5-2	KCI-calculated SQM values agree with BLS-reported SQM values - Mean Held Order Interval and Distribution Intervals.
O&P-7-5-3	Test data collected by KCI agrees with BLS raw data - Mean Held Order Interval and Distribution Intervals.
O&P-7-6-1	BLS reports are correctly disaggregated and complete - Average Jeopardy Notice Interval and Percent of Orders Given Jeopardy Notices.
O&P-7-6-2	KCI-calculated SQM values agree with BLS-reported SQM values - Average Jeopardy Notice Interval and Percent of Orders Given Jeopardy Notices.
O&P-7-7-1	BLS reports are correctly disaggregated and complete - Percent Missed Installation Appointments.
O&P-7-7-2	KCI-calculated SQM values agree with BLS-reported SQM values - Percent Missed Installation Appointments.
O&P-7-7-3	Test data collected by KCI agrees with BLS raw data - Percent Missed Installation Appointments.
O&P-7-8-1	BLS reports are correctly disaggregated and complete - Average Completion Interval Order Completion Interval Distribution.
O&P-7-8-2	KCI-calculated SQM values agree with BLS-reported SQM values - Average Completion Interval Order Completion Interval Distribution.
O&P-7-8-3	Test data collected by KCI agrees with BLS raw data - Average Completion Interval Order Completion Interval Distribution.
O&P-7-9-1	BLS reports are correctly disaggregated and complete - Average Completion Notice Interval.
O&P-7-9-2	KCI-calculated SQM values agree with BLS-reported SQM values - Average Completion Notice Interval.
O&P-7-9-3	Test data collected by KCI agrees with BLS raw data - Average Completion Notice Interval.

O&P-7-10-1	BLS reports are correctly disaggregated and complete - Coordinated Customer Conversions.
O&P-7-10-2	KCI-calculated SQM values agree with BLS-reported SQM values - Coordinated Customer Conversions.
O&P-7-11-1	BLS reports are correctly disaggregated and complete - Percent Provisioning Troubles within 30 days of Service Order Activity.
O&P-7-11-2	KCI-calculated SQM values agree with BLS-reported SQM values - Percent Provisioning Troubles within 30 days of Service Order Activity.
O&P-7-12-1	BLS reports are correctly disaggregated and complete - Total Service Order Cycle Time.
O&P-7-12-2	KCI-calculated SQM values agree with BLS-reported SQM values - Total Service Order Cycle Time.
O&P-7-12-3	Test data collected by KCI agrees with BLS raw data -Total Service Order Cycle Time.
O&P-7-13-1	BLS reports are correctly disaggregated and complete - Service Order Accuracy.
O&P-7-13-2	KCI-calculated SQM values agree with BLS-reported SQM values - Service Order Accuracy.
Evaluation Criteria – Not Complete	
O&P-7-1-3	Test data collected by KCI agrees with BLS raw data - Percent Rejected Service Requests.
O&P-7-2-3	Test data collected by KCI agrees with BLS raw data – Reject Interval.
O&P-7-3-3	Test data collected by KCI agrees with BLS raw data - Firm Order Confirmation Timeliness.
O&P-7-6-3	Test data collected by KCI agrees with BLS raw data - Average Jeopardy Notice Interval and Percent of Orders Given Jeopardy Notices.

8.0 O&P-8: EDI Documentation Evaluation

This section provides a summary of the O&P-8: EDI Documentation Evaluation.

8.1 Objective

The objective of this test was to assess whether the documentation provided by BellSouth adequately assists CLECs in understanding how to implement and use all of the EDI ordering and provisioning functions available to them.

8.2 Evaluation Methods

The EDI Documentation Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards and guidelines for the test.

8.3 Analysis Methods

The data collected from the EDI Documentation Evaluation were analyzed, and the results were assessed employing test specific evaluation criteria.

8.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-B.8: O&P-8: EDI Documentation Evaluation – Summary Results

Evaluation Criteria – Satisfied	
O&P-8-1-1	BLS documentation is readily available via the BellSouth Web site or in hardcopy.
O&P-8-1-2	BLS makes updates to documents readily available to the CLECs.
O&P-8-1-3	Training is available for use of documentation.
O&P-8-1-4	Responsibilities and procedures for developing, updating, and correcting documentation are clearly defined.
O&P-8-1-5	Responsibilities and procedures for distributing documentation are clearly defined.
O&P-8-2-1	Document version is indicated clearly within and throughout each document.
O&P-8-2-2	BLS document organization is consistent with its intended use.
O&P-8-2-3	BLS documents contain information that is relevant to its intended audience.
O&P-8-2-4	BLS documents contain table of contents.
O&P-8-2-5	BLS documents are logically organized with clear page numbering and section labeling.
O&P-8-2-6	BLS Documents contain contact / help desk numbers.
O&P-8-2-7	BLS documents clearly indicate purpose and scope.
O&P-8-2-8	Cross-references are clearly stated directing readers to relevant sources of additional information.
O&P-8-2-9	BLS documents clearly instruct users how to notify BellSouth of document errors and omissions.
O&P-8-3-1	BLS documents provide description of all error messages and potential steps for resolution.
O&P-8-3-2	BLS documents clearly identify inputs / outputs of the specific processes.
O&P-8-3-3	BLS documents include expected results of process and cycle times.
O&P-8-4-1	BLS documents correctly define all data fields.
O&P-8-4-2	BLS documents accurately define acceptable formats for all data fields.
O&P-8-4-3	BLS documents clearly identify required and optional fields.
O&P-8-4-4	BLS documents clearly describe expected system responses / outputs.
O&P-8-4-5	BLS documents contain methods and procedures to correctly execute processes.

9.0 O&P-9: TAG Documentation Evaluation

Interface development, and the documentation supporting this process, was not part of the evaluation scope outlined by the GPSC in its May 20, 1999 *Order*. Therefore, no such evaluation was conducted.

10.0 O&P-10: EDI/TAG Production Volume Performance Test

This section provides a summary of the O&P-10: EDI/TAG Production Volume Performance Test.

10.1 Objective

The objective of the EDI/TAG Production Volume Performance Test was to measure the performance of the EDI and TAG interfaces under current production capacity at YE01 projected transaction mix.

10.2 Evaluation Methods

The EDI/TAG Production Volume Performance Test (O&P-10) tested BellSouth's interfaces under current production capacity at YE01 projected transaction mix in BellSouth's production environment for one eight-hour period. This test was executed by submitting Resale and UNE orders in addition to associated pre-orders against BellSouth test-bed accounts.

The order transaction loads were distributed geographically across multiple Central Offices in the state of Georgia. BellSouth established and configured customer test accounts prior to initiation of the test.

10.3 Analysis Method

The data collected from EDI/TAG Production Volume Performance Test were analyzed, and the results were assessed employing test specific evaluation criteria.

10.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-B.10: O&P-10: EDI/TAG Production Volume Test – Summary Results

Evaluation Criteria – Satisfied	
O&P-10-1-1	EDI order transaction capability is consistently available during scheduled hours of operation.
O&P-10-1-2	TAG order transaction capability is consistently available during scheduled hours of operation.
O&P-10-2-1	The EDI interface provides expected system responses.
O&P-10-2-2	The TAG interface provides expected system responses.
O&P-10-2-3	The TAG interface provides expected pre-order system responses.
O&P-10-3-1	BLS's EDI interface provides timely Functional Acknowledgements (FAs).
O&P-10-3-2	BLS's TAG interface provides timely Functional Acknowledgements (FAs).
O&P-10-3-3	BLS's EDI interface provides timely Firm Order Confirmations (FOCs).
O&P-10-3-4	BLS's TAG interface provides timely Firm Order Confirmations (FOCs).

O&P-10-3-5	The TAG interface provides timely pre-order responses from BLS's Regional Street Access Guide-Telephone Number (RSAG-TN) back end system.
O&P-10-3-6	The TAG interface provides timely pre-order responses from BLS's RSAG-Address back end system.
O&P-10-3-7	The TAG interface provides timely pre-order responses from BLS's Direct Order Entry Support Application Program (DSAP) back end system.
O&P-10-3-8	The TAG interface provides timely pre-order responses from BLS's Application for Telephone Number Load Administration and Selection (ATLAS) back end system.
O&P-10-3-9	The TAG interface provides timely pre-order responses from BLS's CRSECSR back end system.
O&P-10-3-10	The TAG interface provides timely pre-order responses from BLS's ATLAS-MLH back-end system.
O&P-10-3-11	The TAG interface provides timely pre-order responses from BLS's ATLAS-DID back-end system.
O&P-10-3-12	The TAG interface provides timely pre-order responses from BLS's OASIS back-end system.
O&P-10-3-13	The TAG interface provides timely pre-order responses to Calculate Due Date (CDD) inquiries.
O&P-10-4-1	BLS systems provide accurate pre-order success responses.
O&P-10-4-2	BLS systems provide clear, accurate, and complete Firm Order Confirmations (FOCs).
O&P-10-4-3	BLS systems provide accurate order errors (ERRs) / clarifications (CLRs).

C. Billing (BLG)

This section provides a summary of the Billing domain testing activities. For more information on planned testing, refer to Section VI: *Billing Test Section* of the *Master Test Plan*. For more detailed information on the test design, analysis, and results from the execution of the tests, refer to Section VI: *Billing Domain Results and Analysis* in this document.

1.0 BLG-1: CRIS/CABS Invoicing Functional Test

This section provides a summary for the BLG-1: CRIS / CABS Invoicing Functional Test.

1.1 Objective

The objective of this test was to validate the completeness and accuracy of the CRIS / CABS carrier invoicing process in accordance with BellSouth's published specifications.

1.2 Evaluation Methods

In order to accomplish this objective, KCI executed order transactions against test bed lines established for testing purposes. Test case scenarios were developed and utilized to create Local Service Requests for products and activities included in the *Master Test Plan*. Expected results were developed for each test scenario based on the policies and rate structure specified in BellSouth documentation and procedures. These expected results were compared to billing invoices produced by BellSouth to verify that charges were appropriately and accurately billed and delivered within the expected time interval.

For the process evaluation component of the CRIS / CABS Invoicing Functional Test (BLG-1), KCI conducted interviews with BellSouth subject matter experts, observed BellSouth work operations, and reviewed BellSouth documentation pertaining to the production and distribution of CLEC bills. Using the information gathered, KCI evaluated the processes which support the timely and accurate production and distribution of CLEC bills.

1.3 Analysis Methods

The CRIS / CABS Invoicing Functional Billing Test (BLG-1) included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth – Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards and guidelines for the CRIS / CABS Invoicing Functional Billing Test (BLG-1).

1.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete, or Not Satisfied) are provided in Section II.

Table III-C.1: BLG-1: CRIS/CABS Invoicing Functional Test – Summary Results

Evaluation Criteria – Satisfied	
BLG-1-1-1	The appropriate major bill sections appear on the bills per BLS's documentation.
BLG-1-1-2	The appropriate data appears on the page headers per BLS's documentation.
BLG-1-1-3	The appropriate data appears on the Remittance page per BLS's documentation.
BLG-1-1-4	The appropriate data appear in the Summary Billing section per BLS's documentation.
BLG-1-1-5	Appropriate details appear in the Summary Billing section per BLS's documentation.
BLG-1-1-6	The appropriate details appear in the Current Charges section per BLS's documentation.
BLG-1-1-7	The appropriate details appear in the Other Charges and Credits section per BLS's documentation.
BLG-1-1-8	Summary Page calculations correspond with the calculation definition.
BLG-1-1-9	Balance Due calculations cross total as appropriate.
BLG-1-1-10	Late Payment Charge calculations correspond with the calculation definition in the BLS documentation.
BLG-1-1-11	Non-recurring and pro-rated monthly charge calculations correspond appropriately with the BLS tariffs or Interconnection Agreement.
BLG-1-1-12	Usage rates correspond with those defined in the BLS tariffs or Interconnection Agreement.
BLG-1-1-13	Summary Charge calculations correspond with the calculation definition contained in the BLS tariffs or Interconnection Agreement.
BLG-1-1-14	Detailed Charge calculations correspond with the calculation definition contained in the BLS tariffs or Interconnection Agreement.
BLG-1-1-15	Remittance totals cross-total appropriately
BLG-1-1-16	Summary sections / page correspond with appropriate totals elsewhere in the bills.
BLG-1-1-17	Other Charges & Credits (OC&C) detail matches expected results.
BLG-1-1-18	Monthly Recurring Charge detail matches expected results.
BLG-1-1-19	Usage charge(s) match expected results.
BLG-1-1-20	Bill delivery timeliness corresponds with the BLS standard.
BLG-1-1-21	Scope and objectives of the bill delivery services cover all key customer requirements.
BLG-1-1-22	Bill delivery responsibilities and activities are clearly defined.
BLG-1-1-23	Customer can readily obtain assistance in the event of problems with bill delivery.
BLG-1-1-24	Process includes procedures to ensure creation of customer bills on appropriate medium.

Evaluation Criteria – Satisfied	
BLG-1-1-25	Process includes procedures to ensure bills are shipped or transmitted to the correct location according to the established schedule.
BLG-1-1-26	Process includes complete and consistent procedures for status tracking, management reporting, and management intervention for bill delivery.
BLG-1-1-27	Process performance measures are defined, measured, and reviewed for bill delivery.
BLG-1-1-28	Process improvement responsibilities are assigned for bill delivery.
BLG-1-1-29	Scope and objectives of the bill cycle balancing services cover all key customer requirements.
BLG-1-1-30	Bill balancing responsibilities and activities are clearly defined.
BLG-1-1-31	Customer can readily obtain assistance in the event of problems with bill content.
BLG-1-1-32	Internal change management procedures are in place to correct implementation of billing system changes (e.g., code and tables).
BLG-1-1-33	Process includes procedures to ensure all customer data (e.g., service orders, address changes) has been properly introduced and applied.
BLG-1-1-34	Process includes procedures to ensure all customer usage has been accounted for and correctly applied.
BLG-1-1-35	Process includes procedures to ensure all payments and adjustments have been properly introduced and applied.
BLG-1-1-36	Process includes procedures to ensure customer data has been rolled forward from previous cycle.
BLG-1-1-37	Process includes adequate error detection and correction procedures, and reasonability checks to catch errors not susceptible to pre-determined balancing procedures.
BLG-1-1-38	Process provides for visual quality check of bills.
BLG-1-1-39	Process includes complete and consistent procedures for status tracking, management reporting and management intervention for cycle balancing.
BLG-1-1-40	Process performance measures are defined, measured and reviewed for cycle balancing.
BLG-1-1-41	Process improvement responsibilities are assigned and executed for cycle balancing.
BLG-1-1-42	Scope and objectives of the historical bill management services cover all key customer requirements.
BLG-1-1-43	Bill delivery responsibilities and activities are clearly defined.
BLG-1-1-44	Customers are provided with instruction on how to request, track, expedite and obtain assistance for billing resends.
BLG-1-1-45	Process includes procedures to ensure bill history retention requirements are operationally satisfied.
BLG-1-1-46	Process includes procedures to retrieve and transmit customer requested billing information.

Evaluation Criteria – Satisfied	
BLG-1-1-47	Process includes complete and consistent procedures for status tracking, management reporting and management intervention for the maintenance of historical bill information.
BLG-1-1-48	Process performance measures are defined, measured and reviewed for the maintenance of historical bill information.
BLG-1-1-49	Process improvement responsibilities are assigned and executed for the maintenance of historical billing information.

2.0 BLG-2: ODUF/ADUF Usage Functional Evaluation

This section provides a summary of the BLG-2: ODUF/ADUF Usage Functional Evaluation.

2.1 Objective

The objective of this test was to assess the accuracy, completeness and timeliness of the usage file message processing capability as described in BellSouth's published specifications.

2.2 Evaluation Methods

In order to accomplish this objective, KCI placed test calls that originated and terminated in five central office locations using three switch types. Calls were made to and from locations within and outside of the BellSouth service area. Call records compiled by the testers and the DUF records generated by BellSouth were used to evaluate the completeness, accuracy, and timeliness of DUF processing. Process evaluations were based on interviews with BellSouth subject matter experts, inspections of work center operations, and a review of BellSouth documentation.

2.3 Analysis Methods

The ODUF/ADUF Functional Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth-Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for this test.

2.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-C.2: BLG-2: ODUF/ADUF Usage Functional Evaluation – Summary Results

Evaluation Criteria – Satisfied	
BLG-2-1-1	For all scripted and completed test calls that should generate a DUF record, appropriate DUF records are contained in the electronically delivered Daily

Evaluation Criteria – Satisfied	
	Usage Files.
BLG-2-1-2	For all scripted and completed test calls that should generate a DUF record, all expected DUF records are contained in the electronically delivered Daily Usage Files.
BLG-2-1-3	For all scripted and completed test calls that should generate a DUF record, 95% are delivered within 6 business days.
BLG-2-1-4	DUF records transmitted to KCI pseudo-CLEC contained billable information
BLG-2-1-5	Scope and objectives of the DUF production and distribution services covers all key customer requirements.
BLG-2-1-6	DUF production and distribution responsibilities and activities are clearly defined.
BLG-2-1--7	Customer is provided sufficient understanding of the DUF production and processes.
BLG-2-1-8	Customer has ready and convenient access to assistance with DUF production and distribution problems.
BLG-2-1-9	Internal change management procedures are in place to document and manage process changes (e.g., code, tables).
BLG-2-1-10	Process includes procedures to ensure all relevant usage is received, validated and processed.
BLG-2-1-11	Process includes procedures to ensure all usage is correctly rated and routed.
BLG-2-1-12	Process includes adequate error detection procedures and reasonability checks to catch errors not susceptible to pre-determined balancing procedures.
BLG-2-1-13	Process includes procedures to ensure accurate preparation and timely delivery of DUF data.
BLG-2-1-14	Process includes procedures for retaining, archiving and accessing prior period data.
BLG-2-1-15	Process includes complete and consistent procedures for status tracking, management reporting and management intervention.
BLG-2-1-16	Process performance measures are defined, measured and reviewed.
BLG-2-1-17	Process improvement responsibilities are assigned and executed.

3.0 BLG-3: Billing Systems Capacity Management Evaluation

This section provides a summary for the BLG-3: Billing Systems Capacity Management Evaluation.

3.1 Objective

The objective of this test was to assess the extent to which procedures to accommodate increases in CRIS/CABS/ADUF/ODUF billing transaction volumes and users were being actively managed.

3.2 Evaluation Methods

In order to accomplish this objective, systems documentation and process flows for billing were reviewed. Interviews were conducted with key business process owners and system administration personnel responsible for the operation of

CRIS / CABS / ADUF / ODUF billing systems. These interviews were supplemented with an analysis of BellSouth capacity management procedures as well as evidence of related activities such as periodic capacity management reviews, system reconfiguration / load balancing, load increase induced upgrades, resource utilization reporting, and performance management reporting.

3.3 Analysis Methods

The Billing Systems Capacity Management Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for this test.

3.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-C.3: BLG-3: Billing Systems Capacity Management Evaluation– Summary Results

Evaluation Criteria – Satisfied	
BLG-3-1-1	There is an established process for capturing business and transaction volumes.
BLG-3-1-2	There is an established process for capturing resource utilization.
BLG-3-1-3	Resource utilization is monitored for system components and elements.
BLG-3-1-4	Instrumentation and other tools are used to collect resource utilization data.
BLG-3-1-5	Performance is monitored at all applicable levels (e.g. network, database server, application server, client, etc.).
BLG-3-1-6	Instrumentation and other tools are used to monitor performance.
BLG-3-1-7	There is an established process for forecasting business volumes and transactions.
BLG-3-1-8	The business volume tracking and forecasting data is at an appropriate level of detail to use for capacity management.
BLG-3-1-9	There is an established process for reviewing the performance of the business and transaction volume forecasting process.
BLG-3-1-10	There is an established process for verification and validation of performance data.
BLG-3-1-11	Performance monitoring results are compared to service level agreements and other metrics.
BLG-3-1-12	Capacity Management process is defined and documented.
BLG-3-1-13	Resource usage and capacity is considered in the planning process for capacity management.
BLG-3-1-14	Performance monitoring results are considered in the planning process for capacity management.

Evaluation Criteria – Satisfied	
BLG-3-1-15	Capacity Management procedures define performance metrics to trigger the addition of capacity, load re-balancing or system tuning.

4.0 BLG-4: Billing Performance Results Comparison

This section provides a summary for the BLG-4: Billing Performance Results Comparison.

4.1 Objective

One objective of this test was to assess the accuracy and completeness of the Billing Service Quality Measurements (SQMs) calculated and reported by BellSouth for the KCI test CLEC. The other objective was to assess the accuracy of the raw data used by BellSouth to perform these calculations.

4.2 Evaluation Methods

In order to accomplish the first objective, KCI calculated the SQMs based on calculation instructions provided by BellSouth. KCI used the raw data provided by BellSouth to perform its calculations and then compared its results to the reported SQM values, using the pre-established evaluation criteria. To accomplish the second objective, KCI collected data on its test transactions and compared the values in the collected data to the raw data values to determine whether they agreed according to the evaluation criteria.

4.3 Analysis Methods

Using the calculation instructions, KCI developed its own computer programs to perform independent calculations of SQMs. To prepare for the data comparisons, KCI mapped its test data elements to the corresponding elements in BellSouth's raw data for Billing SQMs.

4.4 Summary Results

The following table presents the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-C.4: BLG-4: Billing Performance Results Comparison Evaluation– Summary Results

Evaluation Criteria – Satisfied	
BLG-4-1-1	BLS reports are correctly disaggregated and complete - Invoice Accuracy.
BLG-4-1-2	KCI-calculated SQM values agree with BLS-reported SQM values – Invoice Accuracy.
BLG-4-2-1	BLS reports are correctly disaggregated and complete – Mean Time to Deliver Invoices.
BLG-4-2-2	KCI-calculated SQM values agree with BLS-reported SQM values – Mean Time to Deliver Invoices.

Evaluation Criteria – Satisfied	
BLG-4-2-3	Test data collected by KCI agrees with BLS raw data - Mean Time to Deliver Invoices.
BLG-4-3-1	BLS reports are correctly disaggregated and complete - Usage Data Delivery Accuracy.
BLG-4-3-2	KCI-calculated SQM values agree with BLS-reported SQM values – Usage Data Delivery Accuracy.
BLG-4-4-1	BLS reports are correctly disaggregated and complete - Usage Data Delivery Completeness.
BLG-4-4-2	KCI-calculated SQM values agree with BLS-reported SQM values – Usage Data Delivery Completeness.
BLG-4-4-3	Test data collected by KCI agrees with BLS raw data - Usage Data Delivery Completeness.
BLG-4-5-1	BLS reports are correctly disaggregated and complete - Usage Data Delivery Timeliness.
BLG-4-5-2	KCI-calculated SQM values agree with BLS-reported SQM values – Usage Data Delivery Timeliness.
BLG-4-5-3	Test data collected by KCI agrees with BLS raw data - Usage Data Delivery Timeliness.
BLG-4-6-1	BLS reports are correctly disaggregated and complete - Mean Time to Deliver Usage.
BLG-4-6-2	KCI-calculated SQM values agree with BLS-reported SQM values – Mean Time to Deliver Usage.
BLG-4-6-3	Test data collected by KCI agrees with BLS raw data - Mean Time to Deliver Usage.

5.0 BLG-5: CRIS/CABS Invoicing Documentation Evaluation

This section provides a summary for the BLG-5: CRIS / CABS Invoicing Documentation Evaluation.

5.1 Objective

The objective of this test was to assess whether the documentation provided by BellSouth adequately assists CLECS in understanding how to interact with BellSouth's billing function.

5.2 Evaluation Methods

In order to accomplish this objective, KCI reviewed and assessed documentation produced by BellSouth and made available to CLECs. KCI examined five key areas including document production and distribution, document structure and format, document content, document accuracy, and document change management. The evaluation of BellSouth documentation and production procedures was based on interviews with the responsible BellSouth parties and reviews of supporting internal documentation provided by BellSouth.

5.3 Analysis Methods

The BLG-5 CRIS / CABS Invoicing Documentation Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia

OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the BLG-5 CRIS / CABS Invoicing Documentation Test.

5.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-C.5: BLG-5: CRIS/CABS Invoicing Documentation Evaluation – Summary Results

	Evaluation Criteria – Satisfied
BLG-5-1-1	Organization and flow of the documents facilitate ready understanding and access to needed information.
BLG-5-1-2	References are provided to facilitate efficient usage of the documentation.
BLG-5-1-3	Style elements that facilitate document use are defined and consistently and effectively implemented.
BLG-5-2-1	The BLS-provided billing documentation provides CLECs with an adequate understanding of BLS billing policy and practice, and of billing alternatives.
BLG-5-2-2	The BLS-provided billing documentation provides CLECs with an adequate understanding of how to receive and process wholesale bills.
BLG-5-2-3	The BLS-provided billing documentation provides CLECs with an adequate understanding of steps necessary to validate wholesale bills.
BLG-5-2-4	The BLS-provided billing documentation provides CLECs with an adequate understanding of how to request and follow-up on credit or adjustment requests for wholesale bills.
BLG-5-2-5	The BLS-provided billing documentation provides CLECs with an adequate understanding of how to request and follow-up on BLS assistance with wholesale billing issues and questions.
BLG-5-3-1	Responsibilities and procedures for developing, updating, and correcting documentation are clearly defined.
BLG-5-3-2	Responsibilities and procedures for maintaining distribution lists and distributing documentation are clearly defined.
BLG-5-3-3	Distribution procedure allows latest document version to be made available to interested parties in electronic and paper versions in a timely manner.
BLG-5-3-4	Process includes procedures for accepting change requirements from all stakeholders.
BLG-5-3-5	The document development and production process includes procedures for change, version, and effective date management
BLG-5-3-6	The process includes procedures to define documentation coverage (breadth and depth) requirements.
BLG-5-3-7	The process includes style (organization, format, etc.) guidance.
BLG-5-3-8	The process provides for independent Quality Assurance (QA) of coverage and style.
BLG-5-3-9	The process provides independent validation of correctness.
BLG-5-3-10	The procedure provides for independent evaluation of usability.

	Evaluation Criteria – Satisfied
BLG-5-3-11	Procedures are carried out in compliance with documentation.
BLG-5-4-1	BLS-provided billing documentation contains no errors that significantly impact a CLEC's ability to receive and process wholesale bills.

6.0 BLG-6: ODUF/ADUF Documentation Evaluation

This section provides a summary for the BLG-6: ODUF / ADUF Documentation Evaluation.

6.1 Objective

The objective of this test was to assess whether the documentation provided by BellSouth adequately assists CLECS in understanding how to implement and use all of the ODUF / ADUF functions available to them.

6.2 Evaluation Methods

In order to accomplish this objective, KCI reviewed and assessed documentation produced by BellSouth and made available to CLECs. KCI examined five key areas including document production and distribution, document structure and format, document content, document accuracy, and document change management. The evaluation of BellSouth documentation and production procedures was based on interviews with the responsible BellSouth parties and reviews of supporting internal documentation provided by BellSouth.

6.3 Analysis Methods

The BLG-6 ODUF / ADUF Documentation Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the BLG-6 ODUF / ADUF Documentation Evaluation.

6.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied or Not Complete) are provided in Section II.

Table III-C.6: BLG-6: ODUF/ADUF Documentation Evaluation – Summary Results

	Evaluation Criteria – Satisfied
BLG-6-1-1	Organization and flow of the documents facilitate ready understanding and access to needed information.
BLG-6-1-2	References are provided to facilitate efficient usage of the documentation.
BLG-6-1-3	Style elements that facilitate document use are defined and consistently and effectively implemented.
BLG-6-2-1	The BLS-provided billing documentation provides CLECs with an adequate

	Evaluation Criteria – Satisfied
	understanding of BLS DUF policies, practices and customer options.
BLG-6-2-2	The BLS-provided billing documentation provides CLECs with an adequate understanding of how to prepare and test for receipt of DUF files.
BLG-6-2-3	The BLS-provided billing documentation provides CLECs with an adequate understanding of steps necessary to receive and process the DUF.
BLG-6-2-4	The BLS-provided billing documentation provides CLECs with an adequate understanding of how to validate BLS provided DUF data.
BLG-6-2-5	The BLS-provided billing documentation provides CLECs with an adequate understanding of how to request and follow-up on BLS assistance with DUF issues and questions.
BLG-6-3-1	Responsibilities and procedures for developing, updating, and correcting documentation are clearly defined.
BLG-6-3-2	Responsibilities and procedures for maintaining distribution lists and distributing documentation are clearly defined.
BLG-6-3-3	Distribution procedure allows latest document version to be made available to interested parties in electronic and paper versions in a timely manner.
BLG-6-3-4	Process includes procedures for accepting change requirements from all stakeholders.
BLG-6-3-5	The process includes procedures for change, version, and effective date management.
BLG-6-3-6	The process includes procedures to define documentation topical coverage (breadth and depth) requirements.
BLG-6-3-7	The process includes style (organization, format, etc.) guidance.
BLG-6-3-8	The process provides for independent Quality Assurance (QA) of coverage and style.
BLG-6-3-9	The process provides independent validation of correctness.
BLG-6-3-10	The procedure provides for independent evaluation of usability.
BLG-6-3-11	DUF document production and distribution procedures are carried out in compliance with BLS documentation.
BLG-6-4-1	BLS-provided DUF documentation contains no errors that significantly impact a CLEC's ability to receive and process daily usage files.

D. Maintenance & Repair (M&R)

This section provides a summary of the Maintenance & Repair (M&R) domain testing activities. For more information on planned testing, refer to Section VII: *Maintenance and Repair Test* in the *Master Test Plan*. For more detailed information on the test design, analysis, and results from the execution of the tests, refer to Section VII: *Maintenance and Repair Domain Results and Analysis* in this document.

1.0 M&R-1: TAFI Functional Evaluation

This section provides a summary of the M&R-1: TAFI Functional Evaluation.

1.1 Objective

The objective of this test was to validate the existence of Trouble Administration Facilitation Interface (TAFI) trouble reporting and screening functionality for telephone number-assigned Unbundled Network Elements (UNE) customers in accordance with the Competitive Local Exchange Carrier (CLEC) TAFI End User Training and User Guide.

1.2 Evaluation Methods

This test cycle was executed in BellSouth's production environment by exercising a defined set of TAFI functions associated with trouble management activities against test bed accounts. Scenarios testing these functions were executed both via a LAN-to-LAN connection and via dial-up access in order to evaluate differences in system response times associated with the methods of access.

1.3 Analysis Methods

The data collected from the TAFI Functional Test were analyzed, and the results were assessed employing test-specific evaluation criteria.

1.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-D.1: M&R-1: TAFI Functional Test – Summary Results

Evaluation Criteria – Satisfied	
M&R-1-1-1	The user is able to enter a trouble report using TAFI and receive a satisfactory response.
M&R-1-1-2	The user is able to modify a trouble report using TAFI and receive a satisfactory response.
M&R-1-1-3	The user is able to create a repeat report using TAFI and receive a satisfactory response.
M&R-1-1-4	The user is able to create a subsequent report using TAFI and receive a satisfactory response.

M&R-1-1-5	The user is able to enter multiple trouble reports (MTRs) using TAFI and receive a satisfactory response.
M&R-1-1-6	The user is able to enter and retrieve trouble reports from the queue in TAFI and receive a satisfactory response.
M&R-1-1-7	The user is able to execute supervisor functions within TAFI and receive a satisfactory response.
M&R-1-1-8	The user is able to close a trouble report using TAFI and receive a satisfactory response.
M&R-1-1-9	The user is able to cancel a trouble report using TAFI and receive a satisfactory response.
M&R-1-1-10	The user is able to conduct a port and loop-port test (Mechanized Loop Tests [MLT]) using TAFI and receive a satisfactory response.
M&R-1-1-11	The user is able to view port and loop-port test (MLT) results using TAFI and receive a satisfactory response.
M&R-1-1-12	The user is able to retrieve a LMOS recent status report and receive a satisfactory response.
M&R-1-1-13	The user is able to obtain customer line record information (BOCRIS CSR) using TAFI and receive a satisfactory response.
M&R-1-1-14	The user is able to obtain Predictor results using TAFI and receive a satisfactory response.
M&R-1-1-15	The user is able to view Display Line Record (DLR) information using TAFI and receive a satisfactory response.
M&R-1-1-16	The user is able to view SOCS pending order information using TAFI and receive a satisfactory response.
M&R-1-1-17	The user is able to view and resend transactions that incurred host request errors using TAFI and receive a satisfactory response.
M&R-1-1-18	The user is able to retrieve trouble history using TAFI and receive a satisfactory response.
M&R-1-2-1	The user receives timely responses when entering and retrieving trouble reports from the queue in TAFI.
M&R-1-2-2	The user receives timely responses when executing TAFI supervisor functions.
M&R-1-2-3	The user receives timely responses from the MLT test.
M&R-1-2-4	The user receives timely responses when retrieving a LMOS recent status report using TAFI.
M&R-1-2-5	The user receives timely responses when obtaining customer line record information using TAFI.
M&R-1-2-6	The user receives timely responses when obtaining Predictor results using TAFI.
M&R-1-2-7	The user receives timely responses when retrieving DLR information using TAFI.
M&R-1-2-8	The user receives timely responses when retrieving SOCS pending order information using TAFI.
M&R-1-2-9	The user receives timely responses when retrieving trouble history using TAFI.
M&R-1-3-1	TAFI is a user-friendly system for creating trouble reports.
M&R-1-3-2	TAFI is a user-friendly system for modifying trouble reports.
M&R-1-3-3	TAFI is a user-friendly system for creating repeat reports.

M&R-1-3-4	TAFI is a user-friendly system for creating subsequent reports.
M&R-1-3-5	TAFI is a user-friendly system for entering multiple trouble reports (MTR).
M&R-1-3-6	TAFI is a user-friendly system for entering and retrieving trouble reports from the queue.
M&R-1-3-7	TAFI is a user-friendly system for executing supervisor functions.
M&R-1-3-8	TAFI is a user-friendly system for closing trouble reports.
M&R-1-3-9	TAFI is a user-friendly system for canceling trouble reports.
M&R-1-3-10	TAFI is a user-friendly system for initiating port and loop-port tests.
M&R-1-3-11	TAFI is a user-friendly system for viewing port and loop-port test results.
M&R-1-3-12	TAFI is a user-friendly system for retrieving a LMOS recent status report.
M&R-1-3-13	TAFI is a user-friendly system for obtaining customer line record information.
M&R-1-3-14	TAFI is a user-friendly system for obtaining Predictor results.
M&R-1-3-15	TAFI is a user-friendly system for viewing DLR information.
M&R-1-3-16	TAFI is a user-friendly system for viewing SOCS pending order information.
M&R-1-3-17	TAFI is a user-friendly system for viewing and resending trouble reports that incurred host request errors.
M&R-1-3-18	TAFI is a user-friendly system for retrieving trouble history.
M&R-1-3-19	TAFI is a user-friendly system for handling non-designed UNE M&R issues.

2.0 M&R-2: ECTA Functional Evaluation

This section provides a summary for the M&R-2: ECTA Functional Evaluation.

2.1 Objective

The objective of this test was to validate the existence of Electronic Communication Trouble Administration (ECTA) trouble reporting and screening functionality for both telephone number assigned and circuit identified UNE customers in accordance with BellSouth's published specifications.

2.2 Evaluation Methods

In order to accomplish this objective, KCI executed a test cycle by exercising a defined set of ECTA functions associated with trouble management activities against test bed accounts. The functional elements targeted by this test included access to test capabilities, trouble report entry, query and receipt of trouble report status information, modification and addition of information to trouble reports, and cancellation / closure of trouble reports. In addition, error conditions were included to assess the ECTA Gateway's response to incorrect information. The ECTA Functional Test was conducted against BellSouth's production environment system.

2.3 Analysis Methods

The data collected from the ECTA Functional Test were analyzed, and the results were assessed employing test-specific evaluation criteria.

2.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-D.2: M&R-2: ECTA Functional Test – Summary Results

Evaluation Criteria – Satisfied	
M&R-2-1-1	The user is able to enter a trouble report into ECTA and receive a satisfactory response.
M&R-2-1-2	The user is able to request trouble report status from ECTA and receive a satisfactory response.
M&R-2-1-3	The user is able to add trouble information to an ECTA trouble report and receive a satisfactory response.
M&R-2-1-4	The user is able to modify trouble administration information on an ECTA trouble report and receive a satisfactory response.
M&R-2-1-5	The user is able to cancel a trouble report in ECTA and receive a satisfactory response.
M&R-2-1-6	The user is able to respond to trouble repair completion notifications and receive a satisfactory response.
M&R-2-1-7	The user is able to conduct a Mechanized Line Test and receive a satisfactory response.
M&R-2-2-1	The user receives a timely response when entering a trouble report using ECTA.
M&R-2-2-2	The user receives a timely response when requesting trouble report status using ECTA.
M&R-2-2-3	The user receives a timely response when adding trouble information using ECTA.
M&R-2-2-4	The user receives a timely response when modifying trouble report administration information using ECTA.
M&R-2-2-5	The user receives a timely response when canceling a trouble report using ECTA.
M&R-2-2-6	The user receives a timely response when responding to a verify repair completion.
M&R-2-2-7	The user receives a timely response when conducting a Mechanized Line Test using ECTA.

3.0 M&R-3: ECTA Normal Volume Performance Evaluation

This section provides a summary for the M&R-3: ECTA Normal Volume Performance Evaluation.

3.1 Objective

The objective of this test was to evaluate the current release of BellSouth's Electronic Communication Trouble Administration (ECTA) Gateway for Maintenance and Repair trouble report processing under projected year-end 2001 (YE01) normal load conditions.

3.2 Evaluation Methods

The test was conducted by submitting the projected volume of ECTA transactions against resale and UNE test bed accounts and analyzing ECTA Gateway responses to these transactions. The test cycle was executed by a test transaction generator capable of submitting large volumes of test cases in a manner consistent with ECTA's current and forecasted daily usage patterns and transaction mix, including error conditions.

3.3 Analysis Methods

The data collected from the ECTA Normal Volume Performance Evaluation were analyzed, and the results were assessed employing test-specific evaluation criteria.

3.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-D.3: M&R-3: ECTA Normal Volume Performance Test – Summary Results

Evaluation Criteria – Satisfied	
M&R-3-1-1	The user receives the correct response when entering a trouble ticket into ECTA.
M&R-3-1-2	The user receives the correct response when requesting the status of a trouble ticket using ECTA.
M&R-3-1-3	The user receives the correct response when adding trouble information to a trouble ticket using ECTA.
M&R-3-1-4	The user receives the correct response when modifying trouble administration information using ECTA.
M&R-3-1-5	The user receives the correct response when canceling a trouble ticket using ECTA.
M&R-3-2-1	The response when entering a trouble report using ECTA is within published specifications.
M&R-3-2-2	The response when requesting trouble report status using ECTA is within BLS published specifications.

M&R-3-2-3	The response when adding trouble information using ECTA is within BLS published specifications.
M&R-3-2-4	The response when modifying trouble report administration information using ECTA is within BLS published specifications.
M&R-3-2-5	The user receives the correct response when canceling a trouble ticket using ECTA.

4.0 M&R-4: ECTA Peak Volume Performance Evaluation

This section provides a summary for the M&R-4: ECTA Peak Volume Performance Evaluation.

4.1 Objective

The objective of this test was to evaluate the current release of BellSouth's ECTA Gateway for Maintenance and Repair trouble report processing under projected year-end 2001 (YE01) peak load conditions.

4.2 Evaluation Methods

The test was conducted by submitting the projected volume of ECTA transactions against resale and UNE test bed accounts and analyzing ECTA Gateway responses to these transactions. The test cycle was executed using UNIX test scripts capable of submitting large volumes of test cases in a manner consistent with ECTA's current and forecasted daily usage patterns and transaction mix, including error conditions.

4.3 Analysis Methods

The data collected from the ECTA Peak Volume Performance Evaluation were analyzed, and the results were assessed employing test-specific evaluation criteria.

4.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-D.4: M&R-4: ECTA Peak Volume Performance Evaluation – Summary Results

Evaluation Criteria – Satisfied	
M&R-4-1-1	The user receives the correct response when entering a trouble ticket into ECTA.
M&R-4-1-2	The user receives the correct response when requesting the status of a trouble ticket using ECTA.
M&R-4-1-3	The user receives the correct response when adding trouble information to a trouble ticket using ECTA.
M&R-4-1-4	The user receives the correct response when modifying trouble administration information using ECTA.
M&R-4-1-5	The user receives the correct response when canceling a trouble ticket using ECTA.
M&R-4-2-1	The response when entering a trouble report using ECTA is within BLS published

	specifications.
M&R-4-2-2	The response when requesting trouble report status using ECTA is within BLS published specifications.
M&R-4-2-3	The response when adding trouble information using ECTA is within BLS published specifications.
M&R-4-2-4	The response when modifying trouble report administration information using ECTA is within BLS published specifications.
M&R-4-2-5	The user receives the correct response when canceling a trouble report using ECTA.

5.0 M&R5: TAFI Capacity Management Evaluation

This section provides a summary for the M&R-5: TAFI Capacity Management Evaluation.

5.1 Objective

The objective of this evaluation was to determine the extent to which procedures to accommodate increases in TAFI system transaction volumes and users are being actively managed.

5.2 Evaluation Methods

This evaluation began with a review of systems documentation and process flows for maintenance and repair activities. Interviews were conducted with key system administration personnel responsible for the operation of the TAFI systems. These interviews were supplemented with an analysis of BellSouth's documented capacity management procedures as well as an evaluation of related activities such as periodic capacity management reviews, system reconfiguration/load balancing, and load increase induced upgrades.

5.3 Analysis Methods

The data collected from the TAFI Capacity Management Evaluation were analyzed, and the results were assessed employing test-specific evaluation criteria.

5.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-D.5: M&R-5: TAFI Capacity Management Evaluation – Summary Results

Evaluation Criteria – Satisfied	
M&R-5-1-1	There is an established process for capturing business and transaction volumes.
M&R-5-1-2	There is an established process for capturing resource utilization.
M&R-5-1-3	Resource utilization is monitored for system components and elements.
M&R-5-1-4	Instrumentation and other tools are used to collect resource utilization data.

M&R-5-1-5	Performance is monitored at all applicable levels (e.g. network, database server, application server, client, etc.)
M&R-5-1-6	Instrumentation and other tools are used to monitor performance.
M&R-5-1-7	There is an established process for forecasting business volumes and transactions.
M&R-5-1-8	The business volume tracking and forecasting data is at an appropriate level of detail to use for capacity management.
M&R-5-1-9	There is an established process for reviewing the performance of the business and transaction volume forecasting process.
M&R-5-1-10	There is an established process for verification and validation of performance data.
M&R-5-1-11	Performance monitoring results are compared to service level agreements and other metrics.
M&R-5-1-12	Capacity Management process is defined and documented.
M&R-5-1-13	Resource usage and capacity is considered in the planning process for capacity management.
M&R-5-1-14	Performance monitoring results are considered in the planning process for capacity management.
M&R-5-1-15	Capacity Management procedures define performance metrics to trigger the addition of capacity, load rebalancing or system tuning.

6.0 M&R-6: ECTA Capacity Management Evaluation

This section provides a summary for the M&R-6: ECTA Capacity Management Evaluation.

6.1 Objective

The objective of this evaluation was to determine the extent to which procedures to accommodate increases in the ECTA system transaction volumes and users are being actively managed.

6.2 Evaluation Methods

This evaluation began with a review of systems documentation and process flows for maintenance and repair activities. Interviews were conducted with key system administration personnel responsible for the operation of the ECTA system. These interviews were supplemented with an analysis of BellSouth's documented capacity management procedures as well as with collection of evidence of related activities such as periodic capacity management reviews, system reconfiguration / load balancing, and load increase induced upgrades.

6.3 Analysis Methods

The data collected from the ECTA Capacity Management Evaluation were analyzed, and the results were assessed employing test-specific evaluation criteria.

6.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-D.6: M&R-6: ECTA Capacity Management Evaluation – Summary Results

Evaluation Criteria – Satisfied	
M&R-6-1-1	There is an established process for capturing business and transaction volumes.
M&R-6-1-2	There is an established process for capturing resource utilization.
M&R-6-1-3	Resource utilization is monitored for system components and elements.
M&R-6-1-4	Instrumentation and other tools are used to collect resource utilization data.
M&R-6-1-5	Performance is monitored at all applicable levels (e.g. network, database server, application server, client, etc.).
M&R-6-1-6	Instrumentation and other tools are used to monitor performance.
M&R-6-1-7	There is an established process for forecasting business volumes and transactions.
M&R-6-1-8	The business volume tracking and forecasting data is at an appropriate level of detail to use for capacity management.
M&R-6-1-9	There is an established process for reviewing the performance of the business and transaction volume forecasting process.
M&R-6-1-10	There is an established process for verification and validation of performance data.
M&R-6-1-11	Performance monitoring results are compared to service level agreements and other metrics.
M&R-6-1-12	Capacity Management process is defined and documented.
M&R-6-1-13	Resource usage and capacity is considered in the planning process for capacity management.
M&R-6-1-14	Performance monitoring results are considered in the planning process for capacity management.
M&R-6-1-15	Capacity Management procedures define performance metrics to trigger the addition of capacity, load rebalancing or system tuning.

7.0 M&R-7: M&R Performance Measures Evaluation

This section provides a summary for the M&R-7: M&R Performance Measures Evaluation.

7.1 Objective

One objective of this test was to assess the accuracy and completeness of the Maintenance & Repair Service Quality Measurements (SQMs) calculated and reported by BellSouth for the KCI test CLEC. The other objective was to assess the accuracy of the raw data used by BellSouth to perform these calculations.

7.2 Evaluation Methods

In order to accomplish this first objective, KCI calculated the SQMs based on calculation instructions provided by BellSouth. KCI used the raw data provided by BellSouth to perform its calculations and then compared its results to the reported SQM values, using the pre-established evaluation criteria. To accomplish the second objective, KCI collected data on its test transactions and compared the values in the collected data to the raw data values, in order to determine whether they agreed according to the evaluation criteria.

7.3 Analysis Methods

The data collected from the M&R Performance Measures Evaluation were analyzed, and the results were assessed employing test-specific evaluation criteria.

7.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-D.7: M&R-7: M&R Performance Measures Evaluation – Summary Results

Evaluation Criteria – Satisfied	
M&R-7-1-1	BLS reports are correctly disaggregated and complete - Missed Repair Appointments.
M&R-7-1-2	KCI-calculated SQM values agree with BLS-reported SQM values - Missed Repair Appointments.
M&R-7-1-3	Test data collected by KCI agrees with BLS raw data - Missed Repair Appointments.
M&R-7-2-1	BLS reports are correctly disaggregated and complete - Customer Trouble Report Rate.
M&R-7-2-2	KCI-calculated SQM values agree with BLS-reported SQM values - Customer Trouble Report Rate.
M&R-7-2-3	Test data collected by KCI agrees with BLS raw data - Customer Trouble Report Rate.
M&R-7-3-1	BLS reports are correctly disaggregated and complete - Maintenance Average Duration.
M&R-7-3-2	KCI-calculated SQM values agree with BLS-reported SQM values - Maintenance Average Duration.
M&R-7-3-3	Test data collected by KCI agrees with BLS raw data - Maintenance Average Duration.
M&R-7-4-1	BLS reports are correctly disaggregated and complete - Percent Repeat Troubles within 30 days.
M&R-7-4-2	KCI-calculated SQM values agree with BLS-reported SQM values - Percent Repeat Troubles within 30 days.
M&R-7-4-3	Test data collected by KCI agrees with BLS raw data - Percent Repeat Troubles within 30 days.
M&R-7-5-1	BLS reports are correctly disaggregated and complete - Out Of Service > 24 hours.
M&R-7-5-2	KCI-calculated SQM values agree with BLS-reported SQM values - Out Of Service > 24 hours.

M&R-7-5-3	Test data collected by KCI agrees with BLS raw data - Out Of Service > 24 hours.
M&R-7-6-1	BLS reports are correctly disaggregated and complete - OSS Interface Availability.
M&R-7-6-2	KCI-calculated SQM values agree with BLS-reported SQM values - OSS Interface Availability.
M&R-7-7-1	BLS reports are correctly disaggregated and complete - OSS Response Interval and Percentages.
M&R-7-7-2	KCI-calculated SQM values agree with BLS-reported SQM values - OSS Response Interval and Percentages.
M&R-7-8-1	BLS reports are correctly disaggregated and complete - Average Answer Time - Repair Centers.
M&R-7-8-2	KCI-calculated SQM values agree with BLS-reported SQM values - Average Answer Time - Repair Centers.

8.0 M&R-8: TAFI Documentation Evaluation

This section provides a summary for the M&R-8: TAFI Documentation Evaluation.

8.1 Objective

The objective of this test was to assess whether the documentation provided by BellSouth adequately assists CLECs in understanding how to implement and use all of the TAFI functions available to them.

8.2 Evaluation Methods

KCI collected online and hard copies of available TAFI documentation. Document reviews were performed in order to identify and record any deficiencies and inadequacies found. Similarly, relevant M&R documentation management processes were assessed. In addition to the documentation review, interviews with CLEC and BellSouth subject matter experts were conducted in order to provide additional input for this test.

8.3 Analysis Methods

The data collected from the TAFI Documentation Evaluation were analyzed, and the results were assessed employing test-specific evaluation criteria.

8.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-D.8: M&R-8: TAFI Documentation Evaluation – Summary Results

Evaluation Criteria – Satisfied	
M&R-8-1-1	The document version is indicated within each document and is clear throughout the document.

M&R-8-1-2	The document provides cross-references and annotations within the document.
M&R-8-1-3	The document indicates document scope and purpose.
M&R-8-1-4	The document is logically organized (e.g., clear page numbering and section labeling, table of contents, glossary of terms, explanation of acronyms, etc.) and contains a statement of organization.
M&R-8-1-5	The organization of the document is consistent with its intended use.
M&R-8-1-6	The document describes user access of TAFI system(s).
M&R-8-1-7	The document has clear and accurate citations directing readers to relevant sources of additional information.
M&R-8-1-8	The CLEC *TAFI User Guide* clearly defines how to navigate the system(s).
M&R-8-1-9	The CLEC *TAFI User Guide* defines data entry fields for creating, checking status, modifying, managing, canceling and closing trouble reports.
M&R-8-1-10	The CLEC *TAFI User Guide* explains acceptable formats for data fields.
M&R-8-1-11	The CLEC *TAFI User Guide* distinguishes between required and optional fields.
M&R-8-1-12	The CLEC *TAFI User Guide* defines possible options after data entry (i.e., save, send, cancel.)
M&R-8-1-13	The CLEC *TAFI User Guide* describes expected system responses / outputs and response times.
M&R-8-1-14	CLEC *TAFI User Guide* provides descriptions of error messages and possible steps for resolution.
M&R-8-1-15	The CLEC *TAFI User Guide* describes the escalation process and provides contact information for out of the ordinary occurrences.
M&R-8-1-16	The document contains information that is relevant to its intended audience.
M&R-8-1-17	The CLEC *TAFI User Guide* accurately explains how to create a trouble report using TAFI.
M&R-8-1-18	The CLEC *TAFI User Guide* accurately explains how to modify a trouble report using TAFI.
M&R-8-1-19	The CLEC *TAFI User Guide* accurately explains how to create a repeat trouble report using TAFI.
M&R-8-1-20	The CLEC *TAFI User Guide* accurately explains how to create a subsequent trouble report using TAFI.
M&R-8-1-21	The CLEC *TAFI User Guide* accurately explains how to enter multiple trouble reports.
M&R-8-1-22	The CLEC *TAFI User Guide* accurately explains how to enter and retrieve trouble reports from the queue in TAFI.
M&R-8-1-23	The CLEC *TAFI User Guide* accurately explains how to execute supervisor functions within TAFI.
M&R-8-1-24	The CLEC *TAFI User Guide* accurately explains how to close a trouble report using TAFI.
M&R-8-1-25	The CLEC *TAFI User Guide* accurately explains how to cancel a trouble report using TAFI.
M&R-8-1-26	The CLEC *TAFI User Guide* accurately explains how to view port and loop-port test results using TAFI.
M&R-8-1-27	The CLEC *TAFI User Guide* accurately explains how to retrieve a LMOS recent status report using TAFI.

M&R-8-1-28	The CLEC *TAFI User Guide* accurately explains how to obtain BOCRIS customer line record information using TAFI.
M&R-8-1-29	The CLEC *TAFI User Guide* accurately explains how to obtain Predictor results using TAFI.
M&R-8-1-30	The CLEC *TAFI User Guide* accurately explains how to view DLR information using TAFI.
M&R-8-1-31	The CLEC *TAFI User Guide* accurately explains how to view Service Order Communications System (SOCS) pending order information using TAFI.
M&R-8-1-32	The CLEC *TAFI User Guide* accurately explains how to view and resend transactions that incurred host request errors using TAFI.
M&R-8-1-33	The CLEC *TAFI User Guide* accurately explains how to retrieve trouble history using TAFI.
M&R-8-1-34	Procedures exist for the distribution of TAFI, the CLEC *TAFI User Guide*, and the CLEC *TAFI End-User Training Manual*.
M&R-8-1-35	Procedures exist for the distribution of updates for the CLEC *TAFI User Guide* and the CLEC *TAFI End-User Training Manual*.
M&R-8-1-36	Responsibilities and procedures for developing, updating and correcting the CLEC *TAFI User Guide* are clearly defined.
M&R-8-2-1	TAFI On-Line Help is logically and consistently organized.
M&R-8-2-2	The organization of the TAFI On-Line Help is consistent with its intended use as described by the CLEC *TAFI End-User Training and User Guide*.
M&R-8-2-3	TAFI On-Line Help text is presented in a clearly understandable manner.
M&R-8-2-4	TAFI On-Line Help provides the information required to navigate / utilize the TAFI interface.
M&R-8-2-5	The content of the TAFI On-Line Help is consistent with its intended use as described by the CLEC *TAFI End-User Training and User Guide*.
M&R-8-2-6	The components of the TAFI On-Line Help contain accurate information.
M&R-8-2-7	Responsibilities and procedures for developing, updating, and correcting the TAFI On-Line Help are clearly defined.
M&R-8-3-1	The *Facility Based Activation Requirements Guide* is logically organized (e.g., clear page numbering and section labeling, table of contents, glossary of terms, explanation of acronyms, etc.) and contains a statement of organization.
M&R-8-3-2	The *Facility Based Activation Requirements Guide* clearly describes document purpose.
M&R-8-3-3	The *Facility Based Activation Requirements Guide* has clear and accurate citations directing readers to relevant sources of additional information.
M&R-8-3-4	The TAFI information contained within the *Facility Based Activation Requirements Guide* is correct.
M&R-8-3-5	The TAFI information contained within the *Facility Based Activation Requirements Guide* is in line with the document purpose.
M&R-8-3-6	The *Facility Based Activation Requirements Guide* is made readily available in a timely manner.

9.0 M&R-9: ECTA Documentation Evaluation

This section provides a summary for the M&R-9: ECTA Documentation Evaluation.

9.1 Objective

The objective of this test was to assess whether the documentation provided by BellSouth adequately assists CLECs in understanding how to implement and use all of the ECTA functions available to them.

9.2 Evaluation Methods

Discussions with the Georgia Public Service Commission determined that the ECTA Documentation Evaluation was not intended to assess the documentation provided by BellSouth to guide a CLECs creation of an OSS interface, but to assess the adequacy of end-user functional documentation. Therefore, KCI tested ECTA documentation for accuracy, conformance to American National Standards Institute (ANSI) requirements, and ease of use by reviewing ECTA Joint Implementation Agreements (JIAs) and observations of ECTA JIAs made during the M&R-2: ECTA Functional Test.

9.3 Analysis Methods

The data collected from the ECTA Documentation Evaluation were analyzed, and the results were assessed employing test-specific evaluation criteria.

9.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied or Not Applicable) are provided in Section II.

Table III-D.9: M&R-9: ECTA Documentation Evaluation – Summary Results

Evaluation Criteria – Not Applicable	
M&R-9-1-1	BellSouth ECTA documentation accurately describes the functionality of the ECTA Gateway.
M&R-9-1-2	BellSouth ECTA documentation is easy to use.
M&R-9-1-3	BellSouth ECTA documentation conforms to ANSI documentation requirements.

10.0 M&R 10: M&R Process Evaluation

This section provides a summary for the M&R-10: M&R Process Evaluation.

10.1 Objective

This test was composed of two sub-tests. The objective of Sub-Test 1 was to evaluate the equivalence of BellSouth's end-to-end processes for retail and wholesale trouble reporting and repair. The objective of Sub-Test 2 was to evaluate BellSouth's performance in making repairs under the conditions of various wholesale maintenance scenarios.

10.2 Evaluation Methods

The evaluation was comprised of two major elements. For Sub-Test 1, process flows for wholesale and retail trouble management were reviewed and evaluated along with technician methods and procedures (M&Ps) and job aids for wholesale trouble repair. For Sub-Test 2, faults were inserted into a working test bed of provisioned telephone lines, and BellSouth's performance was observed and measured in relation to the isolation and repair of those faults.

10.3 Analysis Methods

The data collected from the M&R Process Evaluation were analyzed, and the results were assessed employing test-specific evaluation criteria.

10.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-D.10: M&R-10: M&R Process Evaluation – Summary Results

Evaluation Criteria – Satisfied	
M&R-10-1-1	Review of BellSouth M&R process flows for completeness.
M&R-10-1-2	Review of BellSouth process flows for accuracy.
M&R-10-1-3	Confirm parity between retail and resale process.
M&R-10-1-4	The M&P's reflect the complete M&R process.
M&R-10-1-5	The M&P's provide for a quality improvement process.
M&R-10-1-6	The M&P's provide for an escalation process.
M&R-10-1-7	The M&P's document roles and responsibilities for the M&R escalation process.
M&R-10-1-8	The M&P's include a procedure for severity coding of trouble tickets.
M&R-10-1-9	The M&R process includes performance monitoring.
M&R-10-1-10	Trouble ticket performance is tracked and reported.
M&R-10-1-11	The M&P's include procedures for documentation of unresolved trouble tickets.

M&R-10-1-12	Problem status of trouble tickets is tracked and is readily accessible.
M&R-10-1-13	BLS accurately closes trouble tickets as defined in M&R test bed circuits.
M&R-10-1-14	BLS meets commitment date and times in BellSouth test bed circuits.
M&R-10-1-15	BLS M&R systems accurately capture and track the relevant data used in performance tracking and the measurement of trouble tickets in the test bed circuits.

E. Change Management (CM)

This section provides a summary of the Change Management (CM) domain testing activities. For more information on planned testing, refer to Section VIII: *Change Management Practices Review* in the *Master Test Plan*. For more detailed information on the test design, analysis, and results from the execution of the tests, refer to Section VIII: *Change Management Domain Results and Analysis* in this document.

1.0 CM-1: Change Management Practices Review

This section provides a summary of the CM-1: Change Management Practices Review.

1.1 Objective

The objective of this test was to evaluate overall policies and practices for managing changes to the procedures and Operational Support Systems (OSS) necessary for establishing and maintaining effective operations between BellSouth and Competitive Local Exchange Carriers (CLECs).

1.2 Evaluation Methods

This evaluation encompassed a review of BellSouth's *Electronic Interface Change Control Process (EICCP)*, relevant change control documents, and established process flows. Interviews were conducted with BellSouth personnel responsible for change management, release management, documentation, Carrier Notifications (CNs), and systems and processes for internal change control.

1.3 Analysis Methods

The data collected from the Change Management Practices Review were analyzed, and the results were assessed employing test-specific evaluation criteria.

1.4 Summary Results

The following tables present the summary results for the evaluation criteria. Definitions of evaluation criteria and possible results (Satisfied, Not Complete or Not Satisfied) are provided in Section II.

Table III-E.1: CM-1: Change Management Practices Review – Summary Results

Evaluation Criteria – Satisfied	
CM-1-1-1	Change management process responsibilities and activities are clearly defined.
CM-1-1-2	Essential elements of the change management process are in place and adequately documented.
CM-1-1-3	The change management process has a framework to evaluate, categorize, and prioritize proposed changes.
CM-1-1-4	The change management process includes procedures for allowing input from all interested parties.

Evaluation Criteria – Satisfied	
CM-1-1-5	The change management process has clearly defined and reasonable intervals for considering and notifying customers about proposed changes.
CM-1-1-6	Documentation regarding proposed changes is distributed on a timely basis.
CM-1-1-7	Procedures and systems are in place to track information such as descriptions of proposed changes, key notification dates, and change status.
CM-1-1-8	Criteria are defined for the prioritization system and for severity coding.

F. Performance Measures Evaluation

1.0 Description

The Performance Measures Evaluations have two aspects: Calculation and Reporting Validation and Data Comparison. The Calculation and Reporting Validation aspect related to every service domain identified in this test (pre-ordering, ordering and provisioning, billing, and maintenance and repair) and the Data Comparison aspect related to each service domain except pre-ordering. Pre-ordering was excluded from the Data Comparison aspect of the evaluation because none of the pre-ordering data were specific to KCI test transactions.

The Calculation and Reporting Validation aspect of the Performance Measures Evaluation determined whether BellSouth's calculations of the Competitive Local Exchange Carrier (CLEC) Service Quality Measurements (SQMs) were accurate during the testing period and whether BellSouth reported the calculated SQM values accurately. KCI based all of its evaluations on the raw data provided by BellSouth[1]. For those SQMs that are calculated for individual CLECs, KCI evaluated BellSouth's values for the KCI test CLEC for the months of November 1999 through January 2001. For those SQMs that are calculated for the CLEC aggregate only, KCI evaluated BellSouth's values for the CLEC aggregate for October 1999, November 1999, or December 1999, with values for additional months being evaluated as part of re-testing activities.

The Data Comparison aspect of Performance Measures Evaluation determined whether certain elements of the raw data provided by BellSouth agreed with the corresponding data collected by KCI during the test. This comparison was necessarily limited to the raw data elements that pertained specifically to the KCI test CLEC and had KCI-collected counterparts. Whereas the Calculation and Reporting aspect of the Performance Measures Evaluation was concerned with the accuracy of SQM calculations, the Data Comparison aspect was concerned with the accuracy of the raw data upon which SQM calculations for individual CLECs are based. KCI evaluated BellSouth's raw data for the months of November 1999 through December 2000.

2.0 Business Process Description

On a monthly basis, BellSouth generates and reports performance measurement statistics called SQMs. The SQM documentation for Georgia, which is updated periodically, contains definitions of the SQMs along with business rules, exclusions, calculation descriptions, and levels of disaggregation. SQMs have been established for every service domain and are calculated for both CLECs and BellSouth. Most of the SQMs are calculated for individual CLECs, but some are calculated for the CLEC aggregate only, or for the CLEC aggregate and BellSouth

[1] BellSouth uses the term "raw data" to describe the performance measurement data at the stage where it enters into the SQM calculations. KCI uses this nomenclature in this report.

combined. Each month, BellSouth extracts and assembles data from various databases in its Operational Support Systems (OSS) to calculate SQM values. BellSouth has developed a comprehensive tool called Performance Measurement Analysis Platform (PMAP) to calculate many of the SQM values. For the remaining SQMs, BellSouth employs a variety of smaller, special-purpose tools. The SQM values are reported each month on BellSouth's PMAP Web site (https://pmap.bellsouth.com), including the values not calculated using PMAP. BellSouth enables CLECs to download their own SQM values from the Web site. They can also download the corresponding raw data for those SQMs that were calculated using the PMAP tool. The PMAP Raw Data Users Manual provides detailed calculation instructions for those SQMs. Aggregate CLEC and BellSouth SQM values are presented on the Web site for all to see.

3.0 Methodology

KCI conducted the Calculation and Reporting Validation aspect of the Performance Measures Evaluation in two steps. First, KCI calculated monthly SQMs for the KCI test CLEC using the raw data provided by BellSouth. Second, KCI compared the values it calculated to the SQM values reported by BellSouth. By means of this two-step process, KCI was able to assess the accuracy of the metrics reported by BellSouth.

KCI downloaded each month's SQM reports, as well as the raw data available, from BellSouth's PMAP Web site. KCI also requested and received via e-mail any raw data files that were not available from the PMAP Web site.

For calculation purposes, KCI developed its own computer codes based on the SQM guidelines and other descriptions of calculation procedures (verbal or documented) provided by BellSouth. Upon completing its calculations of the SQMs based on the instructions provided by BellSouth for the months of concern, KCI compared its calculated values to the BellSouth-reported values. When discrepancies arose, KCI discussed them with the appropriate BellSouth personnel. KCI issued an Exception if the discrepancies could not be resolved.

KCI conducted the Data Comparison aspect of the Performance Measures Evaluation by comparing the raw data provided by BellSouth for the KCI test CLEC with the data collected by KCI using its own test management tools or via files furnished by BellSouth. This comparison enabled KCI to determine whether the raw data elements for the SQMs were consistent with the values in the data collected by KCI.

In preparation for Data Comparison, KCI mapped BellSouth's raw data elements to the corresponding KCI data elements. In general, the test data collected by KCI included information recorded directly by KCI as well as information transmitted by BellSouth to KCI in conjunction with the test. The comparison was meaningful even when the information had been transmitted by BellSouth,

because the data being compared had not been extracted from the same BellSouth database.

Based on this mapping, KCI developed computer codes to link each record in the BellSouth raw data to the corresponding record in the KCI test data. KCI used the output files generated from these computer codes to detect any inconsistencies between the BellSouth raw data and the KCI test data.

KCI conducted the Performance Measures Evaluation based only on BellSouth information received through March 15, 2001.

Pre-Ordering

IV. Pre-Ordering (PRE) Domain Results and Analysis

1.0 Description

The purpose of this section is to present the specific tests, results, and analysis from KCI's evaluation of the systems, processes, and other operational elements associated with BellSouth's support for Wholesale Pre-Ordering. The Pre-Order (PRE) tests evaluated the systems, processes, and other operational elements associated with BellSouth's ability to provide Competitive Local Exchange Carriers (CLECs) with non-discriminatory access to its Operational Support Systems (OSS) supporting order functions. CLECs submit pre-order queries to validate existing customer information, to verify BellSouth facility availability, and to obtain data (e.g., telephone numbers) that will be input on subsequent service orders. This test assessed the functionality of BellSouth's systems in processing pre-order queries submitted via the Telecommunications Access Gateway (TAG) Client Application Program Interface (API).

2.0 Methodology

The scope of the PRE tests in Georgia encompassed the review and analysis of BellSouth's processes, procedures, interfaces and systems for pre-orders. This was accomplished by reviewing and assessing relevant documentation, testing the functionality of BellSouth's pre-ordering systems, testing the capability to increase system capacity and reviewing metrics reports.

2.1 Business Process Description

TAG

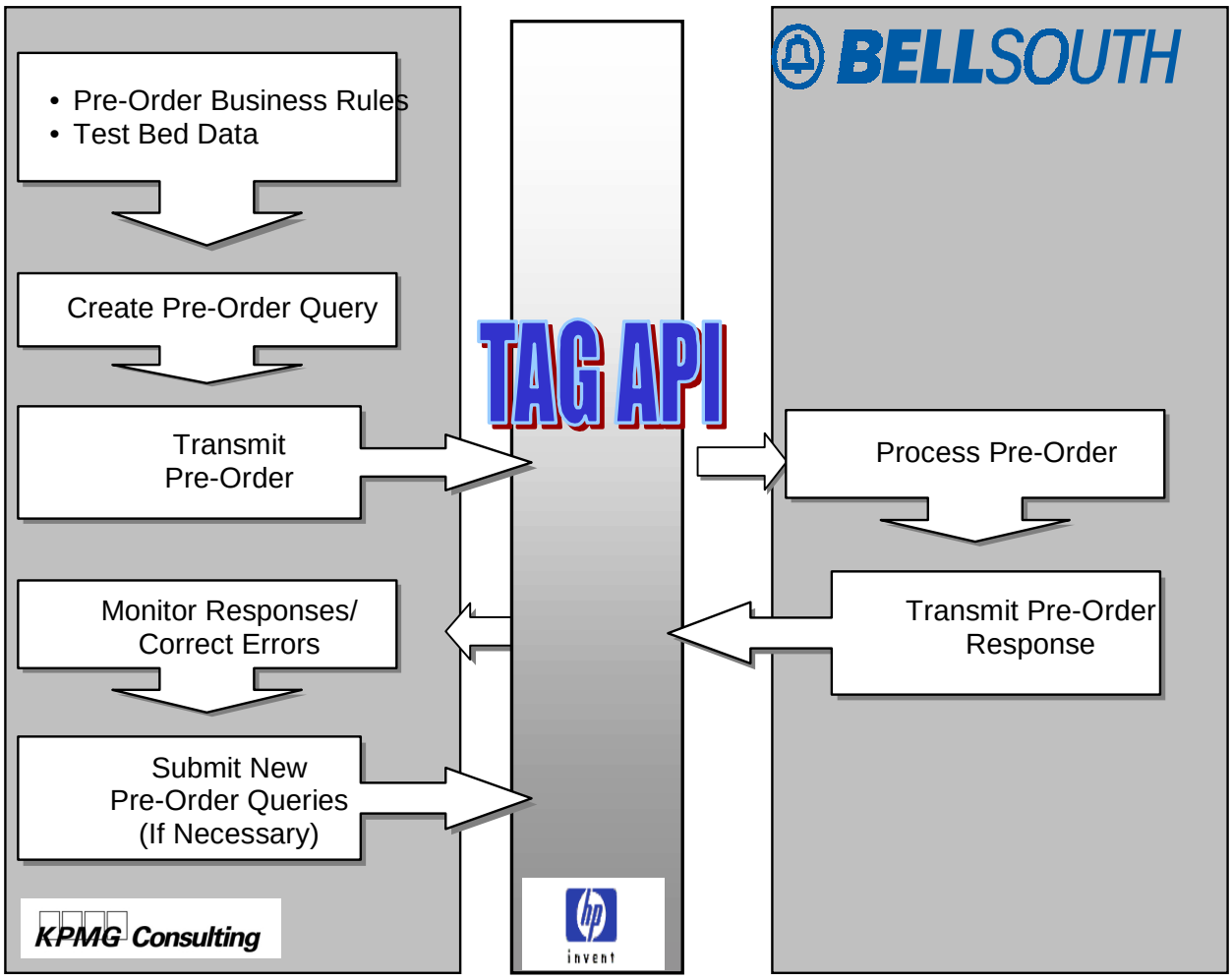
Pre-orders can be submitted electronically to BellSouth through the Telecommunications Access Gateway (TAG), a CORBA-based interface. TAG allows for bi-directional flow of information between BellSouth's Operational Support Systems (OSS) and CLEC customers. CLECs develop their own software applications to obtain information from BellSouth's OSS and can incorporate various internal functions, such as down loading information directly to their own inventory/billing systems, creating their own customer databases and generating internal reports.

TAG provides a standard Application Program Interface (API) to BellSouth's pre-ordering and ordering OSS. TAG transactions are real time. TAG allows CLECs to do the following:

- Address Validation
- Telephone Number Selection / Reservations / Assignment
- TN Inquiry
- Appointment Availability

- Available Primary Interexchange Carrier (PIC) Inquiry
- Service Availability
- Customer Records
- Due Date Calculation

Figure IV-1: TAG Pre-Order Process Flow



Pre-Ordering

KCI developed pre-order transactions in a text file format using its front-end ordering application. These text files were submitted to Hewlett Packard (HP) according to the pre-ordering schedule, which converted them into TAG pre-order format and transmitted them to BellSouth's TAG Gateway. Pre-order responses from BellSouth were similarly returned to HP and converted from TAG to text file format before reaching KCI's order management application.

Pre-order responses received via the TAG interface fall into one of three categories:

1. *TAG Error Messages*

The TAG API performs validation activities before a CLEC pre-order query travels to BellSouth's back-end systems. Messages returned by the TAG API in response to errors notify CLECs of invalid or missing data elements on the query; TAG security violation or password expiration at the application level; or BellSouth back-end resource unavailability.

2. *BellSouth Back-end Error Messages*

   Once CLEC pre-order queries have passed through front-end edits on the TAG API, the transactions proceed through BellSouth's back-end pre-order systems for further validation. If the query is incorrectly populated, BellSouth transmits an error or "near match" message.

3. *Successful Pre-order Responses*

   BellSouth transmits a successful pre-order response after the query passes all data element validations. KCI reviewed the pre-order responses for expected customer or facility information (e.g., feature availability, confirmation of TN reservation, customer address).

2.2 Scenarios

The *Master Test Plan* defined the pre-ordering scenarios to be tested in this evaluation. The scenarios covered the above mentioned electronic pre-order query types offered by BellSouth. Using these scenarios, KCI developed one or more distinct test cases for each scenario. Test cases contained a more detailed description of the pre-order transaction to be run, including customer type (business or residential); query criteria (certain pre-order queries may be executed using more than one set of data element inputs); and other test conditions (e.g., error introduction). Each test case was then used to generate one or more distinct pre-order test instances.

The table below lists the scenarios used in the pre-order tests.

Table IV-1.1: Pre-Order Scenario Description

Scenario #	Transaction Type	Scenario Description
101	AVQ	Address Validation.
102	CSRQ[1]	Customer Service Record (CSR) Inquiry for BLS residential customer who is a potential CLEC customer.
103	CSRQ	CSR Inquiry for a small BLS business customer who is a potential CLEC customer.
104	CSRQ	Deferred CSR Inquiry for a large BLS business customer who is a potential CLEC customer.

[1] KCI also submitted several requests for CSRs of SL2 (designed) UNE Loop customers, who are billed from BellSouth's Carrier Access Billing System (CABS). In order to receive CABS CSRs, a request was placed to KCI's Customer Support Manager (CSM) for one or more CABS records. The CSM faxed or mailed these records to KCI.

Scenario #	Transaction Type	Scenario Description
105	SAQ	Feature Availability lookup.
106	AAQ	Appointment Availability.
107	TNAQ	Telephone Number (TN) Inquiry.
108	TNAQ/TNSQ/TNCAN	Reserve, extend, and cancel TNs.
109	SAQ	Available Primary Interchange Carrier (PIC) Inquiry.
110	CDD	Due Date Calculation.

2.3 Test Bed

For the purpose of submitting pre-order transactions, BellSouth designed test bed accounts according to specifications submitted by KCI. BellSouth also provided KCI with central office and customer information (e.g., telephone numbers, addresses, and switch types) required when populating pre-order transactions. In addition to using test bed accounts, KCI used BellSouth directories to obtain data for address validations.

A. Test Results: TAG Pre-Ordering Functional Test (PRE-1)

1.0 Description

The objective of the Telecommunications Access Gateway (TAG) Pre-Ordering Functional Test (PRE-1) was to evaluate the systems, processes, and other operational elements associated with BellSouth's ability to provide Competitive Local Exchange Carriers (CLECs) with non-discriminatory access to its Operational Support Systems (OSS) supporting pre-order functions. CLECs submit pre-order queries to validate existing customer information, to check BellSouth facility availability, and to obtain data (e.g., telephone numbers and service feature codes) that will be input on subsequent service orders. This evaluation assessed BellSouth's ability to process accurate and timely pre-order transactions via the TAG Client Application Program Interface (API).

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section IV, "Pre-Ordering Overview" for a description of the BellSouth pre-ordering process via TAG.

2.2 Scenarios

KCI generated and transmitted pre-order queries based on the ten pre-order scenarios listed in the *Master Test Plan (MTP).* The *MTP* defined the pre-order scenarios to be tested in PRE-1, outlining specific requirements for transaction types and customer types.

The list of pre-order scenarios that were used for this test is presented in Section V, Table IV-1.1.

2.3 Test Targets & Measures

The test target was BellSouth's pre-order inquiry process via the TAG interface. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column, "Test Cross-Reference" indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

Table IV-1.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Validate Address	Send address request using Billing Telephone Number (BTN)	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send address validation request using Working Telephone Number (WTN)	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send address validation request using full address	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send address validation request using partial address	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-1 PRE-1-3-2
	Receive near match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-1 PRE-1-3-2
	Receive no match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-1 PRE-1-3-2
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-1 PRE-1-3-2
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send address inquiry	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-1 PRE-1-3-2

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Retrieve Customer Service Record	Send CSR request using BTN	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send CSR request using WTN	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send CSR request using circuit identifier and state code	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send CSR request using miscellaneous account number	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-5
	Receive no-match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-5
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-2 PRE-1-3-5
	Correct error(s)	Clarity of Information	PRE-1-4-2
	Resend CSR inquiry	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-5
Determine Product/Service Availability	Send service availability (Local Primary Interexchange Carrier [LPIC], Primary Interexchange Carrier [PIC], Switch Service Availability) request transaction	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive availability response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-8
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-8

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send service availability inquiry	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive match response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-4-8
Request Available Telephone Number(s)	Send Telephone Number (TN) request for specific number(s), i.e., Easy, Sequential, Ascending, Vanity, etc.	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send TN request for random number(s)	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send TN request for a range of specific numbers	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send TN request for a range of random numbers	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive available numbers response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-4 PRE-1-3-6 PRE-1-3-7
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-4 PRE-1-3-6 PRE-1-3-7
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send available telephone number request	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive available numbers response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-4 PRE-1-3-6 PRE-1-3-7

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Reserve TNs	Send reservation for a single TN	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send reservation for Multi-Line-Hunt TNs	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send reservation for Direct In-Dial TNs	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send reservation extension request	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive confirmation response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-4
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-4
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send TN reservation request	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive confirmation response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-4
Cancel TN Reservation	Send cancel reservation request for Single TN	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send cancel reservation request for Multi-Line Hunt	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Send cancel reservation request for Direct-In-Dial	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive confirmation response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-4
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-4

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send cancel TN reservation request	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-4
Determine Appointment Availability	Send request for appointment availability	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-3
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-3
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send available due date request	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-3
Calculate Due Date	Send request for due date calculation	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-9
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-3-9
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send due date calculation request	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-3-9

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Pre-Order / Order Integration	Submit pre-order transactions designated for integration test	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-2-1 through PRE-1-2-9
	Receive error response	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-2 PRE-1-4-2 PRE-1-2-1 through PRE-1-2-9
	Correct errors	Clarity of Information	PRE-1-4-2
	Re-send transactions	Presence of Functionality	PRE-1-1-1 PRE-1-2-1 PRE-1-2-2
	Receive valid responses	Accuracy of Response Clarity of Information Timeliness of Response	PRE-1-4-1 PRE-1-4-1 PRE-1-2-1 through PRE-1-2-9

2.4 Data Sources

The data collected for the test is summarized in the table below.

Table IV-1.2: Data Sources for TAG Pre-Ordering Functional Test

Document	File Name	Location in Work Papers	Source
Pre-Order Business Rules, Versions 2.0, 3.0, 4.0, 5.0, 6.0, and 7.0	No Electronic Copy	PRE-1-A-1	BLS
Pre-Order Business Rules Data Dictionary, Versions 1.0 and 3.0	No Electronic Copy	PRE-1-A-2	BLS
Telecommunications Access Gateway (TAG) API Reference Guide, Versions 2.2.0.2, 2.2.0.4, 2.2.0.5, 2.2.0.7, 2.2.0.8, and 2.2.0.11	No Electronic Copy	PRE-1-A-3	BLS
TAG Programmers Job Aid	No Electronic Copy	PRE-1-A-4	BLS
Pre-Order Test Case Master	POTestCases.xls	PRE-1-A-5	KCI
Transaction Submission Schedule	Schedule.xls	PRE-1-A-6	KCI

Document	File Name	Location in Work Papers	Source
HP TAG System Availability Logs	TAGSystAvail.mdb	PRE-1-A-7	HP
Pre-Order Response Completeness Results Log	PreOrderResponse.xls	PRE-1-A-8	KCI
Pre-Order Timeliness Report Detail: Initial Test	PreOrderTimes.xls	PRE-1-A-9	KCI
Pre-Order Timeliness Report Detail: Re-Test	PreOrderTimesRetest.xls	PRE-1-A-10	KCI
CDD Interval Tracking Log	CDDTracking.xls	PRE-1-A-11	KCI
Service Availability Query (SAQ) Detail: Re-Test	SAQDetail.xls	PRE-1-A-12	KCI
Help Desk Log – Pre-Orders	Help Desk Log.xls	PRE-1-A-13	KCI
Pre Order Expected Response Log	POExpectedResponses.xls	PRE-1-A-15	KCI

2.4.1 Data Generation/Volumes

Data for this test were generated through pre-order transaction submissions via TAG. The number of transactions submitted during functional testing was determined based on the number of pre-order query types available to CLECs via the TAG interface.

This test is a feature function test and did not rely on volume testing.

2.5 Evaluation Methods

To facilitate pre-order inquiry submission, BellSouth provided KCI with test bed accounts that were provisioned according to KCI specifications[1]. Using this test bed information, as well as BellSouth Pre-ordering Business Rules[2], KCI developed test cases and instances (individual pre-order transactions) to be submitted via TAG.

1 Refer to Section V, "O&P Overview" for a more detailed description of the Ordering and Provisioning test bed. The Pre-Order Functional Test utilized the test bed account information provided for the Ordering and Provisioning tests.

2 An initial version of the *BellSouth Pre-order Business Rules* was distributed on the BellSouth Interconnection Web site on 12/16/99. Prior to this date, KCI utilized the *TAG API Guide*, in conjunction with information distributed during BellSouth TAG training, to populate pre-order transactions.

Pre-order transactions were submitted and the results logged and compared to expected pre-ordering system functionality and business processes, as outlined in Section V, "Ordering & Provisioning Overview."

2.6 Analysis Methods

The TAG Pre-Ordering Functional Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the Pre-Ordering Functional Test.

The Georgia Public Service Commission (GPSC) voted on June 6, 2000 to approve a set of Service Quality Measurement- (SQM-) related measures and standards to be used for purposes of this evaluation[3]. For those evaluation criteria that do not map to the GPSC-approved measures, or where BellSouth does not specify and publish a standard business interval for a given procedure, KCI applied its own standard, based on our professional judgment.

For quantitative evaluation criteria where the test result did not meet or exceed the established standard or KCI benchmark, KCI conducted a review to determine whether the differential was statistically significant.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table IV-1.3: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
System Availability			
PRE-1-1-1	TAG pre-order transaction capability is consistently available during scheduled hours of operation.	Satisfied	The GPSC-approved standard is 99.5% system availability during scheduled hours of operation[4]. During the course of this test, Hewlett Packard attempted to maintain a constant connection to

[3] On January 16, 2001, the GPSC issued an order requiring BellSouth to report for business purposes a set of measures that differs in some cases from the requirements of the June 6, 2000 test standards.

4 Regular scheduled hours of availability for the TAG interface are published on the BellSouth Interconnection Web site (www.interconnection.bellsouth.com/oss/oss_hour.html). Notices of specific scheduled system downtime (e.g., for a new system release or fix) are communicated through Carrier Notifications posted on the BLS Web site.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			BLS's TAG interface by implementing regular system 'pinging.' Based on an analysis of HP's TAG system availability logs between 2/15/00 and 7/27/00[5], KCI observed that the TAG interface was available during 99.5% of scheduled hours of availability[6].
Presence of Functionality			
PRE-1-2-1	BLS's TAG interface provides expected system responses.	Satisfied	The KCI standard is 99% of expected system responses received. BLS's TAG interface provided responses (TAG API error, back-end error, or back-end success response) for 100% of 1,317 pre-order transactions submitted during initial functional testing.
PRE-1-2-2	BLS systems or representatives provide required pre-ordering functionality.	Satisfied	BLS systems and representatives provided appropriate functionality to process all of the pre-order transaction types evaluated during the course of this test (see Section V, Table IV-1.1). KCI initially encountered functionality deficiencies when processing Calculate Due Date[7] (CDD) requests for the following order types: • Loop with Number Portability – Migration as-is • Stand-Alone Number Portability – Migration as-is. When performing due date calculations for the above order types, KCI received error messages indicating that the REQ/ACT type was invalid. KCI issued Exception 65.

5 HP maintained detailed logs of system availability beginning on 2/15/00. Comprehensive system availability data for the test period prior to this date is unavailable.

6 KCI could not conclusively determine the root source for all recorded downtime (BellSouth or HP).

7 CDD queries are performed to determine a standard service provisioning interval for a specified order Requisition (REQ) and Activity (ACT) combination. KCI attempted to execute CDD pre-orders for each REQ ACT combination performed in the order functional evaluation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			BLS implemented the required functionality to process Number Portability CDD transactions with version 2.2.0.11 of TAG. KCI performed a re-test of CDD functionality and found that TAG 2.2.0.11 contained the necessary functionality to process Number Portability CDD requests. See Exception 65 for additional information on this issue. Exception 65 is closed. Following the release of TAG 2.2.0.11, KCI was unable to perform CDD transactions associated with UNE Loop-Port Combination accounts. At the time of the interface release, the Pre-Order Business Rules did not provide information on a new field (RSPRODUCT) added to the CDD query. BLS released updated Business Rules on 11/9/00 to address this field. In addition, BLS announced a functionality workaround for processing CDD queries for UNE Loop-Port Combination customers. This workaround was communicated via the Carrier Notification process on December 29, 2000. Following this clarification on valid entries for the RSPRODUCT field, KCI was able to successfully execute CDD transactions for Loop-Port Combinations. See Exception 116 for additional information on this issue. KCI has recommended closure of Exception 116 to the GPSC. While executing pre-order requests in support of the second ordering functional re-test[8], KCI was unable to perform Telephone Number Selection Queries (TNSQs) for customers served out of Macon or Augusta

[8] This second ordering re-test was initiated on January 19, 2001. KCI executed pre-order transactions in support of this re-test via TAG Version 2.2.0.11.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Central Offices (COs). In response to TNSQs submitted, BLS delivered error messages advising KCI to call BLS's Electronic Commerce (EC) Support Desk. On 2/9/01, BLS determined that an audit table entry was missing from BLS back-end tables and added the appropriate audit record. Following this fix, KCI was able to successfully execute TNSQ transactions for all relevant COs. See Exception 130 for additional information on this issue. KCI has recommended closure of Exception 130 to the GPSC.
Timeliness of Response[9] [10] [11]			
PRE-1-3-1	The TAG interface provides timely pre-order responses from BLS's RSAG-TN back end system[12].	Satisfied[13]	The GPSC-approved standard is parity with retail performance. Based on BLS June performance reports, KCI determined the retail standard response time for AVQ_TN inquiries

[9] See Exception 24 for additional information on BellSouth's pre-order response timeliness performance for all query types. Based on BLS system upgrades implemented with TAG Version 2.2.0.7, KCI initiated a re-test on 4/19/00.

[10] In accordance with the GPSC's June 6, 2000 measures and standards to be used for purposes of this evaluation, KPMG reviewed pre-order timeliness results relative to BellSouth retail pre-order timeliness. This standard does not include allowances for transaction transmission time from the test CLEC to BellSouth, and for response transmission time from BellSouth back to the test CLEC. The GPSC's Order specifies that pre-order timeliness results should be disaggregated by the following back-end systems: RSAG-TN; RSAG-ADDR; DSAP; ATLAS; CSRACCTS; CSROCSR.

[11] KCI analyzed BellSouth-published retail performance data for the month of June 2000. Since Bellsouth retail data is reported by business and residential pre-order categories, KCI compared re-test results to a weighted average of BellSouth residential and business results. For those query types where BellSouth retail data was available, KCI performed three "t-tests". The first test compared the average of BellSouth retail business and residence averages to the KCI data. The other two tests separately compared the KCI data to: 1) the average of BellSouth retail business data; and 2) the average of BellSouth retail residence data. The results of the three tests demonstrated consistent variation from the retail performance for each query type. KCI also conducted statistical analysis to determine whether the KCI result was statistically different from the BellSouth combined average.

[12] BellSouth's RSAG-TN system processes Address Validation Queries by Telephone Number (AVQ_TNs).

Test Cross-Reference	Evaluation Criteria	Result	Comments
	end system[12].		to be 1.1 seconds. Responses to AVQ_TNs received during KCI's initial testing were delivered in an average of 11.8 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to AVQ_TNs received during re-testing were delivered in an average of 1.2 seconds. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.
PRE-1-3-2	The TAG interface provides timely pre-order responses from BLS's RSAG-Address back end system[14].	Satisfied[15]	The GPSC-approved standard is parity with retail performance. Based on BLS June performance reports, KCI determined the retail standard response time for AVQ inquiries to be 1.8 seconds. Responses to AVQs received during KCI's initial testing were delivered in an average of 68.3 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to AVQs received during re-testing were delivered in an average of 1.9 seconds. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order

[13] Although the test performance is above the BellSouth parity threshold of 1.1 seconds, the statistical evidence is not strong enough to conclude that the performance is above the threshold with 95% confidence. In other words, the inherent variation in the process is large enough to have produced the substandard result, even with a process that is operating within the standard. The p-value, which indicates the chance of observing this result when the benchmark is being met, is 0.1970 , above the .0500 cutoff for a statistical conclusion of failure.

[14] BellSouth's RSAG-Address system processes Address Validation Queries (AVQs).

[15] Although the test performance is above the BellSouth parity threshold of 1.8 seconds, the statistical evidence is not strong enough to conclude that the performance is above the threshold with 95% confidence. In other words, the inherent variation in the process is large enough to have produced the substandard result, even with a process that is operating within the standard. The p-value, which indicates the chance of observing this result when the benchmark is being met, is 0.4083, above the .0500 cutoff for a statistical conclusion of failure.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			response timeliness.
PRE-1-3-3	The TAG interface provides timely pre-order responses from BLS's DSAP back end system[16].	Satisfied[17]	The GPSC-approved standard is parity with retail performance. Based on BLS June performance reports, KCI determined the retail standard response time for AAQ inquiries to be 0.5 seconds. Responses to AAQs received during KCI's initial testing were delivered in an average of 10.5 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to AAQs received during re-testing were delivered in an average of 1.0 second. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.
PRE-1-3-4	The TAG interface provides timely pre-order responses from BLS's ATLAS back end system[18].	Satisfied	The GPSC-approved standard is parity with retail performance. Based on BLS June performance reports, KCI determined the retail standard response time for TNAQ, TNSQ, and TNCAN_TN inquiries to be 1.2 seconds. Responses to TNAQs, TNSQs, and TNCAN_TNs received during KCI's initial testing were delivered in an average of 44.9 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to TNAQs, TNSQs, and TNCAN_TNs received during re-testing were delivered in an average of 1.2 seconds. See Tables IV-1.4 through IV-1.6 for

[16] BellSouth's DSAP system processes Appointment Availability Queries (AAQs).

[17] Although the result of 1.0 seconds exceeds the BLS retail average of 0.5 seconds by a statistically significant interval, it is KCI's professional judgment that the average response interval for Test-CLEC-submitted AAQ pre-orders is within a reasonable timeframe.

[18] BellSouth's ATLAS system processes Telephone Number Assignment Queries (TNAQs), Telephone Number Selection Queries (TNSQs), and Telephone Number Cancellations by TN (TNCAN_TN).

Test Cross-Reference	Evaluation Criteria	Result	Comments
			additional detail on pre-order response timeliness.
PRE-1-3-5	The TAG interface provides timely pre-order responses from BLS's CRSECSR and CSRACCTs back end systems[19].	Satisfied	The GPSC-approved standard is parity with retail performance. Based on BLS June performance reports, KCI determined the retail standard response time for AVQ_TN queries to be 3.1 seconds. Responses to CSRQs received during KCI's initial testing were delivered in an average of 8.7 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to CSRQs received during re-testing were delivered in an average of 1.8 seconds. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.

[19] BellSouth's CRSECSR and CSRACCT systems process Customer Service Record Queries (CSRQs).

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-1-3-6	The TAG interface provides timely pre-order responses from BLS's ATLAS-MLH back-end system[20].	Satisfied[21]	The KCI standard for pre-order response timeliness is an average of eight seconds. Responses to TNAQ_MLH and TNCAN_MLHs received during KCI's initial testing were delivered in an average of 31.9 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to TNAQ_MLH and TNCAN_MLHs received during re-testing were delivered in an average of 1.0 second. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.
PRE-1-3-7	The TAG interface provides timely pre-order responses from BLS's ATLAS-DID back-end system[22].	Satisfied[23]	The KCI standard for pre-order response timeliness is an average of eight seconds. Responses to TNAQ_DID and TNCAN_DIDs received during KCI's initial testing were delivered in an average of 9.8 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to TNAQ_DID and TNCAN_DIDs received during re-testing were delivered in an average of 2.0 seconds. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.

[20] BellSouth's ATLAS-MLH system processes Telephone Number Assignment and Cancellation Queries for Multi-Line Hunt numbers (TNAQ_MLH and TNCAN_MLH).

[21] BellSouth retail analog data on responses from ATLAS-MLH is not currently available. BellSouth retail ordering representatives currently utilize a manual process for selecting and reserving MLH numbers. As a result, KCI is unable to evaluate TNAQ_MLH and TNCAN_MLH timeliness results in comparison to a retail benchmark for electronic response timeliness. The result for this criteria is based on KCI's professional judgment.

[22] BellSouth's ATLAS-DID system processes Telephone Number Assignment and Cancellation Queries for Direct-In-Dial numbers (TNAQ_DID and TNCAN_DID).

[23] BellSouth retail analog data on responses from ATLAS-DID is not currently available. BellSouth retail ordering representatives currently utilize a manual process for selecting and reserving DID numbers. As

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-1-3-8	The TAG interface provides timely pre-order responses from BLS's OASIS back-end system[24].	Satisfied[25]	The GPSC-approved standard is parity with retail performance. Based on BLS June performance reports, KCI determined the retail standard response time for SAQ queries to be 1.3 seconds. Responses to SAQs received during initial testing were delivered in an average of 33.9 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to SAQs received during re-testing were delivered in an average of 11.6 seconds[26]. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.

a result, KCI is unable to evaluate TNAQ_DID and TNCAN_DID timeliness results in comparison to a retail benchmark for electronic response timeliness. The result for this criteria is based on KCI's professional judgment.

[24] BellSouth's OASIS system processes Service Availability Queries (SAQs).

[25] Although the result of 11.6 seconds exceeds the BLS retail average of 1.3 seconds by a statistically significant interval, it is KCI's professional judgment that the average response interval for Test-CLEC-submitted SAQ pre-orders is within a reasonable timeframe.

[26] Service Availability Queries (SAQs) may be performed by requesting a) information on a specific service / feature or group of related features; or b) information on all features available from a particular BLS switch. The current SQM-related standard for pre-order response timeliness does not distinguish between variations of SAQs. In addition, BLS retail timeliness results are not disaggregated by "full" versus "partial" SAQ inquiries. The distribution of SAQ pre-order variations executed by KCI may not reflect the distribution of SAQ variations included in the BLS retail results. The average response time for "full" SAQs performed during the KCI re-test was 31 seconds. For SAQs requesting partial information, the average re-test response time was 2 seconds.

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-1-3-9	The TAG interface provides timely pre-order responses to Calculate Due Date (CDD) inquiries.	Satisfied[27]	The KCI standard for pre-order response timeliness is an average of eight seconds. Responses to CDDs received during initial testing were delivered in an average of 0.1 seconds. KCI performed a re-test of pre-order response timeliness following BLS TAG system upgrades. Responses to CDDs received during re-testing were delivered in an average of 0.1 seconds. See Tables IV-1.4 through IV-1.6 for additional detail on pre-order response timeliness.
Accuracy of Response[28]			
PRE-1-4-1	BLS system or representative provides clear, accurate, and complete pre-order success responses.	Satisfied	A sample of pre-order responses to all inquiry types was examined for clarity, completeness, and accuracy relative to the BLS Business Rules. Responses were received to valid pre-order inquiries. Responses contained complete information with respect to BLS Business Rules requirements in most cases. CDD query responses were missing the value in the INQNUM data element, a value initially required according to the Pre-Order Business Rules. BLS updated its Business Rules on 10/9/00 to remove this field from the CDD response list. See Exceptions 63 and 66 for additional information on this issue. Exceptions 63 and 66 are closed. KCI also encountered discrepancies between service due date intervals obtained via CDD queries and those

[27] BellSouth retail analog data is not available for the CDD query. BellSouth retail representatives do not utilize this function when retrieving information needed to process retail orders. As a result, KCI is unable to evaluate CDD timeliness results in comparison to a retail benchmark. The result for this criteria is based on KCI's professional judgment.

[28] KCI defined an accurate pre-order success or back-end error response to contain: a) all required data values; b) no prohibited data values. Expected and prohibited values should be contained within BellSouth Business Rule documentation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			obtained via BLS documentation for the same order type. BLS performed several activities to correct these discrepancies: • Implemented a change on July 21, 2000 to update the BLS interval tables used to generate CDD response intervals. • Introduced modifications in TAG Version 2.2.0.11 to correct errors in generating CDD intervals for Loop-Port Combination requests. • Updated the Product and Services Interval Guide (Issue 3b) to more accurately reflect service delivery intervals for REQ TYPE J. KCI performed a re-test to evaluate BLS changes to TAG 2.2.0.11. CDD queries covering the range of electronically-available order types were submitted, and the CDD interval responses were compared to the intervals provided in BLS documentation. While the CDD pre-order provides intervals in line with BLS documentation for standard order types, the CDD query does not allow data inputs to sufficiently identify a more detailed service request type variation. For example, the service interval for a feature change differs based on whether the change requires a technician dispatch or not. No field within the CDD pre-order allows the CLEC to provide the level of detail needed to differentiate between a non-dispatch and a dispatch service request. The deficiency noted is not significant enough to affect the overall evaluation. See Exception 71 for additional information on this issue. KCI has recommended closure of Exception

Test Cross-Reference	Evaluation Criteria	Result	Comments
			71 to the GPSC.
PRE-1-4-2	BLS system or representative provides clear, accurate, and complete back-end or TAG API errors.	Satisfied	A sample of error responses to all inquiry types was examined for clarity, completeness, and accuracy relative to the BLS Business Rules. Error messages were received in response to invalid pre-order requests and provided an adequate level of information to determine the cause of error and contained complete information with respect to BLS Business Rule requirements in appropriate cases.

Table IV-1.4: Average Pre-Order Response Timeliness by Category

Pre-Order Category (BLS back-end system)	Query Type(s) within Category	Average Response Time (seconds) – Initial Testing[29]	Average Response Time (seconds) – Retest[30]	BLS Retail Average[31]
RSAG, by TN	AVQ_TN	11.8	1.21	1.1
RSAG, by Address	AVQ	63.3	1.9	1.8
ATLAS	TNAQ; TNSQ; TNCAN_TN;	44.9	1.2	1.2
CRSECSR	CSRQ	8.7	1.8	3.1
DSAP	AAQ	10.5	1.0	0.5
ATLAS – MLH	TNAQ_MLH; TNCAN_MLH	31.9	1.0	N / A
ATLAS – DID	TNAQ_DID; TNCAN_DID	9.8	1.96	N / A
OASIS	SAQ	33.9	11.6	1.3
N / A[32]	CDD	0.1	0.1	N / A

[29] Initial testing was conducted during November 1999 – March 2000.

[30] Re-testing was conducted during April – May 2000.

[31] BellSouth Retail pre-order response times were obtained from the June performance measurement reports.

[32] CDD pre-order queries are not processed by BellSouth back-end systems. Results are generated based on a series of tables and algorithms applied by the TAG API.

Table IV-1.5: Pre-Order Response Timeliness – Initial Test Results [33] [34]

AAQ	**Appointment Availability Query**								
228 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	27	2	1	0	0	0	0	0	30
	90%	7%	3%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	36	57	67	20	10	7	0	1	198
	18%	29%	34%	10%	5%	4%	0%	1%	100%
AVQ_TN	**Address Validation Query by Telephone Number**								
107 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	25	4	6	0	0	0	0	2	37
	68%	11%	16%	0%	0%	0%	0%	5%	100%
BLS Back-end System Responses	12	16	14	16	5	6	1	0	70
	17%	23%	20%	23%	7%	9%	1%	0%	100%
TNAQ	**Telephone Number Assignment Query**								
180 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	19	1	0	0	2	0	0	3	25
	76%	4%	0%	0%	8%	0%	0%	12%	100%
BLS Back-end System Responses	44	9	75	13	13	0	1	0	155
	28%	6%	48%	8%	8%	0%	1%	0%	100%
TNSQ	**Telephone Number Selection Query**								
133 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	45	0	0	0	0	0	0	0	45
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	23	3	48	11	3	0	0	0	88
	26%	3%	55%	13%	3%	0%	0%	0%	100%

[33] Totals may not equal 100% due to rounding.

[34] Timeliness results in the following tables (IV-1.5 and IV-1.6) are disaggregated by response source to provide a more detailed view of timeliness of responses from both the TAG API and the BLS back-end systems. TAG API errors are generated by the CLEC's interface, prior to the transaction being sent through the BLS TAG gateway. Response timeliness results presented in Table IV – 1.4 represent an average of total (API and back-end) responses.

AVQ	**Address Validation Query**								
137 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	17	0	0	0	0	0	0	3	20
	85%	0%	0%	0%	0%	0%	0%	15%	100%
BLS Back-end System Responses	11	6	26	23	25	23	3	0	117
	9%	5%	22%	20%	21%	20%	3%	0%	100%
SAQ	**Service Availability Query**								
97 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	33	4	1	0	0	0	0	0	38
	87%	11%	3%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	2	5	5	0	4	0	21	22	59
	3%	8%	8%	0%	7%	0%	36%	37%	100%
CSRQ	**Customer Service Record Query**								
148 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	35	22	24	3	2	0	0	0	86
	41%	26%	28%	3%	2%	0%	0%	0%	100%
BLS Back-end System Responses	27	0	20	13	2	0	0	0	62
	44%	0%	32%	21%	3%	0%	0%	0%	100%
CDD	**Calculated Due Date**								
154 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	40	0	0	0	0	0	0	0	40
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	114	0	0	0	0	0	0	0	114
	100%	0%	0%	0%	0%	0%	0%	0%	100%
TNAQ_MLH	**Telephone Number Assignment Query for Multi-Line Hunting Numbers**								
46 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	10	1	0	0	1	0	0	3	15
	67%	7%	0%	0%	7%	0%	0%	20%	100%
BLS Back-end System Responses	9	1	13	5	2	0	0	1	31
	29%	3%	42%	16%	6%	0%	0%	3%	100%

TNAQ_DID	**Telephone Number Assignment Query for Direct Inward Dial Numbers**								
29 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	5	1	0	0	0	0	0	0	6
	83%	17%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	8	0	9	4	2	0	0	0	23
	35%	0%	39%	17%	9%	0%	0%	0%	100%

TNCAN-TN	**Telephone Number Cancellation for General Pool TNs**								
26 total transaction	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	4	0	0	0	0	0	0	0	4
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	11	0	9	2	0	0	0	0	22
	50%	0%	41%	9%	0%	0%	0%	0%	100%
TNCAN-MLH	**Telephone Number Cancellation for Multi-Line Hunting Numbers**								
14 total transaction	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	4	0	0	0	0	0	0	0	4
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	9	0	1	0	0	0	0	0	10
	90%	0%	10%	0%	0%	0%	0%	0%	100%
TNCAN-DID	**Telephone Number Cancellation for Direct Inward Dial Numbers**								
18 total transaction	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	1	0	0	0	0	0	0	0	1
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	9	0	7	1	0	0	0	0	17
	53%	0%	41%	6%	0%	0%	0%	0%	100%
TOTAL	**ALL QUERY TYPES**								
1317 Total Transactions	<=6 sec	7-10 sec	11-15 sec	16-20 sec	21-30 sec	31-45 sec	46-60 sec	> 60 sec	TOTAL
TAG API Responses	265	35	32	3	5	0	0	11	351
	75%	10%	9%	1%	1%	0%	0%	3%	100%
BLS Back-end System Responses	315	97	294	108	66	36	26	24	966
	33%	10%	30%	11%	7%	4%	3%	2%	100%

Table IV-1.6: Pre-Order Re-Test Response Timeliness[35]

AAQ	**Appointment Availability Query**								
73 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	29	0	0	0	0	0	0	0	29
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	29	11	3	1	0	0	0	0	44
	66%	25%	7%	2%	0%	0%	0%	0%	100%
AVQ_TN	**Address Validation Query by Telephone Number**								
57 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	24	0	0	1	0	0	0	0	25
	96%	0%	0%	4%	0%	0%	0%	0%	100%
BLS Back-end System Responses	12	11	8	1	0	0	0	0	32
	38%	34%	25%	3%	0%	0%	0%	0%	100%
TNAQ	**Telephone Number Assignment Query**								
68 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	22	0	0	1	0	0	0	0	23
	96%	0%	0%	4%	0%	0%	0%	0%	100%
BLS Back-end System Responses	20	13	7	3	1	1	0	0	45
	44%	29%	16%	7%	2%	2%	0%	0%	100%
TNSQ	**Telephone Number Selection Query**								
52 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	26	0	0	0	0	0	0	0	26
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	13	8	2	2	0	1	0	0	26
	50%	31%	8%	8%	0%	4%	0%	0%	100%
AVQ	**Address Validation Query**								
68 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	30	1	0	0	0	0	0	0	31
	97%	3%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	8	9	6	9	1	2	2	0	37
	22%	24%	16%	24%	3%	5%	5%	0%	100%

[35] Totals may not equal 100% due to rounding.

SAQ	**Service Availability Query**								
96 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	30	2	0	0	0	1	0	1	34
	88%	6%	0%	0%	0%	3%	0%	3%	100%
BLS Back-end System Responses	0	11	28	4	0	0	0	19	62
	0%	18%	45%	6%	0%	0%	0%	31%	100%
CSRQ	**Customer Service Record Query**								
51 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	25	0	0	0	0	0	1	0	26
	96%	0%	0%	0%	0%	0%	4%	0%	100%
BLS Back-end System Responses	0	15	7	3	0	0	0	0	25
	0%	60%	28%	12%	0%	0%	0%	0%	100%
CDD	**Calculated Due Date**								
83 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	34	0	0	0	0	0	0	0	34
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	49	0	0	0	0	0	0	0	49
	100%	0%	0%	0%	0%	0%	0%	0%	100%
TNAQ_MLH	**Telephone Number Assignment Query for Multi-Line Hunting Numbers**								
56 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	27	0	0	0	0	0	0	0	27
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	15	10	2	0	1	1	0	0	29
	52%	34%	7%	0%	3%	3%	0%	0%	100%
TNAQ_DID	**Telephone Number Assignment Query for Direct Inward Dial Numbers**								
54 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	26	0	0	0	0	0	0	2	28
	93%	0%	0%	0%	0%	0%	0%	7%	100%
BLS Back-end System Responses	2	3	10	4	1	5	1	0	26
	8%	12%	38%	15%	4%	19%	4%	0%	100%

TNCAN-TN	**Telephone Number Cancellation for General Pool TNs**								
52 total transaction	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	25	0	0	0	0	0	0	0	25
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	11	13	1	1	0	0	1	0	27
	41%	48%	4%	4%	0%	0%	4%	0%	100%
TNCAN-MLH	**Telephone Number Cancellation for Multi**								
51 total transaction	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	24	0	0	0	0	0	0	0	24
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	18	6	3	0	0	0	0	0	27
	67%	22%	11%	0%	0%	0%	0%	0%	100%
TNCAN-DID	**Telephone Number Cancellation for Direct Inward Dial Numbers**								
66 total transaction	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	28	0	0	0	0	0	0	0	28
	100%	0%	0%	0%	0%	0%	0%	0%	100%
BLS Back-end System Responses	16	14	5	2	0	1	0	0	38
	42%	37%	13%	5%	0%	3%	0%	0%	100%
ALL QUERY TYPES									
827 Total Transactions	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	>= 21 sec	TOTAL
TAG API Responses	350	3	0	2	0	1	1	3	360
	97%	1%	0%	1%	0%	0%	0%	1%	100%
BLS Back-end System Responses	193	124	82	30	4	11	4	19	467
	41%	26%	18%	6%	1%	2%	1%	4%	100%

B. Test Results: Pre-Ordering Performance Measures Evaluation (PRE-2)

1.0 Description

The Pre-Ordering Performance Measures Evaluation (PRE-2) involved Calculation and Reporting Validation for the pre-order Service Quality Measurements (SQMs) produced by BellSouth. Unlike the performance measures in other categories, neither of the measures in the pre-order category were defined in a manner such that BellSouth would produce data, or report SQM values, at the individual Competitive Local Exchange Carrier (CLEC) level. Therefore, Data Comparison was not part of the evaluation for the pre-order category. The activities undertaken to execute Performance Measures Evaluation are described in Section III-F, "Performance Measures Evaluation Overview."

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

The process description for metrics data processing and reporting at BellSouth is contained in Section III-F, "Performance Measures Evaluation Overview."

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target for Calculation and Reporting Validation is the set of values reported by BellSouth for pre-ordering Service Quality Measurements (SQMs). Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

Table IV-2.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Average OSS Response Time and Response Interval[1]	RSAG – Address RSAG – TN ATLAS COFFI DSAP HAL P/SIMS OASIS	BLS reports are correctly disaggregated and complete.	PRE-2-1-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	PRE-2-1-2
OSS Interface Availability[1]	Not disaggregated	BLS reports are correctly disaggregated and complete.	PRE-2-2-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	PRE-2-2-2

2.4 Data Sources

The data collected for the Pre-Ordering Performance Measures Evaluation are summarized in the table below.

Table IV-2.2: Data Sources for Pre-Ordering Performance Measures Evaluation

Document	File Name	Location in Work Papers	Source
Response Raw Data by month (October 1999), Data Dictionary, Server Listing, System Listing – BLS and CLEC Proprietary	Response data for October 1999.xls	PRE-2-A-3	BLS – Interconnection Operations – CLEC Performance Measurements
Response Raw Data by month (December 1999), Data Dictionary, Server Listing, System Listing – BLS and CLEC Proprietary	Pre-Ord OSS Response Intvl.xls	PRE-2-A-3	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 OSS Response Time report – BLS and CLEC Proprietary	OSS_Response_Time_ Interval_101999.xls	PRE-2-A-1	BLS – Interconnection Operations – CLEC Performance Measurements

[1] This SQM is reported only for the CLEC aggregate and is not specific to the KCI test CLEC.

Document	File Name	Location in Work Papers	Source
December 1999 OSS Response Time report – BLS and CLEC Proprietary	DECOSSRESP.xls	PRE-2-A-1	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 OSS Interface Availability raw data – BLS and CLEC Proprietary	KPMG1_18.xls	PRE-2-A-10	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 OSS Interface Availability report – BLS and CLEC Proprietary	OSS Interface Availability SQM.txt	PRE-2-A-8	BLS (PMAP Web site)
Memorandum of November 2, 1999 – Audit Data for KCI – BLS and CLEC Proprietary	AUDITK~1.DOC	PRE-2–A-9	BLS – Interconnection Operations – CLEC Performance Measurements
Mapping of Components to Applications – BLS and CLEC Proprietary	AVRP1099.xls	PRE-2–A-9	BLS – Interconnection Operations – CLEC Performance Measurements
Mapping of Components to Applications – BLS and CLEC Proprietary	AVRP109R.xls	PRE-2–A-9	BLS – Interconnection Operations – CLEC Performance Measurements
10/22/99 Georgia SQM documentation – BLS and CLEC Proprietary	No Electronic copy	PMR-A-9	BLS (PMAP Web site)
May 2000 Georgia SQM documentation – BLS and CLEC Proprietary	No Electronic copy	PMR-A-11	BLS (PMAP Web site)
KCI – Pre-ordering - Evaluation and Results Table – Performance Measures Evaluation – BLS and CLEC Proprietary	Table IV-2.3.doc	PRE-2-A-15	KCI
KCI – Pre-ordering - Evaluation and Results Table – Performance Measures Evaluation - References – BLS and CLEC Proprietary	Table IV-2.3wp.doc	PRE-2-A-16	KCI

2.4.1 Data Generation/Volumes

The data for this test are the pre-order-related SQM values reported by BellSouth for the CLEC aggregate.

2.5 Evaluation Methods

The Evaluation Methods for the Performance Measures Evaluation tests are described in Section III-F, "Performance Measures Evaluation Overview."

2.6 Analysis Methods

The Performance Measures Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards and guidelines for the test.

The data collected were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table IV-2.3: PRE-2 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Average OSS Response Time and Response Interval			
PRE-2-1-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation in the May 2000 Georgia SQM documentation.
PRE-2-1-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, the KCI-calculated SQM values did not agree with BLS-reported values for the DSAP system/TAG server. After it was discovered that BLS had reported these values in error on the SQM report, BLS provided KCI with an updated SQM report for which KCI matched all reported values, including those for the DSAP system/TAG server. KCI was also provided with an additional month of data and

Test Cross-Reference	Evaluation Criteria	Result	Comments
			reports. For this month (December 1999), the SQM value calculated by KCI at each level of disaggregation matched the corresponding value reported by BLS. See Exception 45 for additional information on this issue. Exception 45 is closed.
OSS Interface Availability			
PRE-2-2-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation in the May 2000 Georgia SQM documentation. No disaggregation is required by the SQM guidelines, but BLS disaggregates SQM values by application.
PRE-2-2-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, the KCI-calculated SQM values did not agree with BLS-reported values for CLEC TAG and LEO Mainframe. Exception 46 was issued. However, BLS clarified the computation instructions for the CLEC TAG application, and provided a new mapping of components to the LEO Mainframe application. KCI then determined that the updated KCI-calculated SQM values agreed with the BLS-reported SQM values exactly. See Exception 46 for additional information on this issue. Exception 46 is closed.

C. Test Results: TAG Pre-Ordering Documentation Evaluation (PRE-3)

1.0 Description

The Telecommunications Access Gateway (TAG) Pre-Ordering Documentation Evaluation (PRE-3) was an operational review of the documentation developed by BellSouth to provide support to Competitive Local Exchange Carriers (CLECs) carrying out the business processes of pre-ordering through BellSouth's Operational Support Systems (OSS).

This test was a high level review to determine the degree to which documentation prepared and distributed by BellSouth was subject to acceptable management and business practices, as defined in the evaluation criteria. The evaluation was not a comprehensive review of the content accuracy of all BellSouth pre-order-related documentation. Rather, it focused primarily on the pre-ordering business rules. The Georgia Public Service Commission's May 20, 1999 *Order* authorizing third party testing did not call for development of a TAG pre-order interface; therefore, documentation pertaining to interface development (e.g., the *TAG API Guide*) was not formally reviewed.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

BellSouth offers CLECs the ability to access its OSS supporting pre-order functions through an electronic interface. Responses to pre-order inquiries provide CLECs with customer information prior to submitting an order for products or services. CLECs can submit pre-order inquiries electronically through the TAG interface. TAG programming instruction and associated documentation is available to CLECs in training classes.

BellSouth provides pre-ordering documentation to define the pre-order business rules, field formats and required fields for pre-order queries and responses. In addition to the documentation provided during training, BellSouth posts pre-order documentation on its Web site for CLECs to access. Notifications of updates to the documents are provided in Carrier Notifications, which are posted on the BellSouth Web site prior to actual delivery of the new version of the document. In addition, Carrier Notifications provide CLECs with BellSouth operations information (i.e., system down time, holiday hours of operation).

See Section IV, "Pre-Ordering Overview" for a complete description of the pre-order / order submission process.

2.2 Scenarios

The scenarios developed for TAG Pre-Order Functional Test (PRE-1) were used to evaluate BellSouth business rules for this evaluation.

2.3 Test Targets & Measures

The test targets were the availability, organization, usability, comprehensiveness, and accuracy of the documentation. Sub-processes, functions, and evaluations are summarized in the following tables. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results and Analysis."

Table IV-3.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Pre-order documentation	Release Management	Existence and adequacy of the update process Availability of document(s)	PRE-3-1-1 PRE-3-1-2 PRE-3-1-3 PRE-3-1-4 PRE-3-1-5
	Document Structure and Format	Existence of structural elements Completeness of data	PRE-3-2-1 PRE-3-2-2 PRE-3-2-3 PRE-3-2-4 PRE-3-2-5 PRE-3-2-6 PRE-3-2-7 PRE-3-2-8 PRE-3-2-9
	Document Content	Content of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3
	Document Accurary	Accuracy of document(s)	PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
Validate Address	Create address validation request transaction	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Correct errors	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
Retrieve CSR	Determine type of inquiry to send	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
	Create CSR request transaction	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
	Correct errors	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
Request available telephone number(s)	Create available telephone number request transaction	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Correct errors	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
Reserve TN(s)	Create telephone number reservation transaction	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
	Correct errors	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
Cancel TN reservation	Create telephone number cancellation or exchange transaction	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
	Correct errors	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Determine product / service availability	Create service availability request transaction	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
	Correct errors	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
Calculate Due Date	Create due date calculation request transaction	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
	Correct errors	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
Determine Appointment Availability	Create appointment availability request transaction	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Correct errors	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5
Pre-order / Order Integration	Submit pre-order transactions designated for integration	Content of document(s) Accuracy of document(s)	PRE-3-3-1 PRE-3-3-2 PRE-3-3-3 PRE-3-4-1 PRE-3-4-2 PRE-3-4-3 PRE-3-4-4 PRE-3-4-5

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table IV-3.2: Data Sources for Pre-Ordering Documentation Evaluation

Document	File Name	Location in Work Papers	Source
Pre-Order Business Rules Version 2.0	PRE3_Pre-Order Business Rules Issue 2.0.pdf	PRE-3-A-Disk 1	BLS
Pre-Order Business Rules Version 3.0	PRE3_Pre-Order Business Rules Issue 3.0.pdf	PRE-3-A-Disk 3	BLS
Pre-Order Business Rules Version 4.0	PRE3_Pre-Order Business Rules Issue 4.0.pdf	PRE-3-A-Disk 4	BLS
Pre-Order Business Rules Version 5.0	PO Bus Rules Ver5.pdf	PRE-3-A-Disk 7	BLS
Pre-Order Business Rules Version 6.0	PO Bus Rules Ver6.pdf	PRE-3-A-Disk 8	BLS
Pre-Order Business Rules Version 7.0	BellSouth Pre-Order Business Rules _Version 70.pdf	PRE-3-A-Disk 10	BLS
Pre-Order Business Rules Version 8.0	BellSouth Pre-Order Business Rules _Version 8.pdf	PRE-3-A-Disk 12	BLS

Document	File Name	Location in Work Papers	Source
Pre-Order Business Rules Version 9.0	BellSouth Pre-Order Business Rules_Ver90.pdf	PRE-3-A-Disk 13	BLS
Pre-Order Business Rules Data Dictionary Version 1.0	PRE3 _Pre-Order Business Rules Data Dictionary Issue 1.0.doc	PRE-3-A-Disk 1	BLS
Pre-Order Business Rules Data Dictionary Version 2.0	PRE3 _Pre-Order Business Rules Data Dictionary Issue 2.0.doc	PRE-3-A-Disk 1	BLS
Pre-Order Business Rules Data Dictionary Version 3.0	PO Bus Rules Data Dictionary Ver3.pdf	PRE-3-A-Disk 6	BLS
Pre-Order Business Rules Data Dictionary Version 4.0	BellSouth Pre-Order Business Rules Data Dic Version 4.pdf	PRE-3-A-Disk 11	BLS
Pre-Order Business Rules Data Dictionary Version 5.0	BellSouth Pre-Order Business Rules data_dic Ver5.pdf	PRE-3-A-Disk 14	BLS
Pre-Order Business Rules Appendix Version 3.0	PRE3 _Pre-Order Business Rules Appendix Version 3.pdf	PRE-3-A-Disk 2	BLS
Pre-Order Business Rules Appendix Version 4.0	PRE3 _Pre-Order Business Rules Appendix Version 4.pdf	PRE-3-A-Disk 2	BLS
Pre-Order Business Rules Appendix Version 5.0	PO Bus Rules Appendix Ver5.pdf	PRE-3-A-Disk 6	BLS
Pre-Order Business Rules Appendix Version 6.0	PO Bus Rules Appendix Ver6.pdf	PRE-3-A-Disk 11	BLS
Pre-Order Business Rules Appendix Version 7.0	BellSouth Pre-Order Business Rules Appendix-70.pdf	PRE-3-A-Disk 12	BLS
Pre-Order Business Rules Appendix Version 8.0	BellSouth Pre-Order Business Rules - appendix_Ver80.pdf	PRE-3-A-Disk 13	BLS
BellSouth Pre-order and Ordering Overview Issue 1	PRE3 _ BellSouth Pre-order and Ordering Overview Issue 1.pdf	PRE-3-A-Disk 1	BLS
Carrier Notifications (Pre-Order related)	No Electronic Copies	PRE-3-A-7	BLS
Evaluation Checklists	PRE3_Documentation Checklist.xls	PRE-3-A-8	BLS
TAG API Reference Guide	TAG API Reference Guide _2208.pdf	PRE-3-A-Disk 9	BLS
Documentation Issues Log	No Electronic Copy	O&P-8-A-3	KCI
BellSouth Pre-Order Interview Report	BLS Pre-Order Interview Report.doc	PRE-3-A-Disk 5	KCI

2.4.1 Data Generation/Volumes

This test relied on input from KCI subject matter experts who reviewed BellSouth pre-ordering documentation in order to conduct the TAG Pre-Ordering Functional Test (PRE-1), as well as structured reviews of the format of the documentation and interviews with BellSouth and CLEC personnel.

2.5 Evaluation Methods

Operational analysis techniques were used to evaluate BellSouth's documentation. Prior to the initiation of the test, evaluation checklists were created to facilitate a structured review of documentation based on standard KCI criteria. KCI performed a structured review of BellSouth pre-ordering documentation, visited Web sites where documentation is issued, conducted interviews with BellSouth and CLECs, and verified the accuracy of documentation during functional testing of BellSouth's TAG interface. The documentation review undertaken during TAG Pre-Ordering Functional Evaluation (PRE-1) allowed for evaluation of the accuracy and usability of the documentation in a business environment.

BellSouth did not have pre-ordering business rules at the start of the TAG and EDI Functional Testing. As a result, KCI issued Exception 1. At that time, KCI conducted a review of the *TAG API Guide* to understand the pre-order business rules. Subsequently, BellSouth published Pre-Order Business Rules Version 1.0 in December 1999. Once published, the business rules document was used for the remainder of this evaluation.

BellSouth revised selected documents several times during the course of testing. Newly released or revised documents essential to functional testing activity were reviewed expeditiously, and in-depth, to allow the functional testing to continue with minimal interruption.

The methodology of the documentation evaluation was to review BellSouth documentation for conformance to a pre-defined checklist of expected characteristics. Further, an "incident report" template was created to document occurrences of inconsistencies, errors, or unclear language that were identified during the test. Errors were discussed with BellSouth during the course of the test. Exceptions were filed for those documentation errors, inconsistencies, or instances of unclear language that were deemed to have a potential significant impact on a CLEC's ability to conduct business operations.

2.6 Analysis Methods

The TAG Pre-Ordering Documentation Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the test.

The data collected from documentation reviews and interviews with BellSouth - GA and CLEC personnel were analyzed employing the evaluation criteria referenced above. Data analyzed for this report include test results collected through October 4, 2000.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table IV-3.3: PRE-3 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Release Management			
PRE-3-1-1	BLS's documentation is readily available via the BLS Web site or in hard copy.	Satisfied	During the course of transaction testing KCI was able to obtain pre-order documentation via the BLS Web site.
PRE-3-1-2	BLS makes updates to documents readily available to the CLECs.	Satisfied	KCI obtained pre-order documentation updates via the Web site.
PRE-3-1-3	Training is available for use of documentation.	Satisfied	KCI's attendance at training courses indicated that BLS pre-order documentation is used in concert with the BLS CLEC training course.
PRE-3-1-4	Responsibilities and procedures for developing, updating, and correcting documentation are clearly defined.	Satisfied	Through interviews with BLS pre-order Subject Matter Experts (SMEs), KCI validated pre-order documentation development, update, and correction responsibilities, and the procedures that were instituted in the Quality Documentation Review process implemented May 31, 2000. BLS instituted the Quality Documentation Review process to address the occurrence of consistent format errors or deficiencies in BLS documentation, as identified by KCI. See Exceptions 53 and 55 for additional information on this issue. Exceptions 53 and 55 are closed.
PRE-3-1-5	Responsibilities and procedures for	Satisfied	Interviews indicate that responsibilities and procedures for the distribution of

Test Cross-Reference	Evaluation Criteria	Result	Comments
	distributing documentation are clearly defined.		BLS documentation are clearly defined and supported through Carrier Notifications on the BLS Web site.
Document Structure and Format			
PRE-3-2-1	Document version is indicated clearly within and throughout each document.	Satisfied	KCI's initial testing revealed that the BLS Pre-Order Business Rules Data Dictionary lacked version identifiers throughout the document. In response to this deficiency, KCI issued Exception 55. To address this issue, BLS added version numbers to the Pre-Order Business Rules Data Dictionary so that all BLS pre-order documentation contains version identifiers throughout the documents. See Exception 55 for additional information on this issue. Exception 55 is closed.
PRE-3-2-2	BLS document organization is consistent with its intended use.	Satisfied	KCI's initial testing indicated that BLS Pre-Order Business Rules did not relate the application of business rules to a specific BLS pre-order application (e.g., TAG or Local Exchange Navigation System [LENS]). In response to this deficiency, KCI issued Exception 55. To address this issue, BLS has added additional table columns to identify the LENS and TAG versions applicable to the business rule. See Exception 55 for additional information on this issue. Exception 55 is closed.
PRE-3-2-3	BLS documents contain information that is relevant to its intended audience.	Satisfied	KCI transaction testing and documentation reviews revealed that BLS pre-order documentation contains information appropriate to its intended audience. For example, the pre-order business rules contain steps to complete pre-order inquiries.
PRE-3-2-4	BLS documents contain a table of contents.	Satisfied	BLS pre-order documentation contains a table of contents. For example, pre-order business rules, data dictionary, and appendices all include a standardized table of contents.

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-3-2-5	BLS documents are logically organized with clear page numbering and section labeling.	Satisfied	KCI's initial testing revealed that BLS Pre-Order Business Rules sections are labeled only at the beginning of each section, rather than on each page. To address this issue, BLS added a header row to each table on each page identifying the appropriate section. See Exception 55 for additional information on this issue. Exception 55 is closed.
PRE-3-2-6	BLS documents contain contact / help desk numbers.	Satisfied	KCI's initial testing revealed that BLS pre-order documentation did not contain contact or help desk numbers. As a result of this deficiency, KCI issued Exception 55. To address this issue, BLS added a comment to each pre-order document directing the user to contact their assigned Account Team for assistance. See Exception 55 for additional information on this issue. Exception 55 is closed.
PRE-3-2-7	BLS documents clearly indicate purpose and scope.	Satisfied	KCI's initial testing revealed that the BLS Pre-Order Business Rules Data Dictionary did not state purpose or intended scope. In response to this deficiency, KCI issued Exception 55. To address this issue, BLS added comments to the objective section so that all BLS pre-order documents state a purpose and scope. See Exception 55 for additional information on this issue. Exception 55 is closed.
PRE-3-2-8	Cross-references are clearly stated directing readers to relevant sources of additional information.	Satisfied	KCI's initial testing revealed that while the *BLS Pre-Order Business Rules Data Dictionary* and *Appendix*, Versions 3.0 and 6.0 respectively, identified as their scope to provide additional information to the *BLS Pre-Order Business Rules*, the *Pre-Order Business Rules*, however, didn't reference the *Dictionary* or the *Appendix*. To address this issue, BLS added a

Test Cross-Reference	Evaluation Criteria	Result	Comments
			sentence in the objective statement of the *BLS Pre-Order Business Rules* identifying the *Dictionary* and the *Appendix* as its companion documents.
PRE-3-2-9	BLS documents clearly instruct users how to notify BLS of document errors and omissions.	Satisfied	KCI's initial testing revealed that BLS pre-order documentation did not provide contact information for error and/or omission reporting. In response to this deficiency, KCI issued Exception 55. To address this issue, BLS added a standardized comment to all pre-order documentation referring users to Account Team for error and/or omission reporting. See Exception 55 for additional information on this issue. Exception 55 is closed.
Document Content			
PRE-3-3-1	BLS documents provide description of error messages and potential steps for resolution.	Satisfied	Based on KCI document reviews, BLS Pre-Order Business Rule appendices L-S effectively identify errors and error handling procedures.
PRE-3-3-2	BLS documents clearly identify inputs/outputs of the specific processes.	Satisfied	KCI's initial testing revealed the majority of BLS pre-order documentation provided defined inputs and outputs. However, the Calculate Due Date (CDD) query process did not contain inputs or outputs. In response to this deficiency, KCI issued Exception 1. To address this issue, BLS added inputs/outputs specific to the CDD process in the Pre-Order Business Rules version 7. See Exception 1 for additional information on this issue. Exception 1 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-3-3-3	BLS documents include expected results of process and cycle times.	Satisfied	Based on KCI document review, BLS pre-order documentation lists expected responses for pre-order queries. Additionally, the Georgia Public Service Commission-approved standard for pre-order response timeliness is Parity with Retail[1].
Document Accuracy			
PRE-3-4-1	BLS documents correctly define data fields.	Satisfied	During KCI's initial document reviews, the Pre-Order Business Rules did not define, for each data element or query type, the corresponding TAG Application Programming Interface (API) release. In response to this deficiency, KCI issued Exception 63. To address this issue, BLS documented the correlation between the *API Reference Guide* and *Pre-Order Business Rules* by matching the TAG fields with the business rules. See Exception 63 for additional information on this issue. Exception 63 is closed.
PRE-3-4-2	BLS documents accurately define acceptable formats for data fields.	Satisfied	KCI's initial testing revealed that BLS pre-order documentation did not contain a definition of the 8 character or 11 character CLLI code for Telephone Number Availability Query (TNAQ) and Telephone Number Availability Response (TNAR). To address this issue, BLS added a definition for 8 character and 11 character CLLI codes.
PRE-3-4-3	BLS documents clearly identify required and optional fields.	Satisfied	During KCI's initial document reviews, the Pre-Order Business Rules did not define, for each data element or query type, the corresponding TAG API release. In response to this deficiency, KCI issued Exception 63. To address this issue, BLS documented the correlation between the *API Reference Guide* and *Pre-Order Business*

[1] The BLS Retail data can be found in the monthly Performance Measurement and Analysis Platform (PMAP) reports that are posted on the BLS Web site.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Rules by matching the TAG fields with the business rules. See Exception 63 for additional information on this issue. Exception 63 is closed.
PRE-3-4-4	BLS documents clearly describe expected system responses / outputs.	Satisfied	KCI's initial testing identified that BLS's *Pre-Order Business Rules* do not clearly distinguish system responses / outputs for each interface (e.g., TAG and LENS). In response to this deficiency, KCI issued Exception 55. BLS subsequently added columns to distinguish between TAG and LENS in the *BellSouth Pre-Order Business Rules*, Version 6.0, released on June 16, 2000. See Exception 55 for more information on this issue. Exception 55 is closed.
PRE-3-4-5	BLS documents contain methods and procedures to correctly execute processes.	Satisfied	KCI's initial testing revealed that the majority of BLS pre-order documentation defined methods and procedures to correctly execute methods and procedures. However methods and procedures were not defined for the Calculate Due Date (CDD) process. In response to this deficiency, KCI issued Exception 1. To address this issue, BLS added methods and procedures specific to the CDD process in the Pre-Order Business Rules version 7. See Exception 1 for additional information on this issue. Exception 1 is closed.

D. Test Results: TAG Normal Volume Pre-Order Performance Test (PRE-4)

1.0 Description

The objective of the Telecommunications Access Gateway (TAG) Normal Volume Pre-Order Performance Test (PRE-4) was to evaluate BellSouth's Operating Support Systems (OSS) associated with pre-ordering at specified volumes. Competitive Local Exchange Carriers (CLECs) submit pre-order queries to validate existing customer information and the availability of BellSouth facilities, and to obtain data (e.g., telephone numbers, service feature codes, etc.) that will be entered on subsequent service orders. This evaluation assessed BellSouth's ability to process accurate and timely pre-order transactions via the TAG Client Application Program Interface (API) under "normal" year-end 2001 (YE01) projected transaction load conditions[1] in the Reengineered Services, Installation and Maintenance Management System (RSIMMS) environment[2].

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section IV, "Pre-Ordering Overview" for a description of the BellSouth pre-ordering process via TAG.

2.2 Scenarios

KCI generated and transmitted pre-order queries based on the scenarios listed in the *Master Test Plan (MTP),* which defined the pre-order scenarios for testing in PRE-4.

For the list of pre-order scenarios refer to Section V, Table IV-1.1: "Pre-Order Scenario Description."

2.3 Test Targets & Measures

The test target was the TAG interface and back-end systems supporting pre-order queries[3]. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

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[1] KCI forecasted hourly transaction rates for individual order and pre-order types drawing on data from current order and pre-order daily volume rates, BellSouth 2001 transaction forecasts, and from CLEC 2001 transaction forecasts, where obtainable.

[2] See RSIMMS and Production Systems Review for a description of the difference between the production and RSIMMS environments.

[3] The RSIMMS environment is designed to access copies of the PSIMMS, COFFI, BOCRIS, BOCABS and LMOS / Host systems, and to access the production COFIUSOC, ATLAS, RSAG, and DSAP systems.

Table IV-4.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Submit Pre-Orders in Projected Normal Volumes	Address Validation	Availability of Interface Accuracy of Response Timeliness of Response	PRE-4-1-1 PRE-4-2-1 PRE-4-3-1 PRE-4-3-2 PRE-4-4-1 PRE-4-4-2
	CSR Retrieval	Availability of Interface Accuracy of Response Timeliness of Response	PRE-4-1-1 PRE-4-2-1 PRE-4-3-5 PRE-4-4-1 PRE-4-4-2
	Switched Service Availability	Availability of Interface Accuracy of Response Timeliness of Response	PRE-4-1-1 PRE-4-2-1 PRE-4-3-8 PRE-4-4-1 PRE-4-4-2
	PIC/LPIC Availability	Availability of Interface Accuracy of Response Timeliness of Response	PRE-4-1-1 PRE-4-2-1 PRE-4-3-8 PRE-4-4-1 PRE-4-4-2
	Product / Service Availability	Availability of Interface Accuracy of Response Timeliness of Response	PRE-4-1-1 PRE-4-2-1 PRE-4-3-8 PRE-4-4-1 PRE-4-4-2
	Telephone Number(s) Availability	Availability of Interface Accuracy of Response Timeliness of Response	PRE-4-1-1 PRE-4-2-1 PRE-4-3-4 PRE-4-3-6 PRE-4-3-7 PRE-4-4-1 PRE-4-4-2
	Reserve TNs	Availability of Interface Accuracy of Response Timeliness of Response	PRE-4-1-1 PRE-4-2-1 PRE-4-3-4 PRE-4-4-1 PRE-4-4-2
	Cancel TN Reservation	Availability of Interface Accuracy of Response Timeliness of Response	PRE-4-1-1 PRE-4-2-1 PRE-4-3-4 PRE-4-3-6 PRE-4-3-7 PRE-4-4-1 PRE-4-4-2

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Determine Due Date / Appointment Availability	Availability of Interface Accuracy of Response Timeliness of Response	PRE-4-1-1 PRE-4-2-1 PRE-4-3-3 PRE-4-3-9 PRE-4-4-1 PRE-4-4-2

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table IV-4-2: Data Sources for TAG Normal Volume Performance Test (PRE-4)

Document	File Name	Location in Work Papers	Source
Pre-Order Business Rules, Versions 2.0, 3.0, 4.0, 5.0, 6.0, and 7.0	No Electronic Copy	PRE-1-A-1	BLS
Pre-Order Business Rules Data Dictionary, Versions 1.0 and 3.0	No Electronic Copy	PRE-1-A-2	BLS
Telecommunications Access Gateway (TAG) API Reference Guide, Versions 2.2.0.2, 2.2.0.4, 2.2.0.5, 2.2.0.7, 2.2.0.8, and 2.2.1.1	No Electronic Copy	PRE-1-A-3	BLS
TAG Programmers Job Aid	No Electronic Copy	PRE-1-A-4	BLS
BellSouth Three Month Hourly Order History	BLS Order History.xls	PRE-4-A-1	BLS
2000, 2001 BellSouth LSR Volume Forecasts	BSTFORECAST.xls	PRE-4-A-2	BLS
2000, 2001 Aggregated CLEC Forecasts	CLEC_BST_FORECAST.xls	PRE-4-A-3	CLEC
YE2001 Normal and Peak Forecast Methodology	Fcast Summary.ppt	PRE-4-A-4	KCI
Normal Volume Test Schedule	schedule.xls	PRE-4-A-5	KCI
System Readiness Test Log	SRT_by_date.xls	PRE-4-A-6	KCI
Results Data Tables	Resutls Data CD-ROM	PRE-4-A-7	KCI
GPSC *Order* Adopting Standards and Benchmarks	GPSC_standards.tif	PRE-4-A-8	GPSC

Document	File Name	Location in Work Papers	Source
Pre-Order Response Data for June, July, August 2000	Response Data Fro June-August 2000.xls	PRE-4-A-9	BLS
Statistical Signifcance Analysis Results	Volume Stats Analysis.xls	PRE-4-A-10	KCI

2.4.1 Data Generation/Volumes

The TAG Normal Volume Test (PRE-4) evaluated BellSouth's performance by sending approximately 118,000 pre-orders with 35,000 associated orders[4] on two distinct days over two 10-hour periods. This test and the ordering (O&P-3) volume test were executed concurrently.

Volumes for this test were determined by forecasting BellSouth's expected order volume for year-end 2001 (YE01). KCI obtained anticipated transaction growth rates from CLECs and BellSouth. Transaction types were forecasted individually based on expected growth rates for each order, and corresponding pre-order query types. KCI also analyzed the distribution of transactions over the course of a normal business day. These data were then combined to determine the number and types of pre-orders to be sent each hour. Pre-orders were then scheduled for transmission to BellSouth via TAG.

Table IV-4.3 shows the pre-order volumes submitted during each day of the Normal Volume Test.[5]

Table IV-4.3: Normal Test Generated Volumes

Query Type	Day 1, 06/02/00	Day 1, Retest 1[6] 06/14/00	Day 1, Retest 2 06/20/00	Day 1, Retest 3 07/24/00	Day 2 08/01/00
AAQ	13,403	13,403	13,403	13,403	13,402
AVQ-TN	1,888	1,888	1,888	1,888	1,887
TNAQ	13,398	13,398	13,398	13,398	13,397
TNSQ	13,398	13,398	13,398	13,398	13,397
AVQ	18,681	18,681	18,681	18,681	18,680

[4] Ordering test results are reported in the TAG/EDI Normal Volume Test (O&P-3).

[5] Two normal volume test days were initially planned. However, BellSouth performance failure required "re-testing" of Normal Volume Day 1 on three subsequent days. Following implementation of system fixes by BellSouth, KCI/HP conducted System Readiness Testing (SRTs) to verify that BellSouth's system was functioning. After these SRTs, additional Normal Volume Day 1 tests were conducted. Normal Volume Day 2 was executed successfully in one attempt.

[6] The normal volume test was originally scheduled for two test cycles. KCI elected to conduct day 1 retests in accordance with the "test until you pass" philosophy referenced in the *MTP* (i.e., volume test "day one" was re-executed until all evaluation criteria were believed to be satisfied.

Query Type	Day 1, 06/02/00	Day 1, Retest 1[6] 06/14/00	Day 1, Retest 2 06/20/00	Day 1, Retest 3 07/24/00	Day 2 08/01/00
SAQ	19,654	19,654	19,654	19,654	19,653
CSRQ	8,030	8,030	8,030	8,030	8,029
CDD	21,941	21,941	21,941	21,941	21,940
TNAQ_MLH	2,287	2,287	2,287	2,287	2,286
TNAQ_DID	828	827	828	828	827
TNCAN	3,733	3,733	3,733	3,733	3,736
TNCAN_MLH	828	827	828	828	827
TNCAN_DID	828	828	828	828	827
Total	118,897	118,895	118,897	118,897	118,888

2.5 Evaluation Methods

In preparation for the test, pre-order transaction seeds were written according to BellSouth business rules[7] and loaded into the KCI transaction test system. These templates were submitted to Hewlett Packard (HP) and transferred to BellSouth during Systems Readiness Testing (SRT)[8]. SRT confirmed the functionality of HP and KCI's transactional systems and verified that orders would flow-through the BellSouth system. The pre-order seeds were used as templates to build the volumes for the subsequent tests. Pre-orders were submitted on a scheduled submission date and time determined by KCI prior to the start of the test. As appropriate, testers made final updates (e.g., desired due dates or other information) and processed the transactions.

The TAG Normal Volume Performance Test evaluated BellSouth's interfaces at YE01 projected order volumes in BellSouth's RSIMMS environment for two 10-hour periods. This test was executed by submitting pre-order requests in support of Resale and UNE orders against BellSouth test-bed accounts and continued through the return of successful pre-order responses or error notices. The test bed accounts[9] were provisioned by BellSouth according to KCI's specifications and verified by KCI prior to initiation of the test.

In order to fully test the capacity of BellSouth's OSS supporting pre-order and ordering, the test was conducted simultaneously with the EDI/TAG Normal Volume Performance Test (O&P-3). The pre-order transaction loads were

[7] Pre-orders were written according to business rules outlined in BellSouth Pre-order Business Rules (V. 7.0).

[8] KCI conducted a number of SRTs between April 11, 2000 and August 1, 2000. After completing the required SRTs, BellSouth requested KCI/HP participation in additional testing. These additional tests were used by BellSouth to ensure that its back-end systems and interfaces were functioning correctly.

[9] Refer to Section IV, "Pre-Ordering Overview" for a detailed description of the Pre-Ordering test bed process and detail of accounts.

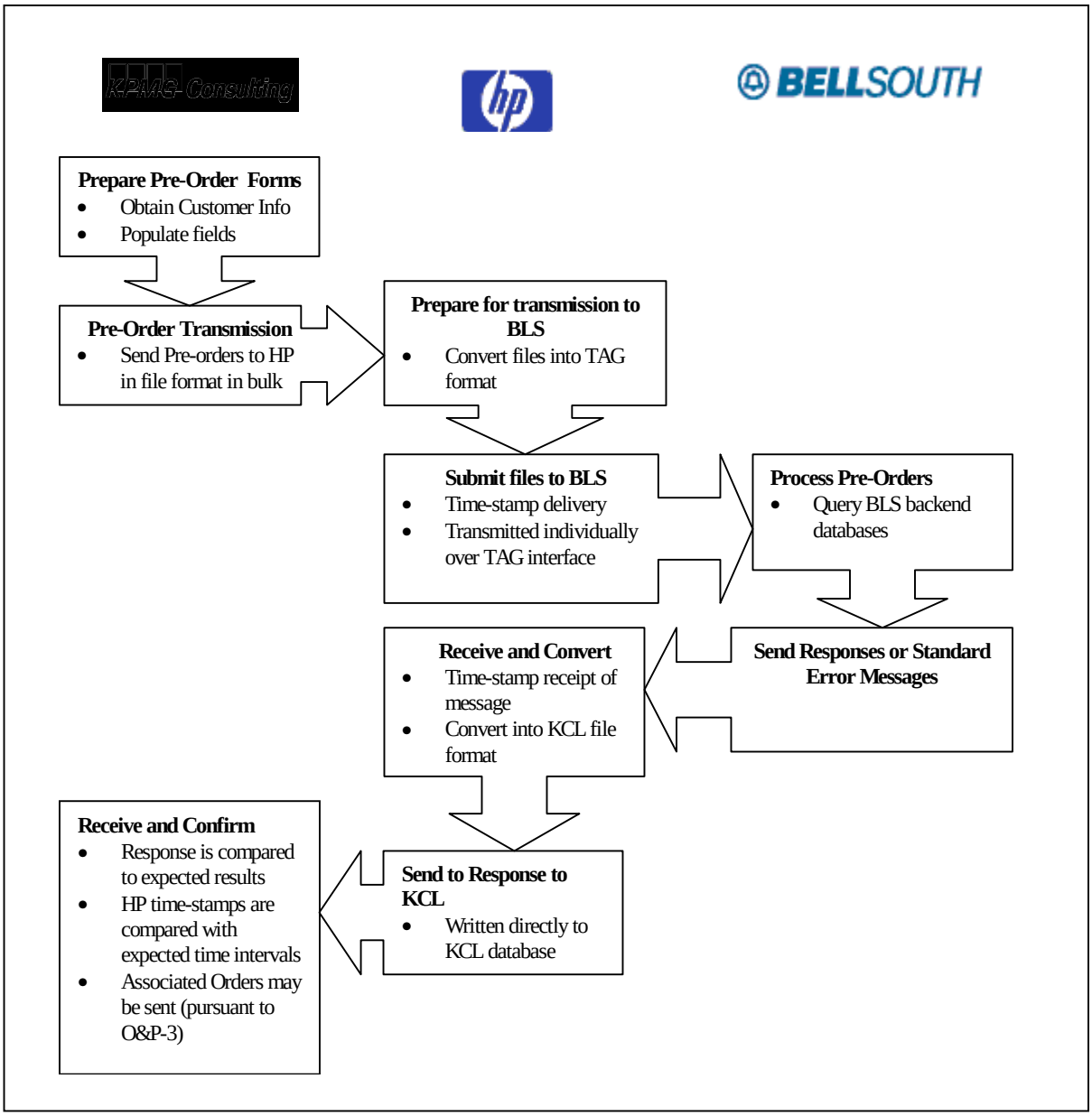
distributed geographically across four Central Offices (COs) in the state of Georgia. BellSouth established and configured customer test accounts prior to initiation of the test.

The test cases for the TAG Normal Volume Test were submitted in an automated fashion. Transactions were provided in bulk to HP for conversion from the business file format to the TAG format. HP time-stamped and forwarded the transactions to BellSouth for processing according to the schedule provided by KCI. BellSouth processed the transactions and returned responses to HP. The test process is depicted in Figure IV-4.1[10]

As pre-order volume transactions were submitted, error messages or positive responses were returned. A transaction was deemed complete if a positive pre-order response or an error message was received. The results were logged and compared to expected pre-ordering system functionality and business processes, as outlined in Section IV, "Pre-Ordering Overview."

[10] See Section IV, "Pre-Ordering Overview" for a complete description of the file transfer process.

Figure IV-4.1: TAG Normal Volume Test Process



2.6 Analysis Methods

The TAG Normal Volume Performance Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided a framework of norms, standards, and guidelines for the TAG Normal Volume Performance Test.

The Georgia Public Service Commission (GPSC) voted on June 6, 2000 to approve a set of Service Quality Measurement- (SQM-) related measures and

standards to be used for purposes of this evaluation[11]. In many cases, results in this section were calculated based on KCI/HP time-stamps, which may differ significantly from the BellSouth time measurement points reported in the SQMs[12]. For those evaluation criteria that do not map to the GPSC-approved measures, KCI has applied its own standard, based on our professional judgment.

Pre-order response times for the KCI Test CLEC queries on each volume test day were compared to BellSouth retail performance data for the corresponding day (e.g., July 25, 2000 test data were compared to July 25, 2000 retail data). For quantitative evaluation criteria where the test result did not meet or exceed the established standard or KCI benchmark, KCI conducted a review to determine whether the differential was statistically significant.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table IV-4.4: PRE-4 Test Evaluation Criteria and Results[13]

Test Cross-Reference	Evaluation Criteria	Result	Comments
System Availability			
PRE-4-1-1	TAG pre-order transaction capability is consistently available during scheduled hours of operation.	Satisfied	The GPSC-approved standard is system availability 99.5% of scheduled up time. HP continuously sent orders and pre-orders throughout each iteration of the test. While connectivity was maintained throughout the test, HP and BLS conducted "coordinated bounces" of their servers on several occasions. These system restarts were conducted primarily to recover BLS back-end functionality. The combined

[11] On January 16, 2001, the GPSC issued an order requiring BellSouth to report for business purposes a set of measures that differs in some cases from the requirements of the June 6 test standards.

[12] For example, for an LSR, BellSouth records the time received and the time a corresponding FOC or ERR is sent. HP/KCI measures the time an LSR is sent, and the time a corresponding FOC or ERR is received. In most cases, we would expect these times to correspond roughly, allowing for factors such as queuing and transmission time. In some cases, these times may differ significantly as a result of system downtime, network congestion, etc.

[13] Results in percentages are rounded to the nearest whole number.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			duration of downtime resulting from these restarts was less than 0.5% of total test time.
Presence of Functionality			
PRE-4-2-1	BLS's TAG interface provides expected system responses.[14]	Satisfied	The KCI standard is 99% of expected system responses received. Day 1 - Initial: — 94% (112,255 / 118,885) of pre-order requests received expected system responses Day 1 – Retest 1: — 91% (108,269 / 118,887)of pre-order requests received expected system responses Day 1 – Retest 2: — 100% (118,875 / 118,884) of pre-order requests received expected system responses Day 1 – Retest 3: — 100% (118,884 / 118,897) of pre-order requests received expected system responses Day 2: — 100% (118,807 / 118,884) of pre-order requests received expected system responses

[14] An expected system response is defined for this criterion as any response that is consistent with technical specifications for EDI and TAG responses. Type of response received is not considered. The accuracy by type of response is evaluated in 4-4-1 and 4-4-2.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Timeliness of Response[15] [16] [17]			
PRE-4-3-1	The TAG interface provides timely pre-order responses from BLS's Regional Street Access Guide-Telephone Number (RSAG-TN) back-end system.	Satisfied[18]	The GPSC-approved standard is parity with retail performance. Based on BLS performance reports, KCI determined the standard response time for AVQ_TN inquiries to be an average of: — 0.9 seconds (6/2/00 BLS Retail data) — 0.9 seconds (6/14/00 BLS Retail data) — 1.1 seconds (6/20/00 BLS Retail data) — 0.9 seconds (7/24/00 BLS Retail data) — 0.9 seconds (8/1/00 BLS Retail data) Responses to AVQ_TNs were received in an average of: — Day 1 – Initial: 8.0 seconds. — Day 1 – Retest 1: 11.2 seconds. — Day 1 – Retest 2: 4.6 seconds. — Day 1 – Retest 3: 1.6 seconds. — Day 2: 2.6 seconds Although the KCI results exceed the BLS retail averages by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted AVQ_TN pre-orders is within a reasonable timeframe.

[15] See *Table IV-4.5: Pre-Order Response Timeliness* for detailed timeliness test results.

[16] In accordance with the GPSC's June 6, 2000 measures and standards to be used for purposes of this evaluation, KCI reviewed pre-order timeliness results relative to BellSouth Retail pre-order timeliness. This standard does not include allowances for transaction transmission time from the test CLEC to BellSouth and for response transmission time from BellSouth back to the test CLEC.

[17] KCI analyzed BellSouth-published Retail performance data for the months corresponding to the KCI volume test execution dates. Test data for volume Day 1 Re-test 3 (performed on July 24, 2000) was compared against BellSouth July Retail performance reports, whereas test data for volume Day 2 (performed on August 1, 2000) was analyzed relative to BellSouth August Retail data. Since BellSouth data are separated into business and residential pre-order categories, KCI compared test results to a weighted average of BellSouth residential and business results.

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-4-3-2	The TAG interface provides timely pre-order responses from BLS's RSAG-Address back-end system.	Satisfied[19]	The GPSC-approved standard is parity with retail performance. Based on BLS performance reports, KCI determined the standard response time for AVQ inquiries to be an average of: — 1.9 seconds (6/2/00 BLS Retail data) — 1.5 seconds (6/14/00 BLS Retail data) — 1.5 seconds (6/20/00 BLS Retail data) — 1.3 seconds (7/24/00 BLS Retail data) — 1.3 seconds (8/01/00 BLS Retail data) Responses to AVQs received during KCI's testing were delivered in an average of: — Day 1 – Initial: 8.3 seconds. — Day 1 – Retest 1: 12.0 seconds. — Day 1 – Retest 2: 5.2 seconds. — Day 1- Retest 3: 2.0 seconds. — Day 2: 2.9 seconds Although the KCI results exceed the BLS retail averages by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted AVQ pre-orders is within a reasonable timeframe.
PRE-4-3-3	The TAG interface provides timely pre-order responses from BLS's Direct Order Entry Support Application Program	Satisfied[20]	The GPSC-approved standard is parity with retail performance. Based on BLS performance reports, KCI determined the standard response time for AAQ inquiries to be an average of:

[18] See *Figure IV-4.2: AVQ_TN Response Distribution* for a distribution of the AVQ_TN response times KCI experienced.

[19] See *Figure IV-4.3: AVQ Response Distribution* for a distribution of the AVQ response times KCI experienced.

[20] See *Figure IV-4.4: AAQ Response Distribution* for a distribution of the AAQ response times KCI experienced.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	(DSAP) back-end system.		— 0.3 seconds (6/2/00 BLS Retail data) — 0.3 seconds (6/14/00 BLS Retail data) — 0.7 seconds (6/20/00 BLS Retail data) — 0.4 seconds (7/24/00 BLS Retail data) — 0.3 seconds (8/01/00 BLS Retail data) Responses to AAQs received during KCI's testing were delivered in an average of: — Day 1 – Initial: 4.9 seconds. — Day 1 – Retest 1: 7.2 seconds. — Day 1 – Retest 2: 2.3 seconds. — Day 1 – Retest 3: 1.1 seconds. — Day 2: 1.4 seconds Although the KCI results exceed the BLS retail averages by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted AAQ pre-orders is within a reasonable timeframe.
PRE-4-3-4	The TAG interface provides timely pre-order responses from BLS's Application for Telephone Number Load Administration and Selection (ATLAS) back- end system[21].	Satisfied	The GPSC-approved standard is parity with retail performance. Based on BLS performance reports, KCI determined the standard response time for TNAQ, TNSQ and TNCAN_TN inquiries to be an average of: — 0.6 seconds (6/2/00BLS Retail data) — 3.7 seconds (6/14/00 BLS Retail data) — 1.0 seconds (6/20/00 BLS Retail data) — 0.8 seconds (7/24/00 BLS Retail

[21] See *Figure IV-4.5: ATLAS Response Distribution* for a distribution of the response times KCI experienced from the ATLAS back end system.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			data) — 0.8 seconds (8/01/00 BLS Retail data) Responses to TNAQs, TNSQs, and TNCAN_TNs received during KCI's testing were delivered in an average of: — Day 1 – Initial: 25.4 seconds. — Day 1 – Retest 1: 16.5 seconds. — Day 1 – Retest 2: 5.5 seconds. — Day 1 – Retest 3: 1.7 seconds. — Day 2: 1.6 seconds Although the KCI results exceed the BLS retail averages by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted TNAQ, TNSQ and TNCAN_TN pre-orders is within a reasonable timeframe.
PRE-4-3-5	The TAG interface provides timely pre-order responses from BLS's CRSECSR back-end system.	Satisfied	The GPSC-approved standard is parity with retail performance. Based on BLS performance reports, KCI determined the standard response time for CSRQ inquiries to be an average of: — 1.0 seconds (6/2/00 BLS Retail data) — 4.0 seconds (6/14/00 BLS Retail data) — 2.6 seconds (6/20/00 BLS Retail data) — 1.1 seconds (7/24/00 BLS Retail data) — 1.0 seconds (8/01/00 BLS Retail data) Responses to CSRQs received during KCI's testing were delivered in an average of: — Day 1 – Retest 1: 11.3 seconds. — Day 1 – Retest 1: 7.6 seconds. — Day 1 – Retest 2: 3.3 seconds.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			— Day 1 – Retest 3: 2.4 seconds. — Day 2: 2.6 seconds Although the KCI results exceed the BLS retail averages by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted CSRQ pre-orders is within a reasonable timeframe.
PRE-4-3-6	The TAG interface provides timely pre-order responses from BLS's ATLAS-MLH back-end system.	Satisfied[22]	The KCI standard for pre-order timeliness is an average of 8.0 seconds. Responses to TNAQ_MLHs and TNCAN_MLHs received during KCI's testing were delivered in an average of: — Day 1 – Initial: 13.3 seconds. — Day 1 – Retest 1: 14.1 seconds. — Day 1 – Retest 2: 4.8 seconds. — Day 1 – Retest 3: 1.8 seconds. — Day 2: 1.5 seconds
PRE-4-3-7	The TAG interface provides timely pre-order responses from BLS's ATLAS-DID back-end system.	Satisfied[23]	The KCI standard for pre-order timeliness is an average of 8.0 seconds. Responses to TNAQ_DIDs and TNCAN_DIDs received during KCI's testing were delivered in an average of: — Day 1 – Initial: 22.1 seconds. — Day 1 – Retest 1: 19.9 seconds. — Day 1 – Retest 2: 7.7 seconds. — Day 1 – Retest 3: 2.7 seconds. — Day 2: 2.3 seconds

[22] BellSouth retail analog data on responses from ATLAS-MLH is not currently available. BellSouth retail ordering representatives currently utilize a manual process for selecting and reserving MLH numbers. As a result, KCI is unable to evaluate TNAQ_MLH and TNCAN_MLH timeliness results in comparison to a retail benchmark for electronic response timeliness.

[23] BellSouth retail analog data on responses from ATLAS-DID is not currently available. BellSouth retail ordering representatives currently utilize a manual process for selecting and reserving DID numbers. As a result, KCI is unable to evaluate TNAQ_DID and TNCAN_DID timeliness results in comparison to a retail benchmark for electronic response timeliness.

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-4-3-8	The TAG interface provides timely pre-order responses from BLS's OASIS back-end system.	Satisfied[24]	The GPSC-approved standard is parity with retail performance. Based on BLS performance reports, KCI determined the standard response time for SAQ[25] queries to be an average of: — 0.9 seconds (6/2/00 BLS Retail data) — 1.0 seconds (6/14/00 BLS Retail data) — 0.9 seconds (6/20/00 BLS Retail data) — 1.0 seconds (7/24/00 BLS Retail data) — 1.4 seconds (8/01/00 BLS Retail data) Responses to SAQs received during KCI's testing were delivered in an average of: — Day 1 – Initial: 11.6 seconds. — Day 1 – Retest 1: 9.8 seconds. — Day 1 – Retest 2: 10.5 seconds. — Day 1 – Retest 3: 2.9 seconds. — Day 2: 3.3 seconds Although the KCI results exceed the BLS retail averages by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted SAQ pre-orders is within a reasonable timeframe.

[24] See *Figure IV-4.6: SAQ Response Distribution* for a distribution of the response times KCI experienced from the OASIS back end system.

[25] Service Availability Queries (SAQs) may be performed by requesting a) information on a specific service/feature or group of related features; or b) information on all features available from a particular BellSouth switch.

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-4-3-9	The TAG interface provides timely pre-order responses to Calculate Due Date (CDD) inquiries[26].	Satisfied	The KCI standard for pre-order timeliness is an average of 8.0 seconds. Responses to CDDs received during KCI's testing were delivered in an average of: Day 1 – Initial: 0.1 Seconds. Day 1 – Retest 1: 0.1 Seconds. Day 1 – Retest 2: 0.2 Seconds. Day 1 – Retest 3: 0.01 Seconds. Day 2: 0.01 Seconds
Accuracy of Response[27]			
PRE-4-4-1	BLS system provides accurate pre-order success responses .	Satisfied	The expected pre-order success responses received during the test were accurate. Responses received by KCI were consistent with the pre-order types associated with them (e.g., CSRQ received a CSR).
PRE-4-4-2	BLS system provides accurate back-end or TAG API errors.	Satisfied	The expected pre-order error responses received during the test were accurate. Responses received by KCI were consistent with the orders expected.

[26] BellSouth retail analog data is not available for the CDD query. BellSouth retail representatives do not utilize this function when retrieving information needed to process retail orders. As a result, KCI is unable to evaluate CDD timeliness results in comparison to a retail benchmark.

[27] For these criteria, KCI defined an accurate response to be a system response that is consistent with the technical specifications for EDI and TAG successful responses *and* to be consistent with the transaction type that initiated the response (e.g., a correctly formatted CSRQ received a Customer Services Record response). In the case of error responses, KCI verified that these were only received for incorrectly formatted queries. The contents of the response files (successes and errors) were evaluated for accuracy and completeness for purposes of this test on a sample basis only. A more complete accuracy evaluation for conformance to the BellSouth business rules was undertaken in feature/function testing (PRE-1 and PO&P11).

Table IV-4.5: Pre-Order Response Timeliness[28]

AAQ	**Appointment Availability Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	12533	712	26	48	35	16	23	10	0	13403
	94%	5%	0%	0%	0%	0%	0%	0%	0%	100%
Day 2	12732	598	14	7	6	5	17	18	5	13402
	95%	4%	0%	0%	0%	0%	0%	0%	0%	100%
AVQ-TN	**Address Validation Query by Telephone Number**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	1466	313	73	9	4	4	6	13	0	1888
	78%	17%	4%	0%	0%	0%	0%	0%	0%	100%
Day 2	858	572	307	109	22	10	3	4	2	1887
	45%	30%	16%	6%	1%	1%	0%	0%	0%	100%
TNAQ	**Telephone Number Assignment Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	9317	2983	474	170	98	211	82	63	0	13398
	70%	22%	4%	1%	1%	2%	0%	0%	0%	100%
Day 2	10155	2640	420	73	27	24	21	30	7	13397
	76%	20%	3%	1%	0%	0%	0%	0%	0%	100%
TNSQ	**Telephone Number Selection Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	9746	2591	455	181	95	174	0	61	0	13398
	72%	19%	3%	1%	1%	1%	0%	0%	0%	100%
Day 2	10932	1916	365	74	28	21	24	32	5	13397
	82%	14%	3%	1%	0%	0%	0%	0%	0%	100%

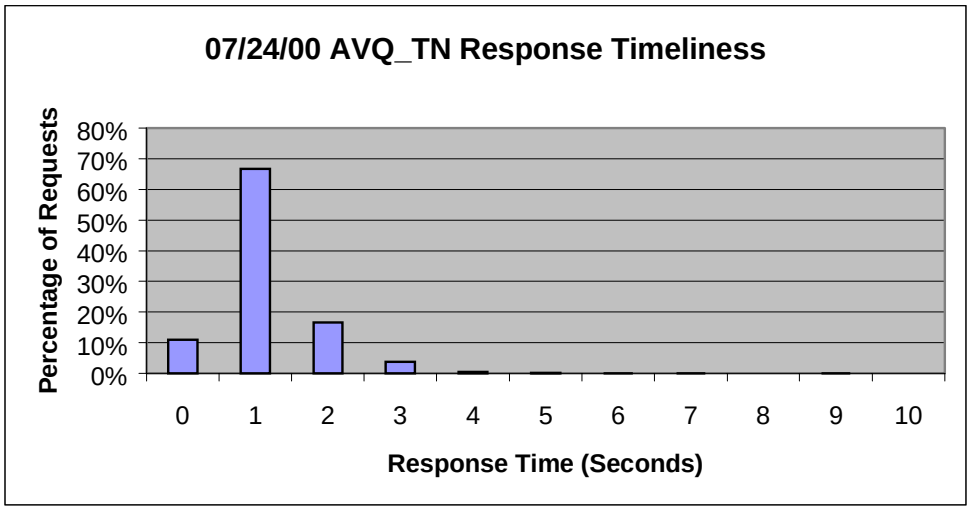
[28] Data is presented here only for the last two instances of the Normal Volume Test. Totals may not equal 100% due to rounding.

AVQ	Address Validation Query									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	10626	6411	1115	205	62	58	50	154	0	18681
	57%	34%	6%	1%	0%	0%	0%	0%	0%	100%
Day 2	5677	6014	4114	1968	561	271	30	27	18	18680
	30%	32%	22%	11%	3%	1%	0%	0%	0%	100%
SAQ	**Service Availability Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	0	7902	10584	852	183	50	17	66	0	19654
	0%	40%	54%	4%	1%	0%	0%	0%	0%	100.0%
Day 2	0	8384	9990	918	218	49	9	68	17	19653
	0%	43%	51%	5%	1%	0%	0%	0%	0%	100%
CSRQ	**Customer Service Record Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	546	5820	1269	228	72	57	15	12	11	8030
	7%	72%	16%	3%	1%	1%	0%	0%	0%	100%
Day 2	601	5493	1337	326	93	83	37	39	20	8029
	7%	68%	17%	4%	1%	1%	0%	0%	0%	100%
CDD	**Calculated Due Date**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	21941	0	0	0	0	0	0	0	0	21941
	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Day 2	21940	0	0	0	0	0	0	0	0	21940
	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
TNAQ_MLH	**Telephone Number Availability Query for Multi-Line Hunting Numbers**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	1473	666	70	15	9	30	14	10	0	2287
	64%	3%	3%	0%	0%	1%	0%	0%	0%	100%
Day 2	1919	283	50	18	5	1	3	7	0	2286
	84%	12%	2%	1%	0%	0%	0%	0%	0%	100%

TNAQ_DID	Telephone Number Availability Query for Direct Inward Dial Numbers									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	243	417	109	20	7	12	9	10	1	828
	29%	50%	13%	2%	1%	1%	0%	0%	0%	100%
Day 2	343	392	71	14	1	1	2	3	0	827
	41%	47%	9%	2%	0%	0%	0%	0%	0%	100%
TNCAN	**Telephone Number Cancellation Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	2743	701	125	34	31	62	28	9	0	3733
	73%	19%	3%	1%	1%	2%	0%	0%	0%	100%
Day 2	2996	592	100	17	6	4	21	31	2	3736
	80%	16%	3%	0%	0%	0%	0%	0%	0%	100%
TNCAN_MLH	**Telephone Number Cancellation Query for Multi-Line Hunting Numbers**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	515	230	40	13	5	15	6	4	0	828
	62%	28%	5%	2%	1%	2%	0%	0%	0.0%	100%
Day 2	595	183	40	4	0	1	1	3	0	827
	72%	22%	5%	0%	0%	0%	0%	0%	0%	100%
TNCAN_DID	**Telephone Number Cancellation Query for Direct Inward Dial Numbers**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 3	457	271	55	8	7	9	9	11	1	828
	55%	33%	7%	1%	1%	1%	0%	1%	0%	100.%
Day 2	500	269	46	3	3	2	1	2	1	827
	60%	32%	6%	0%	0%	0%	0%	0%	0%	100.%

ALL QUERY TYPES										
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	<=1 sec	TOTAL
Day 1 Retest 3	71606	29017	14395	1783	608	698	354	423	13	118897
	60%	24%	12%	1%	1%	1%	0%	0%	0%	100%
Day 2	69248	27336	16854	3531	970	472	169	264	77	118888
	58%	23%	14%	3%	1%	0%	0%	0%	0%	100%

Figure IV-4.2: AVQ_TN Response Distribution



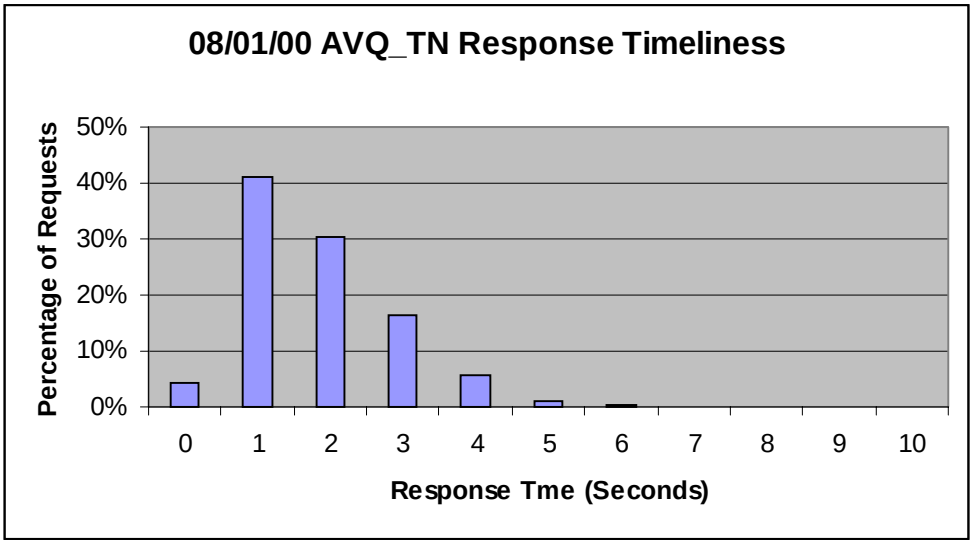
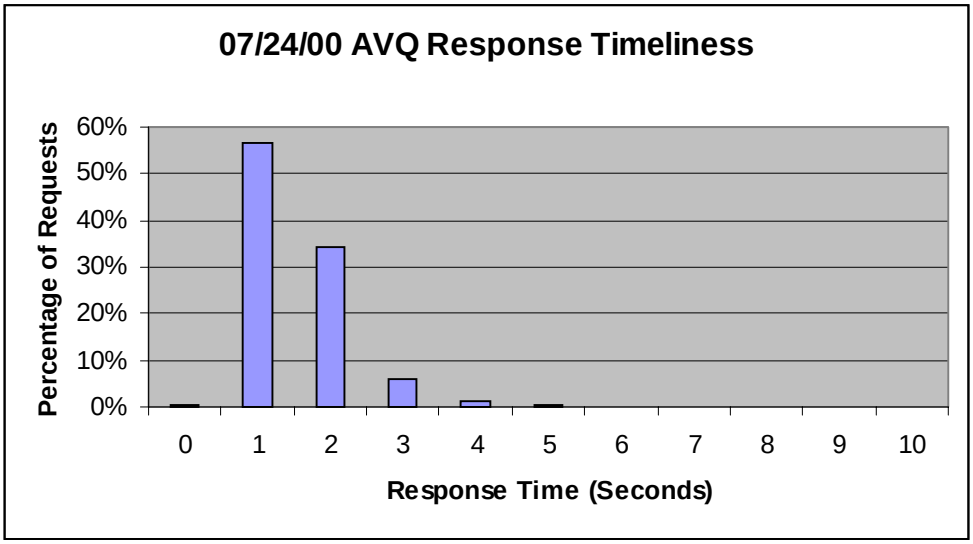


Figure IV-4.3: AVQ Response Distribution



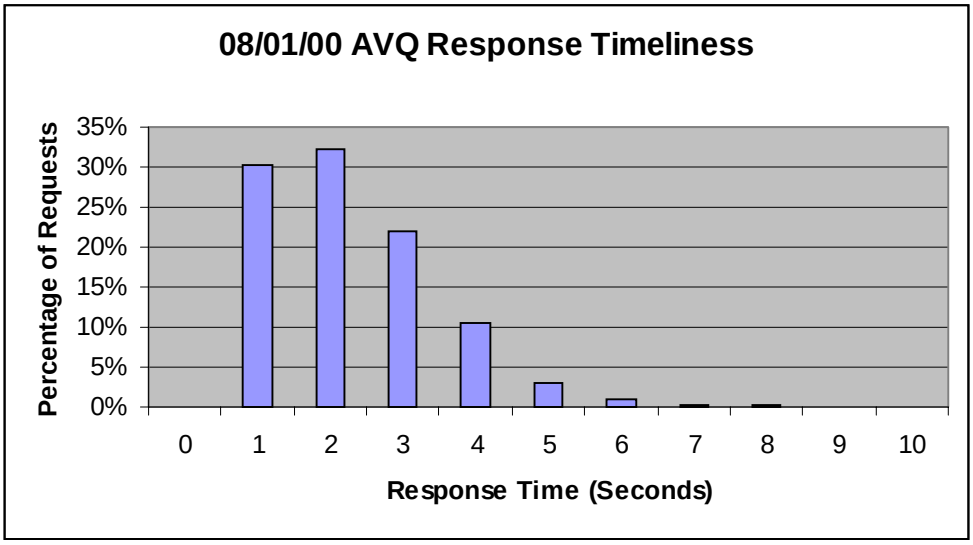
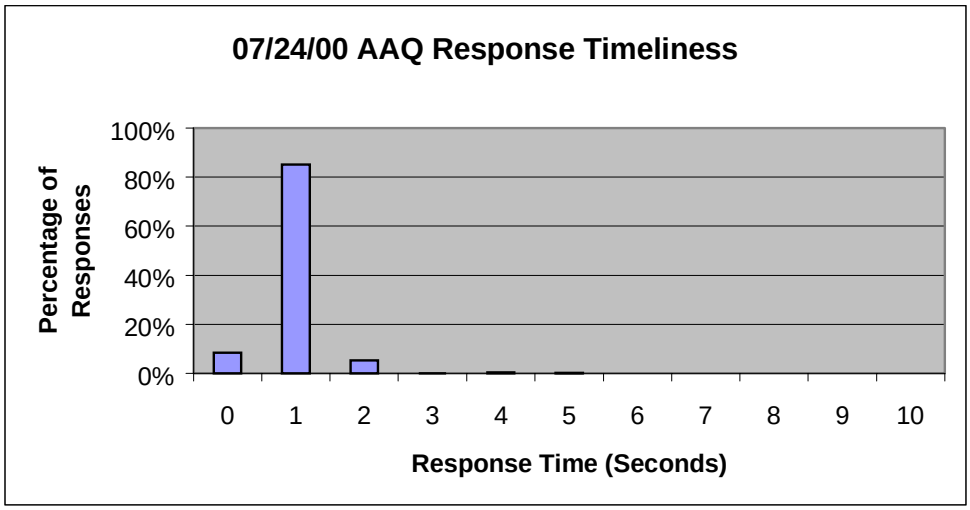


Figure IV-4.4: AAQ Response Distribution



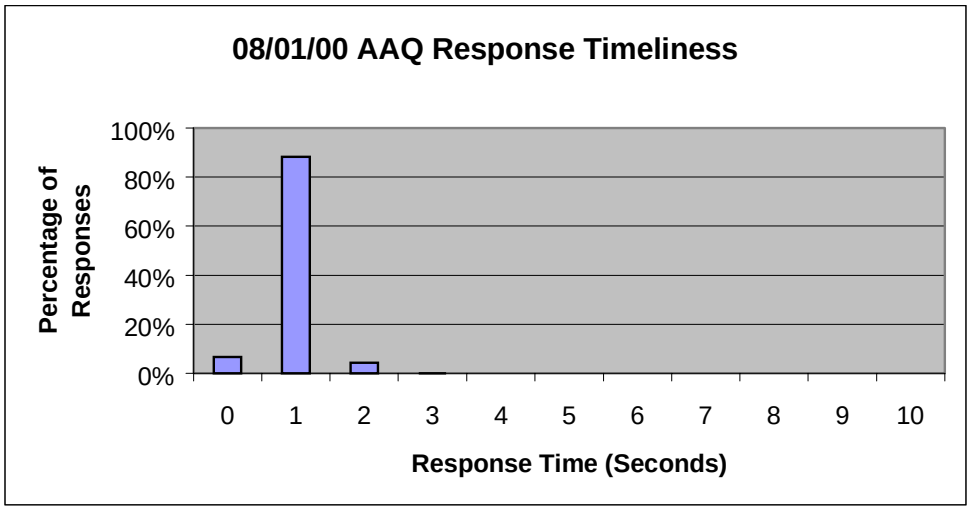
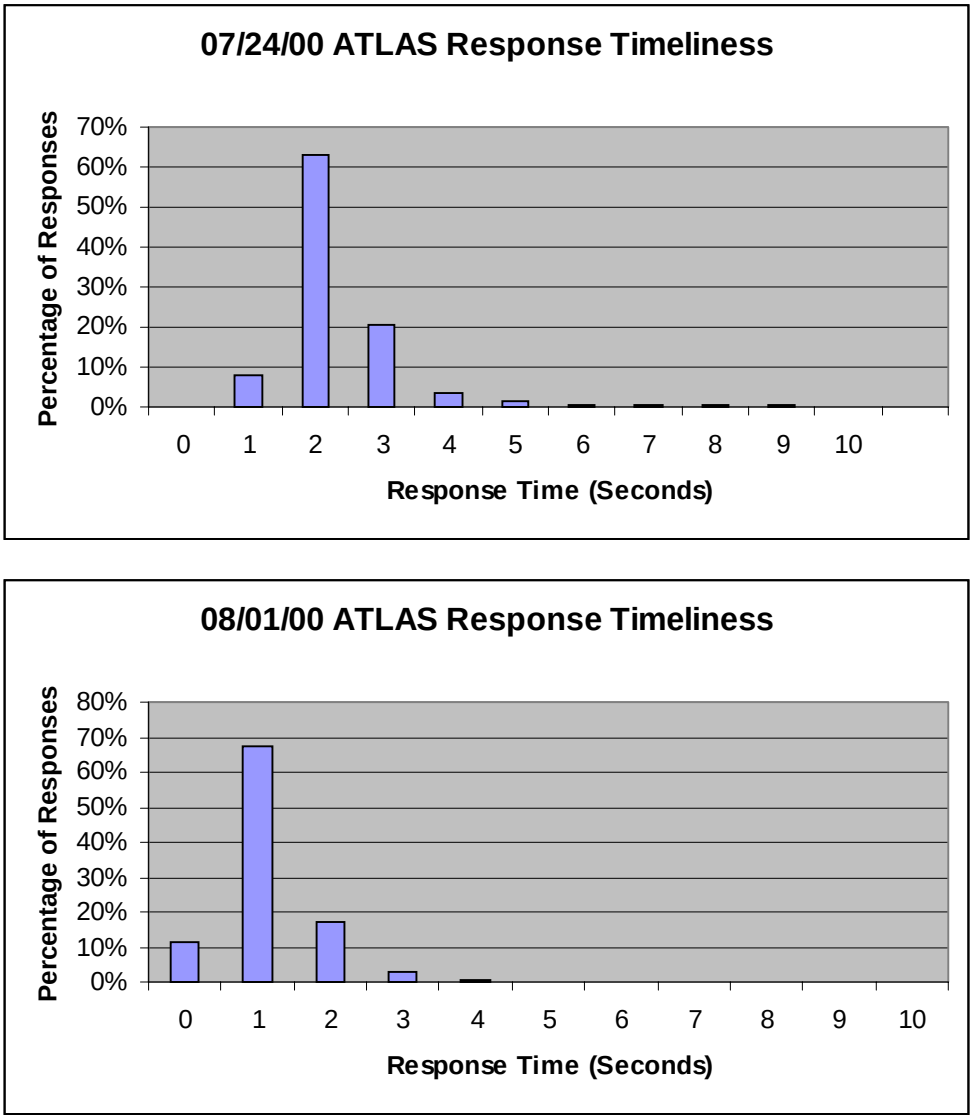
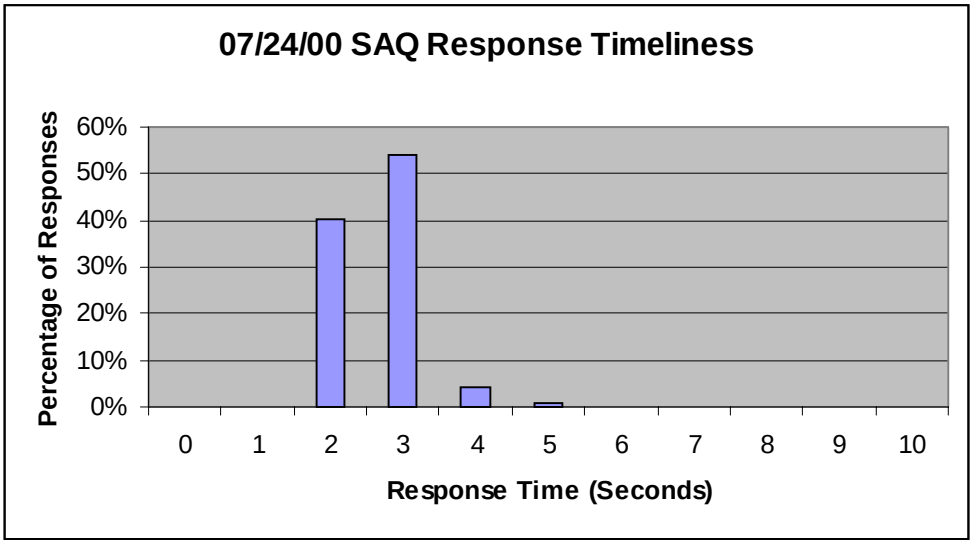


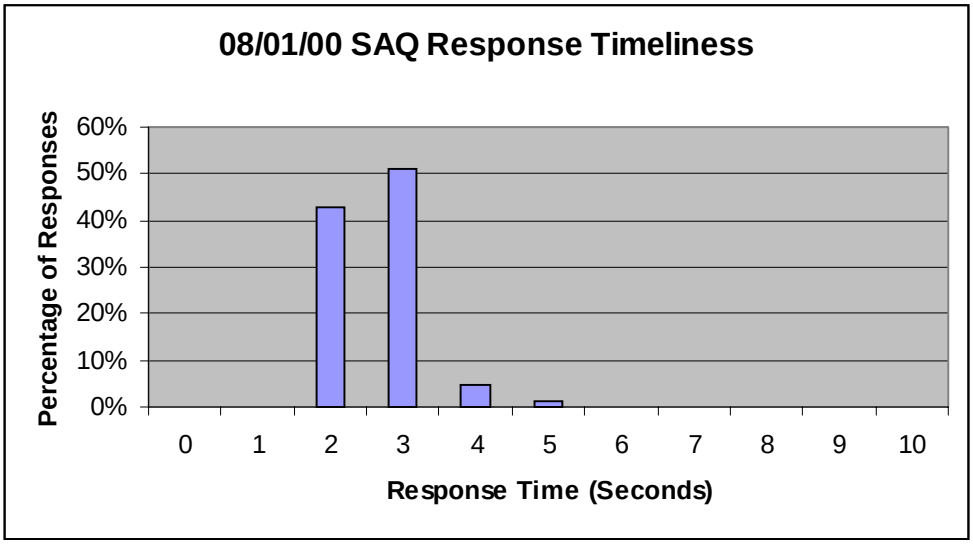
Figure IV-4.5: ATLAS Response Distribution[29]



[29] Contains aggregated response times for all pre-order queries on the ATLAS back-end system, including TNAQs, TNSQs, and TN_CANs.

Figure IV-4.6: SAQ Response Distribution





E. Test Results: TAG Peak Volume Pre-Order Performance Test (PRE-5)

1.0 Description

The objective of the Telecommunications Access Gateway (TAG) Peak Volume Pre-Order Performance Test (PRE-5) was to evaluate BellSouth's Operating Support Systems (OSS) associated with pre-ordering at specified volumes. Competitive Local Exchange Carriers (CLECs) submit pre-order queries to validate existing customer information and the availability of BellSouth facilities, and to obtain data (e.g., telephone numbers, service feature codes, etc.) that will be entered on subsequent service orders. This evaluation assessed BellSouth's ability to process accurate and timely pre-order transactions via the TAG Client Application Program Interface (API) under "peak" year-end 2001 (YE01) projected transaction load conditions[1] in the Reengineered Services, Installation and Maintenance Management System (RSIMMS) environment[2].

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section IV, "Pre-Ordering Overview" for a description of the BellSouth pre-ordering process via TAG.

2.2 Scenarios

KCI generated and transmitted pre-order queries based on the scenarios listed in the *Master Test Plan (MTP),* which defined the pre-order scenarios for testing in PRE-5.

For the list of pre-order scenarios refer to Section V, Table IV-1.1: "Pre-Order Scenario Description."

2.3 Test Targets & Measures

The test target was the TAG interface and back-end systems supporting pre-order queries[3]. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

[1] KCI forecasted hourly transaction rates for individual order and pre-order types drawing on data from current order and pre-order daily volume rates, BellSouth 2001 transaction forecasts, and from CLEC 2001 transaction forecasts where obtainable.

[2] See RSIMMS and Production Systems Review for a description of the difference between the production and RSIMMS environments.

[3] The RSIMMS environment is designed to access copies of the PSIMMS, COFFI, BOCRIS, BOCABS and LMOS/Host systems, and to access the production COFIUSOC, ATLAS, RSAG, and DSAP systems.

Table IV-5.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Submit Pre-Orders in Projected Peak Volumes	Adress Validation	Availability of Interface Accuracy of Response Timeliness of Response	PRE-5-1-1 PRE-5-2-1 PRE-5-3-1 PRE-5-3-2 PRE-5-4-1 PRE-5-4-2
	CSR Retrieval	Availability of Interface Accuracy of Response Timeliness of Response	PRE-5-1-1 PRE-5-2-1 PRE-5-3-5 PRE-5-4-1 PRE-5-4-2
	Switched Service Availability	Availability of Interface Accuracy of Response Timeliness of Response	PRE-5-1-1 PRE-5-2-1 PRE-5-3-8 PRE-5-4-1 PRE-5-4-2
	PIC/LPIC Availability	Availability of Interface Accuracy of Response Timeliness of Response	PRE-5-1-1 PRE-5-2-1 PRE-5-3-8 PRE-5-4-1 PRE-5-4-2
	Product / Service Availability	Availability of Interface Accuracy of Response Timeliness of Response	PRE-5-1-1 PRE-5-2-1 PRE-5-3-8 PRE-5-4-1 PRE-5-4-2
	Telephone Number(s) Availability	Availability of Interface Accuracy of Response Timeliness of Response	PRE-5-1-1 PRE-5-2-1 PRE-5-3-4 PRE-5-3-6 PRE-5-3-7 PRE-5-4-1 PRE-5-4-2
	Reserve TNs	Availability of Interface Accuracy of Response Timeliness of Response	PRE-5-1-1 PRE-5-2-1 PRE-5-3-4 PRE-5-4-1 PRE-5-4-2
	Cancel TN Reservation	Availability of Interface Accuracy of Response Timeliness of Response	PRE-5-1-1 PRE-5-2-1 PRE-5-3-4 PRE-5-3-6 PRE-5-3-7 PRE-5-4-1 PRE-5-4-2

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Determine Due Date / Appointment Availability	Availability of Interface Accuracy of Response Timeliness of Response	PRE-5-1-1 PRE-5-2-1 PRE-5-3-3 PRE-5-3-9 PRE-5-4-1 PRE-5-4-2

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table IV-5.2: Data Sources for TAG Peak Volume Performance Test (PRE-5)

Document	File Name	Location in Work Papers	Source
Pre-Order Business Rules, Versions 2.0, 3.0, 4.0, 5.0, 6.0, and 7.0	No Electronic Copy	PRE-1-A-1	BLS
Pre-Order Business Rules Data Dictionary, Versions 1.0 and 3.0	No Electronic Copy	PRE-1-A-2	BLS
Telecommunications Access Gateway (TAG) API Reference Guide, Versions 2.2.0.2, 2.2.0.4, 2.2.0.5, 2.2.0.7, 2.2.0.8, and 2.2.1.1	No Electronic Copy	PRE-1-A-3	BLS
TAG Programmers Job Aid	No Electronic Copy	PRE-1-A-4	BLS
BellSouth Three Month Hourly Order History	BLS Order History.xls	PRE-5-A-1	BLS
2000, 2001 BellSouth LSR Volume Forecasts	BSTFORECAST.xls	PRE-5-A-2	BLS
2000, 2001 Aggregated CLEC Forecasts	CLEC_BST_FORECAST.xls	PRE-5-A-3	CLEC
YE2001 Normal and Peak Forecast Methodology	Fcast Summary.ppt	PRE-5-A-4	KCI
Peak Volume Test Schedule	schedule.xls	PRE-5-A-5	KCI
System Readiness Test Log	SRT_by_date.xls	PRE-5-A-6	KCI
Results Data Tables	Resutls Data CD-ROM	PRE-5-A-7	KCI
GPSC *Order* Adopting Standards and Benchmarks	GPSC_standards.tif	PRE-5-A-8	GPSC
Pre-Order Response Data for June, July, August 2000	Response Data Fro June-August 2000.xls	PRE-5-A-9	BLS

Document	File Name	Location in Work Papers	Source
Statistical Signifcance Analysis Results	Volume Stats Analysis.xls	PRE-5-A-10	KCI

2.4.1 Data Generation/Volumes

The TAG Peak Volume Test (PRE-5) evaluated BellSouth's performance by sending approximately 147,000 pre-orders with 43,000[4] associated orders on two distinct days, over two eight-hour periods. This test and the ordering (O&P-4) peak volume test were executed concurrently.

Peak Volumes were defined as 150% of transaction volume levels during the busiest consecutive eight hours of the Normal Volume Test.

Volumes for this test were determined by forecasting BellSouth's expected order volume for year-end 2001 (YE01). KCI obtained anticipated transaction growth rates from CLECs and BellSouth. Transaction types were forecasted individually based on expected growth rates for each order and pre-order type. KCI also analyzed the distribution of transactions over the course of a normal business day. These data were then combined to determine the number and types of orders to be sent each hour. Orders were then scheduled for transmission to BellSouth via TAG.

Table IV-5.3 shows the pre-order volumes submitted during each day of the Peak Volume Test[5].

Table IV-5.3: Peak Test Generated Volumes

Query Type	Day 1[6] 07/10/00	Day 1, Retest 1 07/13/00	Day 2 07/17/00
AAQ	19,284	21,918	21,919
AVQ-TN	2,455	2,456	2,456
TNAQ	15,342	17,475	17,476
TNSQ	400	401	401
AVQ	21,432	24,368	24,368

[4] Associated orders were sent as part of the TAG/EDI Peak Volume Test (O&P-4).

[5] Two peak volume test days were initially planned. However, BellSouth performance failure required "re-testing" of Peak Volume Day 1 on one subsequent occasion. Following implementation of system fixes by BellSouth, KCI conducted SRTs to verify that BellSouth's system was functioning. After these SRTs, an additional Peak Volume Day 1 test was conducted.

[6] The Peak volume test was originally scheduled for two test cycles. KCI elected to conduct Day 1 retests in accordance with the "test until you pass" philosophy referenced in the *MTP* (i.e., volume test "day one" was re-executed until all evaluation criteria were believed to be satisfied).

Query Type	Day 1[6] 07/10/00	Day 1, Retest 1 07/13/00	Day 2 07/17/00
SAQ	22,569	25,652	25,652
CSRQ	11,141	11,142	11,142
CDD	28,674	32,552	32,552
TNAQ_MLH	2,983	2,989	2,990
TNAQ_DID	1,077	1,078	1,078
TNCAN	19,486	4,870	4,870
TNCAN_MLH	1,078	1,077	1,078
TNCAN_DID	1,077	1,078	1,078
Total	146,998	147,056	147,062

2.5 Evaluation Methods

In preparation for the test, pre-order transaction seeds were written according to BellSouth business rules[7] and loaded into the KCI transaction test system. These templates were then submitted to Hewlett Packard (HP) and to BellSouth during Systems Readiness Testing (SRT)[8]. SRT confirmed the functionality of HP and KCI's transactional systems and verified that orders would flow-through the BellSouth system. The pre-order seeds were used as templates to build the volumes for the subsequent tests. Pre-orders were submitted on a scheduled submission date and time determined by KCI prior to the start of the test. As appropriate, testers made final updates (e.g., desired due dates or other information) and processed the transactions.

The TAG Peak Volume Performance Test (PRE-5) evaluated BellSouth's interfaces at year-end, 2001 (YE01) projected order volumes in BellSouth's RSIMMS environment for two eight-hour periods. This test was executed by submitting pre-order requests in support of Resale and UNE orders against BellSouth test-bed accounts and continued through the return of successful pre-order responses, rejections, or error notices. The test bed accounts[9] were provisioned by BellSouth according to KCI's specifications and verified by KCI prior to initiation of the test.

[7] Pre-orders were written according to business rules outlined in BellSouth Pre-order Business Rules (V. 7.0).

[8] KCI conducted 24 SRTs between April 11, 2000 and August 1, 2000. After completing the required SRTs, BellSouth requested KCI/HP participation in additional testing. These additional tests were used by BellSouth to ensure that its back-end systems and the Interfaces were functioning correctly.

[9] Refer to Section IV, "Pre-Ordering Overview" for a detailed description of the Pre-Ordering test bed process and detail of accounts.

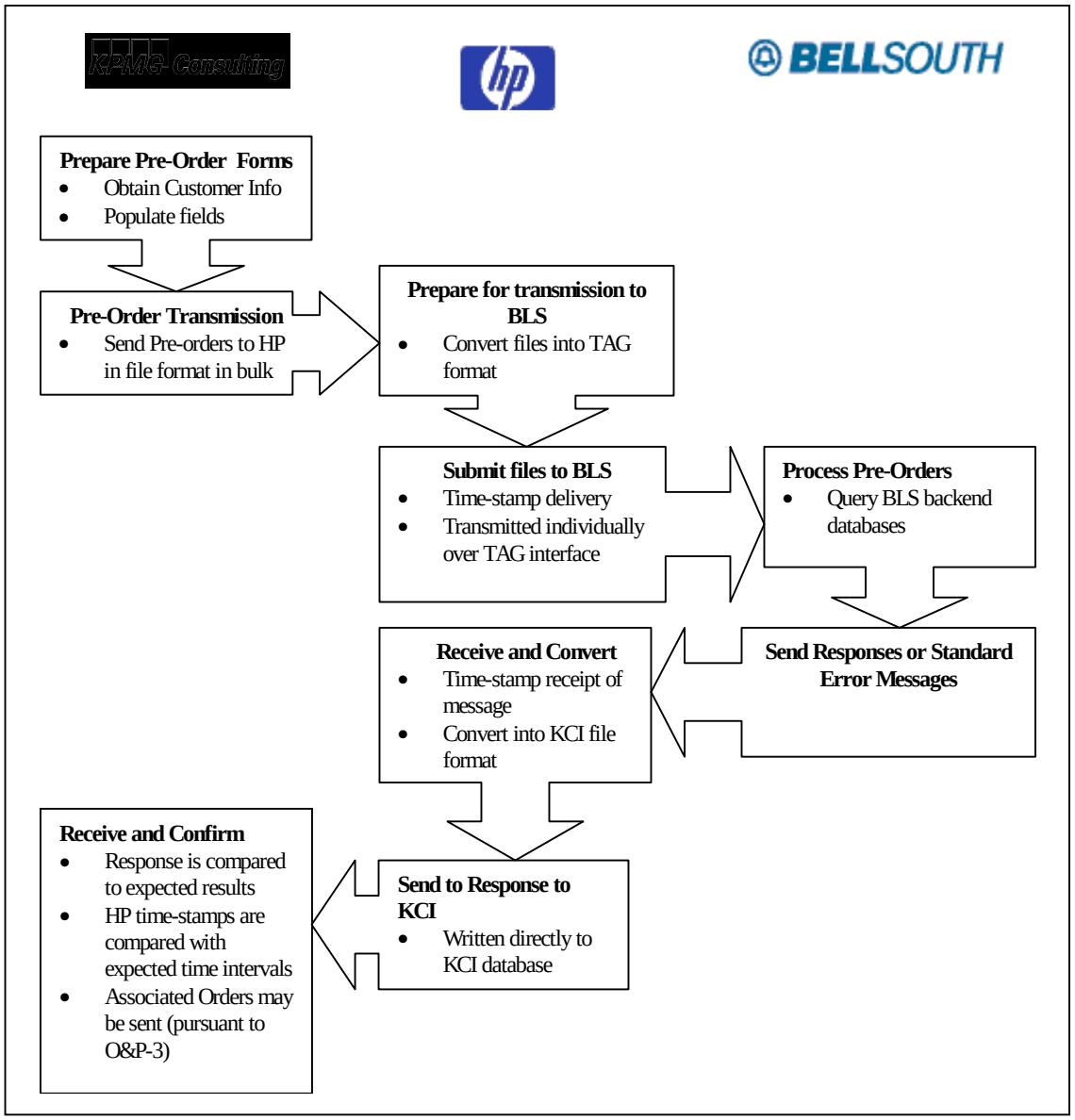
In order to fully test the capacity of BellSouth's OSS supporting pre-order and ordering, the test was conducted simultaneously with the EDI/TAG Peak Volume Performance Test (O&P-4). The pre-order transaction loads were distributed geographically across four Central Offices (COs) in the state of Georgia. BellSouth established and configured customer test accounts prior to initiation of the test.

The test cases for the TAG Peak Volume Test (PRE-5) were submitted in an automated fashion. Transactions were provided in bulk to HP for conversion from the business file format to the TAG format. HP time-stamped and forwarded the transactions to BellSouth for processing according to the schedule provided by KCI. BellSouth processed the transactions and returned responses to HP. The test process is depicted in Figure IV-5.1[10]

As pre-order and order volume transactions were submitted, error messages or positive responses were returned. A transaction was deemed complete if a positive pre-order response or an error message was received. The results were logged and compared to expected pre-ordering system functionality and business processes, as outlined in Section IV, "Pre-Ordering Overview."

[10] See Section IV, "Pre-Ordering Overview" for a complete description of the file transfer process.

Figure IV-5.1: TAG Peak Volume Test Process



2.6 Analysis Methods

The TAG Peak Volume Performance Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided a framework of norms, standards, and guidelines for the TAG Peak Volume Performance Test.

The Georgia Public Service Commission (GPSC) voted on June 6, 2000 to approve a set of Service Quality Measurement- (SQM-) related measures and

standards to be used for purposes of this evaluation[11]. In many cases, results in this section were calculated based on KCI/HP time-stamps, which may differ significantly from the BellSouth time measurement points reported in the SQMs[12]. For those evaluation criteria that do not map to the GPSC-approved measures, KCI has applied its own standard, based on our professional judgment.

Pre-order response times for the KCI Test CLEC queries on each volume test day were compared to BellSouth retail performance data for the corresponding day (e.g., July 25, 2000 test data were compared to July 25, 2000 retail data).

For quantitative evaluation criteria where the test result did not meet or exceed the established standard or KCI benchmark, KCI conducted a review to determine whether the differential was statistically significant.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table IV-5.4: PRE-5 Evaluation Criteria and Results[13]

Test Cross-Reference	Evaluation Criteria	Result	Comments
System Availability			
PRE-5-1-1	TAG pre-order transaction capability is consistently available during scheduled hours of operation.	Satisfied	The GPSC-approved standard is system availability 99.5% of scheduled up time. HP continuously sent orders and pre-orders throughout each iteration of the test. While connectivity was maintained throughout the test, HP and BLS conducted "coordinated bounces" of their servers on several occasions. These system restarts were conducted primarily to recover BLS back-end functionality. The combined duration of

[11] On January 16, 2001, the GPSC issued an order requiring BellSouth to report for business purposes a set of measures that differs in some cases from the requirements of the June 6 test standards.

[12] For example, for an LSR, BellSouth records the time received and the time a corresponding FOC or ERR is sent. HP/KCI measures the time that an LSR is sent, and the time that a corresponding FOC or ERR is received. In most cases, we would expect these times to correspond roughly, allowing for factors such as queuing and transmission time. In some cases, these times may differ significantly as a result of system downtime, network congestion, etc.

[13] Results in percentages are rounded to the nearest whole number.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			downtime resulting from these restarts was less than 0.5% of total test time.
Presence of Functionality			
PRE-5-2-1	BLS's interface provides expected system responses.[14]	Satisfied	The KCI standard is 99% of expected system responses received. Day 1: — 100% (146,715 / 146,998) of pre-order requests received expected system responses. Day 1, Retest 1: — 100% (146,188 / 147,056) of pre-order requests received expected system responses Day 2: — 100% (146,240 / 147,049) of pre-order requests received expected system responses
Timeliness of Response[15] [16] [17]			
PRE-5-3-1	The TAG interface provides timely pre-order responses from BLS's Regional Street Access Guide-Telephone Number (RSAG-TN) back-end system.	Satisfied[18]	The GPSC-approved standard is parity with retail performance. Based on BLS July performance reports, KCI determined the standard response time for AVQ_TN inquiries to be: — 1.5 seconds (7 / 10 / 00 BLS Retail data) — 0.9 seconds (7 / 13 / 00 BLS Retail data) — 0.9 seconds (7 / 17 / 00 BLS Retail

[14] An expected system response is defined for this criterion as any response that is consistent with technical specifications for EDI and TAG responses. Type of response received is not considered. The accuracy by type of response is evaluated in 5-4-1 and 5-4-2 (e.g., Customer Service Record Query [CSRQ] received a CSR).

[15] See *Table IV-5.5: Pre-Order Response Timeliness* for detailed timeliness test results.

[16] In accordance with the GPSC's June 6, 2000 measures and standards to be used for purposes of this evaluation, KCI reviewed pre-order timeliness results relative to BellSouth Retail pre-order timeliness. This standard does not include allowances for transaction transmission time from the test CLEC to BellSouth and for response transmission time from BellSouth back to the test CLEC.

[17] KCI analyzed BellSouth-published Retail performance data for the month of July 2000. Since BellSouth data is separated into business and residential pre-order categories, KCI compared test results to a weighted average of BellSouth residential and business results.

[18] See *Figure IV-5.2: AVQ_TN Response Distribution* for a distribution of the AVQ_TN response times KCI experienced.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			data) Responses to AVQ_TNs were received in an average of: — Day 1- Initial: 6.8 seconds. — Day 1 - Retest: 2.7 seconds. — Day 2: 2.0 seconds. Although the KCI results exceed the BLS retail averages by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted AVQ_TN pre-orders is within a reasonable timeframe.
PRE-5-3-2	The TAG interface provides timely pre-order responses from BLS's RSAG-Address back-end system.	Satisfied[19]	The GPSC-approved standard is parity with retail performance. Based on BLS July performance reports, KCI determined the standard response time for AVQ inquiries to be: — 1.5 seconds (7/10/00 BLS Retail data) — 1.3 seconds (7/13/00 BLS Retail data) — 1.3 seconds (7/17/00 BLS Retail data) Responses to AVQs were received in an average of : — Day 1 – Initial: 7.4 seconds. — Day 1 – Retest: 3.2 seconds. — Day 2: 2.5 seconds. Although the KCI results exceed the BLS retail average by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted AVQ pre-orders is within a reasonable timeframe.

[19] See *Figure IV-5.3: AVQ Response Distribution* for a distribution of the AVQ response times KCI experienced during Day 1 – Retest and Day 2 of testing.

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-5-3-3	The TAG interface provides timely pre-order responses from BLS's Direct Order Entry Support Application Program (DSAP) back- end system.	Satisfied[20]	The GPSC-approved standard is parity with retail performance. Based on BLS July performance reports, KCI determined the standard response time for AAQ inquiries to be: — 0.6 seconds (7/10/00 BLS Retail data) — 0.3 seconds (7/13/00 BLS Retail data) — 0.6 seconds (7/17/00 BLS Retail data) Responses to AAQs were received in an average of: — Day 1 – Initial: 2.8 seconds. — Day 1 – Retest: 1.6 seconds. — Day 2: 1.3 seconds. Although the KCI results exceed the BLS retail average by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted AAQ pre-orders is within a reasonable timeframe.
PRE-5-3-4	The TAG interface provides timely pre-order responses from BLS's Application for Telephone Number Load Administration and Selection (ATLAS) back- end system.	Satisfied[21]	The GPSC-approved standard is parity with retail performance. Based on BLS July performance reports, KCI determined the standard response time for TNAQ, TNSQ and TNCAN_TN inquiries to be: — 1.0 seconds (7/10/00 BLS Retail data) — 0.9 seconds (7/13/00 BLS Retail data) — 1.0 seconds (7/17/00 BLS Retail data) Responses to TNAQs, TNSQs, and TNCAN_TNs were received in an

[20] See *Figure IV-5.4: AAQ Response Distribution* for a distribution of the AAQ response times KCI experienced during Day 1 – Retest and Day 2 of testing.

[21] See *Figure IV-5.5: ATLAS Response Distribution* for a distribution of the response times KCI experienced during Day 1 – Retest and Day 2 of testing from the ATLAS back-end system.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			average of: — Day 1 – Initial: 8.3 seconds. — Day 1 – Retest: 3.2 seconds. — Day 2: 1.8 seconds. Although the KCI results exceed the BLS retail average by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted TNAQ, TNSQ, TNCAN_TN pre-orders is within a reasonable timeframe.
PRE-5-3-5	The TAG interface provides timely pre-order responses from BLS's CRSECSR back-end system.	Satisfied	The GPSC-approved standard is parity with retail performance. Based on BLS July performance reports, KCI determined the standard response time for CSRQ inquiries to be: — 1.7 seconds (7/10/00 BLS Retail data) — 0.9 seconds (7/13/00 BLS Retail data) — 1.4 seconds (7/17/00 BLS Retail data) Responses to CSRQs were received in an average of: — Day 1 – Initial: 4.0 seconds. — Day 1 – Retest: 4.1 seconds. — Day 2: 2.8 seconds Although the KCI results exceed the BLS retail average by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted CSRQ pre-orders is within a reasonable timeframe.

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-5-3-6	The TAG interface provides timely pre-order responses from BLS's ATLAS-MLH back-end system.	Satisfied[22]	The KCI standard for pre-order timeliness is an average of 8.0 seconds. Responses to TNAQ_MLHs and TNCAN_MLHs were received in an average of: — Day 1 – Initial: 5.3 seconds. — Day 1 – Retest: 3.1 seconds. — Day 2: 1.7 seconds
PRE-5-3-7	The TAG interface provides timely pre-order responses from BLS's ATLAS-DID back-end system.	Satisfied[23]	The KCI standard for pre-order timeliness is an average of 8.0 seconds. Responses to TNAQ_DIDs and TNCAN_DIDs were received in an average of: — Day 1 – Initial: 7.5 seconds. — Day 1 – Retest: 4.1 seconds. — Day 2: 2.4 seconds
PRE-5-3-8	The TAG interface provides timely pre-order responses from BLS's OASIS back-end system.	Satisfied[24]	The GPSC-approved standard is parity with retail performance. Based on BLS July performance reports, KCI determined the standard response time for SAQ[25] queries to be: — 0.9 seconds (7/10/00 BLS Retail data) — 0.9 seconds (7/13/00 BLS Retail data) — 1.0 seconds (7/17/00 BLS Retail data) Responses to SAQs were received in an average of: — Day 1 – Initial: 17.9 seconds.

[22] BellSouth retail analog data on responses from ATLAS-MLH is not currently available. BellSouth retail ordering representatives currently utilize a manual process for selecting and reserving MLH numbers. As a result, KCI is unable to evaluate TNAQ_MLH and TNCAN_MLH timeliness results in comparison to a retail benchmark for electronic response timeliness.

[23] BellSouth retail analog data on responses from ATLAS-DID is not currently available. BellSouth retail ordering representatives currently utilize a manual process for selecting and reserving MLH numbers. As a result, KCI is unable to evaluate TNAQ_DID and TNCAN_DID timeliness results in comparison to a retail benchmark for electronic response timeliness.

[24] See *Figure IV-5.6: SAQ Response Distribution* for a distribution of the response times KCI experienced during Day 1 – Retest and Day 2 of testing from the OASIS back-end system.

[25] Service Availability Queries (SAQs) may be performed by requesting a) information on a specific service/feature or group of related features; or b) information on all features available from a particular BLS switch.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			— Day 1 – Retest: 4.8 seconds. — Day 2: 4.0 seconds Although the KCI results exceed the BLS retail average by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted SAQ pre-orders is within a reasonable timeframe.
PRE-5-3-9	The TAG interface provides timely pre-order responses to Calculate Due Date (CDD) inquiries.	Satisfied[26]	The KCI standard for pre-order timeliness is an average of 8.0 seconds. The number of responses received within 6.0 seconds by KCI from BLS are: — Day 1 – Initial: 0.1 Seconds — Day 1 – Retest: 0.02 Seconds — Day 2: 0.02 Seconds
Accuracy of Response[27]			
PRE-5-4-1	BLS system provides clear and accurate pre-order success responses.	Satisfied	The expected pre-order success responses received during the test were accurate. Responses received by KCI were consistent with the pre-order types associated with them (e.g. CSRQ received a CSR).
PRE-5-4-2	BLS system provides clear, accurate, and complete back-end or TAG API errors.	Satisfied	The expected pre-order error responses received during the test were accurate. Responses received by KCI were consistent with the errors expected.

[26] BellSouth retail analog data is not available for the CDD query. BellSouth retail representatives do not utilize this function when retrieving information needed to process retail orders. As a result, KCI is unable to evaluate CDD timeliness results in comparison to a retail benchmark.

[27] For these criteria, KCI defined an accurate response to be a system response that is consistent with the technical specifications for EDI and TAG success responses *and* to be consistent with the transaction type that initiated the response (e.g., a correctly formatted CSRQ received a Customer Service Record). In the case of error responses, KCI verified that these were only received for incorrectly formatted inquiries. The contents of the response files (successes and errors) were evaluated for accuracy and completeness for purposes of this test on a sample basis only. A more complete accuracy evaluation for conformance to the BellSouth business rules was undertaken in feature/function testing (OP-1, OP-2 and PRE-1).

Table IV-5.5: Pre-Order Response Timeliness[28]

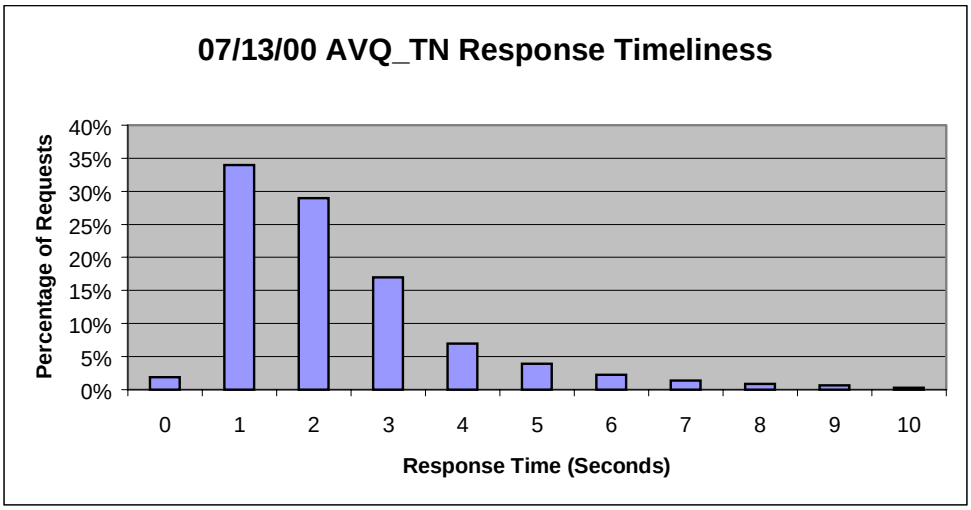
AAQ	**Appointment Availability Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	16691	3888	455	216	118	160	57	84	249	21918
	76%	18%	2%	1%	1%	1%	0%	0%	1%	100%
Day 2	17240	4067	274	26	11	19	16	33	233	21919
	79%	19%	1%	0%	0%	0%	0%	0%	1%	100%
AVQ-TN	**Address Validation Query by Telephone Number**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	881	711	417	170	96	130	21	8	22	2456
	36%	29%	17%	7%	4%	5%	0%	0%	1%	100%
Day 2	1092	881	295	95	38	25	7	3	20	2456
	44%	36%	12%	4%	1%	1%	0%	0%	1%	100%
TNAQ	**Telephone Number Assignment Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	6258	5073	2485	1279	711	1059	218	150	242	17475
	36%	29%	14%	7%	4%	6%	0%	0%	1%	100%
Day 2	10911	4903	966	256	96	68	49	43	184	17476
	62%	28%	6%	1%	1%	0%	0%	0%	1%	100%
TNSQ	**Telephone Number Selection Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	167	109	52	25	12	23	4	5	4	401
	44%	27%	13%	6%	3%	6%	1%	1%	1%	100%
Day 2	254	116	18	3	3	2	0	1	4	401
	63%	29%	4%	1%	1%	0%	0%	0%	1%	100%
AVQ	**Address Validation Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	4200	8969	5208	2587	1344	1545	191	107	217	24368
	17%	37%	21%	11%	6%	6%	0%	0%	1%	100%
Day 2	6104	9950	5221	1732	615	375	75	46	251	24369
	25%	41%	21%	7%	3%	2%	0%	0%	1%	100%

[28] Data is presented here only for the last two instances of the Peak Volume Test (PRE-5). Totals may not equal 100% due to rounding.

SAQ	Service Availability Query									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	0	2940	11084	5483	3120	2709	79	234	3	25652
	0%	11%	43%	21%	12%	11%	0%	1%	0%	100%
Day 2	0	4491	11979	5384	2200	1319	107	170	2	25652
	0%	18%	47%	21%	9%	5%	0%	1%	0%	100%
CSRQ	**Customer Service Record Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	431	5380	3192	1049	400	414	95	176	5	11142
	4%	48%	29%	9%	4%	4%	0%	1%	0%	100%
Day 2	541	6672	2483	800	371	204	47	21	3	11142
	5%	60%	22%	7%	2%	2%	0%	0%	0%	100%
CDD	**Calculated Due Date**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	32536	00		0	0	0	0	0	16	32552
	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Day 2	32549	0	0	0	0	1	0	0	3	32553
	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
TNAQ_MLH	**Telephone Number Availability Query for Multi-Line Hunting Numbers**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	1298	655	406	245	134	173	28	20	30	2989
	43%	22%	14%	8%	4%	6%	0%	0%	1%	100%
Day 2	1994	736	140	41	23	12	4	6	34	2990
	67%	25%	5%	1%	1%	0%	0%	0%	1%	100%
TNAQ_DID	**Telephone Number Availability Query for Direct Inward Dial Numbers**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	91	283	208	120	106	220	30	10	10	1078
	8%	26%	19%	11%	10%	20%	0%	0%	1%	100%
Day 2	177	502	255	86	17	18	6	6	11	1078
	16%	47%	24%	8%	2%	2%	0%	0%	1%	100%

TNCAN	Telephone Number Cancellation Query									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	2014	1245	658	323	179	297	58	48	48	4870
	41%	26%	14%	7%	4%	6%	0%	0%	1%	100%
Day 2	3392	1083	213	69	20	16	16	11	50	4870
	70%	22%	4%	1%	0%	0%	0%	0%	1%	100%
TNCAN_MLH	**Telephone Number Cancellation Query for Multi-Line Hunting Numbers**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	414	253	165	91	54	67	16	8	9	1077
	38%	23%	15%	8%	5%	6%	1%	1%	1%	100%
Day 2	640	315	69	23	10	5	3	2	11	1078
	59%	29%	6%	2%	1%	0%	0%	0%	1%	100%
TNCAN_DID	**Telephone Number Cancellation Query for Direct Inward Dial Numbers**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	311	226	178	81	79	157	24	9	13	1078
	29%	21%	17%	8%	7%	15%	0%	0%	1%	100%
Day 2	495	367	131	52	6	8	3	5	11	1078
	46%	34%	12%	5%	1%	1%	%	0%	1%	100%
ALL QUERY TYPES										
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1 Retest 1	65301	29732	24508	11669	6353	6954	821	859	868	147056
	44%	20%	17%	8%	4%	5%	1%	1%	1%	100%
Day 2	75380	34083	22044	8567	3420	2066	333	347	822	147062
	51%	23%	15%	6%	2%	1%	0.0%	0%	1%	100%

Figure IV-5.2: AVQ_TN Response Distribution



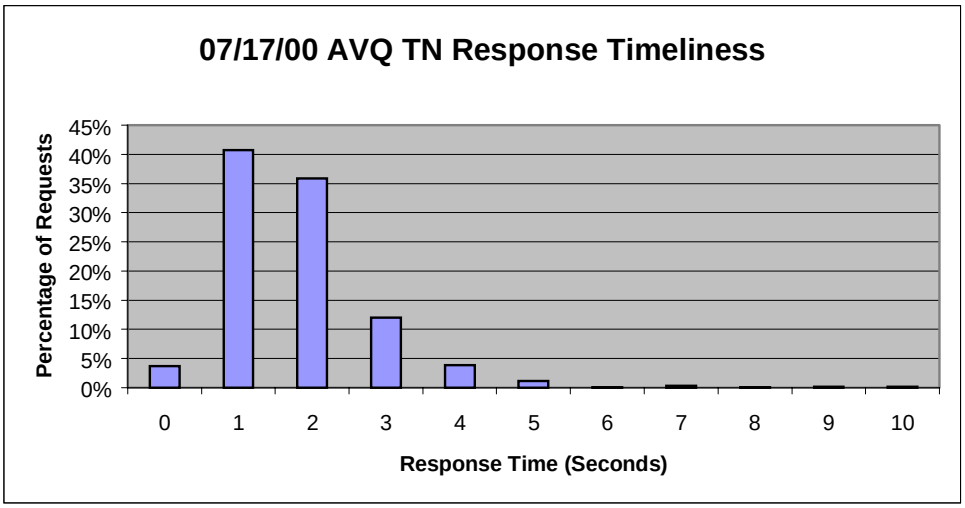
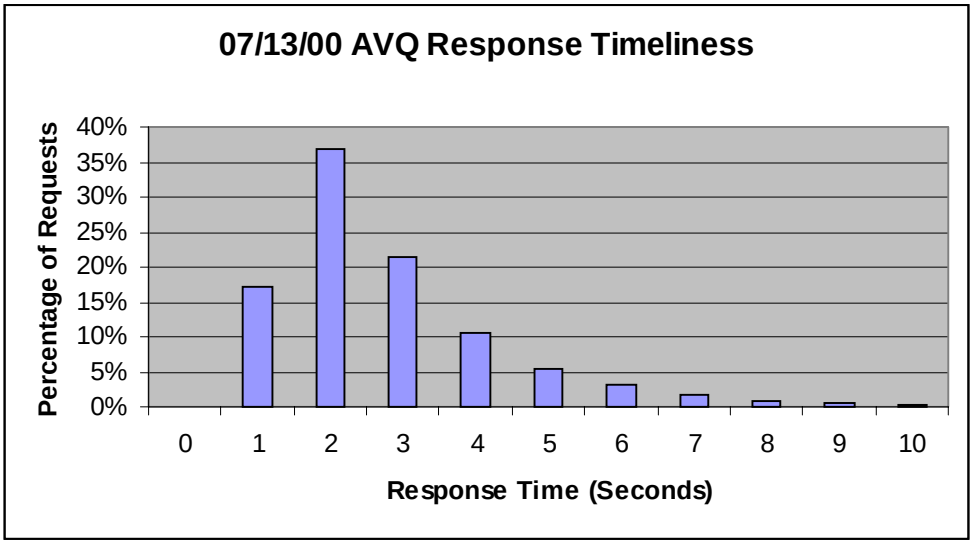


Figure IV-5.3: AVQ Response Distribution



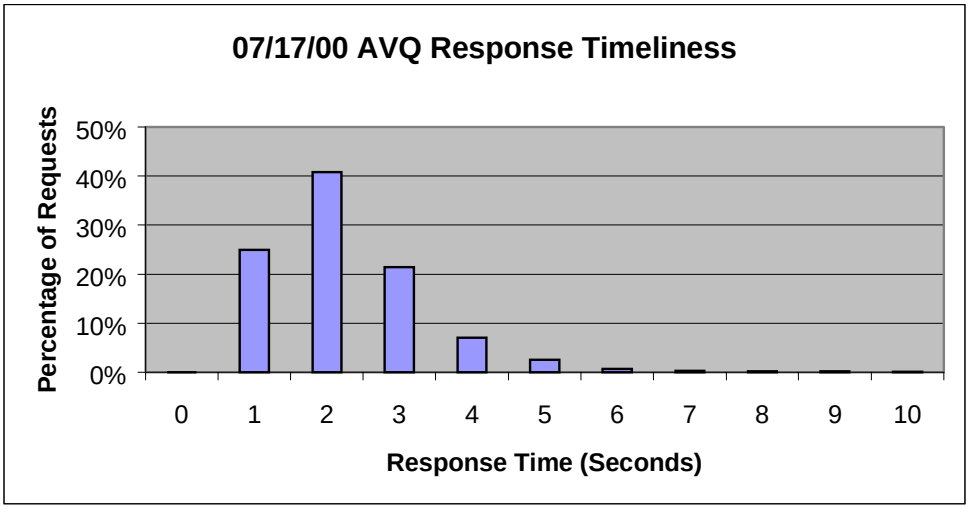
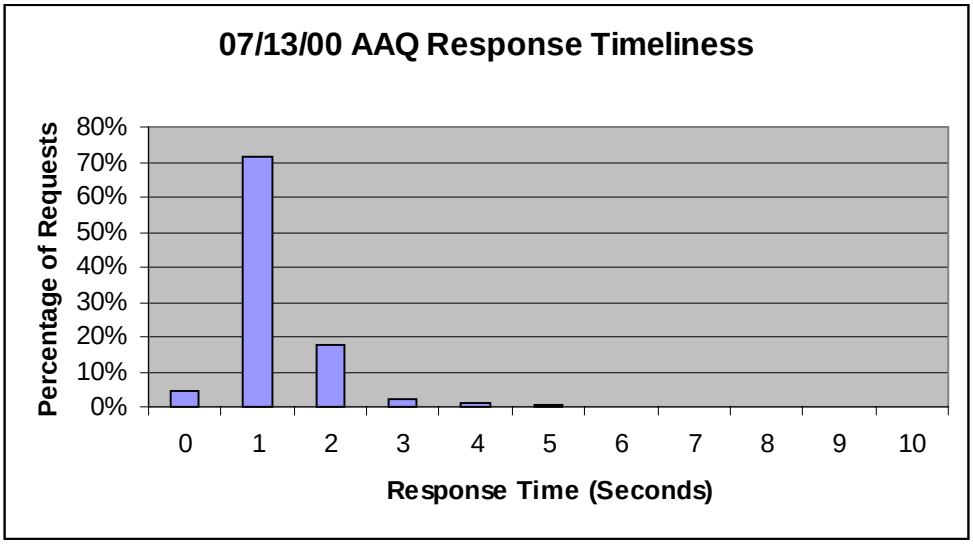


Figure IV-5.4: AAQ Response Distribution



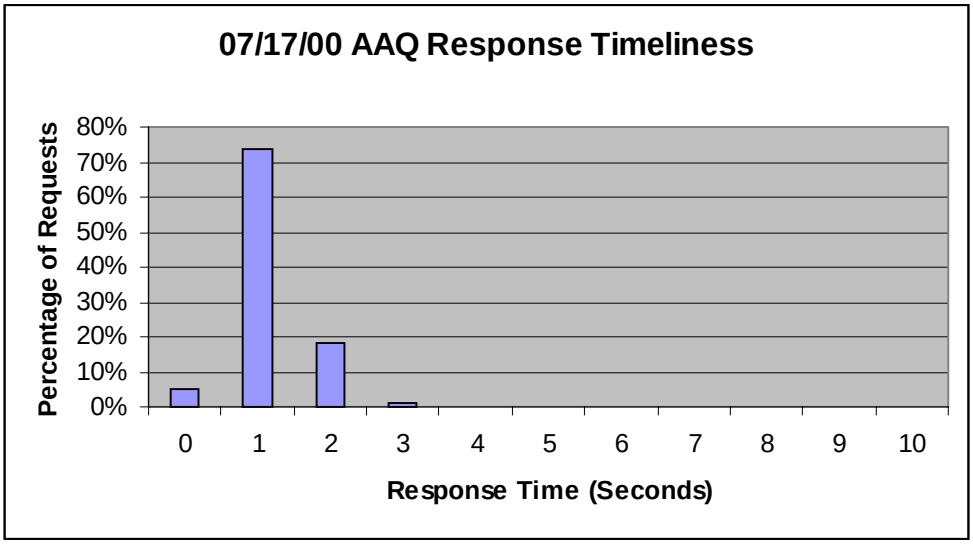
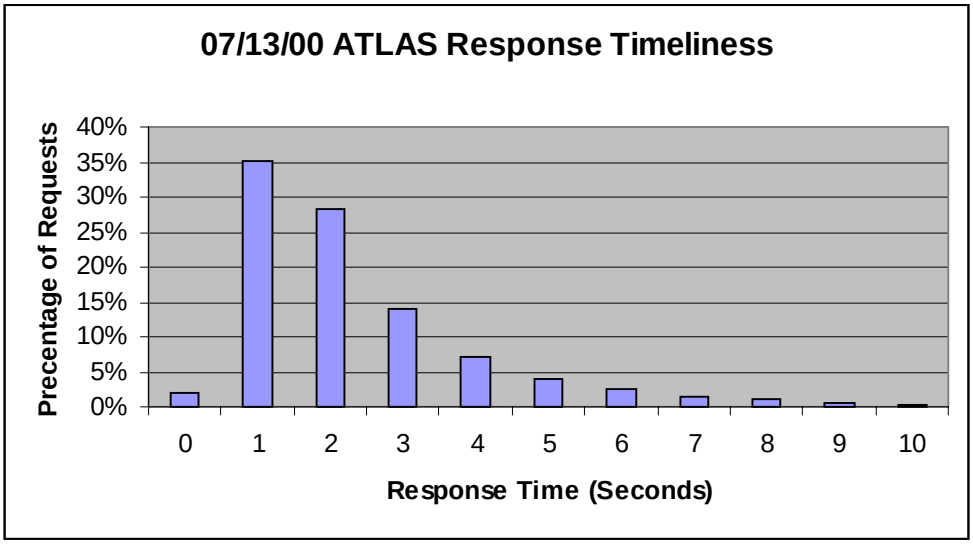
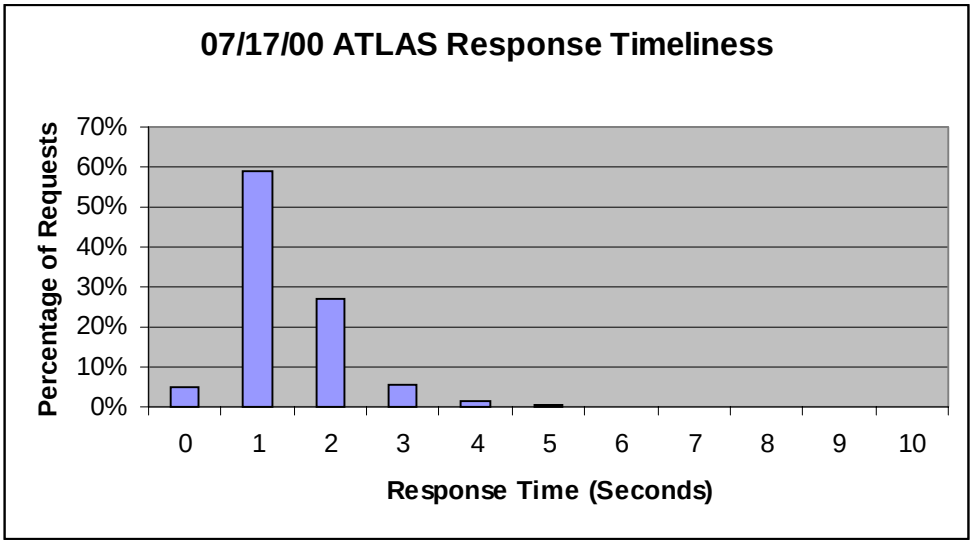


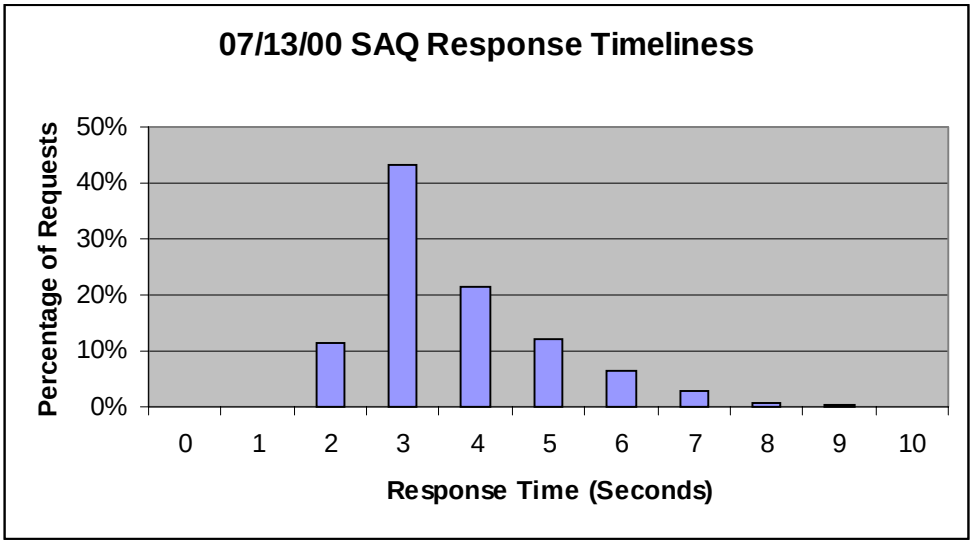
Figure IV-5.5: ATLAS Response Distribution[29]

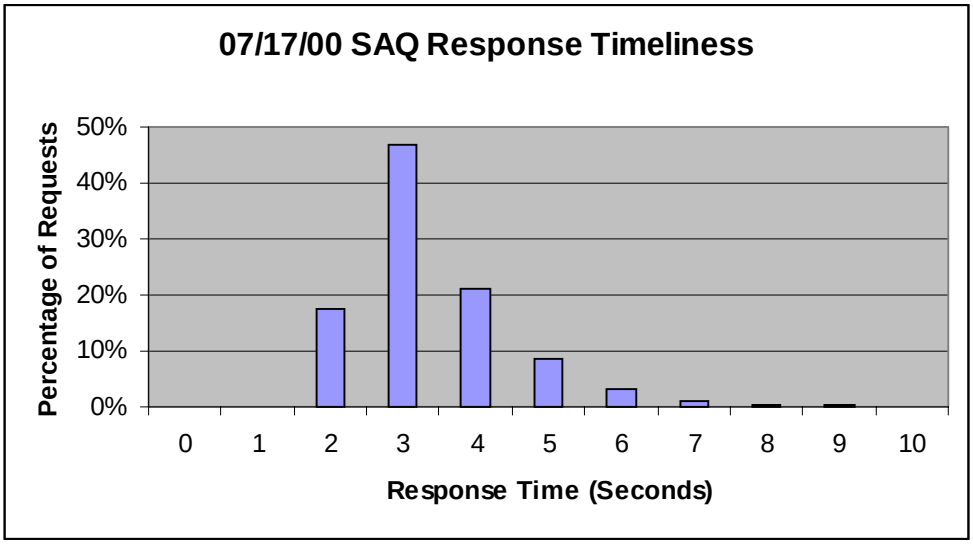




[29] Contains aggregated response times for all pre-order queries on the ATLAS back-end system, including TNAQs, TNSQs, and TN_CANs.

Figure IV-5.6: SAQ Response Distribution





F. Test Results: Pre-Order Processing Systems Capacity Management Evaluation (PRE-6)

1.0 Description

The Pre-Order Processing Systems Capacity Management Evaluation entailed a detailed review of the methods and procedures in place to plan for and manage projected growth in the use of the Telecommunications Access Gateway (TAG) interface and the other shared systems for pre-order processing. The test evaluated the functions for pre-order transaction volume tracking and forecasting, resource usage tracking and forecasting, performance management procedures, and capacity management. The objective of this evaluation was to determine the extent to which procedures to accommodate increases in the pre-order TAG interface transaction volumes and users are actively managed.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section IV, "Pre-Ordering Overview" for a complete description of the pre-order processing systems. The capacity management process for TAG and other shared pre-order processing systems is distributed along various lines of responsibility. BellSouth has outsourced operations and application support for mainframe and mid-range systems. The Customer Records Information System (CRIS), Regional Street Address Guide (RSAG), Application for Telephone Number Load Administration and Selection (ATLAS), Product/Services Inventory Management System (P/SIMS), Central Office Feature File Interface (COFFI) and Direct Order Entry Support Application (DSAP) systems operate in a mainframe environment. The mainframe operations groups manage the mainframe hardware, which includes Central Processing Unit (CPU), core memory, Direct Access Storage Device (DASD), and tape library systems. The application teams manage the production software applications and databases.

The TAG system operates in a midrange environment. The midrange operations groups manage the midrange hardware. The application teams provide mid-range software support. The BellSouth Transport Team manages day-to-day operations for the network and collects data on network performance. The BellSouth Architecture & Standards group is responsible for network capacity planning.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was the pre-order processing systems capacity management process. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

Table IV-6.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Pre-Order Processing Systems Capacity Management	Data collection and reporting of business volumes, resource utilization, and performance monitoring	Adequacy and completeness of data collection and reporting	PRE-6-1-1, PRE-6-1-2, PRE-6-1-3, PRE-6-1-4, PRE-6-1-5, PRE-6-1-6
	Data verification and analysis of business volumes, resource utilization, and performance monitoring	Adequacy and completeness of data verification and analysis	PRE-6-1-7, PRE-6-1-8, PRE-6-1-9, PRE-6-1-10, PRE-6-1-11
	Systems and capacity planning	Adequacy and completeness of systems and capacity planning	PRE-6-1-12, PRE-6-1-13, PRE-6-1-14, PRE-6-1-15

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table IV-6.2: Data Sources for Pre-Order Processing Systems Capacity Management Evaluation

Document	File Name	Location in Work Papers	Source
Telecommunications Access Gateway (TAG) Architecture/Detailed Design [Issue 1, September 1999, Release 3.1]	Design.doc	O&P-6-A-2	BLS
TAG Configurations	Tagconfig.doc	O&P-6-A-3	BLS
Tivoli Checklist, Tivoli for BLP, Tivoli for TAG, Tivoli Monitoring (15 November, 1999)	Tivcheck.doc, Tivmon.doc, Tivoli_blp.doc, Tivoli_tac.doc	O&P-6-A-4	BLS
Monthly Metric Data Summary (TAG)	No electronic copy	O&P-6-A-5	BLS
Interview Summary – TAG Administration	Interview_summary _110499.doc	O&P-6-A-6	KCI

Document	File Name	Location in Work Papers	Source
Interview Summary – Encore Management	Interview_summary _120999.doc	O&P-6-A-7	KCI
Capacity Planning & Management Playbook (What we do & How we do it) Working Draft – Not Approved	No Electronic Copy	O&P-6-C-1	BLS
BellSouth Telecommunications Information Technology – Capacity Planning Methodology, Practices and Requirements – July, 1999	Cap_methodology.doc	PRE-6-A-1	BLS
Mainframe Software Support Procedure Manual	ipsa5001.doc	BLG-3-A-3	BLS
BellSouth Mainframe CPU Configuration RAO's	hardware.txt RAO.ppt	BLG-3-A- 4	BLS
Framework and column descriptions for Mainframe Performance Reporting	PT.xls	BLG-3-A-9	BLS
Scratch Tape Statistics By Site, 10/01/99	SCRATCH TAPE STATISTICS BY SITE.doc	BLG-3-A-10	BLS
Active Tape Count By Site, 07/01/99-10/01/99	ACTT1099.doc	BLG-3-A-11	BLS
Strobe Performance Profile, 11/04/98	stbrtp.doc	BLG-3-A-12	BLS
StorageGUARD Pool Utilization	Stguard.doc	BLG-3-A-13	BLS
Concurrent Tape Drive Usage Report Card, September, 1999	CONC0999.XLS.xls	BLG-3-A-14	BLS
StorageGUARD Pool Summary History	History.doc	BLG-3-A-15	BLS
InTune Report	Snap.txt	BLG-3-A-16	BLS
CPU Measurement Reports	CPU.xls	BLG-3-A-17	BLS
Interview Summary – Mainframe Operations	Interview_summary 2_111699.doc	BLG-3-A-18	KCI
Interview Summary – Billing Test Team	Interview_summary 2_112999.doc	BLG-3-A-20	KCI
Interview Summary – Database Administration	Interview_summary 1_112999.doc	BLG-3-A-21	KCI
Interview Summary – Mainframe Performance & Tuning	Interview_summary 3_112999.doc	BLG-3-A-22	KCI
Mainframe Resource Utilization-- Top 10 (CPU, DASD, and Tape) Consumers	Top 10 Consumers Sept.xls	BLG-3-A-23	BLS
MIP Projections	MVS MIPS Projections.xls	BLG-3-A-27	BLS

Document	File Name	Location in Work Papers	Source
Projected DASD Retirements for 2000	2000-DASD-Retirements.xls	BLG-3-A-28	BLS
B2SY-S2ST-G2SY Application Hours	Trend CPU_Corp.xls	BLG-3-A-29	BLS
A6SY Application Hours	Trend CPU-RAO.xls	BLG-3-A-30	BLS
Letter on Mainframe Asset Planning Inputs	MF-capacity planning letter.doc	BLG-3-A-31	BLS
EDS Mainframe Requirements	EDS Mainframe reqs.doc	BLG-3-A-32	BLS
System Production Readiness Requirements	Readiness checklist.doc	BLG-3-A-33	BLS
Critical Application Availability (Andersen & EDS)	KCIdata.xls	BLG-3-A-34	BLS
Application Availability	GA2000SLAs.xls	BLG-3-A-35	BLS
Interview Summary – Wholesale Billing Manager	Interview_summary _04192000.doc	BLG-3-A-36	KCI
Interview Summary – BCS Transport	Interview_summary _121599.doc	PRE-6-A-2	BLS
BOSIP Network Diagrams	Atlntadc.ppt Bosipcor.ppt Brmghmdc.ppt Chrltdc.ppt Jcksondc.ppt Miamidc.ppt Nsvlledc.ppt	PRE-6-A-3	BLS
Birmingham BayNet Protocol Distribution	Bay1.gif	PRE-6-A-4	BLS
Monthly Average Utilization - Birmingham	FDDI1.gif	PRE-6-A-5	BLS
LAN Interface With In Utilization over 20%	LAN~1.htm	PRE-6-A-6	BLS
Average Latency Between RDC's Originating from Birmingham	Monthl~1.gif	PRE-6-A-7	BLS
Monthly Maximum IP Routes Known to Core	Monthl~2.gif	PRE-6-A-8	BLS
WAN Interface With In Utilization over 30%	SMDS1.gif	PRE-6-A-9	BLS
Daily Interface Performance Statistics for PNSCGS04 to JCVLBA19	Pnscgs04.gif	PRE-6-A-10	BLS
Total Traffic Across Core	WAN~1.htm	PRE-6-A-11	BLS
Server Utilization Report	Viewar~1.csv	PRE-6-A-12	BLS
Interview Summary – Transport Solutions	Interview_summary 1_121099.doc	PRE-6-A-13	KCI

Document	File Name	Location in Work Papers	Source
Interview Summary – Asset Planning	Interview_summary 1_ 01202000.doc	PRE-6-A-14	KCI
BSCN – DS3 Equivalent Capacity	Bscncap.ppt	PRE-6-A-15	BLS
BellSouth Official Communications Special Services Facility Forecast for 2000 – 2002 and Update to the 1999 Forecast (Cover Letter)	Ss99ltr.doc	PRE-6-A-16	BLS
BellSouth Telecommunications Official Communications Service Requirements And Special Service Forecast	Bscn1999.doc	PRE-6-A-17	BLS
Capacity Planning Metrics for BST Assets Managed by BCS	Capaci~1.doc	PRE-6-A-18	BLS
BellSouth Telecommunications Official Communications Service Requirements Mechanized Input Form	Bscnele.xls	PRE-6-A-19	BLS
Trunk Utilization Report	Rpdn_0110.doc	PRE-6-A-20	BLS
Unserviceable Request for Video Conferences 1999	Unservr.xls	PRE-6-A-21	BLS
BellSouth Integrated Broadband Network Diagram	Ibtcp911.ppt	PRE-6-A-22	BLS
Transport Asset Planning – Infrastructures	Infraex.ppt	PRE-6-A-23	BLS
Interview Summary – Network Asset Planner	Interview_summary 2_01202000.doc	PRE-6-A-24	KCI
Questionnaire designed to aid Capacity Planner and / or Technical Architect in characterizing an application workload	Config.xls	PRE-6-A-25	BLS
Interview Summary – Midrange Performance Monitoring	Interview_summary _01252000.doc	PRE-6-A-26	KCI
Printouts from Midrange Performance Data Warehouse	No Electronic Copy	PRE-6-A-27	BLS
BGSCOLL Problem Resolution Guide for Collection of Nodes	Probres.doc	PRE-6-A-28	BLS
Data Collected 11 / 19 / 99 – (Status Report, by project, of Midrange data collection tool installation)	Perforn1.doc	PRE-6-A-29	BLS
Interview Summary – Capacity Planner	Interview_summary _ 01272000.doc	PRE-6-A-30	KCI
TAG Usage Report	TAG Usage.xls	PRE-6-A-35	BLS
BOSIP Support Web Site Printouts	No Electronic Copy	PRE-6-A-39	BLS

Document	File Name	Location in Work Papers	Source
– Homepage			
BOSIP Support Web Site Printouts – Shared BOSIP Network	No Electronic Copy	PRE-6-A-40	BLS
BOSIP Support Web Site Printouts – BCS Support	No Electronic Copy	PRE-6-A-41	BLS
BOSIP LAN and WAN Network Topology Overview	No Electronic Copy	PRE-6-A-42	BLS
Datakit Support Homepage and affiliated web pages	No Electronic Copy	PRE-6-A-43	BLS
ENCORE Successful Logins vs. Failed Logins	No Electronic Copy	PRE-6-A-44	BLS
TRENDview HTML Reports	No Electronic Copy	PRE-6-A-45	BLS
TRENDview HTML Reports – Overutilized / Underutilized WAN Interfaces	No Electronic Copy	PRE-6-A-46	BLS
TRENDview HTML Reports – WAN interface utilization graphed over time	No Electronic Copy	PRE-6-A-47	BLS
Printouts from EDS Midrange Performance Data Warehouse Web Site	No Electronic Copy	PRE-6-A-48	BLS
Project List	No Electronic Copy	PRE-6-A-49	BLS
ENCORE-LESOG Performance Data	No Electronic Copy	PRE-6-A-51	BLS
TAG Performance Data	No Electronic Copy	PRE-6-A-60	BLS
Interview Summary – Capacity Planner	Interview_summary 3_03292000.doc	O&P-6-A-12	BLS
Interview Summary2 – Product Manager	Interview_summary _03292000.doc	O&P-6-A-13	BLS
Interview Summary3 – Second Capacity Planner	Interview_summary 2_ 03292000.doc	O&P-6-A-14	BLS
Interview Summary – Product Support Manager	Interview_summary 2_04132000.doc	O&P-6-A-15	BLS
Interview Summary2 – Forecast Manager	Interview_summary _04132000.doc	O&P-6-A-16	BLS
Interview Summary – Capacity Planning Project Manager	Interview_summary 2_04182000.doc	O&P-6-A-17	BLS
Interview Summary2 – Capacity Planning Manager	Interview_summary _04182000.doc	O&P-6-A-18	BLS
Interview Summary – Support Manager	Interview_summary _04192000	O&P-6-A-19	BLS
BST Product Forecasts	No Electronic Copy	PRE-6-A-61	BLS

Document	File Name	Location in Work Papers	Source
N&CS Forecasting Process	Foreca~1.ppt	PRE-6--A-62	BLS
Network & Carrier Service Forecasting	No Electronic Copy	PRE-6-A-63	BLS
The Forecast Process	No Electronic Copy	PRE-6-A-64	BLS
Capacity Management Notification Process	Capnot1.doc	PRE-6-A-65	BLS
Capacity Forecasts Contacts for Encore & LNP Applications	Capconts.doc	PRE-6-A-66	BLS
LSR Actuals & Forecast Report (1998 – 2004)	No Electronic Copy	PRE-6-A-67	BLS
Monthly Capacity Report – Network Summary – March 2000	Network summary.xls	PRE-6-A-68	BLS
LSR Volume Report by data source for 3/2000	Totals.gif	PRE-6-A-69	BLS
LCSC Center Activity Report (3/2000)	Resale.doc	PRE-6-A-70	BLS
Analysis of Recently Received Documentation and Proposed Changes to Capacity Management Final Reports	Analysis of recent docs for cap mgmt.doc	PRE-6-A-71	BLS
Application Specific Forecast Processes	Capmgt.MP.doc	PRE-6-A-72	BLS
Capacity Planning & Management Standard Operating Procedures	F-1-5 Capacity Plan.doc	PRE-6-A-74	BLS
12/07/2000 Interview Summary	Interview_summary _1207200.doc	PRE-6-A-75	KCI
LSR Volume Tracking	Mainframe_forecast2 .xls	PRE-6-A-76	BLS
LSR Tracking Actuals –vs- Forecasted	Actuals.xls	PRE-6-A-77	BLS
Pre-Order Volumes Per Interfaces	Capacity3.xls	PRE-6-A-78	BLS
LCSC Center Activity Report (4/2000)	April car.doc	PRE-6-C-1	BLS
LCSC Center Activity Report (NON Reqtyp E + NON Reqtyp J)	Non-E-J.doc	PRE-6-C-2	BLS
LCSC Center Activity Report (Reqtyp M Only)	TypeM.doc	PRE-6-C-3	BLS
LCSC Center Activity Report (Reqtyp J Only)	TypeJ.doc	PRE-6-C-4	BLS
Daily LCSC Order Flow Summaries	Lesog.doc	PRE-6-C-5	BLS

Document	File Name	Location in Work Papers	Source
Third Party Testing Forecast of Volumes – EOY 2001	No Electronic Copy	PRE-6-C-6	BLS
Numbers Ported per Day (Week of 3/1/99 – 9/20/99)	No Electronic Copy	PRE-6-C-7	BLS
Maximum Number of Ports Per Day Per Week and Projection through 2001	No Electronic Copy	PRE-6-C-8	BLS
Number of LSRs Process Per Day (Week of 3/1/99 – 9/20/99)	No Electronic Copy	PRE-6-C-9	BLS
Maximum Number of LSRs Per Day Per Week and Projections through 2001	No Electronic Copy	PRE-6-C-10	BLS
Transaction to System Activity Map	No Electronic Copy	PRE-6-C-11	BLS
Business Drivers Form	No Electronic Copy	PRE-6-C-12	BLS
Email with LCSC Service Rep Headcount Forecast	No Electronic Copy	PRE-6-C-13	BLS
Electronic Interface Trends	Nov99T~1.ppt Trends.ppt Trends1.ppt FEBLSR.ppt MARLSR.ppt	PRE-6-C-14	BLS
Server Usage Report (LSOG)	LSOGUsage.xls	PRE-6-C-15	BLS
Encore Forecasts	Encore Forecasts.xls	PRE-6-C-16	BLS
Encore Capacity Analysis Assumptions	Encore capacity analysis assumptions.doc	PRE-6-C-17	BLS
Capacity Analysis Report Encore Systems	Encore.doc	PRE-6-C-18	BLS
Selective Carrier Routing, Full Deployment, Decision Package for Interconnection	No Electronic Copy	PRE-6-C-19	BLS
Memorandum to EDS Centralized System Administrators re: BTSI Capacity Planning	CSA Performance Letter.doc	PRE-6-C-20	BLS
BTSI Capacity Upgrade Request / EDS Performance Analysis Workflow	BTSI Performance Process.doc	PRE-6-C-21	BLS
Project Charter: Encore SLA Performance	ProjCharter063000.doc	PRE-6-C-22	BLS
Memo to Capacity Planners re: CLEC SQM Performance	CapPlanmemo0700.doc	PRE-6-C-23	BLS

Document	File Name	Location in Work Papers	Source
information availability via the PMAP Web site			

2.4.1 Data Generation/Volumes

This test relied on documentation reviews and interviews with BellSouth personnel.

2.5 Evaluation Methods

The Pre-Order Processing Systems Capacity Management Evaluation began with a review of systems documentation and process flows for pre-order processing. Interviews were conducted with system administration personnel responsible for the operation of the TAG, CRIS, RSAG, ATLAS, P/SIMS, COFFI, and DSAP pre-order processing systems. These interviews were supplemented with an analysis of BellSouth's documented capacity management procedures as well as collection of evidence of related activities such as: periodic capacity management reviews; system reconfiguration/load balancing; load increase induced upgrades; and resource utilization and performance management reporting.

2.6 Analysis Methods

The Pre-Order Processing Systems Capacity Management Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the Pre-Order Processing Systems Capacity Management Evaluation.

The data collected from inspections and interviews were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table IV-6.3: PRE-6 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-6-1-1	There is an established process for capturing business and	Satisfied	Pre-order midrange transaction volume data is available from the TAG database logs, is extracted

Test Cross-Reference	Evaluation Criteria	Result	Comments
	transaction volumes		monthly by the Application Support Group, and is provided monthly to the Capacity Planner. The number of Mainframe Legacy System (RSAG, ATLAS, COFFI, DSAP, Hands-off Assignment Logic [HAL], and P/SIMS) requests is collected and used in the calculation of Service Quality Measure (SQM) OSS-1 Average Response Time and Response Interval (Pre-Ordering). BLS developed an appendix to the *Capacity Planning & Management Playbook* specifying that BTSI will track actual pre-order volumes and will maintain a tracking spreadsheet for actual vs. forecast volumes. Copies of the September 2000 monthly TAG transaction volume report and of the pre-order tracking worksheet were provided to KCI.
PRE-6-1-2	There is an established process for capturing resource utilization	Satisfied	The shared pre-order processing systems operate in a mainframe environment, therefore, resource utilization and performance monitoring are covered under the efforts of the mainframe operations groups. Mainframe resource utilization data are collected and reported monthly. Midrange and network resource utilization data are tracked and reported on the Midrange Performance Monitoring Web site and the BellSouth Open System Interconnect Protocol (BOSIP) home page respectively. These Web sites are available to and accessed by the resources responsible for monitoring the performance of systems and networks. The processes for capturing resource utilization were described during interviews with members of the groups responsible for these activities. In addition, KCI reviewed the BOSIP home page and the Midrange Performance Monitoring Web site. Sample resource utilization reports

Test Cross-Reference	Evaluation Criteria	Result	Comments
			were collected and reviewed.
PRE-6-1-3	Resource utilization is monitored for system components and elements	Satisfied	The Performance and Tuning group monitors Multiple Virtual Storage (MVS) mainframe components such as storage utilization (central storage), memory paging rates, batch jobs, Time Share Operations (TSO) sessions, Direct Access Storage Device (DASD) response times, tape drives allocated, Central Processing Unit (CPU) percentage busy, etc. Sample mainframe resource utilization reports were collected during the test. For midrange systems, Disk input/output (I/O), Network I/O, as well as resource utilization for CPUs, Memory, and file systems is tracked and reported. BLS also collects resource utilization data on CPU, buffer and memory utilization for the routers, circuits utilization of the routers, LAN interfaces on routers, hubs, and the Fiber Distributed Data Interface (FDDI) rings. For the circuits and LAN interfaces, reports are generated for the devices with the highest utilization. The midrange and network resource utilization data collection processes were described during interviews and verified through a review of the BOSIP home page, review of the Midrange Performance Monitoring Web site, and through the collection of sample reports.
PRE-6-1-4	Instrumentation and other tools are used to collect resource utilization data	Satisfied	InTune and Strobe are (mainframe) MVS tools used to provide information on where applications are spending CPU cycles, wait times, DASD volumes and tracks accessed, etc. These application-profiling tools operate on IMS and DB2 databases. Storage Guard is an on-line system that takes a snapshot of DASD storage (each Volume Table of Contents (VTOC) every 30 minutes. Through the on-line facility it is possible to view the capacity and utilization of

Test Cross-Reference	Evaluation Criteria	Result	Comments
			each storage pool. Data Facility Storage Management Subsystem (DFSMS) is a hierarchical storage manager that checks for previous messages. Targets are set for storage utilization. If a device is over the utilization target, then the utility searches for old data (past period set for retention for all data types) that can be moved to a lower priority stage. These tools were identified through interviews with the mainframe operation group and sample reports were provided to KCI. The data used to produce midrange system resource utilization reports are gathered through a variety of tools and utilities including Best/1, BGSCOLL, GlancePlus, SAR, Unicenter TNG, and Tivoli. The Best/1 modeling and simulation capacity planning tool is used for monitoring of midrange system resources. The BGSCOLL tool collects data in 15-minute intervals daily. The data are compiled into daily and monthly averages. Three months of data are stored for trending. The tools used to collect midrange resource utilization data were described during interviews and sample reports were collected and reviewed. Tools running to collect network resource utilization data include TRENDsnmp (from DeskTalk), Spectrum Enterprise Manager, OpenView, Nerve Center for BOSIP (the router network), and Starkeeper (for the Datakit networks). These tools were described during interviews with the BOSIP Support manager and sample reports were provided to KCI.

Test Cross-Reference	Evaluation Criteria	Result	Comments
PRE-6-1-5	Performance is monitored at all applicable levels (e.g., network, database server, application server, client, etc.)	Satisfied	The Performance and Tuning Group monitors system resources for mainframe computers [i.e., MVS mainframe components such as storage utilization (central storage), memory paging rates, batch jobs, TSO sessions, DASD response times, tape drives allocated, CPU percentage busy, etc.]. The site manager ensures that DFSMS is running, checks for previous messages, and checks tape drive status. The performance of the (midrange) application servers is monitored daily by the midrange operations groups. The BLS Transport Team is responsible for day-to-day operations of the networks (comprised of components such as routers, ATM switches, and hubs). The team is comprised of three groups: PACS, which provides tier three support; Proactive Performance Analysis, which monitors the networks to prevent problems; and the Tools group. This team collects the data on network performance. BLS has also written scripts to collect data such as latency and packet loss across the BOSIP core. These activities were described during interviews with the Application Support Teams, Midrange Operations Group, and Network Support Team. In addition, sample performance reports were collected.
PRE-6-1-6	Instrumentation and other tools are used to monitor performance	Satisfied	The CMF tool looks at system logs to collect mainframe performance data. MainView (a graphical user interface for CMF) presents the performance data collected by CMF in a graphical format so that trending can be performed. The Midrange Performance Monitoring and the BOSIP Web sites are available to and accessed by the resources responsible for monitoring the performance of (midrange)

Test Cross-Reference	Evaluation Criteria	Result	Comments
			systems and network elements. Best/1, GlancePlus, SAR, Unicenter TNG, and Tivoli are tools used to monitor midrange performance. TRENDsnmp (from DeskTalk), Spectrum Enterprise Manager, OpenView, Nerve Center for BOSIP (the router network), and Starkeeper (for the Datakit networks) are tools used to monitor network performance. Performance monitoring activities were described during interviews and sample reports were provided to KCI. The Midrange Performance Monitoring Web site and the BOSIP home page were reviewed.
PRE-6-1-7	There is an established process for forecasting business volumes and transactions	Satisfied	During initial testing, no established, ongoing process for forecasting business volumes and transactions was observed for BLS's pre-order processing systems. See Exception 25 for additional information on this issue. During retest activities, KCI learned that pre-order transaction volume is not directly forecast. Instead, the current Local Service Request (LSR) to pre-order transaction ratio is extracted from system performance data. This ratio is applied to the LSR forecast and used in the mid-range system capacity model to simulate the growth in pre-order transaction volume for the TAG interface. The business volume and transaction forecasting process for the mainframe pre-order systems is described in the Standard Operating Procedure (SOP) section of the *Capacity Planning & Management Playbook.* The SOP documents the process of using the LSR forecast to develop projections for mainframe impact. Applications targeted are RSAG, ATLAS, P/SIMS DSAP, and COFFI. The SOP outlines the process steps that the Capacity Planner is to complete in order to

Test Cross-Reference	Evaluation Criteria	Result	Comments
			develop the mainframe forecast that is delivered to mainframe operations for use in the quarterly capacity planning meetings. In addition, an appendix to the Playbook describes the transaction forecasting process for mainframe pre-order systems. The new process has been completed once and a forecast was provided to the mainframe planners in November 2000. Exception 25 is closed.
PRE-6-1-8	The business volume tracking and forecasting data is at an appropriate level of detail to use for capacity management	Satisfied	During initial testing, no process was observed for the collection of mainframe (CRIS, RSAG, ATLAS, P/SIMS, COFFI and DSAP) or mid-range (TAG) pre-order business and transaction volumes. See Exception 25 for additional information on this issue. During the retest, KCI learned that the current Local Service Request (LSR) to pre-order transaction ratio is extracted from system performance data. These ratios are incorporated into the mid-range capacity-planning model and are assumed to hold as the volume of LSRs (order workload) is increased according to the LSR forecast. Business volume tracking and forecasting data will be utilized in the mainframe capacity management process. The mainframe forecast worksheet tracks actual LSRs and forecast data through 12/2001 and transforms the LSR forecast into calculated CRIS region Millions of Information per Second (MIPS) requirements. The calculated MIPS requirements are compared to MIPS installed and a percentage of Installed MIPS to LSR Impact is reported. The dedicated CRIS control region contains the RSAG, ATLAS, COFFI, and DSAP applications. In addition, resource utilization data is trended based upon historical system performance. These trended

Test Cross-Reference	Evaluation Criteria	Result	Comments
			data, along with any application changes, are used to project system needs. For BLS's network, capacity planning is done annually as part of the budgeting process and also for each application release. Application development, system administration, and production support resources participate in the capacity planning process. The planning process takes as input the Network Carrier Services (NCS) Marketing Group forecast, current volumes, trend data, and anticipated volume changes that may result from new system functionality. This information is used to project future hardware and software needs. If additional capacity is needed, the request is brought to BLS (Delivery and Customer Service Managers) for approval, equipment purchase, and installation. Exception 25 is closed.
PRE-6-1-9	There is an established process for reviewing the performance of the business and transaction volume forecasting process	Satisfied	During initial testing, no established, ongoing process for reviewing the performance of the mainframe, mid-range, or network pre-order business and transaction volume forecasting process was observed. See Exception 25 for additional information on this issue. BLS developed an appendix to the *Capacity Planning & Management Playbook* specifying that BellSouth Technology Service, Inc. (BTSI) will track and compare actual LSR flow-through against forecast volumes. In addition, a copy of a recent comparison of actual to forecast LSRs was provided. Exception 25 is closed.
PRE-6-1-10	There is an established process for verification and validation of performance data	Satisfied	Mainframe hardware performance is monitored daily. Any anomalies detected are reported, investigated, and resolved. The performance monitoring, database administration,

Test Cross-Reference	Evaluation Criteria	Result	Comments
			and application support groups participate in this process of verification and validation of performance data. Data from the system hardware resources are downloaded for personal computer access. This information is formatted into PC reports and is analyzed and/or reviewed periodically by the team members responsible for mainframe performance and tuning analysis. The data are retained for a minimum of one year. In the midrange and network environments, performance data are verified and validated by System Administrators and the Transport Group. Performance reports are reviewed regularly on the Midrange Performance Monitoring Web site, on the BOSIP home page, and through on-line tools. The reports and tools define thresholds for utilization of system and network resources. Any values exceeding the established threshold are highlighted in the reports, investigated, and resolved. Performance monitoring activities were described during interviews. KCI reviewed and collected sample performance and resource utilization reports.
PRE-6-1-11	Performance monitoring results are compared to service level agreements and other metrics	Satisfied	BLS and the third party managing the systems operations have contracts in place governing system performance. These contracts define targets for system availability for TAG, CRIS, RSAG, ATLAS, P/SIMS and DSAP. KCI was provided with the targets for system availability and copies of reports on vendor performance, by system. Service Quality Measurements (SQMs) are defined for availability of the TAG interface [OSS-2. Interface Availability (Pre-Ordering)]. SQMs are also defined for average OSS Response Time and Response Interval for the CRIS,

Test Cross-Reference	Evaluation Criteria	Result	Comments
			RSAG, ATLAS, and DSAP systems from TAG [OSS-1 Average Response Time and Response Interval (Pre-Ordering)]. (See *BellSouth Service Quality Measurements Plan* document dated 07/2000.) Performance results for these metrics are reported through the Performance Monitoring and Analysis Platform (PMAP). BLS's capacity planning process identifies PMAP data as an input for the mid-range capacity planning process. BLS monitors its own network performance results. Network availability (i.e., trunk and node availability) results are tracked against established performance targets/objectives. The Transport Group works with the BLS Architecture & Standards (A&S) Group to address network performance issues. Network performance activities were described during interviews with the BOSIP Support Manager.
PRE-6-1-12	The Capacity Management process is defined and documented	Satisfied	The processes that are executed for performance monitoring and capacity planning activities are defined and documented. The document, *BLS Telecommunications Information Technology Capacity Planning Methodology, Practices, and Requirements July 1999,* outlines a capacity planning process for the mainframe, midrange, and network environments. BLS's capacity planning process is part of the IT Engagement Process (ITEP). Process flows for the capacity planning process have been developed and are posted on the BLS IT Web site. These flows are also contained in a document entitled *Capacity Planning & Management Playbook.* The capacity planning process has been communicated within the Engineering & Design Group. The links within the Asset Management Group and the interfaces to other

Test Cross-Reference	Evaluation Criteria	Result	Comments
			organizations are defined in the process documentation. BLS is refining the definition of process links between the remaining functional groups. Documentation depicting the current mainframe performance monitoring process was provided to KCI. Midrange and network performance monitoring is addressed in the capacity planning and management documentation.
PRE-6-1-13	Resource usage and capacity is considered in the planning process for capacity management	Satisfied	On a monthly basis, the Mainframe Operations Management Group uses data collected for each mainframe box to 1) fit a trend line through the monthly utilization data points; 2) estimate, based on trends and rates of growth, when upgrades or new purchases must occur; and 3) purchase additional capacity, as needed. If anomalies in CPU utilization, DASD, etc. occur, the Operations Group will contact the appropriate Application Support Group to determine the root cause of the anomaly. In addition, TRIAD meetings are held every three months. TRIAD meetings include representatives from hardware procurement, mainframe performance monitoring, and customer representatives for the applications running in the mainframe environment with the largest DASD usage. Customer representatives provide input on changes to applications and how they may impact various components of system capacity. Resource utilization reports are examined on an ongoing basis and as part of the quarterly capacity planning process. Server usage reports, LAN / WAN interface and FDDI utilization reports are examined on an ongoing basis as part of the mid-range and network capacity planning processes.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			These capacity planning activities were described during interviews.
PRE-6-1-14	Performance monitoring results are considered in the planning process for capacity management	Satisfied	Mainframe and mid-range performance monitoring reports are examined on an ongoing basis and as part of the quarterly capacity planning process. The BLS Architecture & Standards (A&S) Group is responsible for network capacity planning. The BLS Transport Team analyzes network performance data and resolves capacity issues. If unable to resolve capacity issues, the Transport Team alerts the A&S Group, which purchases equipment or makes architecture changes. These capacity planning activities were described during interviews.
PRE-6-1-15	Capacity Management procedures define performance metrics that trigger the addition of capacity, load re-balancing or system tuning	Satisfied	Mainframe application hours are tracked monthly. Historical growth trends of these hours is tracked against known thresholds and used to estimate future growth and determine when upgrades or new purchases must occur. Scratch tape counts and scratch tape thresholds are tracked monthly by site. These counts and thresholds are used to assist in determining when additional tapes should be ordered. Active tape counts (and corresponding Average Growth per Month) are also tracked monthly. Thresholds have been set for resource utilization and performance measures in both mainframe and mid-range environments. Values that exceed the established thresholds are flagged and investigated. In the network environment, WAN interface utilization is tracked to identify opportunities for load balancing. Procedures for performance management were described during interviews. In addition, KCI viewed and collected sample reports.

V. Ordering and Provisioning (O&P) Domain Results and Analysis

1.0 Description

The purpose of this section is to present the specific tests, results, and analysis from KCI's evaluation of the systems, processes, and other operational elements associated with BellSouth's support for Wholesale Ordering. The Ordering and Provisioning (O&P) tests evaluated the systems and processes associated with BellSouth's ability to provide Competitive Local Exchange Carriers (CLECs) with non-discriminatory access to its Operational Support Systems (OSS). The ordering portion of the test assessed the adequacy of BellSouth's ordering systems and support procedures to efficiently process Local Service Request (LSRs) for Unbundled Network Element (UNE) services. The provisioning verification portion of the test performed a comprehensive review of BellSouth's ability to accurately and expeditiously complete the provisioning of CLEC orders.

2.0 Methodology

The scope of the O&P tests in Georgia encompassed the review and analysis of BellSouth's processes, procedures, interfaces and systems for ordering and provisioning CLEC UNE accounts. This was accomplished by reviewing and assessing relevant documentation, testing the functionality of BellSouth's ordering and provisioning systems, testing the capability to increase system capacity, reviewing metrics reports, and evaluating provisioning performance for BellSouth's CLEC customers.

2.1 Business Process Description

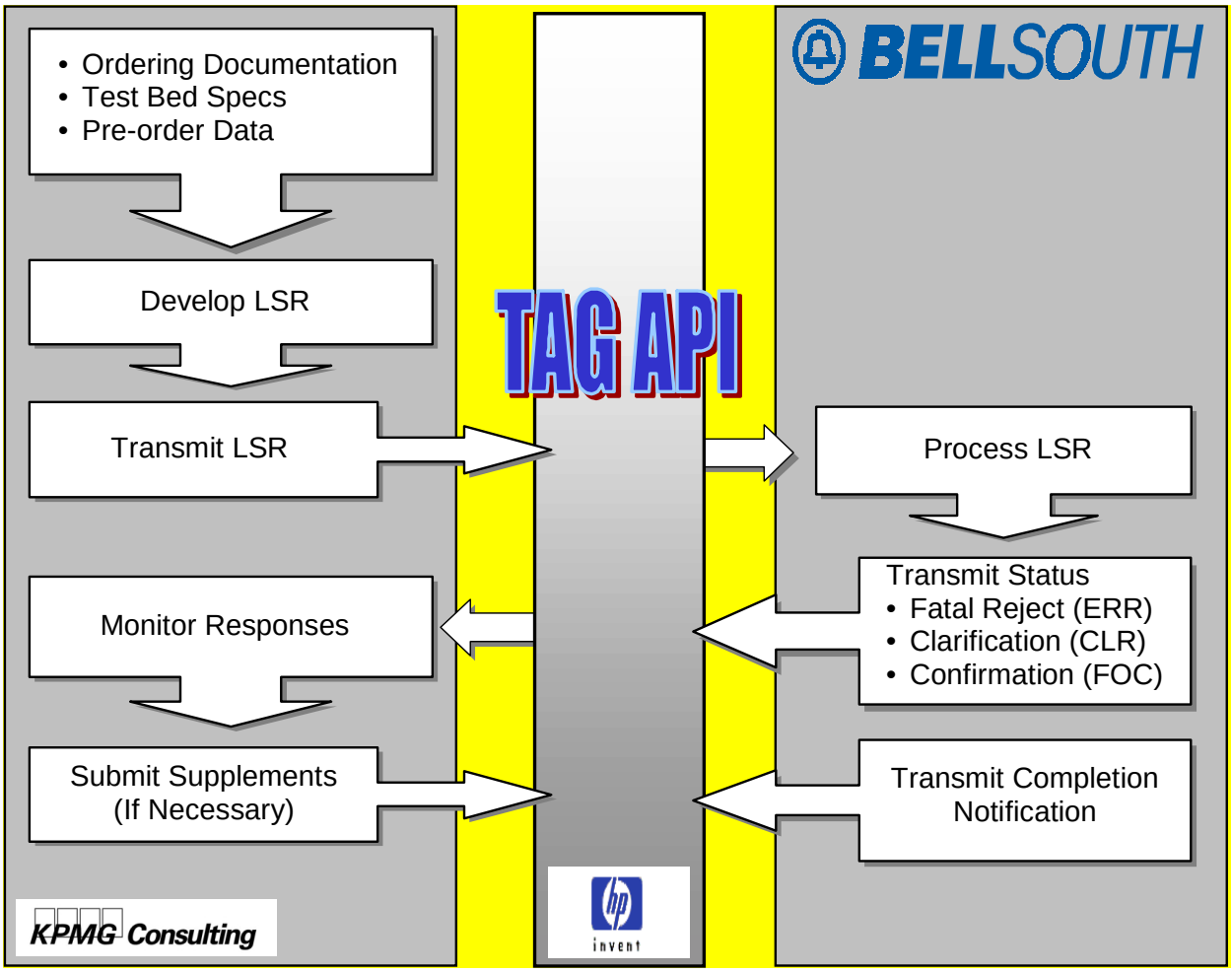
Two BellSouth electronic ordering interfaces, Telecommunications Access Gateway (TAG) and Electronic Data Interchange (EDI) were tested.

The TAG and EDI environments are described in more detail below.

TAG

Orders can be submitted electronically to BellSouth through the Telecommunications Access Gateway (TAG), a CORBA-based interface. TAG allows for bi-directional flow of information between BellSouth's OSS and CLEC customers. CLECs develop their own software applications to obtain information from BellSouth's OSS and can incorporate various internal functions, such as down loading information directly to their own inventory/billing systems, creating their own customer databases and generating internal reports. TAG provides a standard Application Program Interface (API) to BellSouth's pre-ordering and ordering OSS.

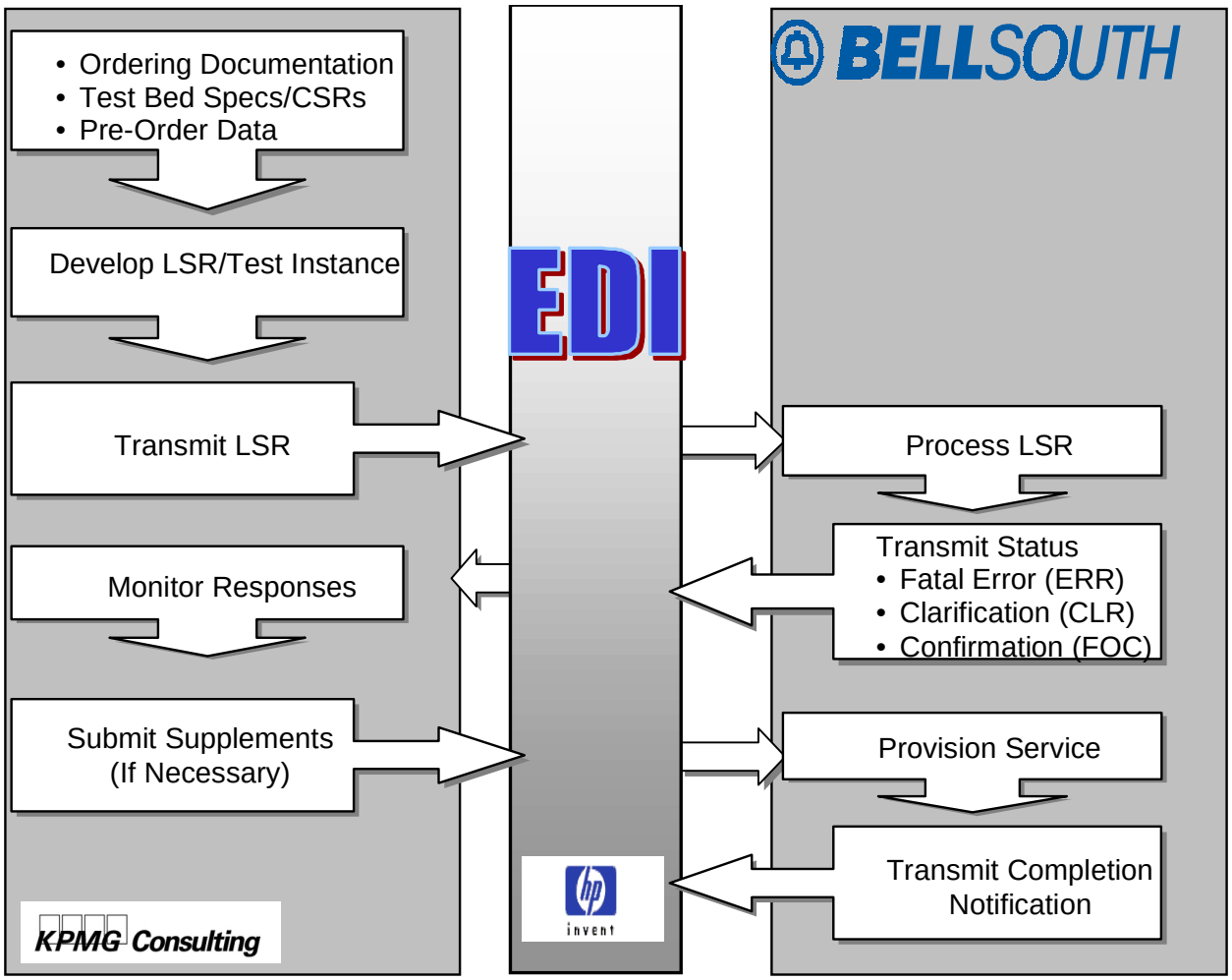
Table V –A: TAG Order Process Flow



EDI

Electronic Data Interchange (EDI) is designed to allow BellSouth's computer applications to exchange business files with CLEC computer applications in a standard format. BellSouth defines the information that is needed to successfully submit each order type. This information is encoded to fit the standard EDI transaction set for data transmission. EDI requires the use of industry standards that define the format and the data content of each business transaction. BellSouth determines how and when each data element is transferred (or mapped) into a BellSouth Service Order.

Table V –B: EDI Order Process Flow



Transaction Types

TAG and EDI allow CLECs to process the following transactions types to BellSouth's OSS:

- Submit Local Service Requests (LSRs)
- Retrieve Functional Acknowledgements (FA)
- Retrieve Firm Order Confirmations (FOCs)
- Retrieve Completion Notices (CNs)
- Retrieve Rejects, Clarifications and Service Jeopardies

Interface Testing

CLECs wishing to perform electronic ordering operations with BellSouth via TAG/EDI must first complete a series of tests designed to certify the CLEC and BellSouth's interfaces can appropriately communicate during the ordering process. This interface testing period is designed to verify TAG/EDI connectivity between BellSouth and the CLEC; to verify the CLEC's ability to send and receive file transfer acknowledgements; to verify BellSouth's ability to translate, process, and respond to CLEC service requests and supplements; and to verify CLEC compliance with BellSouth usage requirements as defined in the LEO Implementation Guide.

Ordering Process Flow

KCI utilized three primary inputs to create order test instances:

Test Bed Information

The test bed was comprised of specific customer accounts and facility information provided by BellSouth. KCI received test bed accounts (built according to KCI specifications) in the form of Customer Service Records (CSRs) that identified the end-user's initial state, including information on their address, billing accounts, and existing services and equipment. BellSouth delivered test bed CSRs to KCI via a direct database extract process. KCI evaluated BellSouth's pre-order functionality with respect to CSR queries by executing CSR pre-order queries for a defined set of customers during the TAG Pre-Ordering Functional Test (PRE-1)

Pre-Order Data

For a defined number of order test instances, KCI performed pre-order queries to validate customer address and service information, validate specific switch capabilities, select and reserve Telephone Numbers (TNs), and obtain valid due dates. KCI reviewed the pre-order response information and used this information to validate or add data to the subsequent service request.

BellSouth Ordering Documentation

BellSouth ordering documentation contains two main components. The technical specifications include programming instructions for creating TAG or EDI transaction sets. The ordering business rules provide the ordering forms and data elements comprising a service request, as well as the data characteristics, usage requirements, and valid entries for each data element.

Using test bed and pre-order information, and applying the ordering rules defined in BellSouth documentation, KCI developed an order test instance, or Local Service Request (LSR). Each LSR was assigned a unique Purchase Order Number (PON) for BellSouth and test manager tracking purposes. The LSR was transmitted in a text file to Hewlett Packard (HP), who utilized the BellSouth technical specifications to map the

text file into TAG or EDI data[1] and transmitted the LSR to BellSouth's EDI or TAG gateway.

When BellSouth receives the LSR, an FA is automatically returned to the CLEC, confirming that the file has been successfully received. As the LSR passes through the BellSouth back-end OSS systems, BellSouth systems or representatives perform validations to determine if the CLEC's service request is properly formatted and contains accurate data. In response to an erred LSR, BellSouth transmits one of the following error responses[2]:

Fatal Reject (ERR)

BellSouth returns an ERR when a CLEC electronically submits an LSR that is unreadable or lacks correctly populated all required fields. BellSouth categorizes fatal rejects as fully-mechanized responses.

Auto Clarification (CLR)

BellSouth returns an auto CLR when an electronically-submitted LSR does not pass the second round of edit checks for order accuracy. BellSouth categorizes auto CLRs as fully-mechanized responses.

Clarification (CLR)

BellSouth returns a CLR after an electronically-submitted LSR falls out for manual handling. A representative from BellSouth's Local Carrier Service Center (LCSC) reviews the LSR, determines that the request fell out due to a CLEC error, and sends a request for clarification back to the CLEC. BellSouth classifies CLRs as partially-mechanized responses.

In response to an ERR, the CLEC must re-submit the original LSR, correcting any errors. Following the receipt of a CLR (system- or representative-generated), the CLEC must submit a supplemental service request (Sup) that modifies the original order.

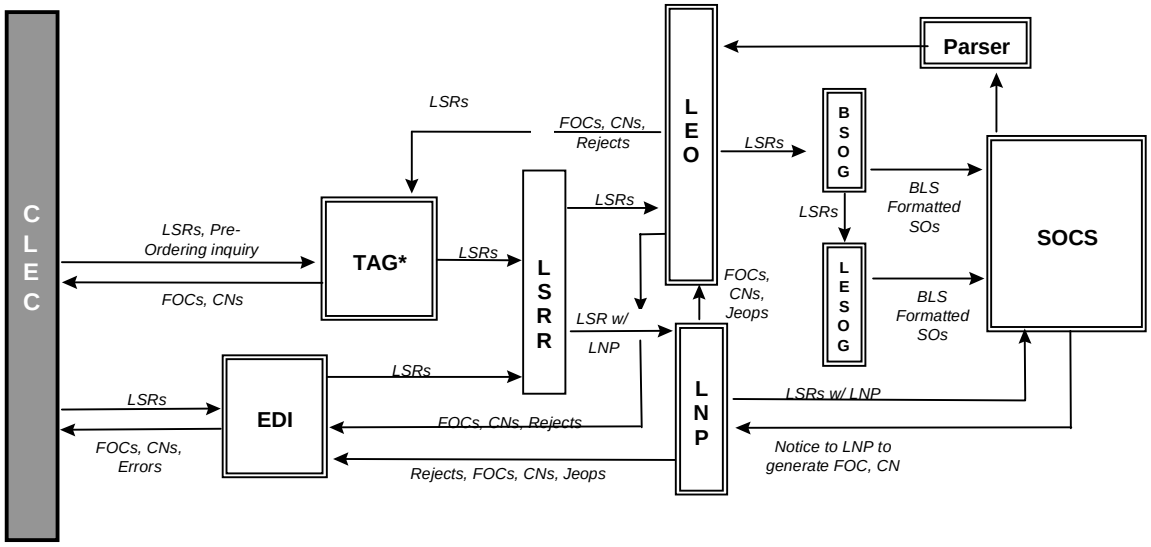
Once an LSR passes through the ordering validation process, it is logged in the BellSouth Service Order Communication System (SOCS), which coordinates downstream provisioning activity and monitors the status of the order. SOCS generates a Firm Order Confirmation (FOC) response that is delivered to the CLEC. This FOC confirms that BellSouth has validated the LSR and provides a Due Date (DD) on which BellSouth commits to provisioning the requested service.

The following is a diagram of BellSouth's Ordering System:

[1] HP delivered errors encountered during the text file-to-TAG/EDI mapping to KCI. The associated LSRs were never transmitted to the BellSouth EDI or TAG Gateway. KCI investigated these errors, made appropriate modifications to the LSR, and resubmitted the service request.

[2] Definitions of error categories taken from the BellSouth Service Quality Measurements (SQM) Georgia Performance Reports, 10/22/99, p. 14 (Percent Rejected Service Request report definition).

Table V-C: BellSouth's Production Order System



Provisioning

The provisioning process begins once a complete and accurate service order is produced by the Service Order Control System (SOCS). The provisioning process is determined by the type of service order (designed or non-designed). Once SOCS receives the order information, it is transmitted to the Service Order Analysis & Control System (SOAC). SOAC determines which downstream assignment and control systems are required to complete order provisioning based on information contained in the service order.

An LSR may pass through several stages after confirmation and prior to completion. The LSR status changes to indicate the order's progress through provisioning validation and completion activities. With each change in status, BellSouth transmits a Status Message to the CLEC. Notification is also provided in the event that provisioning activities cannot be completed on the committed due date as a result of a CLEC or BellSouth issue. BellSouth delivers a Missed Appointment (MA) notice when the due date on a service order is missed. Status and MA codes, definitions, and information on required CLEC action are provided on the BellSouth Web site[3]. Upon completion of provisioning activities, BellSouth transmits a Completion Notification (CN) to the CLEC indicating successful activation of the order.

The BellSouth UNE Center (UNE-C) is the focal point for UNE conversions, including UNE analog loops and UNE ports. Specifically, the coordination center is responsible for all provisioning activity involving plain old telephone service (POTS), as well as special service circuits for UNE products, Interim Number Portability (INP), and Local Number Portability (LNP). For coordinated analog loop conversions and port orders, a

[3] http://www.interconnection.bellsouth.com/markets/lec/oss_info.html

coordinator at the UNE-C verifies the order and places a call to the CLEC to obtain concurrence. During actual provisioning of a coordinated order, the UNE-C directs the relevant BellSouth provisioning organizations, including the Central Office technician and Recent Change Management Administration Group (RCMAG) switch translation personnel, through the process. Following provisioning, the UNE-C places another call to the CLEC to confirm completion and obtain acceptance of the ordered service installation.

2.2 Scenarios

Various O&P related scenarios were used to evaluate the O&P process and systems. The *BellSouth – Georgia OSS Evaluation Master Test Plan* (MTP) defined the TAG and EDI order scenarios to be tested in O&P-1&2. The scenarios outline, at a high level, the specific products and services to be ordered and activity types to be requested. The scenarios also defined requirements for testing of different customer types (business and residential), migration activity (partial and full migration[4]), and flow through[5] designations. Using these test scenario descriptions, KCI developed test cases for each scenario. The test cases contain a more-detailed description of the order to be run. Each test case was then used to generate one or more distinct service requests, or test instances, for specific end users.

KCI developed test cases and instances to cover the range of UNE services defined in the Georgia Public Service Commission's (GPSC's) *Order*[6]. Electronically orderable UNE products, and the specific ordering activities that can be performed for each product, are defined by BellSouth Requisition (REQ TYPE) and Activity (ACT TYPE) codes. KCI developed and executed TAG and EDI transactions to order the REQ/ACT types based on these combinations.

Table V-D: UNE Scenario Categories

Order Type	Scenario Category	Requisition Type
UNE Loop	Loop	A
UNE Loop with Interim Number Portability (INP)	Loop INP	B
UNE Loop with Local Number Portability (LNP)	Loop LNP	B
UNE Standalone INP	INP	C
UNE Standalone LNP	LNP	C
UNE Port	Port	F

[4] A full migration converts all of a customer's lines to a new service provider. A CLEC requests a partial migration for a multi-line customer wishing to retain at least one line with BellSouth.

[5] For electronically submitted LSRs, a flow-through service request proceeds through BellSouth's OSS to generate a FOC without manual intervention. A non-flow-through request falls out for manual handling prior to the generation of an FOC.

[6] *Order for Petition of Third Party Testing*, May 20, 1999.

Order Type	Scenario Category	Requisition Type
UNE Loop-Port Combination	Combo	M
UNE Standalone Directory Listing (DL)	DL	J

Table V-E: UNE Scenarios

Scenario Number	Scenario Category	Scenario Description
301	Loop	A CLEC orders two new SL1[7] unbundled analog loops from BLS in support of a customer's service request.
302	Loop	A CLEC orders 26 new SL1 unbundled analog loops from BLS in support of a new customer's service request.
303	Loop	A CLEC orders two new SL2[8] unbundled analog loops from BLS in support of a new customer's service request.
305	Loop	A CLEC orders two SL1 unbundled analog loops in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC business.
307	Loop	A CLEC orders two SL2 unbundled analog loops in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC.
308	Loop	A CLEC orders 26 SL2 unbundled analog loops in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC.
309	Loop	A CLEC orders two SL1 unbundled analog loops from BLS for one of its resale customers.
311	Loop	A CLEC orders two SL2 unbundled analog loops from BLS for one of its resale customers.
312	Loop	A CLEC orders 26 SL2 unbundled analog loops from BLS for one of its resale customers.
315	Loop	A CLEC orders a change (e.g., add a loop to an existing account) on two SL2 unbundled analog loops in response to a CLEC customer complaint.
317	Loop	An existing CLEC customer moves from the third to the fifth floor. The CLEC orders an inside move on both of its customer's SL1 unbundled analog loops from BLS.
318	Loop	An existing CLEC customer moves from the third to the fifth floor. The CLEC orders an inside move on both of its customer's SL2 unbundled analog loops from BLS.
319	Loop	An existing CLEC customer moves across town. The CLEC orders an outside move on both of its customer's SL1 unbundled analog loops from BLS.
320	Loop	An existing CLEC customer moves across town. The CLEC orders an outside move on both of its customer's SL2 unbundled analog loops from BLS.

[7] SL1 is a non-designed loop.
[8] SL2 is a designed loop

Scenario Number	Scenario Category	Scenario Description
323	Loop	An existing CLEC customer is moving to another state. The CLEC orders BLS to disconnect both of its customer's SL1 unbundled analog loops.
324	Loop	An existing CLEC customer is moving to another state. The CLEC orders BLS to disconnect both of its customer's SL2 unbundled analog loops.
620	Loop	An existing CLEC customer disconnects one of its existing three SL1 unbundled analog loops.
630	Loop	A CLEC migrates an existing UNE loop-port combination two-line customer to UNE analog SL2 loops.
700	Loop	Migrate an existing CLEC single line resale customer to another CLEC UNE SL1 analog loop.
701	Loop	Migrate an existing CLEC one line SL1 loop customer to another CLEC UNE SL1 analog loop.
600	Loop	Migrate two auxiliary lines of a BLS retail four-line customer to CLEC UNE SL2 analog loop.
325	Loop INP	A CLEC orders two SL1 unbundled analog loops with INP in support of a partial migration service request from an existing BLS customer. The customer currently has six lines, four of which stay with BLS and two are migrated "as-specified" to the CLEC.
326	Loop INP	A CLEC orders two SL1 unbundled analog loops with INP in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC.
328	Loop INP	A CLEC orders 26 SL1 unbundled analog loops with INP in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC.
329	Loop INP	A CLEC orders two SL2 unbundled analog loops with INP in support of a partial migration service request from an existing BLS customer. The customer currently has six lines, four of which stay with BLS and two are migrated "as-specified" to the CLEC.
330	Loop INP	A CLEC orders two SL2 unbundled analog loops with INP in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC.
333	Loop INP	A CLEC orders two SL1 unbundled analog loops with INP from BLS for one of its resale customers.
334	Loop INP	A CLEC orders 26 SL1 unbundled analog loops with INP from BLS for one of its resale customers.
335	Loop INP	A CLEC orders two SL2 unbundled analog loops with INP from BLS for one of its resale customers.
349	Loop LNP	A CLEC orders two SL1 unbundled analog loops with LNP in support of a partial migration service request from an existing BLS customer. The customer currently has six lines, four of which stay with BLS and two are migrated "as-specified" to the CLEC.
350	Loop LNP	A CLEC orders two SL1 unbundled analog loops with LNP in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC.

Scenario Number	Scenario Category	Scenario Description
351	Loop LNP	A CLEC orders 26 SL1 unbundled analog loops with LNP in support of a partial migration service request from an existing BLS customer. The customer currently has 31 lines, five of which stay with BLS and 26 are migrated "as-specified" to the CLEC.
353	Loop LNP	A CLEC orders two SL2 unbundled analog loops with LNP in support of a partial migration service request from an existing BLS customer. The customer currently has six lines, four of which stay with BLS and two are migrated "as-specified" to the CLEC.
354	Loop LNP	A CLEC orders two SL2 unbundled analog loops with LNP in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC.
355	Loop LNP	A CLEC orders 26 SL2 unbundled analog loops with LNP in support of a partial migration service request from an existing BLS customer. The customer currently has 31 lines, five of which stay with BLS and 26 are migrated "as-specified" to the CLEC.
357	Loop LNP	A CLEC orders two SL1 unbundled analog loops with LNP from BLS for one of its resale customers.
358	Loop LNP	A CLEC orders 26 SL1 unbundled analog loops with LNP from BLS for one of its resale customers.
359	Loop LNP	A CLEC orders two SL2 unbundled analog loops with LNP from BLS for one of its resale customers.
800	Loop LNP	Migrate 'as-is' a two-line BLS residence customer to two UNE analog SL1 loops with LNP. Directory Listings remain the same.
373	INP	A CLEC ports two of its existing six numbers to CLEC using INP.
374	INP	A CLEC orders INP for both of its fully migrated lines from BLS.
375	INP	A CLEC ports 26 of its existing 31 numbers to CLEC via INP.
377	INP	A CLEC orders INP for two lines in support of an existing resale customer being migrated to CLEC facilities.
382	INP	An existing CLEC customer is moving to another state. The CLEC orders BLS to disconnect INP for all six of its customer's lines.
383	LNP	A CLEC ports two of its existing six numbers to CLEC via LNP.
384	LNP	A CLEC orders LNP for both of its fully migrated lines from BLS.
385	LNP	A CLEC ports 26 of its existing 31 numbers to CLEC via LNP.
386	LNP	A CLEC orders LNP for all 26 fully migrated lines from BLS.
387	LNP	A CLEC orders LNP for two lines in support of an existing resale customer being migrated to CLEC facilities.
388	LNP	A CLEC orders LNP for 26 lines in support of an existing resale customer being migrated to CLEC facilities.
801	LNP	A CLEC orders LNP for two retail business lines. Directory listings remain the same.
393	LNP	A CLEC orders a change from INP to LNP for two lines.
395	Port	A CLEC orders two new business unbundled analog ports from BLS in support of a new business customer's service request.
396	Port	A CLEC orders 26 new business unbundled analog ports from BLS in support of a new business customer's service request.

Scenario Number	Scenario Category	Scenario Description
397	Port	A CLEC orders two new residential unbundled analog ports from BLS in support of a new business customer's service request.
398	Port	A CLEC orders two business unbundled analog ports in support of a partial migration service request from an existing BLS business customer. The business customer currently has six lines, four of which stay with BLS and two are migrated "as-specified" to the CLEC.
399	Port	A CLEC orders two business unbundled analog ports in support of a full migration service request from an existing BLS business customer. The business customer lines are migrated "as-specified" to the CLEC.
400	Port	A CLEC orders 26 business unbundled analog ports in support of a partial migration service request from an existing BLS business customer. The business customer currently has 31 lines, five of which stay with BLS and 26 are migrated "as-specified" to the CLEC.
401	Port	A CLEC orders 26 business unbundled analog ports in support of a full migration service request from an existing BLS business customer. The business customer lines are migrated "as-specified" to the CLEC.
402	Port	A CLEC orders two residential unbundled analog ports in support of a partial migration service request from an existing BLS residential customer. The residential customer currently has three lines, one of which stay with BLS and two are migrated "as-specified" to the CLEC.
403	Port	A CLEC orders two residential unbundled analog ports in support of a full migration service request from an existing BLS residential customer. The residential customer lines are migrated "as-specified" to the CLEC.
404	Port	A CLEC orders two business unbundled analog ports from BLS for one of its resale business customers.
405	Port	A CLEC orders 26 business unbundled analog ports from BLS for one of its resale business customers.
406	Port	A CLEC orders three residential unbundled analog ports from BLS for one of its resale residential customers.
407	Port	A CLEC orders a change (e.g., add call waiting) on two business unbundled analog ports in response to a CLEC customer complaint.
408	Port	A CLEC orders a change on 26 business unbundled analog ports in response to a CLEC customer complaint.
409	Port	A CLEC orders a change (e.g., add call waiting) on two residential unbundled analog ports in response to a CLEC customer complaint.
412	Port	A CLEC orders a suspend on two business unbundled analog ports.
414	Port	A CLEC orders a suspend on two residential unbundled analog ports.
415	Port	A CLEC orders a restore on two business unbundled analog ports.
417	Port	A CLEC orders a restore on two residential unbundled analog ports.
418	Port	An existing CLEC business customer is going out of business. The CLEC orders BLS to disconnect both of its customer's unbundled analog ports.
419	Port	An existing CLEC residential customer is moving to another state. The CLEC orders BLS to disconnect both of its customer's unbundled analog ports from BLS.

Scenario Number	Scenario Category	Scenario Description
420	Combo	A CLEC orders two new business unbundled analog loop – port combinations from BLS in support of a new business customer's service request.
422	Combo	A CLEC orders two new residential unbundled analog loop – port combinations from BLS in support of a new residential customer's service request.
423	Combo	A CLEC orders two business unbundled analog loop - port combinations in support of a full migration service request from an existing BLS business customer. The business customer lines are migrated "as-specified" to the CLEC.
424	Combo	A CLEC orders 26 business unbundled analog loop - port combinations in support of a full migration service request from an existing BLS business customer. The business customer lines are migrated "as-specified" to the CLEC.
425	Combo	A CLEC orders two residential unbundled analog loop - port combinations in support of a full migration service request from an existing BLS residential customer. The residential customer lines are migrated "as-specified" to the CLEC.
427	Combo	A CLEC orders 26 business unbundled analog loop - port combinations from BLS for one of its resale business customers.
428	Combo	A CLEC orders two residential unbundled analog loop - port combinations from BLS for one of its resale residential customers.
429	Combo	A CLEC orders a change on two business unbundled analog loop - port combinations in response to a CLEC customer complaint.
432	Combo	An existing CLEC business customer moves from the third to the fifth floor in an office complex. The CLEC orders an inside move on both of its customer's unbundled analog loop - port combinations from BLS.
433	Combo	An existing CLEC residential customer moves from the second to the third floor in an apartment building. The CLEC orders an inside move on its customer's unbundled analog loop - port combination from BLS.
435	Combo	An existing CLEC residential customer moves across town. The CLEC orders an outside move on its customer's unbundled analog loop - port combination from BLS.
438	Combo	A CLEC orders a suspend on two business unbundled analog loop - port combinations.
440	Combo	A CLEC orders a suspend on two residential unbundled analog loop - port combinations.
441	Combo	A CLEC orders a restore on two business unbundled analog loop - port combinations.
443	Combo	A CLEC orders a restore on two residential unbundled analog loop - port combinations.
444	Combo	An existing CLEC customer is moving to another state. The CLEC orders BLS to disconnect both of its unbundled loop-port combinations.

Scenario Number	Scenario Category	Scenario Description
445	Combo	An existing CLEC customer is moving to another state. The CLEC orders BLS to disconnect both of its unbundled loop-port combinations.
604	Combo	CLEC orders one unbundled analog loop / port combination in support of partial migration. BLS customer currently has three lines, two of which stay with BLS, while one migrates "as specified" to CLEC.
602	Combo	An existing CLEC customer orders BLS to disconnect two of four CLEC analog loop-port combinations.
702	Combo	Migrate an existing CLEC single line UNE Loop-Port combination customer to another CLEC UNE Loop-Port combination.
452	DL	A CLEC orders an additional directory listing in support of a service request from an existing business loop port combination customer.
453	DL	A CLEC orders an additional directory listing in support of a service request from an existing residential loop port combination customer.
454	DL	An existing CLEC residential loop port combination customer requests a directory listing change.
455	DL	An existing CLEC business loop port combination customer requests a directory listing change.
456	DL	An existing CLEC multi-line business loop port combination customer requests an additional directory listing.
457	DL	A CLEC customer with LNP orders a directory listing.
458	DL	A CLEC customer with LNP deletes its directory listing.

Integration Testing

KCI conducted a defined set of integrated pre-order / order transactions. For these transactions, the information returned in a pre-order response was manually copied, without modifications, into an LSR for which pre-order information was required. This test was conducted to evaluate the degree to which a CLEC could develop automated integrated transactions and to highlight any inconsistencies in field name(s) and format between pre-order and order forms. The following table outlines the pre-order / order integration test flow. Results of the integration test are presented in Section 3.1: Results and Analysis.

Table V-F: Integration Scenarios

Scenario	Description	Pre-Order (s) Transaction Type
I01	Migrate a four-line Retail business customer to four UNE analog Ports. Add Call Waiting and Call Forward Deluxe to all lines. Add Call Return on two lines.	Service Availability Query
I02	Migrate a four-line Retail customer to four UNE Loop-Port combos.	Service Availability Query

I03	Migrate a two-line Retail business customer to CLEC Resale. Change customer's PIC and LPIC.	Service Availability Query
I04	Migrate a three-line retail business customer to three UNE analog SL1 loops.	Address Validation Query
I05	Disconnect a single line resale residential customer.	Appointment Availability Query Calculate Due Date
I06	Migrate a single line residential Retail customer to one UNE analog SL1 loop.	Address Validation Query (using Telephone Number as input)
I07	A two-line Resale business customer performs an inside move.	Address Validation Query Telephone Number Assignment Query Telephone Number Selection Query
I08	A two-line Resale residential customer performs an outside move.	Address Validation Query
I09	A residential two-line UNE loop-port combination customer requests a TN change for both lines.	Telephone Number Assignment Query Telephone Number Selection Query
I10	A new residential customer adds two UNE analog Ports. Add call waiting on both lines.	Telephone Number Assignment Query Telephone Number Selection Query
I11	A new business customer adds two UNE analog Loop Port combos.	Telephone Number Assignment Query Telephone Number Selection Query

2.3 Test Bed

In order to provide KCI with a set of customers against which to submit service requests, BellSouth provided KCI with a test bed. BellSouth provisioned the test bed accounts according to specifications submitted by KCI. These requirements covered a range of customer starting states (e.g., BellSouth retail, CLEC resale, CLEC UNE); line counts (single and multi-line); service types (business, residential); and features (e.g., call waiting, return call, speed dial). The test bed accounts were established across a range of Central Offices (COs), covering different rate centers and switch types.

The test bed specifications submitted to BellSouth provided no indication of the subsequent order activity planned by KCI. In addition to the test bed accounts, BellSouth provided KCI with facility and customer information (cable-pair assignments, telephone numbers, and addresses) required when populating specific service requests.

KCI, in collaboration with the GPSC, solicited the participation of actual CLECs currently doing business with BellSouth Georgia to execute Local Number Portability (LNP) service requests.

As a pseudo-CLEC, KCI lacked access to the requisite registrations and certifications needed to perform LNP orders. As a result, KCI obtained LNP test bed information from four CLECs possessing LNP-ordering capability. These CLECs provided KCI with the company and facility specific information required on LNP orders. The CLECs were asked to perform the necessary provisioning activities to complete the orders. Utilizing the information provided by the CLECs, KCI created and submitted the LNP service requests via its TAG and EDI interfaces. KCI also monitored BLS provisioning activities in association with these LNP orders[9].

[9] Results of provisioning activities associated with LNP service requests are presented in the Results Section of the Provisioning Verification Test (O&P-5).

A. Test Results: EDI Functional Test (O&P-1)

1.0 Description

The objective of the Electronic Data Interchange (EDI) Functional Test (O&P-1) was to evaluate the functionality of BellSouth's ordering systems in processing Local Service Requests (LSRs) for Unbundled Network Element (UNE) services submitted via EDI.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section V, "Ordering & Provisioning Overview" for a description of the BellSouth ordering process via EDI.

2.2 Scenarios

KCI generated and transmitted LSRs based on the 100 UNE scenarios outlined in the *Master Test Plan* (*MTP*). The *MTP* defined the EDI order scenarios to be tested in O&P-1, and outlined the specific products and services to be ordered as well as the applicable activity types. The scenarios also defined requirements for the testing of different customer types (business and residential), migration activity (partial and full migration[1]) and flow through[2] designations.

Please refer to Section V, Tables V-2.2 and V-2.3 for a list of the UNE scenarios used for this test.

2.3 Test Targets & Measures

The test target was BellSouth's UNE ordering process for LSRs submitted via the EDI interface. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

[1] A CLEC requests a full migration to convert all of a customer's lines to a new service provider. A CLEC requests a partial migration for a multi-line customer retaining at least one line with BellSouth.

[2] For electronically submitted LSRs, a flow-through service request proceeds through BellSouth's OSS to generate a FOC without manual intervention. A non-flow-through service request falls out for manual handling prior to generation of a FOC.

Table V-1.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Submit an Order	Send order in LSR format	Presence of Functionality	O&P-1-1-1; O&P-1-2-1; O&P-1-2-2
	Receive acknowledgment	Timeliness of Response	O&P-1-3-1
	Receive FOC / error / reject notification	Accuracy of Response	O&P-1-4-1: O&P-1-4-2: O&P-1-4-3
		Clarity of Information	O&P-1-4-1; O&P-1-4-2
		Timeliness of Response	O&P-1-3-2a; O&P-1-3-2b; O&P-1-3-3a; O&P-1-3-3b
	Send expedited order transaction	Presence of Functionality	O&P-1-1-1; O&P-1-2-1; O&P-1-2-2
Submit an Error	Send error in LSR format	Presence of Functionality	O&P-1-1-1; O&P-1-2-1; O&P-1-2-2
	Receive acknowledgement	Timeliness of Response	O&P-1-3-1
	Receive planned error / reject notification	Accuracy of Response	O&P-1-4-2
		Clarity of Information	O&P-1-4-2
		Timeliness of Response	O&P-1-3-2a; O&P-1-3-2b
	Correct error(s)	Clarity of Information	O&P-1-4-2
	Re-send order	Presence of Functionality	O&P-1-1-1; O&P-1-2-1; O&P-1-2-2
	Receive FOC	Accuracy of Response	O&P-1-4-1; O&P-1-4-3
		Clarity of Information	O&P-1-4-1
		Timeliness of Response	O&P-1-3-3a; O&P-1-3-3b
Supplement an Order	Send supplement	Presence of Functionality	O&P-1-1-1; O&P-1-2-1; O&P-1-2-2
	Receive acknowledgment	Timeliness of Response	O&P-1-3-1
	Receive FOC / error / reject notification	Accuracy of Response	O&P-1-4-1; O&P-1-4-2; O&P-1-4-3
		Clarity of Information	O&P-1-4-1; O&P-1-4-2
		Timeliness of Response	O&P-1-3-2a; O&P-1-3-2b; O&P-1-3-3a; O&P-1-3-3b
	Correct error(s)	Clarity of Information	O&P-1-4-2
	Re-send supplement	Presence of Functionality	O&P-1-1-1; O&P-1-2-1; O&P-1-2-2
	Receive FOC	Accuracy of Response	O&P-1-4-1; O&P-1-4-3
		Clarity of Information	O&P-1-4-1
		Timeliness of Response	O&P-1-3-3a; O&P-1-3-3b

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Pre-Order / Order Integration	Populate integration orders with information returned from designated pre-order response	Clarity of Information	O&P-2-5-1; O&P-2-5-2; O&P-2-5-3; O&P-2-5-4; O&P-2-5-5; O&P-2-5-6; O&P-2-5-7
	Submit integration orders	Presence of Functionality	O&P-1-1-1; O&P-1-2-1; O&P-1-2-2
	Receive acknowledgment	Timeliness of Response	O&P-1-3-1
	Receive error / reject notification	Accuracy of Response	O&P-1-4-2
		Clarity of Information	O&P-1-4-2
		Timeliness of Response	O&P-1-3-2a; O&P-1-3-2b
	Correct error(s)	Clarity of Information	O&P-1-4-2
	Re-send integration order	Presence of Functionality	O&P-1-1-1; O&P-1-2-1; O&P-1-2-2
	Receive FOC	Accuracy of Response	O&P-1-4-1; O&P-1-4-3
		Clarity of Information	O&P-1-4-1
		Timeliness of Response	O&P-1-3-3a; O&P-1-3-3b
Receive Completion Notice (CN)	Receive CN transaction	Accuracy of Response	O&P-1-4-4
		Clarity of Information	O&P-1-4-4
		Timeliness of Response	O&P-1-3-4
Receive Jeopardy Notification	Receive jeopardy notification / missed appointment transaction	Accuracy of Response	O&P-1-4-5; O&P-1-4-6
		Clarity of Information	O&P-1-4-5; O&P-1-4-6
		Timeliness of Response	O&P-1-3-5; O&P-1-3-6
Check Service Order Status	Check service order status	Accuracy of Response	O&P-1-4-7
		Clarity of Information	O&P-1-4-7

2.4 Data Sources

The data collected for this test are summarized in the table below.

Table V-1.2: Data Sources for EDI Functional Test

Document	File Name	Location in Work Papers	Source
Local Exchange Ordering (LEO) Implementation Guide, Volume 1, Issues 7J, 7K, 7L, 7M, 7N, 7O, and 7P	No Electronic Copy	O&P-1-B-1	BLS
LEO Implementation Guide, Volume 2, Issue 6B, July 99	No Electronic Copy	O&P-1-B-2	BLS

Document	File Name	Location in Work Papers	Source
LEO Implementation Guide, Volume 3, Issue 3A, August 98	No Electronic Copy	O&P-1-B-3	BLS
LEO Implementation Guide, Volume 4, Issue 7F, October 99	No Electronic Copy	O&P-1-B-4	BLS
Product and Services Interval Guide	No Electronic Copy	O&P-1-B-5	BLS
Local Service Request Error Messages (Version TCIF 7)	O&P_errors.pdf	O&P-1-A-4	BLS
CLEC Service Order Tracking System (CSOTS) *Users Guide*	O&P_csots.pdf	O&P-1-A-1	BLS
Local Number Portability (LNP) Ordering Guide (Issue 1b-October 1999)	O&P_LNPgd.pdf	O&P-1-A-3	BLS
Facility-Based Activation Requirements	No Electronic Copy	O&P-1-B-6	BLS
Miscellaneous Account Numbers provided by BLS	O&P_MANs.doc	O&P-1-A-5	BLS
KCI Company Codes and Billing Account Numbers	O&P_OCN.xls	O&P-1-A-6	BLS
EDI Interface Testing Agreement – LNP	O&P_EDIvalid.doc	O&P-1-A-8	BLS
Cable Pair Assignments	O&P_cablepair.xls	O&P-1-A-9	BLS
Initial State Customer Service Records (CSRs)	O&P_PreCSR.mdb	O&P-1-A-10	BLS
Post-Order Activity CSRs	O&P_PostCSR.mdb	O&P-1-A-11	BLS
CLEC information for LNP orders (Proprietary)	O&P_CLECLNP.xls	O&P-1-A-12	CLECs
Pending Order Status Job Aid	O&P_Pendingstat.pdf	O&P-1-A-13	BLS
Additional Test Bed Addresses	O&P_newad.doc	O&P-1-A-14	BLS
O&P Test Bed Specifications	O&P_Testbed_specs.xls	O&P-1-A-15	KCI
LNP Test Bed Specifications	O&P_LNPTestbed_specs.xls	O&P-1-A-16	KCI
Test Case Master	O&P_Testcasemaster.xls	O&P-1-A-17	KCI
Order Transaction Submission Schedule	O&P_editagsced.xls	O&P-1-A-18	KCI
KCI Help Desk Log	O&P_HelpDesklog.xls	O&P-1-A-19	KCI
KCI Issues Log	O&P_TestIssues.xls	O&P-1-A-20	KCI
Pre-Order / Order Integration Log	O&P_integration.xls	O&P-1-A-21	KCI
EDI System Availability Logs	O&P_EDIsystem.mdb	O&P-1-A-22	HP
Expected Results Analysis - EDI	O&P_EDIExpected	O&P-1-A-25	KCI

2.4.1 Data Generation/Volumes

Data for this test were generated through order transaction submission via EDI. The number of transactions submitted during functional testing was determined based on the number of different requisition and activity (REQ ACT) type combinations available to CLECs via the EDI interface.

This test is a feature function test and did not rely on volume testing.

2.5 Evaluation Methods

To allow for service request submission, BellSouth provided KCI with test bed accounts[3] that were provisioned according to KCI's specifications. Test cases and instances, correlating to Local Service Requests (LSRs), were developed using test bed accounts, pre-order data and BellSouth ordering documentation, which included the *Local Exchange Ordering Guide (LEO) Guide, Volume 1*.

Transactions (LSRs) were submitted and the results were logged and compared to expected results, based on our knowledge of the ordering and provisioning system functionality and business processes. These processes are outlined in Section V, "Ordering and Provisioning Overview."

EDI orders were submitted as both stand-alone transactions and as integrated pre-order / order transactions[4].

2.6 Analysis Methods

The EDI Functional Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. The evaluation criteria provided the framework of norms, standards, and guidelines for the EDI Functional Test.

The Georgia Public Service Commission voted on June 6, 2000 to approve a set of Service Quality Measurement- (SQM-) related measures and standards to be used for purposes of this evaluation[5]. In many cases, results in this section were calculated based on KCI / HP timestamps, which may differ significantly from the BellSouth time measurement points reported in the SQMs.[6] For those

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[3] See Section V, "Ordering & Provisioning Overview" for a detailed description of the Ordering and Provisioning test bed.

[4] See Section V, "Ordering & Provisioning Overview" for a description of the Pre-Order / Order Integration Sub-Test.

[5] On January 16, 2001 the GPSC issued an order requiring BellSouth to report for business purposes a set of measures that differs in some cases from the requirements of the June 6, 2000 test standards.

[6] For one evaluation criterion, O&P-1-3-2a, KCI conducted a comparison of response timeliness based on BellSouth-provided timestamps versus response timeliness based on KCI / HP timestamps. While KCI's evaluation result for this and all other ordering criteria is determined using KCI / HP timestamps and data measurement points, data pertaining to this BLS / KCI data comparison is provided for information purposes. See O&P-1-3-2a for additional information.

evaluation criteria that do not map to the GPSC-approved measures, or where BellSouth does not specify and publish a standard business interval for a given procedure, KCI applied its own standard, based on our professional judgment.

For quantitative evaluation criteria where the test result did not meet or exceed the established standard or KCI benchmark, KCI conducted a review to determine whether the differential was statistically significant.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table V-1.3: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Interface Availability			
O&P-1-1-1	EDI order transaction capability is consistently available during scheduled hours of operation.	No Result Determination Made [7]	The GPSC approved standard is 99.5% system availability during scheduled hours of operation[8]. During the course of this test, Hewlett Packard attempted to maintain a constant connection to BLS's EDI interface by implementing regular system 'pinging.' Based on an analysis of HP's EDI system availability logs between 2/7/00 and 7/27/00[9], KCI observed that the EDI interface was available during 98.6% of scheduled hours of availability.

[7] KCI could not conclusively determine the root source (BellSouth or CLEC) for all recorded downtime. As a portion or all of the noted downtime could have resulted from CLEC system downtime, KCI cannot state with confidence that the CLEC recorded result provides evidence of sub-standard performance.

[8] Regular scheduled hours of availability for the TAG interface are published on the BellSouth Interconnection Web site (www.interconnection.bellsouth.com/oss/oss_hour.html). Notices of specific scheduled system downtime (e.g., for a new system release or fix) are communicated through Carrier Notifications posted on the BellSouth Web site.

[9] HP maintained detailed logs of system availability beginning on 2/7/00. Comprehensive system availability data for the test period prior to this date is unavailable.

Test Cross-Reference	Evaluation Criteria	Result	Comments
System Functionality			
O&P-1-2-1	The EDI interface provides expected system responses.	Not Satisfied	The KCI standard is 99% of expected system and representative responses received. Of the 863[10] order transactions submitted during the initial Functional Evaluation, nearly 100% received responses (functional acknowledgements, subsequent errors or confirmations, and expected completion notifications) from BLS. During initial testing, some electronically submitted LSRs received responses via facsimile[11]. According to BLS, these faxes were generated as a result of BLS ordering representative error in failing to populate one of several particular data elements within the BLS service order[12]. The missing internal field(s) precluded an electronic response from being generated. On January 15, 2000, BLS implemented a system enhancement to ensure that FOCs and CNs are electronically generated even when an ordering representative fails to enter one of these data elements. Following this system enhancement, KCI did not observe any additional occurrences of missing electronic FOC or CN responses that were attributable to BLS representatives during initial functional testing. See Exception 9 for additional information on this issue. KCI has recommended closure

[10] This number does not include those transactions receiving interface errors (i.e., those that did not reach BellSouth back-end systems).

[11] Less than one percent of total transactions received responses via Fax.

[12] Particular fields include: AECN (on UNE orders); sales code beginning with "YAXQ"; PON; MAN (UNE orders); RESH (Resale orders); and RMKR.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			of Exception 9 to the GPSC. KCI initiated a functional re-test on 8/25/00.[13] During this re-test, KCI failed to receive Completion Notices (CNs) on approximately 14% of transactions for which a CN was expected. For a portion of these orders, BLS indicated that they were mistakenly canceled by BLS service representatives[14]. See Exception 118 for additional information on this issue. As no subsequent re-testing activities are planned, KCI has recommended closure of Exception 118 to the GPSC.
O&P-1-2-2	BLS systems and representatives provide required order functionality[15].	Satisfied	BLS systems and representatives provided the required order functionality for most transaction types evaluated (see Section V, Tables V-2.2 and V-2.3). However, the following deficiencies in UNE ordering functionality were observed[16]: — Loop service with directory listing requests require two separate LSRs. BLS has indicated that system modifications to allow loop and directory changes

[13] This re-test was initiated to address deficiencies identified in other evaluation criteria; however, results were monitored across all relevant evaluation criteria.

[14] According to BLS, some of these orders fell into error status following confirmation (for billing- and directory listing-related errors). A BLS Error Resolution Group, charged with working orders in this error status, mistakenly viewed the KCI Company Codes as belonging to internal BLS test orders and cancelled them out of the system. Additional orders were affected by other service rep errors or cancellations.

[15] A number of ordering scenarios outlined in the *Master Test Plan* are not electronically orderable via BellSouth TCIF 7 interfaces. BellSouth does not allow stand-alone UNE Loop partial migrations or various types of "UNE-to-UNE migrations", converting a CLEC customer from one service delivery platform (e.g., UNE Loop-Port Combination) to another delivery method (e.g., UNE Loop). KCI issued Exception 39 (UNE Loop partial migration) and Exception 54 (UNE-to-UNE migration) to address these issues. BellSouth submitted requests via the Change Control Process to introduce this ordering functionality into its OSS '99 (TCIF 9) interface release. KCI recommended closure of these exceptions due to the fact that they are not electronically orderable in TCIF 7. Pursuant to the Georgia Public Service Commission's Order, KCI evaluated the electronically-orderable services in TCIF 7. KCI did not test Issue 9 electronic ordering interfaces in Georgia.

[16] All deficiencies referenced in this criterion were addressed and successfully re-tested. The related exceptions are closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			on a single service order are not operationally feasible. To relate the due dates of the two orders, BLS advised CLECs to submit the DL request after the related Loop request has received confirmation, using the Due Date provided on the Loop confirmation as the Desired Due Date for the DL request. KCI submitted a set of Loop Service orders with DL orders to re-test this process. KCI received Firm Order Confirmations on all separate service requests for Loop Service and DL, indicating that BLS ordering systems successfully processed the requests. In addition, KCI experienced no significant problem with obtaining the same confirmed Due Date for DL service as the Due Date received on corresponding Loop Service requests. See Exception 31 for additional information on this issue. Exception 31 is closed[17]. — On three UNE Loop migration service requests, BLS ordering representatives incorrectly processed the service order, resulting in the disconnection of the customers' retail service without reconnection of the UNE component. BLS instituted a system edit to prohibit service representatives from improperly coordinating BLS internal service order activity. Following implementation of this system

[17] KCI recommended closure of Exception 31 based on the presence of adequate LS and DL ordering functionality. While BellSouth electronic ordering systems do not have the ability to handle Loop Service with DL orders on a *single* LSR, the basic functionality to process these orders does exist. KCI believes that the additional effort required of CLECs to develop two distinct service requests and to coordinate their Due Dates is not a significant impediment to timely execution of these order types.

[18] WPQTY = White Pages Quantity; YPQTY = Yellow Pages Quantity.

[19] KCI successfully processed LNP orders following implementation of this feature enhancement.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			edit, no further instances of inappropriate disconnection activity were noted during initial testing. In addition, KCI executed re-test transactions designed to evaluate this BLS edit. KCI monitored subsequent responses to Loop migration service requests in error status and observed no instances of improper service disconnection. See Exception 22 for additional information on this issue. Exception 22 is closed. — A BLS defect preventing the electronic processing of Loop Port Combination partial migration service requests was identified. BLS implemented a system fix on 01/17/00 to correct this deficiency. Subsequent re-testing of this order type indicated that partial migrations are successfully supported. See Exception 4 for additional information on this issue. Exception 4 is closed. — A BLS systems defect preventing the migration of a customer's Billing Telephone Number (BTN) during a partial migration to UNE Loop-Port Combinations was identified. BLS implemented a system fix to address this issue on 4/29/00 and provided CLEC notification of this fix on 5/25/00. See Exception 51 for additional information on this issue. KCI successfully re-tested BTN migrations on 5/30/00. Exception 51 is closed. – A BLS system limitation in processing Local Number Portability (LNP) requests (with and without loops) as a result of the WPQTY and YPQTY data elements[18] was identified. BLS provided notification of an LNP

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Gateway feature enhancement, implemented on 5/7/00, as well as an interim workaround[19] via the Change Control distribution process.
Timeliness of Response [20]			
O&P-1-3-1	BLS's EDI Interface provides timely Functional Acknowledgements (FAs)	Satisfied[21]	The KCI standard is 95% of FAs received within 30 minutes.[22] LSRs submitted for functional testing received FAs within the following timeframes: — 62% of 861 FAs were received in less than 30 minutes. — 23% of FAs were received within 30-60 minutes. — 6% of FAs were received within 60-90 minutes. — The remaining 9% were received after more than 90 minutes. KCI initiated a re-test of FA Timeliness on August 25, 2000. LSRs submitted during re-testing received FAs within the following timeframes[23]: — 93% of 340 FAs were received in less than 30 minutes. — 6% were received within 30-60 minutes. — The remaining 2% were received within 60-90 minutes.

[20] During the course of this evaluation, KCI conducted 2 re-tests to address BellSouth performance relative to select 'response timeliness' criteria. The first re-test, initiated on August 25, 2000, was designed to evaluate BellSouth performance following: a) process improvements implemented in the BellSouth ordering centers; and b) the effects of a BellSouth process change within its EDI translator to segregate incoming CLEC transactions from those of other trading partners (completed on June 30, 2000). The second re-test commenced on January 19, 2001, following BellSouth EDI infrastructure changes. A description of the BellSouth EDI infrastructure modifications can be found in BellSouth's Carrier Notification SN91082007. BellSouth also implemented an EDI change *during the course of* the second re-test. On February 2, 2001, BellSouth modified the time intervals for the process consolidating EDI transactions into a single file for pickup by the LEO system. The process was modified to run every 5 minutes (between 6AM-8PM CST) and every 10 minutes (after 8PM and before 6AM); previously, this process ran every 15 minutes. While KCI's evaluation result is determined based on total results for the latest related re-test, data on BellSouth performance after implementation of a mid-test fix is provided for information purposes.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			See Exception 60 for additional information on this issue. KCI has recommended closure of Exception 60 to the GPSC.
O&P-1-3-2a	BLS's EDI interface provides timely Fully Mechanized (FM) order errors (Fatal Rejects and Auto Clarifications).	Not Satisfied	The GPSC-approved standard for fully mechanized (FM) errors is 97% received within one hour[24]. LSRs submitted during the entire period of initial functional testing received FM errors within the following timeframes [25] (See Table V-1.5): — 18% of FM errors were received in less than one hour. An additional 63% were received within 1-2 hours. KCI initiated a re-test of error response timeliness on August 25, 2000. LSRs submitted during this re-test received FM errors within the following timeframes (See Table V-1.6): — 64% of FM errors were received in less than one hour. An

[21] Although the test percentage is below the benchmark of 95%, the statistical evidence is not strong enough to conclude that the performance is below the benchmark with 95% confidence. In other words, the inherent variation in the process is large enough to have produced the substandard result, even with a process that is operating above the benchmark standard. The p-value, which indicates the chance of observing this result when the benchmark is being met, is 0.0584 , above the .0500 cutoff for a statistical conclusion of failure.

[22] BellSouth documentation does not provide any information on the expected interval for return of an FA.

[23] Totals due not equal 100% due to rounding.

[24] Results are based on the actual flow-through status of LSRs submitted by KCI. KCI determined that a clarification was fully mechanized (FM) or partially / non-mechanized (PM) by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FM / PM classification. During initial testing, KCI was unable to obtain actual FM / PM classifications on a number of Local Number Portability service requests. Responses to 7% of these non-categorized service requests were received within one hour, and 70% were received within 24 hours. During initial re-testing, KCI was unable to obtain actual FM / PM classifications on a number of LNP and non-LNP orders. Of the 30 non-classified orders, 70% were received within 24 hours.

[25] On 2 / 7 / 00, BellSouth completed a systems and process fix to address timeliness of response issues. For the testing period beginning after the fix implementation, 15% of FM errors were received in less than one hour and 69% of PM errors were received in less than 24 hours.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			additional 33% were received within 2 hours.[26] KCI initiated a second re-test of error response timeliness on January 19, 2001. LSRs submitted during this re-test received FM errors within the following timeframes (See Table V-1.7): — 84% of FM errors were received in less than one hour. An additional 5% were received within 2 hours.[27] See Exception 77 for additional information on this issue. As no subsequent re-testing activities are planned, KCI has recommended closure of Exception 77 to the GPSC.
O&P-1-3-2b	BLS's EDI interface provides timely Partially Mechanized (PM) order clarifications (CLRs).	Satisfied	The GPSC-approved standard for partially mechanized (PM) CLRs is 85% received within 24 hours[24]. LSRs submitted during the entire period of initial functional testing received PM CLRs within the following timeframes[25] (See Table V-1.5): — 65% of PM errors were received in less than 24 hours. An additional 30% were received within 24-48 hours. KCI initiated a re-test of error response timeliness on August 25, 2000. LSRs submitted during re-testing received PM CLRs within the following timeframes (See Table V-1.6): — 89% of PM errors were received in less than 24 hours. An

[26] KCI conducted an additional review of FM Error Timeliness results for the initial UNE re-test, comparing response timeliness using BellSouth timestamps to response timeliness using KCI/HP timestamps. For all responses classified as "late" using KCI timestamp analysis, BellSouth provided its EDI translator timestamps for the inbound and outbound transactions. Using BellSouth-provided timestamps, 96% of FM ERR/CLR responses received during the first UNE re-test were received one time (i.e., within one hour). See Table V-1.6 for additional information.

[27] BellSouth implemented a modification to its EDI systems on 2/2/01(see Footnote 13 for additional information). 78% of FM errors received via EDI following this fix were delivered within one hour.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			additional 10% were received within 24-48 hours. See Exception 98 for additional information on this issue. KCI has recommended closure of Exception 98 to the GPSC.
O&P-1-3-3a	BLS's EDI interface provides timely Flow-Through (FT) Firm Order Confirmations (FOCs).	Satisfied	The GPSC-approved standard for flow-through (FT) FOCs is 95% received within three hours[28]. LSRs submitted during the entire period of initial functional testing received FT FOCs within the following timeframes [29] [30] (See Table V-1.8): — 78% of FOCs were received in less than three hours for FT LSRs. KCI initiated a re-test of FOC response timeliness on August 25, 2000. LSRs submitted during this re-test received FT FOCs within the following timeframes (See Table V-1.9): — 82% of FOCs were received in

[28] Results are based on actual Flow-Through (FT) and Non-Flow-Through (NFT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT or NFT by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FT / NFT classification. During initial testing, KCI was unable to obtain actual FT / NFT classifications on a number of Local Number Portability (LNP) service requests. Responses to 17% of these non-categorized service requests were received within three hours, and 92% were received within 36 hours. During initial re-testing, KCI was unable to obtain actual FT / NFT classifications on a number of LNP and non-LNP service requests. Of the 40 FOC responses not classified, 35% were received within three hours and 100% were received within 36 hours.

[29] Beginning with the February Flow-Through Report, BellSouth no longer categorized as Flow- Through those service requests that proceeded through BellSouth electronic ordering systems to the Service Order Communication System (SOCS) and fell out for manual handling after failing a SOCS edit. Previously categorized as FT, these service request types are now defined by BellSouth to be NFT due to the required manual intervention. As a result of BellSouth Flow-Through calculation modifications, some FT FOCs previously categorized as "late" would be considered *NFT* if submitted in the future. FOC response timeliness re-testing activity (initiated on August 25, 2000) occurred after this FT definition change was implemented. As a result, evaluation of re-test FOC timeliness was performed based on consistent classification of FT or NFT categories.

[30] On 2 / 7 / 00, BellSouth completed a systems and process fix to address timeliness of response issues. This set of results is provided beginning after the implementation. For the testing period beginning after the fix implementation, 83% of FOCs were received in less than three hours for FT LSRs and 83% of FOCs were received in less than 36 hours for NFT LSRs.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			less than three hours for FT LSRs. An additional 13% were received within 24 hours. KCI initiated a second re-test of FOC response timeliness on January 19, 2001. LSRs submitted during the second re-test received FT FOCs within the following timeframes (See Table V-1.10): — 100% of FOCs were received in less than 3 hours for FT FOCs.[31] See Exception 78 for additional information on this issue. The issues in Exception 78 that relate to this criterion are resolved.
O&P-1-3-3b	BLS's EDI interface provides timely Non-Flow Through (NFT) Firm Order Confirmations (FOCs).	Satisfied	The GPSC-approved standard for Non Flow-Through (NFT) FOCs is 85% received within 36 hours[28]. LSRs submitted during the entire period of initial functional testing received NFT FOCs within the following timeframes[29, 30] (See Table V-1.8): — 85% of FOCs were received in less than 36 hours for NFT LSRs. KCI initiated a re-test of FOC response timeliness on August 25, 2000. LSRs submitted during re-testing received NFT FOCs within the following timeframes (See Table V-1.9): — 100% of FOCs were received within 36 hours for NFT LSRs. See Exception 97 for additional information on this issue. Exception 97 is closed.

[31] BellSouth implemented a modification to its EDI systems on 2/2/01 (see Footnote 13 for additional information). 100% of FT FOCs received via EDI following this fix were delivered within three hours.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-1-3-4	BLS's EDI interface provides timely Completion Notifications (CNs) within agreed upon standard intervals.	No Result Determination Made[32]	BLS delivers CNs upon the conclusion of "field provisioning"[33] activities as well as all subsequent downstream (listing and billing) provisioning activities[34]. Within the CN, BLS provides the field provisioning completion date (located in the 'DD' field). BLS does not offer a guideline for the standard interval between field and billing completion activities. LSRs submitted for initial functional testing received CNs within the following timeframes (See Table V-1.11): — 86% of CNs were received within one business day after the field provisioning completion date. — 7% received within two business days after field provisioning completion. — 5% received within three-to-five business days after field provisioning completion. — The remaining 2% of CNs were received six or more business days following field provisioning completion.

[32] KCI is unable to assign an evaluation result for this criterion and provides the test results as diagnostic information only. Although the GPSC Service Quality Measurement (SQM), 'Average Completion Notice Interval' is related to CN delivery and has an associated standard of "Parity with Retail," KCI is unable to accurately compare its functional transaction results to this SQM within a reasonable degree of accuracy. BLS calculates this metric using the following data points: 1) Completion date and time (as entered by a BLS field technician for dispatched orders or 5pm on the due date for non-dispatched orders); and 2) Date and time of conclusion of all downstream (listing, billing, and, for LNP orders, TN porting) activities. Within the CN response file delivered to CLECs, BLS provides the work completion date (but not the time); BLS does not provide a date / time stamp associated with downstream provisioning completion. While the CN Timeliness results calculated using CLEC data measurement points (and presented in the comment section of this criterion) provide a reasonable representation of the time between receipt of a CN and completion of field provisioning activities, the differences between KCI and BLS calculation points is large enough to prevent an accurate assignment of a Satisfied / Not Satisfied result relative to the SQM standard.

[33] The "field provisioning" date is defined as the date on which actual service completion occurred.

[34] For Local Number Portability (LNP) orders, BellSouth returns CNs following all provisioning activities and after the CLEC completes the porting of associated Telephone Numbers with the Number Portability Administration Center (NPAC).

Test Cross-Reference	Evaluation Criteria	Result	Comments
			KCI initiated a re-test of CN response timeliness on August 25, 2000. LSRs submitted during re-testing received CNs within the following timeframes (See Table V-1.12): — 87% of CNs were received within one business day after the field provisioning completion date. — 3% received within two business days after field provisioning completion. — 4% received within three-to-five business days after field provisioning completion. — The remaining 6% of CNs were received six or more business days following field provisioning completion. See Exception 26 for additional information on this issue. KCI has recommended closure of Exception 26 to the GPSC.
O&P-1-3-5	BLS's EDI interface provides timely Jeopardy Notifications.	Satisfied	The GPSC-approved standard is 95% of Jeopardy Notifications received at least 48 hours before the confirmed Due Date (DD). Of the nine Jeopardy Notifications received via EDI, BLS has returned 100% at least 48 hours before the DD. See Table V-1.15 for additional details.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-1-3-6	BLS's EDI interface provides timely Missed Appointment (MA) notifications.	Satisfied[35]	The KCI standard is 95% of MA notifications received within one business day after the latest confirmed Due Date (DD). Of the 15 MAs received via EDI, BLS has returned: – 93% (14/15) within 1 business day after the DD. – 7% (1/15) later than one business -day after the DD[36]. See Exception 67 for additional information on this issue.[37] Exception 67 is closed.
Accuracy of Response			
O&P-1-4-1	BLS systems and representatives provide clear, accurate, and complete Firm Order Confirmations (FOCs).	Satisfied	A sample of FOCs was examined for clarity, accuracy, and completeness relative to the BLS Business Rules (*LEO Guide, Volume 1*)[38]. A number of FOCs were received in response to invalid service requests. For these orders, KCI expected to receive error messages. KCI initated a re-test on 9/25/00 to monitor the accuracy of FOC responses. KCI determined that 99% of FOCs received during re-test activities were

[35] Although the test percentage is below the benchmark of 95%, the statistical evidence is not strong enough to conclude that the performance is below the benchmark with 95% confidence. In other words, the inherent variation in the process is large enough to have produced the substandard result, even with a process that is operating above the benchmark standard. The p-value, which indicates the chance of observing this result when the benchmark is being met, is 0. 5367 , above the .0500 cutoff for a statistical conclusion of failure.

[36] The late MA response was received 13 days after the FOC DD.

[37] KCI drafted Exception 67 to address late MA notifications received. Upon further investigation, the majority of responses initially categorized as 'late' were determined to be 'on-time'. For a number of PONs, due date modifications were initiated by CLEC representatives during conversations with BellSouth UNE-Center personnel. New FOCs (containing the new Due Dates) are not transmitted in these cases. As a result, KCI initially compared the *original* FOC DD with the MA receipt time. The MA receipt times were subsequently compared to the modified Due Dates. In the majority of cases, the MAs were delivered in a timely manner relative to the new DD.

[38] KCI defined an accurate FOC as a correct response type relative to the LSR submitted (i.e., the FOC was received in response to a valid LSR) that contains: a) all expected data elements (fields); b) no unexpected data elements (fields); c) all required data values in the expected format; d) no prohibited values. Expected and prohibited values were developed based on the *LEO Guide, Volume 1.*

Test Cross-Reference	Evaluation Criteria	Result	Comments
			accurate response types (i.e., received in response to valid LSRs). See Exception 95 for additional information on this issue. The issues in Exception 95 that relate to this criterion are resolved. During KCI's initial review of FOC completeness, KCI observed a number of discrepancies between BLS-documented data requirements and actual data returned on FOC responses. For example, Frame Due Time (FDT) and Circuit ID (ECCKT) were listed as required fields but were not populated on all responses. In addition, CHAN/PAIR was populated when it was not an applicable field according to BLS Business Rules. Exception 68 was opened to address these response completeness issues. To address these issues, BLS published an updated version of *LEO Guide, Volume I* on August 28, 2000 to more accurately reflect FOC data requirements. This version (7S) did not adequately define usage requirements, by specific order types, for some response fields[39]. On 1/31/01, BLS issued a modified *LEO Guide* (Issue 7U) that included additional usage information for response transactions. Based on this updated documentation, KCI validated that all expected data fields were populated on FOC responses. See Exception 68 for additional information on this issue. KCI has recommended closure of Exception 68 to the GPSC.

[39] The following response fields have inadequate usage requirements: ORD, RORD, FDT, EBD, LOCBAN, BAN1, BAN2. For these fields, KCI was initially unable to determine what the "expected" results should be.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-1-4-2	BLS systems and representatives provide clear, accurate and complete order errors / clarifications (CLRs).	Not Satisfied	A sample of error responses was examined for clarity, accuracy, and completeness relative to the BLS Business Rules (*LEO Guide, Volume 1*)[40]. A number of CLRs were received in response to valid service requests. BLS performed additional training of its ordering representatives to correct this problem. CLRs received following the implementation of rep training were found to be accurate[41]. However, KCI noted additional occurrences of inaccurate CLRs during re-test activities initiated on 9/25/00. Of the sample reviewed, approximately 18% of partially-mechanized CLRs (i.e., issued by BLS representatives) received during re-testing were found to be inaccurate. See Exception 47 for additional information on this issue. As no subsequent re-testing activities are planned, KCI has recommended closure of Exception 47 to the GPSC. In addition, several error messages received in response to Local Number Portability (LNP) service requests did not contain clear and comprehensive error descriptions. These responses were populated with an error message stating "Other LNP Error." KCI contacted its BLS Customer Service Manager to obtain the detailed error message. BLS has opened a feature change to prevent this message from being delivered on LNP responses. A target date for the implementation of this feature has not yet been established. This deficiency did not prevent KCI from

[40] KCI defined an accurate error as a correct response type relative to the LSR submitted (i.e., the ERR / CLR was received in response to an erred LSR) that contains: a) all expected data elements (fields); b) no unexpected data elements (fields); c) all required data values in the expected format; d) no prohibited values. Expected and prohibited values were developed based on the *LEO Guide, Volume 1.*

[41] Three additional inaccuracies were observed, representing less than 5% of total partially-mechanized CLR responses reviewed following BellSouth rep training.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			continuing its ordering activity and was not significant enough to affect the overall evaluation. For some initial functional test transactions, a BLS representative generated a CLR in response to a Line Class of Service (LNE CLS SVC) entry on an LSR that had previously returned a system-generated FOC. BLS has proposed a feature enhancement within its internal Change Control Process to ensure system-representative consistency in service request validation. BLS plans to implement this feature in its OSS'99 version of EDI. KCI is not testing OSS '99. See Exception 18 for additional information on this issue. Exception 18 is closed [42]. During KCI's initial review of error completeness, the BLS Business Rules (Issue 7S) did not adequately define usage requirements, by specific order types, for some response fields[43]. On 1/31/01, BLS issued a modified *LEO Guide* (Issue 7U) that included additional usage information for response transactions. Based on this updated documentation, KCI validated that all expected data fields were populated on error responses. See Exception 68 for additional information on this issue. KCI has recommended closure of Exception 68 to the GPSC. This criterion has been assigned a Not Satisfied as a result of the inaccurate CLRs noted above.

[42] KCI closed this exception based on the fact that BellSouth has updated its documentation to more clearly reflect the valid data entries in the LNE CLS SVC field, and because the BellSouth feature will not be implemented in TCIF 7. KCI is not testing the ordering functionality of the TCIF 9 release in Georgia.

[43] The following response fields have inadequate usage requirements: ORD, RORD, FDT, EBD, LOCBAN, BAN1, BAN2. For these fields, KCI was unable to determine what the "expected" results should be.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-1-4-3	Service order provisioning due dates (FOC DDs[44]) identified within BLS's order confirmation delivered through EDI are consistent with the CLEC's valid due date (LSR DDD[45]) request (e.g., a due date selected in accordance with the product's standard interval or acquired from a Calculate Due Date [CDD] pre-order query).	No Result Determination Made[46]	KCI obtained valid DDD information for population on an LSR from one of two sources: 1) BLS *Product and Services Interval Guide.* 2) A combination of pre-order queries. KCI performed a Calculate Due Date (CDD) query to determine the earliest possible due date for an order type. An Appointment Availability Query (AAQ) was then run to confirm that the appointment time was available in the necessary Central Office. For LSRs submitted during initial testing and populated with a DDD obtained from BLS documentation[47]: — 88% of DDs were equal to the LSR DDD. — 5% of DDs were earlier than the LSR DDD. — 7% of DDs were later than the LSR DDD. For LSRs submitted during initial testing and populated with a DDD obtained from electronic pre-order queries[48]: – 90% of DDs were equal to the LSR DDD.

[44] FOC Due Date (DD) is defined as the due date provided in the FOC. It is the date on which BellSouth commits to complete provisioning of a customer's service.

[45] LSR Desired Due Date (LSR DDD) is defined as the due date requested in a customer's LSR.

[46] A Georgia Service Quality Measurement (SQM) addressing the correlation between confirmed due dates and requested due dates does not exist. In addition, BellSouth does not have an established commitment or guideline for the percentage of confirmed due dates that should equal the requested due date. In the absence of an SQM-related benchmark, a BellSouth-defined guideline, or general industry-approved standards or business rule thresholds that can be used for evaluation purposes, KCI provided the test results as diagnostic information only.

[47] Results are based on 224 LSRs submitted using BellSouth documentation to obtain input for the DDD field.

[48] Results are based on ten LSRs submitted using electronic pre-order queried to obtain input for the DDD field.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			– 10% of DDs were earlier than the LSR DDD. BLS implemented training for Local Carrier Service Center (LCSC) representatives on 3/9/00 to prevent earlier DDs from being issued on manually handled service requests. Based on a review of FOCs received after 3/9/00: – 9% of DDs were earlier than the requested DDD. KCI initiated a subsequent re-test of Due Date accuracy on August 25, 2000. For LSRs submitted during re-testing and populated with a DDD obtained from BLS documentation[49]: — 95% of DDs were equal to the LSR DDD. — 1% of DDs were earlier than the LSR DDD. — 4% of DDs were later than the LSR DDD. For LSRs submitted during re-testing and populated with a DDD obtained from electronic pre-order queries[50]: — 88% of DDs were equal to the LSR DDD. — 13% of DDs were later than the LSR DDD. See Exception 38 and Tables V-1.13 and V-1.14 for additional information on this issue. KCI has recommended closure of Exception 38 to the GPSC.

[49] LSRs for which KCI requested an invalid DDD (i.e., earlier than the documented or pre-order-obtained standard interval) have been excluded from this analysis.

[50] Totals do not equal 100% due to rounding.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-1-4-4	BLS systems and representatives provide clear, accurate, and complete Completion Notifications (CNs).	Satisfied	A sample of CNs was examined for clarity, accuracy, and completeness relative to the BLS Business Rules (*LEO Guide, Volume 1*) [51]. The majority of CNs were received in reponse to completed service requests[52]. During KCI's initial review of CN completeness, KCI observed a number of discrepancies between BLS-documented data requirements and actual data returned on CN responses. For example, Frame Due Time (FDT) and Circuit ID (ECCKT) were listed as required fields but were not populated on all responses. In addition, CHAN/PAIR was populated when it was not an applicable field according to BLS Business Rules. Exception 68 was opened to address these response completeness issues. To address these issues, BLS published an updated version of *LEO Guide, Volume I* on August 28, 2000 to more accurately reflect CN data requirements. This version (7S) did not adequately define usage requirements, by specific order types, for some response fields[53]. On 1/31/01, BLS issued a modified *LEO Guide* (Issue 7U) that included additional usage information for response transactions. Based on this updated documentation, KCI validated that all expected data fields were populated on CN responses. See Exception 68 for additional information on this issue. KCI has recommended closure of Exception 68 to the GPSC.

[51] KCI defined an accurate CN as a correct response type relative to the LSR submitted (i.e., the CN was received in response to a completed LSR) that contains: a) all expected data elements (fields); b) no unexpected data elements (field); c) all required data values in the expected format; d) no prohibited data values. Expected and prohibited values were developed based on the *LEO Guide, Volume 1.*

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-1-4-5	BLS systems and representatives return clear and complete Jeopardy Notifications[54].	Satisfied	BLS documentation available during initial testing did not adequately define the process for categorizing and delivering Jeopardy Notifications[55]. BLS updated its *Pending Order Status Job Aid* in a 6/12/00 release to clarify the Jeopardy Notification process. See Exception 72 for additional information on this issue. Exception 72 is closed. KCI reviewed a sample of Jeopardy responses for completeness relative to the BLS Business Rules (*LEO Guide, Volume 1*). During KCI's initial review of Jeopardy response completeness, the *BellSouth Business Rules* (Issue 7S) did not adequately define usage requirements, by specific order types, for some response fields[56]. On 1/31/01, BLS issued a modified *LEO Guide* (Issue 7U) that included additional usage information for response transactions. Based on this updated documentation, KCI validated that all expected data fields were populated on Jeopardy responses. See Exception 68 for additional information on this issue. KCI has recommended closure of Exception 68 to the GPSC.

[52] One CN was received in response to a cancelled service request.

[53] The following response fields have inadequate usage requirements: ORD, RORD, FDT, EBD, LOCBAN, BAN1, BAN2. For these fields, KCI was unable to determine what the "expected" results should be.

[54] Please see O&P-5 results for additional information on Jeopardy Notification accuracy and completeness.

[55] For example, a response containing an indicator code of "Jeopardy" is not necessarily counted as a Jeopardy Notification in BellSouth Service Quality Measurement (SQM) calculations.

[56] The following response fields have inadequate usage requirements: ORD, RORD, FDT, EBD, LOCBAN, BAN1, BAN2. For these fields, KCI was unable to determine what the "expected" results should be.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-1-4-6	BLS systems provide clear, accurate, and complete Missed Appointment notifications.	Satisfied	BLS documentation available during initial testing did not adequately define the process for categorizing and delivering Missed Appointment Notifications[57]. BLS updated its *Pending Order Status Job Aid* in a 6/12/00 release to clarify the Missed Appointment notification process. See Exception 72 for additional information on this issue. Exception 72 is closed. KCI reviewed a sample of Missed Appointment responses for completeness relative to the BLS Business Rules (*LEO Guide Volume 1*). During KCI's initial review of Missed Appointment response completeness, the *BellSouth Business Rules* (Issue 7S) did not adequately define usage requirements, by specific order types, for some response fields[58]. On 1/31/01, BLS issued a modified *LEO Guide* (Issue 7U) that included additional usage information for response transactions. Based on this updated documentation, KCI validated that all expected data fields were populated on Missed Appointment responses. See Exception 68 for additional information on this issue. KCI has recommended closure of Exception 68 to the GPSC.
O&P-1-4-7	BLS service order tracking systems (CSOTS) provide accurate LSR status.	Satisfied	KCI compared a sample of order status queries in CSOTS[59] to the order status reflected in KCI's Order Management Tool (i.e., the most recent response file message received by KCI).

[57] For example, a response containing an indicator code of "Jeopardy" could be considered a Missed Appointment Notification.

[58] The following response fields have inadequate usage requirements: ORD, RORD, FDT, EBD, LOCBAN, BAN1, BAN2. For these fields, KCI was unable to determine what the "expected" results should be.

[59] CSOTS provides the status of service requests once BellSouth has received Firm Order Confirmations (FOCs). The status of service requests in a pre-FOC state is not available via CSOTS.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Based on this sampling, CSOTS queries (Confirmed, Pending, or Completed) matched the responses received by KCI in most cases. During a functional re-test initiated on 8/25/00, KCI reviewed BLS's service order status accuracy. Based on re-test results, KCI noted four instances of Local Number Portability (LNP) service requests for which the Completion Date provided on the CN response was later than the Completion Date identified within CSOTS. In response to this issue, BLS has opened a defect change request to populate LNP CNs with the date of actual completion. A target date for implementation of this release has not yet been established. See Exception 125 for additional information on this issue. KCI has recommended closure of Exception 125 to the GPSC. The deficiencies noted are not significant enough to affect the overall evaluation.

Table V-1.4: Integration Test Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Pre-order/Order Integration			
O&P-1-5-1	Information returned in response to pre-order System Availability Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between fields received in response to Service Availability Queries and the three corresponding fields in the Order forms was inconsistent with respect to field name and format. To provide information on the relationship between pre-order responses and order fields, BellSouth plans to publish a "*Pre-Order to Firm Order Mapping Matrix*" on 3/30/01 (see Carrier Notification SN91082241 for additional information). While the names and formats of the pre-order and order fields did not agree, data content returned on the pre-order responses adequately fulfills order form input requirements. (See Table V-1.16)
O&P-1-5-2	Information returned in response to pre-order Appointment Availability Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between fields received in response to Appointment Availability Queries and the two corresponding fields in the Order forms was inconsistent with respect to field name and format. To provide information on the relationship between pre-order responses and order fields, BellSouth plans to publish a "*Pre-Order to Firm Order Mapping Matrix*" on 3/30/01 (see Carrier Notification SN91082241 for additional information). While the names and formats of the pre-order and order fields did not agree, data content returned on the pre-order responses adequately fulfills order form input requirements. (See Table V-1.16)

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-1-5-3	Information returned in response to pre-order Calculate Due Date Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between one field received in responses to Calculate Due Date queries and the two corresponding fields in the Order forms was inconsistent with respect to field name and format. To provide information on the relationship between pre-order responses and order fields, BellSouth plans to publish a "*Pre-Order to Firm Order Mapping Matrix*" on 3/30/01 (see Carrier Notification SN91082241 for additional information). While the names and length of the pre-order and order fields did not agree, data content returned on the pre-order response adequately fulfills order form input requirements. (See Table V-1.16)
O&P-1-5-4	Information returned in response to pre-order Address Validation with Telephone Number Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between the nine fields received in response to Address Query Validation with Telephone Number and six corresponding fields in the Order forms was inconsistent with respect to field name, format and length. To provide information on the relationship between pre-order responses and order fields, BellSouth plans to publish a "*Pre-Order to Firm Order Mapping Matrix*" on 3/30/01 (see Carrier Notification SN91082241 for additional information). In addition to the field name and length inconsistences, the data content returned on the pre-order response was inadequate to fulfill order form input requirements. For example, the length of the combined responses provided by the AVQ-TN (which must be concatenated prior to entry on the order form) may be greater then the length of the subsequent order field. While the documentation implies that potential address field length discrepancies could exist, KCI did not experience any actual instances of pre-order response field lengths exceeding

Test Cross-Reference	Evaluation Criteria	Result	Comments
			subsequent order field length requirements. BLS has opened a feature request to close the gap in the field size / length differences between pre-order and firm order requirements. An implementation date is currently being negotiated. (See Table V-1.16)
O&P-1-5-5	Information returned in response to pre-order Address Validation Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between the nine fields received in response to Address Validation Queries and six corresponding fields in the Order forms was inconsistent with respect to field name, format and length. To provide information on the relationship between pre-order responses and order fields, BellSouth plans to publish a "*Pre-Order to Firm Order Mapping Matrix*" on 3 / 30 / 01 (see Carrier Notification SN91082241 for additional information). In addition to the field name and length inconsistences, the data content returned on the pre-order response was inadequate to fulfill order form input requirements. For example, the length of the combined responses provided by the AVQ-TN (which must be concatenated prior to entry on the order form) may be greater then the length of the subsequent order field. While the documentation implies that potential address field length discrepancies could exist, KCI did not experience any actual instances of pre-order response field lengths exceeding susequent order field length requirements. BLS has opened a feature request to close the gap in the field size / length differences between pre-order and firm order requirements. An implementation date is currently being negotiated. (See Table V-1.16)

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-1-5-6	Information returned in response to pre-order Telephone Number Availability Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between one field received in response to Telephone Number Availability Queries and one corresponding field in the Order forms was consistent with respect to field name, format and length. (See Table V-1.16)
O&P-1-5-7	Information returned in response to pre-order Telephone Number Selection Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between the one field received in response to Telephone Number Selection Queries and one corresponding field in the Order forms was consistent with respect to field name, format and length. (See Table V-1.16)

Table V-1.5, Part 1: Error/Clarification Timeliness, Summary View – Initial Test Data

Clarification Timeliness Detail – Aggregate								
Fully Mechanized								
	<1 hr	**1-2 hrs**	**2-4 hrs**	**4-12 hrs**	**12-24 hrs**	**24-48 hrs**	**>48 hrs**	**>72 hrs**
FM	16	57	5	6	2	0	0	4
% FM	18%	63%	6%	7%	2%	0%	0%	4%
Partially Mechanized								
					<24hrs	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
PM					130	60	6	4
% PM					65%	30%	3%	2%

Table V-1.5, Part 2: Error/Clarification Timeliness, On/After 2/8/00 – Initial Test Data

Clarification Timeliness Detail – On/After 2/8/2000								
Fully Mechanized								
	<1 hr	**1-2 hrs**	**2-4 hrs**	**4-12 hrs**	**12-24 hrs**	**24-48 hrs**	**>48 hrs**	**>72 hrs**
FM	10	39	5	6	2	0	0	3
% FM	15%	60%	8%	9%	3%	0%	0%	5%
Partially Mechanized								
					<24hrs	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
PM					116	50	3	0
% PM					69%	30%	2%	0%

Table V-1.5, Part 3: Error/Clarification Timeliness, Disaggregated View – Initial Test Data

Clarification Timeliness Detail – Disaggregated View								
Fully Mechanized								
Service Type	**<1 hr**	**1-2 hrs**	**2-4 hrs**	**4-12 hrs**	**12-24 hrs**	**24-48 hrs**	**>48 hrs**	**>72 hrs**
2-wire Loop-Design	5	19	1	2	1	0	0	1
% 2-wire Loop-Design	17%	66%	3%	7%	3%	0%	0%	3%
2-wire Loop-Non Design	0	15	1	1	1	0	0	0
% 2-wire Loop-Non Design	0%	83%	6%	6%	6%	0%	0%	0%
2-wire Loop w/ INP – Design	0	0	0	0	0	0	0	0
% 2-wire Loop w/ INP – Design	0%	0%	0%	0%	0%	0%	0%	0%
2-wire Loop w/ INP – Non-Design	0	3	0	0	0	0	0	0
% 2-wire Loop w/ INP – Non Des.	0%	100%	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Design	0	0	0	0	0	0	0	0
% 2-wire Loop w/ LNP – Design	0%	0%	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Non-Design	0	0	0	0	0	0	0	0
% 2-wire Loop w/ LNP – Non-Des.	0%	0%	0%	0%	0%	0%	0%	0%
INP (Standalone)	0	0	1	0	0	0	0	0
% INP (Standalone)	0%	0%	100%	0%	0%	0%	0%	0%
LNP (Standalone)	0	0	0	0	0	0	0	0
% LNP (Standalone)	0%	0%	0%	0%	0%	0%	0%	0%
Switch Ports	2	2	0	1	0	0	0	0
% Switch Ports	40%	40%	0%	20%	0%	0%	0%	0%
Loop-Port Combination	6	14	2	0	0	0	0	3
% Loop-Port Combination	24%	56%	8%	0%	0%	0%	0%	12%
TOTALS	**13**	**53**	**5**	**4**	**2**	**0**	**0**	**4**
	16%	**65%**	**6%**	**5%**	**2%**	**0%**	**0%**	**5%**
Partially Mechanized								
Service Type					**< 24 hrs**	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop-Design					31	10	0	0
% 2-wire Loop-Design					76%	24%	0%	0%
2-wire Loop-Non Design					23	16	1	1
% 2-wire Loop-Non Design					56%	39%	2%	2%
2-wire Loop w/ INP – Design					2	2	0	0
% 2-wire Loop w/ INP – Design					50%	50%	0%	0%
2-wire Loop w/ INP – Non-Design					7	5	0	0
% 2-wire Loop w/ INP – Non Des.					58%	42%	0%	0%

Clarification Timeliness Detail – Disaggregated View								
2-wire Loop w/ LNP – Design					0	0	0	0
% 2-wire Loop w/ LNP – Design					0%	0%	0%	0%
2-wire Loop w/ LNP – Non-Design					0	0	0	0
% 2-wire Loop w/ LNP – Non-Des.					0%	0%	0%	0%
INP (Standalone)					2	0	0	1
% INP (Standalone)					67%	0%	0%	33%
LNP (Standalone)					0	0	0	0
% LNP (Standalone)					0%	0%	0%	0%
Switch Ports					11	5	2	2
% Switch Ports					55%	25%	10%	10%
Loop-Port Combination					25	12	2	0
% Loop-Port Combination					64%	31%	5%	0%
TOTALS					**101**	**50**	**5**	**4**
					63%	**31%**	**3%**	**3%**

Notes:
(Notes apply to Table V-1.5, Part 1, 2, and 3)

1. Initial test results include data from November 9, 1999 through May 31, 2000.
2. A fully mechanized (FM) response occurs when an electronically submitted LSR receives a clarification generated by BellSouth systems with no manual intervention. FM responses include Fatal Rejects and Auto Clarifications.
3. A partially mechanized (PM) response occurs when an electronically submitted LSR falls out for manual handling and receives a clarification generated by a BellSouth representative. PM responses include LCSC-issued Clarifications.
4. Results are based on the actual performance of LSRs submitted by KCI. KCI determined that a clarification was fully mechanized or partially/non-mechanized by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FM/PM classification
5. On 2/7/00 BellSouth completed a systems and process fix to address timeliness of response issues. In addition to aggregate results for the entire test period, results for the period beginning after the implementation fix are also presented.
6. Timeliness information pertaining to the LNP service requests for which BellSouth was unable to provide actual FM/PM data is not included in the above table.
7. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
8. The disaggregated breakdown of Clarification timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.
9. Totals may not equal 100% due to rounding.

Table V-1.6, Part 1: Error/Clarification Timeliness, Summary View – First Re-test Data

Clarification Timeliness Detail – Aggregate								
Fully Mechanized								
	<1 hr	**1-2 hrs**	**2-4 hrs**	**4-12 hrs**	**12-24 hrs**	**24-48 hrs**	**>48 hrs**	**>72 hrs**
FM	76	39	2	0	1	0	0	0
% FM	64%	33%	2%	0%	1%	0%	0%	0%
Partially Mechanized								
					<24hrs	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
PM					62	7	0	1
% PM					89%	10%	0%	1%

Table V-1.6, Part2: Error/Clarification Timeliness: Disaggregated View – First Re-test Data

Clarification Timeliness Detail -- Disaggregated View								
Fully Mechanized								
Service Type	**<1 hr**	**1-2 hrs**	**2-4 hrs**	**4-12 hrs**	**12-24 hrs**	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop Design	15	10	0	0	0	0	0	0
% 2-wire Loop-Design	60%	40%	0%	0%	0%	0%	0%	0%
2-wire Loop-Non Design	13	7	0	0	0	0	0	0
% 2-wire Loop-Non Design	65%	35%	0%	0%	0%	0%	0%	0%
2-wire Loop w/ INP - Design	0	0	0	0	0	0	0	0
% 2-wire Loop w/ INP - Design	0%	0%	0%	0%	0%	0%	0%	0%
2-wire Loop w/ INP - Non Design	0	0	0	0	0	0	0	0
% 2-wire Loop w/ INP - Non Design	0%	0%	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP - Design	8	3	2	0	0	0	0	0
% 2-wire Loop w/ LNP - Design	62%	23%	15%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP - Non Design	5	2	0	0	0	0	0	0
% 2-wire Loop w/ LNP - Non Design	71%	29%	0%	0%	0%	0%	0%	0%
INP (Standalone)	0	0	0	0	0	0	0	0
% INP (Standalone)	0%	0%	0%	0%	0%	0%	0%	0%
LNP (Standalone)	0	0	0	0	0	0	0	0
% LNP (Standalone)	0%	0%	0%	0%	0%	0%	0%	0%
Switch Ports	0	2	0	0	1	0	0	0
% Switch Ports	0%	67%	0%	0%	33%	0%	0%	0%
Loop Port Combination	8	3	0	0	0	0	0	0
% Loop Port Combination	73%	27%	0%	0%	0%	0%	0%	0%
DL	27	12	0	0	0	0	0	0
% DL	69%	31%	0%	0%	0%	0%	0%	0%
TOTALS	76	39	2	0	1	0	0	0
	64%	33%	2%	0%	1%	0%	0%	0%
Partially Mechanized								
Service Type					**<24 hrs**	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop Design					23	0	0	0
% 2-wire Loop-Design					100%	0%	0%	0%
2-wire Loop-Non Design					6	0	0	0
% 2-wire Loop-Non Design					100%	0%	0%	0%
2-wire Loop w/ INP - Design					0	0	0	0

% 2-wire Loop w/ INP - Design					**0%**	**0%**	**0%**	**0%**
2-wire Loop w/ INP - Non Design					**0**	**0**	**0**	**0**
% 2-wire Loop w/ INP - Non Design					**0%**	**0%**	**0%**	**0%**
2-wire Loop w/ LNP - Design					**5**	**4**	**0**	**0**
% 2-wire Loop w/ LNP - Design					**56%**	**44%**	**0%**	**0%**
2-wire Loop w/ LNP - Non Design					**3**	**2**	**0**	**0**
% 2-wire Loop w/ LNP - Non Design					**60%**	**40%**	**0%**	**0%**
INP (Standalone)					**0**	**0**	**0**	**0**
% INP (Standalone)					**0%**	**0%**	**0%**	**0%**
LNP (Standalone)					**1**	**0**	**0**	**0**
% LNP (Standalone)					**100%**	**0%**	**0%**	**0%**
Switch Ports					**5**	**0**	**0**	**0**
% Switch Ports					**100%**	**0%**	**0%**	**0%**
Loop Port Combination					**7**	**0**	**0**	**0**
% Loop Port Combination					**100%**	**0%**	**0%**	**0%**
DL					**12**	**1**	**0**	**1**
% DL					**86%**	**7%**	**0%**	**7%**
TOTALS					**62**	**7**	**0**	**1**
					89%	**10%**	**0%**	**1%**

Notes:
(Notes apply to Table V-1.6, Part 1 and 2)

1. Re-test results reflect data from August 25 through November 15, 2000.
2. Directory Listing disaggregation is provided as supplemental information, to maintain consistency in total counts between Part 1 and Part 2. This category is not required by the GPSC's requested levels of disaggregation.
3. Results are based on actual Fully Mechanized (FM) and partially Mechanized (PM) performance of LSRs submitted by KCI. KCI determined that a ERR/CLR was FM or PM by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FM/PM classification.
4. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
5. The disaggregated breakdown of Clarification timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.
6. Totals may not equal 100% due to rounding.

Table V-1.6, Part 3: BellSouth – KCI Timestamp Analysis for Error/Clarification Timeliness: First Re-test Data

Description	Average Interval	Range
Difference between KCI timestamp for "LSR Sent" and BellSouth timestamp for "LSR Received"	17 minutes	5 to 48 minutes
Difference between KCI timestamp for "Error Received" and BellSouth timestamp for "Error Sent"	7 minutes	0 to 144 minutes

FM Error Timeliness Results Using BellSouth Timestamps			FM Error Timeliness Results Using KCI Timestamps		
Total Responses	**Responses On Time**	**% On Time (< 1 hr)**	**Total Responses**	**Responses On Time**	**% On Time (<1 hr)**
114	109	96%	118	76	64%

Notes:

1. KCI "LSR Sent" and "Error Received" timestamps reflect the point at which the transaction was sent from, or received by, the KCI/HP EDI Interface Gateway.
2. BellSouth "LSR Received" and "Error Sent" timestamps reflect the time at which the inbound LSR or outbound ERR/CLR transaction was processed by the BellSouth EDI translator.
3. Interval calculations were performed on those transactions categorized as "late" based on KCI timestamp analysis.
4. Total responses reviewed using KCI timestamps exceeds total responses reviewed using BellSouth timestamps due to the inclusion of several additional responses that were not classified as Fully Mechanized at the time of the initial BellSouth review.

Table V-1.7, Part 1: Error/Clarification Timeliness, Summary View – Second Re-test Data

Clarification Timeliness Detail – Aggregate								
Fully Mechanized								
	<1 hr	**1-2 hrs**	**2-4 hrs**	**4-12 hrs**	**12-24 hrs**	**24-48 hrs**	**>48 hrs**	**>72 hrs**
FM	62	4	1	0	4	3	0	0
% FM	84%	5%	1%	0%	5%	4%	0%	0%

Table V-1.7, Part 2: Error/Clarification Timeliness: Disaggregated View – Second Re-test Data

Clarification Timeliness Detail -- Disaggregated View								
Fully Mechanized								
Service Type	**<1 hr**	**1-2 hrs**	**2-4 hrs**	**4-12 hrs**	**12-24 hrs**	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop Design	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% 2-wire Loop-Design	**100%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
2-wire Loop-Non Design	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% 2-wire Loop-Non Design	**100%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
2-wire Loop w/ LNP - Design	**7**	**1**	**1**	**0**	**1**	**0**	**0**	**0**
% 2-wire Loop w/ LNP - Design	**70%**	**10%**	**10%**	**0%**	**10%**	**0%**	**0%**	**0%**
2-wire Loop w/ LNP - Non Design	**10**	**0**	**0**	**0**	**3**	**3**	**0**	**0**
% 2-wire Loop w/ LNP - Non Design	**63%**	**0%**	**0%**	**0%**	**19%**	**19%**	**0%**	**0%**
Loop Port Combination	**31**	**3**	**0**	**0**	**0**	**0**	**0**	**0**
% Loop Port Combination	**91%**	**9%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
TOTALS	**62**	**4**	**1**	**0**	**4**	**3**	**0**	**0**
	84%	**5%**	**1%**	**0%**	**5%**	**4%**	**0%**	**0%**

Notes:
(Notes apply to Table V-1.7, Parts 1 and 2)

1. Second re-test results reflect data from January 19 through February 27, 2001.
2. Results are based on actual Fully Mechanized (FM) performance of LSRs submitted by KCI. FM responses include Fatal Rejects and Auto Clarifications. KCI determined that an error was FM by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FM classification.
3. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
4. The disaggregated breakdown of Clarification timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.
5. Totals may not equal 100% due to rounding.

Table V-1.8, Part 1: Firm Order Confirmation Timeliness, Summary View – Initial Test Data

Firm Order Confirmation Timeliness Detail - Aggregate						
Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
FT	45	8	2	1	1	1
% FT	78%	14%	3%	2%	2%	2%
Non-Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
NFT	27	90	34	16	3	8
% NFT	15%	51%	19%	9%	2%	5%

Table V-1.8, Part 2: Firm Order Confirmation Timeliness, On/After 2/8/00- Initial Test Data

Firm Order Confirmation Timeliness Detail - On/After 2/8/00						
Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
FT	35	6	0	1	0	0
% FT	83%	14%	0%	2%	0%	0%
Non-Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
NFT	24	83	28	14	1	6
% NFT	15%	53%	18%	9%	0%	4%

Table V-1.8, Part 3: Firm Order Confirmation Timeliness, Disaggregated View- Initial Test Data

Firm Order Confirmation Timeliness Detail – Disaggregated View						
Flow-Through						
Service Type	**<3 hrs**	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop-Design	0	0	0	0	0	0
% 2-wire Loop-Design	0%	0%	0%	0%	0%	0%
2-wire Loop-Non Design	3	1	0	0	0	0
% 2-wire Loop-Non Design	75%	25%	0%	0%	0%	0%
2-wire Loop w/ INP – Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Design	0%	0%	0%	0%	0%	0%
2-wire Loop w/ INP – Non-Design	1	0	0	0	1	0
% 2-wire Loop w/ INP – Non Des.	50%	0%	0%	0%	50%	0%
2-wire Loop w/ LNP – Design	0	1	0	1	0	0
% 2-wire Loop w/ LNP – Design	0%	50%	0%	50%	0%	0%
2-wire Loop w/ LNP – Non-Design	0	0	0	0	0	0
% 2-wire Loop w/ LNP – Non-Des.	0%	0%	0%	0%	0%	0%
INP (Standalone)	2	0	0	0	0	0
% INP (Standalone)	100%	0%	0%	0%	0%	0%
LNP (Standalone)	0	0	0	0	0	0
% LNP (Standalone)	0%	0%	0%	0%	0%	0%
Switch Ports	5	2	2	0	0	1
% Switch Ports	50%	20%	20%	0%	0%	10%
Loop-Port Combination	28	3	0	0	0	0
% Loop-Port Combination	90.3%	9.7%	0%	0%	0%	0%
TOTALS	**39**	**7**	**2**	**1**	**1**	**1**
	77%	**14%**	**4%**	**2%**	**2%**	**2%**
Non-Flow Through						
Service Type	**<3 hrs**	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop-Design	2	22	6	1	0	1
% 2-wire Loop-Design	63%	69%	19%	3%	0%	3%
2-wire Loop-Non Design	2	15	5	1	0	1
% 2-wire Loop-Non Design	8%	63%	21%	4%	0%	4%
2-wire Loop w/ INP – Design	0	1	0	1	0	0
% 2-wire Loop w/ INP – Design	0%	50%	0%	50%	0%	0%
2-wire Loop w/ INP – Non-Design	1	5	4	1	0	1
% 2-wire Loop w/ INP – Non Des.	8%	42%	33%	8%	0%	8%

Firm Order Confirmation Timeliness Detail – Disaggregated View						
2-wire Loop w/ LNP – Design	0	3	0	0	0	0
% 2-wire Loop w/ LNP – Design	0%	100%	0%	0%	0%	0%
2-wire Loop w/ LNP – Non-Design	1	6	1	0	2	0
% 2-wire Loop w/ LNP – Non-Design	10%	60%	10%	0%	20%	0%
INP (Standalone)	0	3	1	1	0	0
% INP (Standalone)	0%	60%	20%	20%	0%	0%
LNP (Standalone)	1	0	1	0	0	1
% LNP (Standalone)	33%	0%	33%	0%	0%	33%
Switch Ports	5	6	6	3	1	2
% Switch Ports	22%	26%	26%	13%	4%	9%
Loop-Port Combination	10	15	8	6	2	1
% Loop-Port Combination	24%	36%	19%	14%	5%	2%
TOTALS	**22**	**76**	**32**	**14**	**5**	**7**
	14%	**49%**	**21%**	**9%**	**3%**	**5%**

Notes:
(Notes apply to Table V-1.8, Part 1, 2, and 3)

1. Initial test results reflect data from November 9, 1999 through May 31, 2000.
2. Results are based on actual Flow-Through (FT) and Non-Flow-Through (NFT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT or NFT by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FT / NFT classification.
3. On 2/7/00 BellSouth completed a systems and process fix to address timeliness of response issues. In addition to aggregate results for the entire test period, results for the period beginning after the implementation fix are also presented.
4. Timeliness information pertaining to the LNP service requests for which BellSouth was unable to provide actual FT / NFT data is not included in the above table.
5. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
6. The disaggregated breakdown of FOC timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.
7. Totals may not equal 100% due to rounding.

Table V-1.9, Part 1: Firm Order Confirmation Timeliness, Summary View – First Re-Test Data

Firm Order Confirmation Timeliness Detail						
Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
FT	31	5	1	0	0	1
% FT	82%	13%	3%	0%	0%	3%
Non-Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
NFT	13	55	5	0	1	1
% NFT	17%	73%	7%	0%	1%	1%
Discrepancy						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
Discrepancy	14	21	5	0	0	0
Discrepancy %	35%	53%	13%	0%	0%	0%

Table V-1.9, Part 2: Firm Order Confirmation Timeliness, Disaggregated View – First Re-Test Data

Firm Order Confirmation Timeliness Detail – Disaggregated View						
Flow-Through						
Service Type	**<3 hrs**	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop-Design	3	1	0	0	0	0
% 2-wire Loop-Design	75%	25%	0%	0%	0%	0%
2-wire Loop-Non Design	5	1	1	0	0	0
% 2-wire Loop-Non Design	71%	14%	14%	0%	0%	0%
2-wire Loop w/ INP – Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Design	0%	0%	0%	0%	0%	0%
2-wire Loop w/ INP – Non-Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Non Des.	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Design	2	1	0	0	0	0
% 2-wire Loop w/ LNP – Design	67%	33%	0%	0%	0%	0%
2-wire Loop w/ LNP – Non-Design	1	1	0	0	0	0
% 2-wire Loop w/ LNP – Non-Des.	50%	50%	0%	0%	0%	0%
INP (Standalone)	0	0	0	0	0	0
% INP (Standalone)	0%	0%	0%	0%	0%	0%
LNP (Standalone)	0	0	0	0	0	0
% LNP (Standalone)	0%	0%	0%	0%	0%	0%
Switch Ports	1	0	0	0	0	0
% Switch Ports	100%	0%	0%	0%	0%	0%
Loop-Port Combination	8	1	0	0	0	0
% Loop-Port Combination	89%	11%	0%	0%	0%	0%
Directory Listing	12	0	0	0	0	1
% Directory Listing	92%	0%	0%	0%	0%	8%
TOTALS	**31**	**5**	**1**	**0**	**0**	**1**
	82%	**13%**	**3%**	**0%**	**0%**	**3%**
Non-Flow-Through						
Service Type	**<3 hrs**	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop-Design	3	19	1	0	0	0
% 2-wire Loop-Design	13%	83%	4%	0%	0%	0%
2-wire Loop-Non Design	3	5	0	0	1	0
% 2-wire Loop-Non Design	33%	56%	0%	0%	11%	0%
2-wire Loop w/ INP – Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Design	0%	0%	0%	0%	0%	0%

Firm Order Confirmation Timeliness Detail – Disaggregated View						
2-wire Loop w/ INP – Non-Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Non Des.	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Design	0	0	0	0	0	0
% 2-wire Loop w/ LNP – Design	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Non-Design	0	0	0	0	0	0
% 2-wire Loop w/ LNP – Non-Design	0%	0%	0%	0%	0%	0%
INP (Standalone)	0	0	0	0	0	0
% INP (Standalone)	0%	0%	0%	0%	0%	0%
LNP (Standalone)	0	0	0	0	0	0
% LNP (Standalone)	0%	0%	0%	0%	0%	0%
Switch Ports	2	12	2	0	0	0
% Switch Ports	13%	75%	13%	0%	0%	0%
Loop-Port Combination	0	11	1	0	0	0
% Loop-Port Combination	0%	92%	8%	0%	0%	0%
Directory Listing	5	8	1	0	0	0
% Directory Listing	36%	57%	7%	0%	0%	0%
TOTALS	**13**	**55**	**5**	**0**	**1**	**1**
	17%	**73%**	**7%**	**0%**	**1%**	**1%**

Discrepancy						
Service Type	**<3 hrs**	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop-Design	0	0	0	0	0	0
% 2-wire Loop-Design	0%	0%	0%	0%	0%	0%
2-wire Loop-Non Design	2	0	0	0	0	0
% 2-wire Loop-Non Design	100%	0%	0%	0%	0%	0%
2-wire Loop w/ INP – Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Design	0%	0%	0%	0%	0%	0%
2-wire Loop w/ INP – Non-Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Non Des.	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Design	3	5	1	0	0	0
% 2-wire Loop w/ LNP – Design	33%	56%	11%	0%	0%	0%
2-wire Loop w/ LNP – Non-Design	2	8	2	0	0	0
% 2-wire Loop w/ LNP – Non-Des.	17%	67%	17%	0%	0%	0%
INP (Standalone)	0	0	0	0	0	0
% INP (Standalone)	0%	0%	0%	0%	0%	0%
LNP (Standalone)	4	8	2	0	0	0
% LNP (Standalone)	29%	57%	14%	0%	0%	0%

Firm Order Confirmation Timeliness Detail – Disaggregated View						
Switch Ports	1	0	0	0	0	0
% Switch Ports	100%	0%	0%	0%	0%	0%
Loop-Port Combination	0	0	0	0	0	0
% Loop-Port Combination	0%	0%	0%	0%	0%	0%
Directory Listing	3	0	0	0	0	0
% Directory Listing	100%	0%	0%	0%	0%	0%
TOTALS	**14**	**21**	**5**	**0**	**0**	**0**
	35%	**53%**	**13%**	**0%**	**0%**	**0%**

Notes:
(Notes apply to Table V-1.9, Part 1 and 2)

1. First re-test results reflect data from August 25 through November 15, 2000.
2. Directory Listing disaggregation is provided as supplemental information, to maintain consistency in total counts between Part 1 and Part 2. This category is not required by the GPSC's requested levels of disaggregation.
3. Results are based on actual Flow-Through (FT) and Non-Flow-Through (NFT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT or NFT by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FT / NFT classification.
4. 'Discrepancies' refer to those orders for which KCI was unable to obtain actual FT / NFT classifications from BellSouth.
5. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
6. The disaggregated breakdown of FOC timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.
7. Totals may not equal 100% due to rounding.

Table V-1.10, Part 1: Firm Order Confirmation Timeliness, Summary View – Second Re-Test Data

Firm Order Confirmation Timeliness Detail - Summary						
Flow-Through						
	<3 hrs	3-24 hrs	24-36 hrs	36-48 hrs	48-72 hrs	>72 hrs
FT	50	0	0	0	0	0
% FT	100%	0%	0%	0%	0%	0%

Table V-1.10, Part 2: Firm Order Confirmation Timeliness, Disaggregated View – Second Re-Test Data

Firm Order Confirmation Timeliness Detail -- Disaggregated View						
Flow-Through						
Service Type	<3 hrs	3-24 hrs	24-36 hrs	36-48 hrs	48-72 hrs	>72 hrs
2-wire Loop Design	4	0	0	0	0	0
% 2-wire Loop-Design	100%	0%	0%	0%	0%	0%
2-wire Loop-Non Design	0	0	0	0	0	0
% 2-wire Loop-Non Design	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP - Design	1	0	0	0	0	0
% 2-wire Loop w/ LNP - Design	100%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP - Non Design	9	0	0	0	0	0
% 2-wire Loop w/ LNP - Non Design	100%	0%	0%	0%	0%	0%
Loop Port Combination	36	0	0	0	0	0
% Loop Port Combination	100%	0%	0%	0%	0%	0%
TOTALS	50	0	0	0	0	0
	100%	0%	0%	0%	0%	0%

Notes:
(Notes apply to Table V-1.10, Parts 1 and 2)

1. Second re-test results reflect data from January 19 through February 27, 2001.
2. Results are based on actual Flow-Through (FT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FT classification.
3. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
4. The disaggregated breakdown of FOC timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.
5. Totals may not equal 100% due to rounding.

Table V-1.11, Part 1: Completion Notice Due Date (CN DD) vs. Completion Notification Delivery Date – Initial Test Data

	TOTAL		Flow-Through					
	CNs Received	% of Total CN	Flow-Through[1]	% Flow-Through[2]	% of Total Flow-Through[3]	Non-Flow Through[4]	% Non-Flow-Through[5]	% of Total Non-Flow-Through[6]
CN Date Received = CN DD	126	76%	28	22%	85%	84	67%	70%
CN Date Received = CN DD + 1 day	16	10%	2	13%	6%	14	88%	12%
CN Date Received = CN DD + 2 days	11	7%	2	18%	6%	9	82%	8%
CN Date Received = CN DD + 3-5 days	9	5%	1	11%	3%	8	89%	7%
CN Date Received = CN DD + >=6 days	4	2%	0	0%	0%	4	100%	3%
TOTAL	**166**	**100%**	**33**		**100%**	**119**		**100%**

Notes:

1. Initial test results reflect data from November 9, 2000 through May 31, 2000.
2. Flow-Through = The number of CNs received within the specified timeframe that were Flow -Through LSRs.
3. % Flow-Through = The percentage of CNs received within the specified timeframe that were Flow-Through LSRs.
4. % of Total Flow Through = The percentage of total Flow-Through LSRs that received CNs within the specified timeframe.
5. Non-Flow-Through = The number of CNs received within the specified timeframe that were Non-Flow-Through LSRs.
6. % Non-Flow-Through = The percentage of CNs received within the specified timeframe that were Non-Flow-Through LSRs.
7. % of Total Non-Flow Through = The percentage of total Non-Flow-Through LSRs that received CNs within the specified timeframe.
8. Results are based on actual Flow-Through (FT) and Non-Flow-Through (NFT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT or NFT by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FT / NFT classification.
9. CN Timeliness information pertaining to the LNP service requests for which BellSouth was unable to provide actual FT / NFT data *is* included in the above table. However, the FT-specific detail is not included. As a result, the Total CNs Received will not equal the sum of FT Received and NFT Received columns.

10. Totals may not equal 100% due to rounding.
11. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).

Table V-1.11, Part 2: Completion Notice Due Date (CN DD) vs. Completion Notification Delivery Date – Initial Test Data

	TOTAL		Product Delivery Analysis														
	CNs Received	% of Total CNs	No. of Loops[1]	Loops as a % of CNs Received[2]	% of Total Loops3	No. of Ports[1]	Ports as a % of CNs Received[2]	% of Total Ports[3]	No. Of Combos[1]	Combos as a % of CNs Received[2]	% of Total Combos[3]	No. NP[1]	NP as a % of CNs Received[2]	% of Total NP[3]	No. DL[1]	NP as a % of CNs Received[2]	% of Total DL[3]
CN Date Received = CN DD	126	76%	32	25%	80%	18	14%	67%	36	29%	78%	17	13%	59%	23	18%	96%
CN Date Received = CN DD + 1 day	16	10%	6	38%	15%	1	6%	4%	5	31%	11%	4	25%	14%	0	0%	0%
CN Date Received = CN DD + 2 days	11	7%	0	0%	0%	3	27%	11%	1	9%	2%	6	55%	21%	1	9%	4%
CN Date Received = CN DD + 3-5 days	9	5%	1	11%	3%	5	56%	19%	2	22%	4%	1	11%	3%	0	0%	0%
CN Date Received = CN DD + >=6 days	4	2%	1	25%	3%	0	0%	0%	2	50%	4%	1	25%	3%	0	0%	0%
TOTAL	**166**	**100%**	**40**		**100 %**	**27**		**100%**	**46**		**100 %**	**29**		**100 %**	**24**		**100%**

Notes:

1. The number of CNs by product type (Loop, Port, Port-Loop Combo, Number Portability, Directory Listing) that received LSRs within the specified timeframe.
2. The percentage of CNs by product type (Loop, Port, Port-Loop Combo, Number Portability, Directory Listing) that received LSRs within the specified timeframe.
3. The percentage of Total LSRs by product type (Loop, Port, Port-Loop Combo, Number Portability, Directory Listing) that were received within the specified timeframe.
4. Calculations are based on business days (i.e. weekends and BellSouth holidays are not counted).
5. Loop with Number Portability LSRs are included in the NP column.
6. Totals may not equal 100% due to rounding.

Table V-1.12, Part 1: Completion Notice Due Date (CN DD) vs. Completion Notification Delivery Date - Re-test Data

	TOTAL		Flow-Through					
	CNs Received	% of Total CN	Flow-Through[1]	% Flow-Through[2]	% of Total Flow-Through3	Non- Flow-Through[4]	% Non-Flow-Through[5]	% of Total Non-Flow-Through[6]
CN Date Received = CN DD	48	71%	14	29%	78%	34	71%	68%
CN Date Received = CN DD + 1 day	11	16%	2	18%	11%	9	82%	18%
CN Date Received = CN DD + 2 days	2	3%	1	50%	6%	1	50%	2%
CN Date Received = CN DD + 3-5 days	3	4%	1	33%	6%	2	67%	4%
CN Date Received = CN DD + >=6 days	4	6%	0	0%	0%	4	100%	8%
TOTAL	**68**	**100%**	**18**		**100%**	**50**		**100%**

Notes:

1. Re-test results reflect data from August 25 through November 15, 2000.
2. Flow-Through = The number of CNs received on within the specified timeframe that were Flow-Through LSRs.
3. % Flow-Through = The percentage of CNs received within the specified timeframe that were Flow- Through LSRs.
4. % of Total Flow-Through = The percentage of total Flow-Through LSRs that received CNs within the specified timeframe.
5. Non-Flow-Through = The number of CNs received within the specified timeframe that were Non-Flow-Through LSRs. Note: 2 CNs had no actual Non-Flow-Through indicator. Since these orders were EXPECTED to be Non-Flow Through, they were included in the Non-Flow-Through counts.
6. % Non-Flow-Through = The percentage of CNs received within the specified timeframe that were Non Flow Through LSRs.
7. % of Total Non-Flow-Through = The percentage of total Non-Flow-Through LSRs that received CNs within the specified timeframe.
8. Results are based on actual Flow-Through (FT) and Non-Flow-Through (NFT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT or NFT by analyzing BLS back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FT/NFT classification.
9. CN Timeliness information pertaining to the LNP service requests for which BellSouth was unable to provide actual FT/NFT data *is* included in the above table. However, the FT-specific detail is not included. As a result, the Total CNs Received will not equal the sum of FT Received and NFT Received columns.
10. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
11. Totals may not equal 100% due to rounding.

Table V-1.12, Part 2: Completion Notice Due Date (CN DD) vs. Completion Notification Delivery Date

	TOTAL		Product Delivery Analysis														
	CNs Received	% of Total CNs	No. of Loops[1]	Loops as a % of CNs Received[2]	% of Total Loops3	No. of Ports[1]	Ports as a % of CNs Received[2]	% of Total Ports[3]	No. Of Combos[1]	Combos as a % of CNs Received[2]	% of Total Combos[3]	No. NP[1]	NP as a % of CNs Received[2]	% of Total NP[3]	No. DL[1]	DL as a % of CNs Received[2]	% of Total DL[3]
CN Date Received = CN DD	48	71%	8	17%	40%	9	19%	69%	12	25%	75%	10	21%	100%	9	19%	100%
CN Date Received = CN DD + 1 day	11	16%	8	73%	40%	2	18%	15%	1	9%	6%	0	0%	0%	0	0%	0%
CN Date Received = CN DD + 2 days	2	3%	2	100%	10%	0	0%	0%	0	0%	0%	0	0%	0%	0	0%	0%
CN Date Received = CN DD + 3-5 days	3	4%	1	33%	5%	1	33%	8%	1	33%	6%	0	0%	0%	0	0%	0%
CN Date Received = CN DD + >=6 days	4	6%	1	25%	5%	1	25%	8%	2	50%	13%	0	0%	0%	0	0%	0%
TOTAL	**68**	**100%**	**20**		**100%**	**13**		**100%**	**16**		**100%**	**10**		**100%**	**9**		**100%**

Notes:

1. The number of CNs by product type (Loop, Port, Port-Loop Combo, Number Portability, Directory Listing) that received LSRs within the specified timeframe.
2. The percentage of CNs by product type (Loop, Port, Port-Loop Combo, Number Portability, Directory Listing) that received LSRs within the specified timeframe.
3. The percentage of Total LSRs by product type (Loop, Port, Port-Loop Combo, Number Portability, Directory Listing) that were received within the specified timeframe.
4. Calculations are based on business days (i.e. weekends and BellSouth holidays are not counted).
5. Loop with Number Portability LSRs are included in the NP column.
6. Totals may not equal 100% due to rounding.

Table V-1.13: Desired Due Date from KCI's Local Service Request (LSR DDD) vs. Committed Due Date from BLS's Firm Order Confirmation (FOC DD) – Initial Test Data

	Total		Flow-Through Analysis				Delivery Method Analysis									
	Number	Percent	FT	% FT	NFT	%NFT	Loops	% Loops	Ports	% Ports	Port-Loop Combo	% Port-Loop Combo	NP	%NP	DL	% DL
LSR DDD = FOC DD	205	88%	34	81%	151	87%	48	92%	29	91%	51	79%	51	90%	26	90%
LSR DDD not = FOC DD	29	12%	8	19%	22	13%	4	8%	3	9%	14	22%	6	11%	3	10%
Total	**234**	**100%**	**42**	**100%**	**173**	**100%**	**52**	**100%**	**32**	**100%**	**65**	**100%**	**57**	**100%**	**29**	**100%**
Distribution of Earlier Due Dates																
DD = DDD - 1 day	2	17%	0	0%	2	17%	1	33%	0	0%	0	0%	1	50%	0	0%
DD = DDD - 2 days	3	25%	0	0%	3	25%	0	0%	1	50%	1	50%	0	0%	1	33%
DD = DDD - 3-5 days	5	42%	0	0%	5	42%	1	33%	1	50%	1	50%	0	0%	2	67%
DD = DDD - >=6 days	2	17%	0	0%	2	17%	1	33%	0	0%	0	0%	1	50%	0	0%
Total Earlier (DD before DDD)	**12**	**5%**	**0**	**0%**	**12**	**7%**	**3**	**6%**	**2**	**6%**	**2**	**3%**	**2**	**4%**	**3**	**10%**
Distribution of Later Due Dates																
DD = DDD + 1 day	7	41%	1	13%	6	60%	1	100%	1	100%	3	25%	2	4%	0	0%
DD = DDD + 2 days	6	35%	4	50%	3	30%	0	0%	0	0%	5	42%	1	2%	0	0%
DD = DDD + 3-5 days	3	18%	2	25%	1	10%	0	0%	0	0%	3	25%	0	0%	0	0%
DD = DDD + >=6 days	1	6%	1	13%	0	0%	0	0%	0	0%	1	8%	0	0%	0	0%
Total Later (DD after DDD)	**17**	**7%**	**8**	**19%**	**10**	**6%**	**1**	**2%**	**1**	**3%**	**12**	**19%**	**3**	**5%**	**0**	**0%**

Notes:

1. Initial test results reflect data from November 9, 1999 through May 31, 2000.
2. LSRs on which KCI's Desired Due Date was earlier than the standard interval for the order type (as documented in BellSouth's *Product and Services Interval Guide*) were excluded from this report.
3. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
4. Results are based on actual Flow-Through (FT) and Non-Flow-Through (NFT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT or NFT by analyzing BellSouth back-end system

data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FT / NFT classification.

5. Totals may not equal 100% due to rounding.

Table V-1.14: Desired Due Date from KCI's Local Service Request (LSR DDD) vs. Committed Due Date from BLS's Firm Order Confirmation (FOC DD) – Re-test Data

	Total		Flow-Through Analysis				Delivery Method Analysis									
	Number	Percent	FT	% FT	NFT	% NFT	Loops	% Loops	Ports	% Ports	Port - Loop Combo	% Port - Loop Combo	NP	% NP	DL	% DL
LSR DDD = FOC DD	128	93%	35	97%	93	91%	38	95%	9	60%	17	89%	38	100%	26	100%
LSR DDD not = FOC DD	10	7%	1	3%	9	9%	2	5%	6	40%	2	11%	0	0%	0	0%
Total	**138**	**100%**	**36**	**100%**	**102**	**100%**	**40**	**100%**	**15**	**100%**	**19**	**100%**	**38**	**100%**	**26**	**100%**
Distribution of Earlier Due Dates																
DD = DDD - 1 day	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
DD = DDD - 2 days	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
DD = DDD - 3-5 days	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
DD = DDD - >=6 days	1	100%	0	0%	1	100%	1	100%	0	0%	0	0%	0	0%	0	0%
Total Earlier (DD before DDD)	1	1%	0	0%	1	1%	1	3%	0	0%	0	0%	0	0%	0	0%
Distribution of Later Due Dates																
DD = DDD + 1 day	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
DD = DDD + 2 days	3	38%	0	0%	3	38%	0	0%	3	50%	0	0%	0	0%	0	0%
DD = DDD + 3-5 days	5	63%	0	0%	5	63%	1	100%	3	50%	1	100%	0	0%	0	0%
DD = DDD + >=6 days	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total Later (DD after DDD)	8	6%	0	0%	8	8%	1	3%	6	40%	1	5%	0	0%	0	0%

Notes:

1. Re-test results reflect data from August 25 through November 14, 2000.

2. LSRs on which KCI's Desired Due Date was earlier than the standard interval for the order type (as documented in BellSouth's *Product and Services Interval Guide*) were excluded from this report.
3. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
4. Results are based on actual Flow-Through (FT) and Non-Flow-Through (NFT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT or NFT by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FT/NFT classification. For those cases where KCI was unable to obtain Actual Flow-Through Indicators from BellSouth, KCI placed the orders in a FT/NFT category based on their *expected* FT status.
5. Totals may not equal 100% due to rounding.

Table V-1.15: Jeopardy Notification Timeliness Detail

Jeopardy Notification Detail – Disaggregated View[60] Jeopardy Date Received versus FOC DD						
Service Type	**>48 hrs before DD**	**24-48 hrs before DD**	**Same day as DD**	**24 hrs after DD**	**24-48 hrs after DD**	**TOTAL**
UNE Loop-Port Combination	5	0	0	0	0	2
% Loop-Port Combination	56%	0%	0%	0%	0%	100%
UNE 2-wire Loop with Number Portability	0	0	0	0	0	0
% 2-wire Loop with NP	0%	0%	0%	0%	0%	0%
UNE 2-wire Loop without Number portability	4	0	0	0	0	0
% 2-wire Loop without NP	44%	0%	0%	0%	0%	100%
UNE Other	0	0	0	0	0	0
% UNE Other	0%	0%	0%	0%	0%	0%
TOTAL	**9**	**0**	**0**	**0**	**0**	**0**
	100%	**0%**	**0%**	**0%**	**0%**	**0%**

Notes:

1. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
2. KCI has included the following service order types in the "UNE Other" category: UNE Port; UNE Stand Alone Directory Listing; and UNE Stand Alone Number Portability.

[60] Disaggregation levels in the above table reflect the GPSC-approved 6/6/00 Service Quality Measurements (SQMs) for use in this test.

Table V-1.16: Pre-Order - Order Integration Test Results

Pre-Order Response			Order Form		Comments
Form Name	**Field Name**	**Format**	**Field Name**	**Format**	
SAQ					
1.	USOC	5 A / N Characters	FEATURE	3-6 A / N Characters	The pre-order response returns the USOC data in the correct format to populate an order form. However, the corresponding field name in the PS order form is FEATURE.
2.	CLLI	11 A / N Characters	LST	11 A / N Characters	The pre-order response returns the CLLI data in the correct format to populate an order form. However, the corresponding field name in the LSR order form is LST.
3.	CIC	4 Numeric Characters	PIC / LPIC	4 A / N Characters	The pre-order response returns the PIC / LPIC data in the correct format to populate an order form. However, the RS order form has two fields, PIC and LPIC. There is no notation on the pre-order form indicating whether the number returned is the PIC or LPIC.
AVQ					
1.	HOUSE-NUM THOROUGHFARE STREET-NAME 1 STREET-SUFFIX	13 A / N Characters 35 A / N Characters 44 A / N Characters 4 A / N Characters	EU-STREET 1	35 A / N Characters	The order field EU-STREET 1 is constructed by concatenating the four fields from the pre-order query. The combined length of the four pre-order fields could exceed the maximum length of the order field.
2.	CITY	32 A / N Characters	EU-CITY	25 A / N Characters	The pre-order response returns the data in the correct format. However, the field name is different on the order form. The pre-order response could exceed the size limitation of the EU-CITY field on the order form.

Pre-Order Response			Order Form		Comments
Form Name	**Field Name**	**Format**	**Field Name**	**Format**	
3.	STATE	2 Alpha Characters	EU-STATE	2 Alpha Characters	The pre-order response returns the data in the correct format. However, the field name is different on the order form.
4.	ZIPCODE	5 Numeric Characters	EU-ZIPCODE	5 Numeric Characters	The pre-order response does not return any data that can be used for the EU-ZIPCODE field on the order form. Therefore, an error was returned when submitting an order with this field left blank.
5.	FLR	14 A / N Characters	EU-FLOOR	12 A / N Characters	The pre-order returns the data in an incorrect format. The response added the FLR abbreviation to the data. The field name is also different on the order form. The pre-order response could exceed the size limitation of the EU-FLOOR field on the order form.
AAQ					
1.	COAVAIL DAYS	Mon-Sun (Y or N) XXXXXXX	DDD	YYMMDD	The pre-order response returned the data in Y or N form, specifying the days of the week available to perform service. The response is incompatible with the field DDD on the order form which requires Year, Month, and Date numerals.
2.	COAVAIL DAYS	Mon-Sun (Y or N) XXXXXXX	DDDO-CC	CC	The pre-order response returned the data in Y or N form, specifying the days of the week available to perform service. The response is incompatible with the field DDDO-CC order form, which requires two Century numerals.
CDD					

Pre-Order Response			Order Form		Comments
Form Name	**Field Name**	**Format**	**Field Name**	**Format**	
1.	CDD	CCYYMMDD	DDD DDDO-C	YYMMDD	The pre-order response returned the data in the form Century, Century, Year, Year, Month, Month, and Day, Day. The response is inconsistent with the order form requirement, which splits the date into two fields.
AVQ-TN					
1.	HOUSE-NUM THOROUGHFARE STREET-NAME 1 STREET SUFFIX	13 A / N Characters 10 A / N Characters 44 A / N Characters 4 A / N Characters	EU-STREET 1	35 A / N Characters	The order field EU-STREET 1 is constructed by concatenating the four fields from the pre-order query. The combined length of the four pre-order fields could exceed the maximum length of the order field.
2.	CITY	32 A / N Characters	EU-CITY	25 A / N Characters	The pre-order response returns the data in the correct format. However, the field name is different on the order form. The pre-order response could exceed the size limitation of the EU-CITY field on the order form.
3.	STATE	2 Alpha Characters	EU-STATE	2 Alpha Characters	The pre-order response returns the data in the correct format. However, the field name is different on the order form.
4.	UNIT-ROOM	RM 14 A / N Characters	EU-ROOM	9 A / N Characters	The pre-order response returns the data in an incorrect format. The response added the RM abbreviation to the data. The field name is also different on the order form. The pre-order response could exceed the size limitation of the EU-ROOM field on the order form field.

Pre-Order Response			Order Form		Comments
Form Name	**Field Name**	**Format**	**Field Name**	**Format**	
5.	ELEV-FLOOR	FLR 14 A / N Characters	EU-FLOOR	12 A / N Characters	The pre-order returns the data in an incorrect format. The response added the FLR abbreviation to the data. The field name is also different on the order form. The pre-order response could exceed the size limitation of the EU-FLOOR field on the order form.
TNAQ					
1.	TN	10 A / N Characters	TN	10 A / N Characters	The Telephone Numbers were returned in the correct format. The numbers were entered into the TNSQ pre-order.
TNSQ					
1.	TN	10 A / N Characters	TN	10 A / N Characters	The Telephone Numbers were confirmed in the correct format

B. Test Results: TAG Functional Test (O&P-2)

1.0 Description

The objective of the Telecommunications Access Gateway (TAG) Functional Test (O&P-2) was to evaluate the functionality of BellSouth's ordering systems in processing Local Service Requests (LSRs) for Unbundled Network Element (UNE) services submitted via the TAG Client Application Program Interface (API).

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section V, "Ordering & Provisioning Overview" for a description of the BellSouth ordering process via TAG.

2.2 Scenarios

KCI generated and transmitted LSRs based on the 100 UNE scenarios outlined in the *Master Test Plan (MTP).* The *MTP* defined the TAG order scenarios to be tested in O&P-2, and outlined the specific products and services to be ordered as well as the applicable activity types. The scenarios defined requirements for the testing of different customer types (business and residential), migration activity (partial and full migration)[1], and Flow-Through[2] designations.

Please refer to Section V, Tables V-2.2 and V-2.3 for a list of the UNE scenarios developed for this test.

2.3 Test Targets & Measures

The test target was BellSouth's UNE ordering process for LSRs submitted via the TAG interface. Sub-processes, functions, and evaluation criteria are summarized in Table V-2.1: Test Target Cross-Reference. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

[1] A CLEC requests a partial migration for a multi-line customer retaining at least one line with BellSouth. A CLEC requests a full migration to convert all of a customer's lines to a new service provider.

[2] For electronically submitted LSRs, a Flow-Through service request proceeds through BellSouth's OSS to generate an FOC without manual intervention. A Non-Flow-Through service request falls out for manual handling prior to generation of an FOC.

Table V-2.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Submit an Order	Send order in LSR format	Presence of Functionality	O&P-2-1-1; O&P-2-2-1; O&P-2-2-2
	Receive acknowledgment	Timeliness of Response	O&P-2-3-1
	Receive FOC / error / reject notification	Accuracy of Response	O&P-2-4-1; O&P-2-4-2; O&P-2-4-3
		Clarity of Information	O&P-2-4-1; O&P-2-4-2
		Timeliness of Response	O&P-2-3-2a; O&P-2-3-2b; O&P-2-3-3a; O&P-2-3-3b
	Send expedited order transaction	Presence of Functionality	O&P-2-1-1; O&P-2-2-1; O&P-2-2-2
Submit an Error	Send error in LSR format	Presence of Functionality	O&P-2-1-1; O&P-2-2-1; O&P-2-2-2
	Receive acknowledgement	Timeliness of Response	O&P-2-3-1
	Receive planned error / reject notification	Accuracy of Response	O&P-2-4-2
		Clarity of Information	O&P-2-4-2
		Timeliness of Response	O&P-2-3-2a; O&P-2-3-2b
	Correct error(s)	Clarity of Information	O&P-2-4-2
	Re-send order	Presence of Functionality	O&P-2-1-1; O&P-2-2-1; O&P-2-2-2
	Receive FOC	Accuracy of Response	O&P-2-4-1; O&P-2-4-3
		Clarity of Information	O&P-2-4-1
		Timeliness of Response	O&P-2-3-3a; O&P-2-3-3b
Supplement an Order	Send supplement	Presence of Functionality	O&P-2-1-1; O&P-2-2-1; O&P-2-2-2
	Receive acknowledgment	Timeliness of Response	O&P-2-3-1
	Receive FOC / error / reject notification	Accuracy of Response	O&P-2-4-1; O&P-2-4-2; O&P-2-4-3
		Clarity of Information	O&P-2-4-1; O&P-2-4-2
		Timeliness of Response	O&P-2-3-2a; O&P-2-3-2b; O&P-2-3-3a; O&P-2-3-3b
	Correct error(s)	Clarity of Information	O&P-2-4-2
	Re-send supplement	Presence of Functionality	O&P-2-1-1; O&P-2-2-1; O&P-2-2-2
	Receive FOC	Accuracy of Response	O&P-2-4-1; O&P-2-4-3
		Clarity of Information	O&P-2-4-1

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
		Timeliness of Response	O&P-2-3-3a; O&P-2-3-3b
Pre-Order / Order Integration	Populate integration orders with information returned from designated pre-order response	Clarity of Information	O&P-2-5-1; O&P-2-5-2; O&P-2-5-3; O&P-2-5-4; O&P-2-5-5; O&P-2-5-6; O&P-2-5-7
	Submit integration orders	Presence of Functionality	O&P-2-1-1; O&P-2-2-1; O&P-2-2-2
	Receive acknowledgment	Timeliness of Response	O&P-2-3-1
	Receive error / reject notification	Accuracy of Response	O&P-2-4-2
		Clarity of Information	O&P-2-4-2
		Timeliness of Response	O&P-2-3-2a; O&P-2-3-2b
	Correct error(s)	Clarity of information	O&P-2-4-2
	Re-send integration order	Presence of functionality	O&P-2-1-1; O&P-2-2-1; O&P-2-2-2
	Receive FOC	Accuracy of Response	O&P-2-4-1; O&P-2-4-3
		Clarity of Information	O&P-2-4-1
		Timeliness of Response	O&P-2-3-3a; O&P-2-3-3b
Receive Completion Notice (CN)	Receive CN transaction	Accuracy of Response	O&P-2-4-4
		Clarity of Information	O&P-2-4-4
		Timeliness of Response	O&P-2-3-4
Receive Jeopardy Notification	Receive jeopardy notification and missed appointment notification transaction	Accuracy of Response	O&P-2-4-5; O&P-2-4-6
		Clarity of Information	O&P-2-4-5; O&P-2-4-6
		Timeliness of Response	O&P-2-3-5; O&P-2-3-6
Check Service Order Status	Check service order status	Accuracy of Response	O&P-2-4-7
		Clarity of Information	O&P-2-4-7

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table V-2.2: Data Sources for TAG Functional Test

Document	File Name	Location in Work Papers	Source
Local Exchange Ordering (LEO) Implementation Guide, Volume 1. Issues 7J, 7K, 7L, 7M, 7N, 7O, and 7P	No Electronic Copy	O&P-2-B-1	BLS
LEO Implementation Guide, Volume 2. Issue 6B, July 99	No Electronic Copy	O&P-2-B-2	BLS
LEO Implementation Guide, Volume 3. Issue 3A, August 98	No Electronic Copy	O&P-2-B-3	BLS
Product and Services Interval Guide	No Electronic Copy	O&P-2-B-4	BLS
Local Service Request Error Messages (Version TCIF 7)	O&P_errors.pdf	O&P-2-A-4	BLS
CLEC Service Order Tracking System (CSOTS) *Users Guide*	O&P_csots.pdf	O&P-2-A-1	BLS
Local Number Portability (LNP) Ordering Guide (Issue 1b-October 1999)	O&P_LNPgd.pdf	O&P-2-A-3	BLS
Facility-Based Activation Requirements	No Electronic Copy	O&P-2-B-5	BLS
Telecommunications Access Gateway (TAG) API Reference Guide (Versions 2.2.0.4, 2.2.0.5, and 2.2.0.7)	No Electronic Copy	O&P-2-B-6	BLS
TAG Programmers Job Aid (Version 5.1)	O&P_TAGjobaid.pdf	O&P-2-A-2	BLS
Miscellaneous Account Numbers provided by BLS	O&P_MANs.doc Hard Copies	O&P-2-A-5	BLS
KCI Company Codes and Billing Account Numbers	O&P_OCN.xls	O&P-2-A-6	BLS
TAG Interface Testing Agreement – LNP	O&P_TAGvlaid.doc	O&P-2-A-7	BLS
Cable Pair Assignments	O&P_cablepair.xls	O&P-2-A-9	BLS
Initial State Customer Service Records (CSRs)	O&P_PreCSR.mdb	O&P-2-A-10	BLS
Post-Order Activity CSRs	O&P_PostCSR.mdb	O&P-2-A-11	BLS
CLEC information for LNP orders (Proprietary)	O&P_CLECLNP.xls	O&P-2-A-12	CLECs
Pending Order Status Job Aid	O&P_Pendingstat.pdf	O&P-2-A-13	BLS
Additional Test Bed Addresses	O&P_newad.doc	O&P-2-A-14	BLS
O&P Test Bed Specifications	O&P_Testbed_specs.xls	O&P-2-A-15	KCI
LNP Test Bed Specifications	O&P_LNPTestbed_s	O&P-2-A-16	KCI

Document	File Name	Location in Work Papers	Source
	pecs.xls		
Test Case Master	O&P_Testcasemaster.xls	O&P-2-A-17	KCI
Order Transaction Submission Schedule	O&P_editagsced.xls	O&P-2-A-18	KCI
KCI Help Desk Log	O&P_HelpDesklog.xls	O&P-2-A-19	KCI
KCI Issues Log	O&P_TestIssues.xls	O&P-2-A-20	KCI
Pre-Order / Order Integration Log	O&P_integration.xls	O&P-2-A-21	KCI
TAG System Availability Logs	O&P_TAGsystem.mdb	O&P-2-A-23	HP
Expected Results Analysis - TAG	O&P_TAGExpected	O&P-2-A-24	KCI

2.4.1 *Data Generation/Volumes*

Data for this test was generated through order transaction submission via TAG. The number of transactions submitted during functional testing was determined based on the number of different requisition and activity (REQ ACT) type combinations available to CLECs via the TAG interface.

This test is a feature / function test and did not rely on volume testing.

2.5 Evaluation Methods

To allow for service request submission, BellSouth provided KCI with test bed accounts[3] that were provisioned according to KCI's specifications. Test cases and instances, correlating to Local Service Requests (LSRs), were developed using test bed accounts, pre-order data, and BellSouth ordering documentation, which included the *Local Exchange Ordering Guide (LEO Guide), Volume 1*.

Transactions (LSRs) were submitted and the results logged and compared to expected results, based on our knowledge of the ordering and provisioning system functionality and business processes. These processes are outlined in Section V, "Ordering & Provisioning Overview."

TAG orders were submitted as both stand-alone transactions and as integrated pre-order / order transactions[4].

[3] See Section V, "Ordering & Provisioning Overview" for a detailed description of the Ordering and Provisioning test bed.

[4] See Section V, "Ordering & Provisioning Overview" for a description of the Pre-Order / Order Integration Sub-Test.

2.6 Analysis Methods

The TAG Functional Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the TAG Functional Test.

The Georgia Public Service Commission (GPSC) voted on June 6, 2000 to approve a set of Service Quality Measurement- (SQM-) related measures and standards to be used for purposes of this evaluation[5]. In many cases, results in this section were calculated based on KCI/HP time stamps, which may differ significantly from the BellSouth time measurement points reported in the SQMs. For those evaluation criteria that do not map to the GPSC-approved measures, or where BellSouth does not specify and publish a standard business interval for a given procedure, KCI applied its own standard, based on our professional judgment.

For quantitative evaluation criteria where the test result did not meet or exceed the established standard or KCI benchmark, KCI conducted a review to determine whether the differential was statistically significant.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table V-2.3: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Interface Availability			
O&P-2-1-1	TAG order transaction capability is consistently available during scheduled hours of operation.	Satisfied	The GPSC-approved standard is 99.5% system availability during scheduled hours of operation[6]. During the course of this test, Hewlett Packard attempted to maintain a constant connection to

[5] On January 16, 2001, the GPSC issued an order requiring BellSouth to report for business purposes a set of measures that differs in some cases from the requirements of the June 6, 2000 test standards.

[6] Regular scheduled hours of availability for the TAG interface are published on the BellSouth Interconnection Web site (www.interconnection.bellsouth.com/oss/oss_hour.html). Notices of specific scheduled system downtime (e.g., for a new system release or fix) are communicated through Carrier Notifications posted on the BellSouth Web site.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			BLS's TAG interface by implementing regular system 'pinging.'[7] Based on an analysis of HP's TAG system availability logs between 2/15/00 and 7/27/00[8], KCI observed that the TAG interface was available during 99.5% of scheduled hours of availability.
System Functionality			
O&P-2-2-1	The TAG interface provides expected system responses.	Not Satisfied	The KCI standard is 99% of expected system or representative responses received. Of the 756[9] order transactions submitted during the initial Functional Evaluation, 100% received responses (Functional Acknowledgements, subsequent errors or confirmations, and expected completion notifications) from BLS. During initial testing, some electronically submitted LSRs received responses via facsimile[10]. According to BLS, these faxes were generated as a result of BLS ordering representative error in failing to populate one of several particular data elements within the BLS service order[11]. The missing internal field(s) precluded an electronic response from being generated. On January 15, 2000, BLS implemented a system enhancement to ensure that FOCs and CNs are electronically generated even when an ordering representative fails to enter one of these data elements. Following this system enhancement, KCI did not observe any additional

[7] KCI could not conclusively determine the root source (BellSouth or CLEC) for all recorded downtime.

[8] HP maintained detailed logs of system availability beginning on 2/15/00. Comprehensive system availability data for the test period prior to this date is unavailable.

[9] This number does not include those transactions receiving interface errors (i.e., those that did not reach BellSouth back-end systems).

[10] Less than one percent of total transactions were received via Fax.

[11] Particular fields include: AECN (on UNE orders); sales code beginning with "YAXQ"; PON; MAN (UNE orders); RESH (Resale orders); and RMKR.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			occurrences of missing electronic FOC or CN responses that were attributable to BLS representatives during initial functional testing. See Exception 9 for additional information on this issue. KCI has recommended closure of Exception 9 to the GPSC. KCI initiated a functional re-test on 8/25/00[12]. During this re-test, KCI failed to receive Completion Notices (CNs) on 16% of transactions for which a CN was expected. For some of these orders, BLS indicated that they were mistakenly canceled by BLS service representatives[13]. See Exception 118 for additional information on this issue. As no subsequent re-testing activities are planned, KCI has recommended closure of Exception 118 to the GPSC.

[12] This re-test was initiated to address deficiencies identified in other evaluation criteria; however, results were monitored across all relevant evaluation criteria.

[13] According to BellSouth, some of these orders fell into error status following confirmation (for billing- and directory listing-related errors). A BellSouth Error Resolution Group, charged with working orders in this error status, mistakenly viewed the KCI Company Codes as belonging to internal BellSouth test orders and cancelled them out of the system. Additional orders were affected by other service rep errors or cancellations.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-2-2-2	BLS systems and representatives provide required order functionality[14].	Satisfied	BLS systems and representatives provided the required order functionality for most transaction types evaluated (see Section V, Tables V-2.2 and V-2.3). However, the following deficiencies in UNE ordering functionality have been observed[15]: — Loop service with directory listing requests require two separate LSRs. BLS has indicated that system modifications to allow loop and directory changes on a single service order are not operationally feasible. To relate the due dates of the two orders, BLS advised CLECs to submit the DL request after the related Loop request has received confirmation, using the Due Date provided on the Loop confirmation as the Desired Due Date for the DL request. KCI submitted a set of Loop Service orders with DL orders to re-test this process. KCI received Firm Order Confirmations on all separate service requests for Loop Service and DL, indicating that BLS ordering systems successfully processed the requests. In addition, KCI experienced no significant problem with obtaining the same confirmed Due Date for DL service as the Due Date received

[14] A number of ordering scenarios outlined in the Master Test Plan are not electronically orderable via BellSouth TCIF 7 interfaces. BellSouth does not allow stand-alone UNE Loop partial migrations or various types of "UNE-to-UNE migrations", converting a CLEC customer from one service delivery platform (e.g., UNE Loop-Port Combination) to another delivery method (e.g., UNE Loop). KCI has issued Exception 39 (UNE Loop partial migration) and Exception 54 (UNE-to-UNE migration) to address these issues. BellSouth has submitted requests via the Change Control Process to introduce this ordering functionality into its OSS '99 (TCIF 9) interface release. KCI is closing these exceptions due to the fact that they are not electronically orderable in TCIF 7. Pursuant to the Georgia Public Service Commission's Order, KCI is evaluating the electronically-orderable services in TCIF 7. KCI will not be testing Issue 9 electronic ordering interfaces in Georgia.

[15] All deficiencies referenced in this criterion have been addressed and successfully re-tested. The related exceptions are closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			on corresponding Loop Service requests. See Exception 31 for additional information on this issue. Exception 31 is closed[16]. – On three UNE Loop migration service requests, BLS ordering representatives incorrectly processed the service order, resulting in the disconnection of the customer's retail service without reconnection of the UNE component. BLS instituted a system edit to prohibit service representatives from improperly coordinating BLS internal service order activity. Following implementation of this system edit, no further instances of inappropriate disconnection activity were noted during initial testing. In addition, KCI executed re-test transactions designed to evaluate this BLS edit. KCI monitored subsequent responses to Loop migration service requests in error status and observed no instances of improper service disconnection. See Exception 22 for additional information on this issue. Exception 22 is closed. – A BLS defect preventing coordinated hot cuts without specified frame due times was identified for non-designed (SL1) loops. BLS implemented a system fix with TAG Version 2.2.0.7 to resolve this issue. KCI successfully re-tested this service request type. See Exception 40 for additional information on this issue. Exception 40 is closed.

[16] KCI recommended closure of Exception 31 based on the presence of adequate LS and DL ordering functionality. While BellSouth electronic ordering systems do not have the ability to handle Loop Service with DL orders on a *single* LSR, the basic functionality to process these orders does exist. KCI believes that the additional effort required of CLECs to develop two distinct service requests and to coordinate their Due Dates is not a significant impediment to timely execution of these order types.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			– A BLS defect preventing the electronic processing of Loop-Port Combination partial migrations was identified. BLS implemented a system fix on 01/17/00 to correct this deficiency. Subsequent re-testing of this order type indicated partial migrations are successfully supported. See Exception 4 for additional information on this issue. Exception 4 is closed. – A BLS systems defect preventing the migration of a customer's Billing Telephone Number (BTN) during a partial migration to UNE Loop-Port Combinations was identified. BLS implemented a system fix to address this issue on 4/29/00. KCI successfully re-tested BTN migrations on 5/30/00. See Exception 51 for additional information on this issue. Exception 51 is closed. – TAG does not support a blank space in a data element. This defect prevents a two-word entry in the billing address fields. BLS indicates that this issue has been resolved with the release of the OSS '99 version of TAG. KCI did not test OSS '99.
Timeliness of Response			
O&P-2-3-1	BLS's TAG interface provides timely Functional Acknowledgements (FAs)[17].	Satisfied	The KCI standard is 95% of FAs received within 30 minutes. LSRs submitted for functional testing received FAs within the following timeframe: 100% of 753 FAs were received in less than 30 minutes.

[17] BellSouth documentation does not provide any information on the expected interval for return of an FA.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-2-3-2a	BLS's TAG interface provides timely Fully Mechanized (FM)order errors (Fatal Rejects and Auto Clarifications).	Satisfied [18]	The GPSC-approved standard for fully mechanized (FM) errors is 97% received within one hour[19]. LSRs submitted during the entire period of initial functional testing received FM errors within the following timeframes [20] (See Table V-2.5): – 93% of FM errors were received in less than one hour. KCI initiated an initial re-test of error response timeliness on August 25, 2000. This re-test was designed to evaluate the effects of process improvements implemented in BLS ordering centers. LSRs submitted during the first re-test received FM errors within the following timeframes (See Table V-2.6): — 67% of FM errors were received in less than one hour. An additional 13% were received within 1-2 hours. KCI initiated a second re-test on January 19, 2001 to evaluate FM EDI error timeliness. LSRs submitted during this second re-test received FM errors within the following timeframes (See Table V-2.7): — 94% of FM errors were received in less than one hour. An additional 3% were received within 2 hours. See Exception 77 for additional information on this issue. The issues in Exception 77 that relate to this criterion are resolved.

[18] Although the test percentage is below the benchmark of 97%, the statistical evidence is not strong enough to conclude that the performance is below the benchmark with 95% confidence. In other words, the inherent variation in the process is large enough to have produced the substandard result, even with a process that is operating above the benchmark standard. The p-value, which indicates the chance of observing this result when the benchmark is being met, is 0.1297, above the 0.0500 cutoff for a statistical conclusion of failure.

[19] Results are based on the actual Flow-Through status of LSRs submitted by KCI. KCI determined that a clarification was fully mechanized (FM) or partially / non-mechanized (PM) by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-2-3-2b	BLS's TAG interface provides timely Partially Mechanized (PM) order clarifications (CLRs).	Satisfied[21]	The GPSC-approved standard for partially mechanized (PM) CLRs is 85% received within 24 hours[19]. LSRs submitted during initial functional testing received PM CLRs within the following timeframes [20] (See Table V-2.5): – 60% of PM errors were received in less than 24 hours. An additional 33% were received within 24-48 hours. KCI initiated a re-test of error response timeliness on August 25, 2000. This re-test was designed to evaluate the effects of process improvements implemented in BLS ordering centers. LSRs submitted during re-testing received PM CLRs within the following timeframes (See Table V-2.6): — 82% of PM errors were received in less than 24 hours. An additional 8% were received within 48 hours. See Exception 98 for additional information on this issue. KCI has recommended closure of Exception 98 to the GPSC.
O&P-2-3-3a	BLS's TAG interface	Not Satisfied	The GPSC-approved standard for

on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FM/PM classification. During initial testing, KCI was unable to obtain actual FM/PM classifications on a number of Local Number Portability (LNP) service requests. Responses to 12% of these non-categorized service requests were received within one hour, and 75% were received within 24 hours. During re-testing, KCI was unable to obtain actual FM/PM classifications on a number of LNP and non-LNP orders. Of the 42 orders without a FM or PM classification, 71% were received within 24 hours.

[20] On 2/7/00, BellSouth completed a systems and process fix to address timeliness of response issues. This set of results is provided for the testing period beginning after the fix implementation. For the testing period beginning after the fix implementation, 93% of FM errors were received in less than one hour and 67% of PM errors were received in less than 24 hours.

[21] Although the test percentage is below the benchmark of 85%, the statistical evidence is not strong enough to conclude that the performance is below the benchmark with 95% confidence. In other words, the inherent variation in the process is large enough to have produced the substandard result, even with a process that is operating above the benchmark standard. The p-value, which indicates the chance of observing this result when the benchmark is being met, is 0.2643, above the 0.0500 cutoff for a statistical conclusion of failure.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	provides timely Flow-Through (FT) Firm Order Confirmations (FOCs) .		Flow-Through (FT) FOCs is 95% received within three hours[22]. LSRs submitted during the entire period of initial functional testing received FT FOCs within the following timeframes [23] [24] (See TableV-2.8): – 92% of FOCs were received in less than three hours for FT LSRs. KCI initiated a re-test of FOC response timeliness on August 25, 2000. LSRs submitted during the first re-test received FT FOCs within the following timeframes (See Table V-2.9): — 56% of FOCs were received in less than three hours for FT LSRs. An additional 37% were received within 24 hours. KCI initiated a second re-test of FT FOC response timeliness on January 19, 2001. LSRs submitted during the second re-test received FT FOCs

[22] Results are based on actual Flow-Through (FT) and Non-Flow-Through (NFT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT or NFT by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FM/PM classification. During initial testing, KCI was unable to obtain actual FT/NFT classifications on a number of Local Number Portability (LNP) service requests. Responses to 8% of these non-categorized service requests were received within three hours, and 87% were received within 36 hours. During re-testing, KCI was unable to obtain actual FT/NFT classifications on a number of LNP and non-LNP service requests. Of the 35 FOC responses not classified, 20% were received within three hours and 86% were received within 36 hours.

[23] Beginning with the February Flow-Through Report, BellSouth no longer categorized as Flow-Through those service requests which proceeded through BellSouth electronic ordering systems to the Service Order Communication System (SOCS) and fell out for manual handling after failing a SOCs edit. Previously categorized as FT, these service request types are now defined by BellSouth to be NFT due to the required manual intervals. As a result of BellSouth Flow-Through calculation modifications, some FT FOCs previously categorized as "late" would be considered NFT if submitted in the future. FOC response timeliness re-testing activity (initiated on August 25, 2000) occurred after this FT definition change was implemented. As a result, evaluation of re-test FOC timeliness is performed based on consistent classification of FT or NFT categories.

[24] On 2/7/00, BellSouth completed a systems and process fix to address timeliness of response issues. The results are from the period beginning after the fix implementation. For the testing period beginning after the fix implementation, 97.5% of FOCs were received in less than three hours for FT LSRs and 83% of FOCs were received in less than 36 hours for NFT LSRs.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			within the following timeframes (See Table V-2.10): — 84% of FOCs were received in less than three hours for FT LSRs. An additional 11% were received within 24 hours. See Exception 78 for additional information on this issue. As no subsequent re-test activities are planned, KCI has recommended closure of Exception 78 to the GPSC.
O&P-2-3-3b	BLS's TAG interface provides timely Non-Flow-Through (NFT) Firm Order Confirmations (FOCs).	Satisfied	The GPSC-approved standard for Non- Flow-Through (NFT) FOCs is 85% received within 36 hours. LSRs submitted during the entire period of initial functional testing received NFT FOCs within the following timeframes[22][23][24] (See TableV-2.8): – 79% of FOCs were received in less than 36 hours for NFT LSRs. An additional 14% were received within 36-48 hours. KCI initiated a re-test of FOC response timeliness on August 25, 2000. LSRs submitted during re-testing received NFT FOCs within the following timeframes (See Table V-2.9): — 92% of FOCs were received in less than 36 hours for NFT LSRs. An additional 3% were received within 48 hours. See Exception 97 for additional information on this issue. KCI has recommended closure of Exception 97 to the GPSC.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-2-3-4	BLS's TAG interface provides timely Completion Notifications (CNs) within agreed upon standard intervals.	No Result Determination Made[25]	BLS delivers CNs upon the conclusion of "field provisioning"[26] activities as well as all subsequent downstream (listing and billing) provisioning activities[27]. Within the CN, BLS provides the field provisioning completion date (located in the 'DD' field). BLS does not offer a guideline for the standard interval between field and billing completion activities. LSRs submitted for initial functional testing received CNs within the following timeframes (See Table V-2.11): • 89% of CNs were received within one business day after the field provisioning completion date. • 2% were received within two business days after field provisioning completion. • 5% were received within three-to-five days after field provisioning completion. • The remaining 4% of CNs were received within six or more days following field provisioning completion. KCI initiated a re-test of CN response timeliness on August 25, 2000. LSRs

[25] KCI is unable to provide an evaluation result for this criterion and provides the test results as diagnostic information only. Although the GPSC Service Quality Measurement (SQM), 'Average Completion Notice Interval' is related to CN delivery and has an associated standard of "Parity with Retail," KCI is unable to accurately compare its functional transaction results to this SQM within a reasonable degree of accuracy. BLS calculates this metric using the following data points: 1)Completion date and time (as entered by a BLS field technician for dispatched orders or 5pm on the due date for non-dispatched orders); and 2) Date and time of conclusion of all downstream (listing, billing, and - for LNP orders - TN porting) activities. Within the CN response file delivered to CLECs, BLS provides the work completion date (but not the time); BLS does not provide a date/time stamp associated with downstream provisioning completion. While the CN Timeliness results calculated using CLEC data measurement points (and presented in the comment section of this criterion) provide a reasonable representation of the time between receipt of a CN and completion of field provisioning activities, the differences between KCI and BLS calculation points is large enough to prevent an accurate assignment of a Satisfied / Not Satisfied result relative to the SQM standard.

[26] The "field provisioning" date is defined as the date on which actual service completion occurred.

[27] For Local Number Portability (LNP) orders, BellSouth returns CNs following all provisioning activities and after the CLEC completes the porting of associated Telephone Numbers with the Number Portability Administration Center (NPAC).

Test Cross-Reference	Evaluation Criteria	Result	Comments
			submitted during re-testing received CNs within the following timeframes (See Table V-2.12): • 89% of CNs were received within one business day after the field provisioning completion date. • 5% were received within two business days after field provisioning completion. • 5% were received within three-to-five business days after field provisioning completion. • The remaining 1% of CNs were received six or more days following field provisioning completion. See Exception 26 for additional information on this issue. KCI has recommended closure of Exception 26 to the GPSC.
O&P-2-3-5	BLS's TAG interface provides timely Jeopardy Notifications.	Satisfied	The BLS proposed standard is 95% of Jeopardy Notifications received at least 48 hours before the confirmed Due Date (DD). Of the 5 Jeopardy Notifications received via TAG, BLS has returned 100% at least 48 hours before the FOC DD. See Table V-2.15 for additional detail.
O&P-2-3-6	BLS's TAG interface provides timely Missed Appointment (MA) notifications.	Satisfied	The KCI standard is 95% of MA notifications received within one business day after the latest confirmed Due Date (DD). Of the 15 MAs received via TAG, BLS has returned 100% (15/15) within 1 business day after the DD. See Exception 67 for additional information on this issue[28]. Exception 67 is closed.

[28] KCI drafted Exception 67 to address late MA notifications received. Upon further investigation, the majority of responses initially categorized as 'late' were determined to be 'on-time.' For a number of PONs, due date modifications were initiated by CLEC representatives during conversations with BellSouth UNE-Center personnel. New FOCs (containing the new Due Dates) are not transmitted in these cases. As a result, KCI initially compared the original FOC DD with the MA receipt time. The MA receipt times were subsequently compared to the modified Due Dates. In all cases, the MAs were delivered in a timely manner relative to the new DD.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Accuracy of Response			
O&P-2-4-1	BLS systems and representatives provide clear, accurate, and complete Firm Order Confirmations (FOCs)	Satisfied	A sample of FOCs was examined for clarity, accuracy, and completeness relative to the BLS Business Rules (*LEO Guide, Volume 1*)[29]. A number of FOCs were received in response to invalid service requests. For these orders, KCI expected to receive error messages. KCI initiated a re-test on 9/25/00 to monitor the accuracy of FOC responses. KCI determined that 99% of FOCs received during re-test activities were accurate response types (i.e., received in response to valid LSRs). See Exception 95 for additional information on this issue. The issues in Exception 95 that relate to this criterion are resolved. During KCI's initial review of FOC completeness, KCI observed a number of discrepancies between BLS-documented data requirements and actual data returned on FOC responses. For example, Frame Due Time (FDT) and Circuit ID (ECCKT) were listed as required fields but were not populated on all responses. In addition, CHAN/PAIR was populated when it was not an applicable field according to *BellSouth Business Rules*. KCI issued Exception 68 to address these response completeness issues. To address these issues, BLS published an updated version of *LEO Guide*, Volume I on August 28, 2000 to more accurately reflect FOC data requirements. This version (7S) did not adequately define usage

[29] KCI defined an accurate FOC as a correct response type relative to the LSR submitted (i.e., the FOC was received in response to a valid LSR) that contains: a) all expected data elements (fields); b) no unexpected data elements (fields); c) all required data values in the expected format; d) no prohibited values. Expected and prohibited values were developed based on the *LEO Guide, Volume 1*.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			requirements, by specific order types, for some response fields[30]. On 1/31/01, BLS issued a modified LEO Guide (Issue 7U) that included additional usage information for response transactions. Based on this updated documentation, KCI validated that all expected data fields were populated on FOC responses. See Exception 68 for additional information on this issue. KCI has recommended closure of Exception 68 to the GPSC.
O&P-2-4-2	BLS systems and representatives provide clear, accurate, and complete order rejects and clarifications (CLRs).	Not Satisfied	A sample of errors was examined for clarity, accuracy, and completeness relative to the *BellSouth Business Rules* (*LEO Guide, Volume 1*)[31]. A number of CLRs were received in response to valid service requests. BLS performed additional training of its ordering representatives to correct this problem. CLRs received following the implementation of rep training were found to be accurate[32]. However, KCI noted additional occurrences of inaccurate CLRs during re-test activities initiated on 9/25/00. Of the sample reviewed, approximately 7% of partially-mechanized CLRs (i.e., issued by BLS representatives) received during re-testing were found to be inaccurate. See Exception 47 for additional information on this issue. As no subsequent re-testing activities are planned, KCI has recommended closure of Exception 47 to the GPSC. In addition, several error messages

[30] The following response fields have inadequate usage requirements: ORD, RORD, FDT, EBD, LOCBAN, BAN1, BAN2. For these fields, KCI was initially unable to determine what the "expected" results should be.

[31] KCI defined an accurate error as a correct response type relative to the LSR submitted (i.e., the ERR/CLR was received in response to an erred LSR) that contains: a) all expected data elements (fields); b) no unexpected data elements (fields); c) all required data values in the expected format; d) no prohibited data values.

[32] Three additional inaccuracies were observed, representing less than 5% of total partially-mechanized CLR responses reviewed following BellSouth rep training.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			received in response to Local Number Portability (LNP) service requests did not contain clear and comprehensive error descriptions. These responses were populated with an error message stating "Other LNP Error." KCI contacted its BLS Customer Service Manager to obtain the detailed error message. BLS has opened a feature change request to prevent this message from being delivered on LNP responses. A target date for the implementation of this feature has not yet been established. This deficiency did not prevent KCI from continuing its ordering activity and was not significant enough to effect the overall evaluation. For some initial functional test transactions, a BLS representative generated a CLR in response to a Line Class of Service (LNE CLS SVC) entry on an LSR that had previously returned a system-generated FOC. BLS has proposed a feature enhancement within its internal change control process to ensure system-representative consistency in service request validation. BLS plans to implement this feature in its OSS'99 version of TAG. KCI is not testing OSS '99. See Exception 18 for additional information on this issue. Exception 18 is closed[33]. During KCI's initial review of error completeness, the *Local Exchange Ordering (LEO)Implementation Guide*, Issue 7S did not adequately define usage requirements, by specific order types, for some response fields[34]. On 1/31/01, BLS issued a modified *LEO*

[33] KCI closed this exception based on the fact that BellSouth has updated its documentation to more clearly reflect the valid data entries in the LNE CLS SVC field, and because the BellSouth feature will not be implemented in TCIF 7. KCI is not testing the ordering functionality of the TCIF 9 release in Georgia.

[34] The following response fields have inadequate usage requirements: ORD, RORD, FDT, EBD, LOCBAN, BAN1, BAN2. For these fields, KCI was unable to determine what the "expected" results should be.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Guide (Issue 7U) that included additional usage information for response transactions. Based on this updated documentation, KCI validated that all expected data fields were populated on error responses. See Exception 68 for additional information on this issue. KCI has recommended closure of Exception 68 to the GPSC. This criterion has been assigned a Not Satisfied as a result of the inaccurate CLRs noted above.
O&P-2-4-3	Service order provisioning due dates (FOC DDs[35]) identified within BLS's order confirmation delivered through TAG are consistent with the CLEC's valid due date (LSR DDD[36]) request (i.e., a due date selected in accordance with the product's standard interval or acquired from a Calculate Due Date (CDD) pre-order query).	No Result Determination Made[37]	KCI obtained valid DDD information for population on an LSR from one of two sources: 1) BLS *Product and Services Interval Guide.* 2) A combination of pre-order queries. KCI performed a Calculate Due Date (CDD) query to determine the earliest possible due date for an order type. An Appointment Availability Query (AAQ) was then run to confirm that the appointment time was available in the necessary Central Office. For LSRs submitted during initial testing and populated with a DDD obtained from BLS documentation[38]: – 88% of DDs were equal to the LSR DDD. – 3% of DDs were earlier than the LSR DDD.

[35] FOC Due Date (DD) is defined as the due date provided in the FOC. It is the date on which BellSouth commits to complete provisioning of a customer's service.

[36] LSR Desired Due Date (LSR DDD) is defined as the due date requested in a customer's LSR.

[37] A Georgia Service Quality Measurement (SQM) addressing the correlation between confirmed due dates and requested due dates does not exist. In addition, BellSouth does not have an established commitment or guideline for the percentage of confirmed due dates that should equal the requested due date. In the absence of an SQM-related benchmark, a BellSouth-defined guideline, or general industry-approved standards or business rule thresholds that can be used for evaluation purposes, KCI provided the test results as diagnostic information only.

[38] Results are based on 239 LSRs submitted using BellSouth documentation to obtain input for the DDD field.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			– 9% of DDs were later than the LSR DDD. For LSRs submitted during initial testing and populated with a DDD obtained from electronic pre-order queries[39], 100% of DDs were equal to the LSR DDD. BLS implemented training for Local Carrier Service Center (LCSC) representatives on 3/9/00 to prevent earlier DDs from being issued on manually handled service requests. Based on a review of FOCs received after 3/9/00, 9% of DDs were earlier than the requested DDD. KCI initiated a subsequent re-test of Due Date accuracy on August 25, 2000. For LSRs submitted during re-testing and populated with a DDD obtained from BLS documentation[40]: — 90% of DDs were equal to the LSR DDD. — 8% of DDs were later than the LSR DDD. — 2% of DDs were earlier than the LSR DDD. For LSRs submitted during re-testing and populated with a DDD obtained from electronic pre-order queries: — 95% of DDs were equal to the LSR DDD. — 5% of DDs were later than the LSR DDD. See Exception 38 and Tables V-2.13 and V-2.14 for additional details. KCI has recommended closure of Exception 38 to the GPSC.

[39]Results are based on nine LSRs submitted using electronic pre-orders to obtain input for the DDD field.

[40] LSRs for which KCI requested an invalid DDD (i.e., earlier than the documented or pre-order-obtained standard interval) have been excluded from this analysis.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-2-4-4	BLS systems and representatives provide clear, accurate, and complete Completion Notifications (CNs).	Satisfied	A sample of CNs was examined for clarity, accuracy, and completeness relative to the BLS Business Rules (*LEO Guide, Volume 1*)[41]. CNs were received in response to completed service requests. During KCI's initial review of CN completeness, KCI observed a number of discrepancies between BLS-documented data requirements and actual data returned on CN responses. For example, Frame Due Time (FDT) and Circuit ID (ECCKT) were listed as required fields but were not populated on all responses. In addition, CHAN / PAIR was populated when it was not an applicable field according to *BellSouth Business Rules*. KCI issued Exception 68 to identify these response completeness issues. To address these issues, BLS published an updated version of *LEO Guide, Volume I* on August 28, 2000 to more accurately reflect CN data requirements. This version (7S) did not adequately define usage requirements, by specific order types, for some response fields[42]. On 1/31/01, BLS issued a modified *LEO Guide* (Issue 7U) that included additional usage information for response transactions. Based on this updated documentation, KCI validated that all expected data fields were populated on CN responses. See Exception 68 for additional information on this issue. KCI has recommended closure of Exception 68 to the GPSC.

[41] KCI defined an accurate CN as a correct response type relative to the LSR submitted (i.e., the CN was received in response to a completed LSR) that contains: a) all expected data elements (fields); b) no unexpected data elements (field); c) all required data values in the expected format; d) no prohibited data values. Expected and prohibited values were developed based on the *LEO Guide, Volume 1.*

[42] The following response fields have inadequate usage requirements: ORD, RORD, FDT, EBD, LOCBAN, BAN1, BAN2. For these fields, KCI was unable to determine what the "expected" results should be.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-2-4-5	BLS systems and representatives return clear and complete Jeopardy Notifications[43].	Satisfied	BLS documentation available during initial testing did not adequately define the process for categorizing and delivering Jeopardy Notifications[44]. BLS updated its *Pending Order Status Job Aid* in a 6/12/00 release to clarify the Jeopardy Notification process. See Exception 72 for additional information on this issue. Exception 72 is closed. KCI reviewed a sample of Jeopardy responses for completeness relative to the *BellSouth Business Rules* (*LEO Guide, Volume 1*). During KCI's initial review of Jeopardy response completeness, the BLS Business Rules (Issue 7S) did not adequately define usage requirements, by specific order types, for some response fields[45]. On 1/31/01, BLS issued a modified *LEO Guide* (Issue 7U) that included additional usage information for response transactions. Based on this updated documentation, KCI validated that all expected data fields were populated on Jeopardy responses. See Exception 68 for additional information on this issue. KCI has recommended closure of Exception 68 to the GPSC.

[43] Please see O&P-5 Results for additional information on Jeopardy Notification accuracy and completeness.

[44] For example, a response containing an indicator code of "Jeopardy" is not necessarily counted as a Jeopardy Notification in BellSouth Service Quality Measurement (SQM) calculations.

[45] The following response fields have inadequate usage requirements: ORD, RORD, FDT, EBD, LOCBAN, BAN1, BAN2. For these fields, KCI was unable to determine what the "expected" results should be.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-2-4-6	BLS systems provide clear, accurate, and complete Missed Appointment notifications.	Satisfied	BLS documentation available during initial testing did not adequately define the process for categorizing and delivering Missed Appointment Notifications[46]. BLS updated its *Pending Order Status Job Aid* in a 6/12/00 release to clarify the Missed Appointment notification process. See Exception 72 for additional information on this issue. Exception 72 is closed. KCI reviewed a sample of Missed Appointment responses for completeness relative to the *BellSouth Business Rules* (*LEO Guide, Volume 1*). During KCI's initial review of Missed Appointment response completeness, the *BellSouth Business Rules* (Issue 7S) did not adequately define usage requirements, by specific order types, for some response fields[47]. On 1/31/01, BLS issued a modified *LEO Guide* (Issue 7U) that included additional usage information for response transactions. Based on this updated documentation, KCI validated that all expected data fields were populated on Missed Appointment responses. See Exception 68 for additional information on this issue. KCI has recommended closure of Exception 68 to the GPSC.

[46] For example, a response containing an indicator code of "Jeopardy" could be considered a Missed Appointment Notification.

[47] The following response fields have inadequate usage requirements: ORD, RORD, FDT, EBD, LOCBAN, BAN1, BAN2. For these fields, KCI was unable to determine what the "expected" results should be.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-2-4-7	BLS service order tracking systems (CSOTS) provide accurate LSR status.	Satisfied	KCI compared a sample of order status queries in CSOTS[48] to the order status in KCI's Order Management Tool (i.e., the most recent response file message received by KCI). Based on this sampling, CSOTS queries (Confirmed, Pending, or Completed) matched the responses received by KCI in most cases. During a functional re-test initiated on 8/25/00, KCI reviewed BLS's service order status accuracy. Based on re-test results, KCI noted four instances of Local Number Portability (LNP) service requests where the Completion Date provided on the CN response was later than the Completion Date identified within CSOTS. In addition, in response to one service request for an inside move, BLS delivered the CN response in advance of actual order completion[49]. In response to these issues, BLS opened a defect change request to populate LNP CNs with the date of actual completion. BLS opened an additional feature change to ensure that CNs are not sent until all applicable BLS service orders have been completed. A target date for implementation of these two releases has not yet been established. See Exception 125 for additional information on this issue. KCI has recommended closure of Exception 125 to the GPSC. The deficiencies noted are not significant enough to affect the overall evaluation.

[48] CSOTS provides the status of service requests once BellSouth has received Firm Order Confirmations (FOCs). The status of service requests in a pre-FOC state is not available via CSOTS.

[49] To perform customer moves, BellSouth generates two internal service orders. Although the customer's service request is not complete until the conclusion of both service orders, BellSouth delivered the CN response after completion of the first service order. The second service order completed several days later.

Table V-2.4: Integration Test Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Pre-order/Order Integration			
O&P-2-5-1	Information returned in response to pre-order System Availability Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between fields received in response to Service Availability Queries and the three corresponding fields in the Order forms was inconsistent with respect to field name and format. To provide information on the relationship between pre-order responses and order fields, BellSouth plans to publish a "*Pre-Order to Firm Order Mapping Matrix*" on 3/30/01 (see Carrier Notification SN91082241 for additional information). While the names and formats of the pre-order and order fields did not agree, data content returned on the pre-order responses adequately fulfills order form input requirements. (See Table V-2.16)
O&P-2-5-2	Information returned in response to pre-order Appointment Availability Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between fields received in response to Appointment Availability Queries and the two corresponding fields in the Order form was inconsistent with respect to field name and format. To provide information on the relationship between pre-order responses and order fields, BellSouth plans to publish a "*Pre-Order to Firm Order Mapping Matrix*" on 3/30/01 (see Carrier Notification SN91082241 for additional information). While the names and formats of the pre-order and order fields did not agree, data content returned on the pre-order responses adequately fulfills order form input requirements. (See Table V-2.16)

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-2-5-3	Information returned in response to pre-order Calculate Due Date Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between one field received in responses to Calculate Due Date queries and the two corresponding fields in the Order form was inconsistent with respect to field name and format. To provide information on the relationship between pre-order responses and order fields, BellSouth plans to publish a "*Pre-Order to Firm Order Mapping Matrix*" on 3/30/01 (see Carrier Notification SN91082241 for additional information). While the names and length of the pre-order and order fields did not agree, data content returned on the pre-order response adequately fulfills order form input requirements. (See Table V-2.16)
O&P-2-5-4	Information returned in response to pre-order Address Validation with Telephone Number Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between the nine fields received in response to Address Validation Query by Telephone Number and six corresponding fields in the Order form was inconsistent with respect to field name, format and length. To provide information on the relationship between pre-order responses and order fields, BellSouth plans to publish a "*Pre-Order to Firm Order Mapping Matrix*" on 3/30/01 (see Carrier Notification SN91082241 for additional information). In addition to the field name and length inconsistencies, the data content returned on the pre-order response was inadequate to fulfill order form input requirements. For example, the length of the combined responses provided by the AVQ-TN (which must be concatenated prior to entry on the order form) may be greater then the length of the subsequent order field. While the documentation implies that potential address field length discrepancies could exist, KCI did not experience any actual instances of pre-order response field lengths exceeding

Test Cross-Reference	Evaluation Criteria	Result	Comments
			subsequent order field length requirements. BLS has opened a feature request to close the gap in the field size / length differences between pre-order and firm order requirements. An implementation date is currently being negotiated. (See Table V-2.16)
O&P-2-5-5	Information returned in response to pre-order Address Validation Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between the nine fields received in response to Address Validation Queries and six corresponding fields in the Order form was inconsistent with respect to field name, format and length. To provide information on the relationship between pre-order responses and order fields, BellSouth plans to publish a "*Pre-Order to Firm Order Mapping Matrix*" on 3 / 30 / 01 (see Carrier Notification SN91082241 for additional information). In addition to the field name and length inconsistencies, the data content returned on the pre-order response was inadequate to fulfill order form input requirements. For example, the length of the combined responses provided by the AVQ-TN (which must be concatenated prior to entry on the order form) may be greater then the length of the subsequent order field. While the documentation implies that potential address field length discrepancies could exist, KCI did not experience any actual instances of pre-order response field lengths exceeding subsequent order field length requirements. BLS has opened a feature request to close the gap in the field size / length differences between pre-order and firm order requirements. An implementation date is currently being negotiated. (See Table V-2.16)

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-2-5-6	Information returned in response to pre-order Telephone Number Availability Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between one field received in response to Telephone Number Availability Queries and one corresponding field in the Order form was consistent with respect to field name, format, and length. (See Table V-2.16)
O&P-2-5-7	Information returned in response to pre-order Telephone Number Selection Queries is compatible with requirements on corresponding orders.	Satisfied	Information transferred between one field received in response to Telephone Number Selection Queries and one corresponding field in the Order form was consistent with respect to field name, format, and length. (See Table V-2.16)

Table V-2.5, Part 1: Error/Clarification Timeliness, Summary View – Initial Test Data

Clarification Timeliness Detail – Aggregate								
Fully Mechanized								
	<1 hr	**1-2 hrs**	**2-4 hrs**	**4-12 hrs**	**12-24 hrs**	**24-48 hrs**	**>48 hrs**	**>72 hrs**
FM	98	2	0	3	1	2	0	0
% FM	93%	2%	0%	3%	1%	2%	0%	0%
Partially Mechanized								
					<24hrs	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
PM					141	77	10	9
% PM					60%	33%	4%	4%

Table V-2.5, Part 2: Error/Clarification Timeliness, On/After 2/8/00 – Initial Test Data

Clarification Timeliness Detail – On/After 2/8/2000								
Fully Mechanized								
	<1 hr	**1-2 hrs**	**2-4 hrs**	**4-12 hrs**	**12-24 hrs**	**24-48 hrs**	**>48 hrs**	**>72 hrs**
FM	52	2	0	0	1	1	0	0
% FM	93%	4%	0%	0%	2%	2%	0%	0%
Partially Mechanized								
					<24hrs	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
PM					120	57	1	1
% PM					67%	32%	1%	1%

Table V-2.5, Part 3: Error/ Clarification Timeliness, Disaggregated View – Initial Test Data

Clarification Timeliness Detail – Disaggregated View								
Fully Mechanized								
Service Type	**<1 hr**	**1-2 hrs**	**2-4 hrs**	**4-12 hrs**	**12-24 hrs**	**24-48 hrs**	**>48 hrs**	**>72 hrs**
2-wire Loop-Design	22	0	0	0	1	0	0	0
% 2-wire Loop-Design	96%	0%	0%	0%	4%	0%	0%	0%
2-wire Loop-Non Design	27	0	0	3	0	1	0	0
% 2-wire Loop-Non Design	87%	0%	0%	10%	0%	3%	0%	0%
2-wire Loop w/ INP – Design	0	0	0	0	0	0	0	0
% 2-wire Loop w/ INP – Design	0%	0%	0%	0%	0%	0%	0%	0%
2-wire Loop w/ INP – Non-Design	0	0	0	0	0	0	0	0
% 2-wire Loop w/ INP – Non Des.	0%	0%	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Design	0	0	0	0	0	0	0	0
% 2-wire Loop w/ LNP – Design	0%	0%	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Non-Design	0	0	0	0	0	0	0	0
% 2-wire Loop w/ LNP – Non-Des.	0%	0%	0%	0%	0%	0%	0%	0%
INP (Standalone)	0	2	0	0	0	0	0	0
% INP (Standalone)	0%	100%	0%	0%	0%	0%	0%	0%
LNP (Standalone)	0	0	0	0	0	0	0	0
% LNP (Standalone)	0%	0%	0%	0%	0%	0%	0%	0%
Switch Ports	12	0	0	0	0	1	0	0
% Switch Ports	92%	0%	0%	0%	0%	8%	0%	0%
Loop-Port Combination	24	0	0	0	0	0	0	0
% Loop-Port Combination	100%	0%	0%	0%	0%	0%	0%	0%
TOTALS	**85**	**2**	**0**	**3**	**1**	**2**	**0**	**0**
	91%	**2%**	**0%**	**3%**	**1%**	**2%**	**0%**	**0%**
Partially Mechanized								
Service Type					**< 24 hrs**	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop-Design					17	15	0	1
% 2-wire Loop-Design					52%	45%	0%	3%
2-wire Loop-Non Design					36	14	1	1
% 2-wire Loop-Non Design					69.2%	26.9%	1.9%	1.9%
2-wire Loop w/ INP – Design					0	1	0	1
% 2-wire Loop w/ INP – Design					0%	50%	0%	50%
2-wire Loop w/ INP – Non-Design					4	1	0	0
% 2-wire Loop w/ INP – Non Des.					80%	20%	0%	0%
2-wire Loop w/ LNP – Design					0	0	0	0
% 2-wire Loop w/ LNP – Design					0%	0%	0%	0%
2-wire Loop w/ LNP – Non-Design					0	0	0	0
% 2-wire Loop w/ LNP – Non-Des.					0%	0%	0%	0%

Clarification Timeliness Detail – Disaggregated View								
INP (Standalone)					2	1	0	0
% INP (Standalone)					67%	33%	0%	0%
LNP (Standalone)					0	0	0	0
% LNP (Standalone)					0%	0%	0%	0%
Switch Ports					11	17	5	4
% Switch Ports					29.7%	45.9%	13.5%	10.8%
Loop-Port Combination					39	20	4	2
% Loop-Port Combination					60%	31%	6%	3%
TOTALS					**109**	**69**	**10**	**9**
					55%	**35%**	**5%**	**5%**

Notes:
(Notes apply to Table V-2.5, Parts 1, 2, and 3)

1. Initial test results include data from November 9, 1999 through May 31, 2000.
2. A fully mechanized (FM) response occurs when an electronically submitted LSR receives a clarification generated by BellSouth systems with no manual intervention. FM responses include Fatal Rejects and Auto Clarifications.
3. A partially mechanized (PM) response occurs when an electronically submitted LSR falls out for manual handling and receives a clarification generated by a BellSouth representative. PM responses include LCSC-issued Clarifications.
4. Results are based on the actual performance of LSRs submitted by KCI. KCI determined that a clarification was fully mechanized or partially/non-mechanized by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team KCI also created an algorithm, based on BLS Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FM/PM classification.
5. On 2/7/00 BellSouth completed a systems and process fix to address timeliness of response issues. In addition to aggregate results for the entire test period, results for the period beginning after the implementation fix are also presented.
6. Timeliness information pertaining to the LNP service requests for which BellSouth was unable to provide actual FM/PM data is not included in the above table.
7. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
8. The disaggregated breakdown of ERR/CLR timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.
9. Totals may not equal 100% due to rounding.

Table V-2.6, Part 1: Error/Clarification Timeliness, Summary View – First Re-test Data

Error/Clarification Timeliness Detail								
Fully Mechanized								
	<1 hr	**1-2 hrs**	**2-4 hrs**	**4-12 hrs**	**12-24 hrs**	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
FM	16	3	1	0	2	0	2	0
% FM	67%	13%	4%	0%	8%	0%	8%	0%
Partially Mechanized								
					<24hrs	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
PM					84	8	4	6
% PM					82%	8%	4%	6%

Table V-2.6, Part 2: Error/Clarification Timeliness, Disaggregated View – First Re-test Data

Clarification Timeliness Detail -- Disaggregated View								
Fully Mechanized								
Service Type	**<1 hr**	**1-2 hrs**	**2-4 hrs**	**4-12 hrs**	**12-24 hrs**	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop Design	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% 2-wire Loop-Design	**100%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
2-wire Loop-Non Design	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% 2-wire Loop-Non Design	**100%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
2-wire Loop w/ INP - Design	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% 2-wire Loop w/ INP - Design	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
2-wire Loop w/ INP - Non Design	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% 2-wire Loop w/ INP - Non Design	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
2-wire Loop w/ LNP - Design	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**
% 2-wire Loop w/ LNP - Design	**0%**	**0%**	**0%**	**0%**	**100%**	**0%**	**0%**	**0%**
2-wire Loop w/ LNP - Non Design	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**0**
% 2-wire Loop w/ LNP - Non Design	**0%**	**0%**	**33%**	**0%**	**33%**	**0%**	**33%**	**0%**
INP (Standalone)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% INP (Standalone)	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
LNP (Standalone)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% LNP (Standalone)	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Switch Ports	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% Switch Ports	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Loop Port Combination	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
% Loop Port Combination	**75%**	**0%**	**0%**	**0%**	**0%**	**0%**	**25%**	**0%**
DL	**5**	**3**	**0**	**0**	**0**	**0**	**0**	**0**
% DL	**63%**	**38%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
TOTALS	**16**	**3**	**1**	**0**	**2**	**0**	**2**	**0**
	67%	**13%**	**4%**	**0%**	**8%**	**0%**	**8%**	**0%**

Partially Mechanized								
Service Type					**<24 hrs**	**24-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop Design					**26**	**1**	**1**	**0**
% 2-wire Loop-Design					**93%**	**4%**	**4%**	**0%**
2-wire Loop-Non Design					**29**	**2**	**0**	**2**
% 2-wire Loop-Non Design					**88%**	**6%**	**0%**	**6%**
2-wire Loop w/ INP - Design					**0**	**0**	**0**	**0**
% 2-wire Loop w/ INP - Design					**0%**	**0%**	**0%**	**0%**
2-wire Loop w/ INP - Non Design					**0**	**0**	**0**	**0**
% 2-wire Loop w/ INP - Non Design					**0%**	**0%**	**0%**	**0%**
2-wire Loop w/ LNP - Design					**3**	**1**	**2**	**0**
% 2-wire Loop w/ LNP - Design					**50%**	**17%**	**33%**	**0%**
2-wire Loop w/ LNP - Non Design					**10**	**3**	**0**	**1**
% 2-wire Loop w/ LNP - Non Design					**71%**	**21%**	**0%**	**7%**
INP (Standalone)					**0**	**0**	**0**	**0**
% INP (Standalone)					**0%**	**0%**	**0%**	**0%**
LNP (Standalone)					**0**	**0**	**0**	**0**
% LNP (Standalone)					**0%**	**0%**	**0%**	**0%**
Switch Ports					**5**	**0**	**0**	**2**
% Switch Ports					**71%**	**0%**	**0%**	**29%**
Loop Port Combination					**2**	**0**	**1**	**0**
% Loop Port Combination					**67%**	**0%**	**33%**	**0%**
DL					**9**	**1**	**0**	**1**
% DL					**82%**	**9%**	**0%**	**9%**
TOTALS					**84**	**8**	**4**	**6**
					82%	**8%**	**4%**	**6%**

Notes:
(Notes apply to Table V-2.6, Parts 1, 2, and 3)

1. First re-test results reflect data from August 25 through November 15, 2000.
2. Results are based on actual Fully Mechanized (FM) and Partially Mechanized (PM) performance of LSRs submitted by KCI. KCI determined that a ERR/CLR was FM or PM by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FM.PM classification.
3. On 2/7/00 BellSouth completed a systems and process fix to address timeliness of response issues. In addition to aggregate results for the entire test period, results for the period beginning after the implementation fix are also presented.
4. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
5. The disaggregated breakdown of ERR/CLR timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.
6. Totals may not equal 100% due to rounding.

Table V-2.7, Part 1: Error/Clarification Timeliness, Summary View – Second Re-test Data

Error/Clarification Timeliness Detail								
Fully Mechanized								
	<1 hr	1-2 hrs	2-4 hrs	4-12 hrs	12-24 hrs	24-48 hrs	48-72 hrs	>72 hrs
FM	84	3	0	0	0	1	1	0
% FM	94%	3%	0%	0%	0%	1%	1%	0%

Table V-2.7, Part 2: Error/Clarification Timeliness, Disaggregated View – Second Re-test Data

Clarification Timeliness Detail -- Disaggregated View								
Fully Mechanized								
Service Type	<1 hr	1-2 hrs	2-4 hrs	4-12 hrs	12-24 hrs	24-48 hrs	48-72 hrs	>72 hrs
2-wire Loop Design	12	0	0	0	0	0	0	0
% 2-wire Loop-Design	100%	0%	0%	0%	0%	0%	0%	0%
2-wire Loop-Non Design	2	0	0	0	0	0	0	0
% 2-wire Loop-Non Design	100%	0%	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP - Design	1	1	0	0	0	0	0	0
% 2-wire Loop w/ LNP - Design	50%	50%	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP - Non Design	8	0	0	0	0	1	1	0
% 2-wire Loop w/ LNP - Non Design	80%	0%	0%	0%	0%	10%	10%	0%
Loop Port Combination	61	2	0	0	0	0	0	0
% Loop Port Combination	97%	3%	0%	0%	0%	0%	0%	0%
TOTALS	84	3	0	0	0	1	1	0
	94%	3%	0%	0%	0%	1%	1%	0%

Notes:
(Notes apply to Table V-2.7, Parts 1 and 2)

1. Second re-test results reflect data from January 19 through February 27, 2001.
2. Results are based on actual Fully Mechanized (FM) performance of LSRs submitted by KCI. KCI determined that a ERR/CLR was FM by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FM classification.
3. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
4. The disaggregated breakdown of ERR/CLR timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.
5. Totals may not equal 100% due to rounding.

Table V-2.8, Part 1: Firm Order Confirmation Timeliness, Summary View – Initial Test Data

Firm Order Confirmation Timeliness Detail - Aggregate						
Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
FT	48	0	1	2	0	1
% FT	92%	0%	2%	4%	0%	2%
Non-Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
NFT	54	79	31	30	7	7
% NFT	26%	38%	15%	14%	3%	3%

Table V-2.8, Part 2: Firm Order Confirmation Timeliness, On/After 2/8/00 – Initial Test Data

Firm Order Confirmation Timeliness Detail - On/After 2/8/00						
Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
FT	39	0	0	1	0	0
% FT	98%	0%	0%	2%	0%	0%
Non-Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
NFT	42	65	23	24	3	0
% NFT	27%	41%	15%	15%	2%	0%

Table V-2.8, Part 3: Firm Order Confirmation Timeliness, Disaggregated View – Initial Test Data

Firm Order Confirmation Timeliness Detail – Disaggregated View						
Flow-Through						
Service Type	**<3 hrs**	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop-Design	1	0	0	0	0	0
% 2-wire Loop-Design	100%	0%	0%	0%	0%	0%
2-wire Loop-Non Design	7	0	0	0	0	0
% 2-wire Loop-Non Design	100%	0%	0%	0%	0%	0%
2-wire Loop w/ INP – Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Design	0%	0%	0%	0%	0%	0%
2-wire Loop w/ INP – Non-Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Non Des.	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Design	0	0	0	0	0	0
% 2-wire Loop w/ LNP – Design	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Non-Design	0	0	0	0	0	0
% 2-wire Loop w/ LNP – Non-Des.	0%	0%	0%	0%	0%	0%
INP (Standalone)	0	0	0	1	0	0
% INP (Standalone)	0%	0%	0%	100%	0%	0%
LNP (Standalone)	0	0	0	0	0	0
% LNP (Standalone)	0%	0%	0%	0%	0%	0%
Switch Ports	7	0	1	1	0	1
% Switch Ports	70%	0%	10%	10%	0%	10%
Loop-Port Combination	21	0	0	0	0	0
% Loop-Port Combination	100%	0%	0%	0%	0%	0%
TOTALS	**36**	**0**	**1**	**1**	**0**	**1**
	92%	**0%**	**3%**	**3%**	**0%**	**3%**
Non-Flow-Through						
Service Type	**<3 hrs**	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop-Design	6	11	7	3	0	0
% 2-wire Loop-Design	22%	41%	26%	11%	0%	0%
2-wire Loop-Non Design	7	13	2	6	1	1
% 2-wire Loop-Non Design	23%	43%	7%	20%	3%	3%
2-wire Loop w/ INP – Design	0	0	1	0	0	1
% 2-wire Loop w/ INP – Design	0%	0%	50%	0%	0%	50%
2-wire Loop w/ INP – Non-Design	0	3	1	1	0	0
% 2-wire Loop w/ INP – Non Des.	0%	60%	20%	20%	0%	0%
2-wire Loop w/ LNP – Design	0	4	0	1	1	0
% 2-wire Loop w/ LNP – Design	0%	67%	0%	17%	17%	0%
2-wire Loop w/ LNP – Non-Design	0	5	0	3	1	0
% 2-wire Loop w/ LNP – Non-Design	0%	56%	0%	33%	11%	0%
INP (Standalone)	0	1	2	0	0	0

Firm Order Confirmation Timeliness Detail – Disaggregated View						
% INP (Standalone)	0%	33%	67%	0%	0%	0%
LNP (Standalone)	1	1	0	0	0	0
% LNP (Standalone)	50%	50%	0%	0%	0%	0%
Switch Ports	8	14	10	9	1	2
% Switch Ports	18%	32%	23%	20%	2%	5%
Loop-Port Combination	21	18	6	7	2	2
% Loop-Port Combination	38%	32%	11%	13%	4%	4%
TOTALS	**43**	**70**	**29**	**30**	**6**	**6**
	23%	**38%**	**16%**	**16%**	**3%**	**3%**

Notes:
(Notes apply to Table V-2.8, Parts 1, 2, and 3)

1. Initial functional test results reflect data from November 9, 1999 through May 31, 2000.
2. Directory Listing disaggregation is provided as supplemental information, to maintain consistency in total counts between Part 1 and Part 2. This category is not required by the GPSC's requested levels of disaggregation.
3. Results are based on actual Fully-Mechanized (FM) and Partially Mechanized (PM) performance of LSRs submitted by KCI. KCI determined that a FOC was FM or PM by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FM/PM classification. In addition, KCI placed all Fatal Reject responses (ERRs) within the FM category, in line with the BLS Service Quality Measurement (SQM) definitions.
4. 'Discrepancies' refer to those orders for which KCI was unable to obtain actual FM/PM classifications from BellSouth.
5. The disaggregated breakdown of FOC timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.
6. Totals may not equal 100% due to rounding.

Table V-2.9, Part 1: Firm Order Confirmation Timeliness, Summary View – First Re-test Data

Firm Order Confirmation Timeliness Detail						
Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
FT	33	22	3	1	0	0
% FT	56%	37%	5%	2%	0%	0%
Non-Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
NFT	20	42	6	2	0	4
% NFT	27%	57%	8%	3%	0%	5%
Discrepancy						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
Discrepancy	7	15	8	1	4	0
Discrepancy %	20%	43%	23%	3%	11%	0%

Table V-2.9, Part 2: Firm Order Confirmation Timeliness, Disaggregated View – First Re-test Data

Firm Order Confirmation Timeliness Detail – Disaggregated View						
Flow-Through						
Service Type	**<3 hrs**	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop-Design	0	3	0	0	0	0
% 2-wire Loop-Design	0%	100%	0%	0%	0%	0%
2-wire Loop-Non Design	11	4	1	0	0	0
% 2-wire Loop-Non Design	69%	25%	6%	0%	0%	0%
2-wire Loop w/ INP – Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Design	0%	0%	0%	0%	0%	0%
2-wire Loop w/ INP – Non-Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Non Des.	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Design	0	5	0	1	0	0
% 2-wire Loop w/ LNP – Design	0%	83%	0%	17%	0%	0%
2-wire Loop w/ LNP – Non-Design	0	4	2	0	0	0
% 2-wire Loop w/ LNP – Non-Des.	0%	67%	33%	0%	0%	0%
INP (Standalone)	0	0	0	0	0	0
% INP (Standalone)	0%	0%	0%	0%	0%	0%
LNP (Standalone)	0	0	0	0	0	0
% LNP (Standalone)	0%	0%	0%	0%	0%	0%
Switch Ports	1	0	0	0	0	0
% Switch Ports	100%	0%	0%	0%	0%	0%
Directory Listing	16	0	0	0	0	0
%Directory Listing	100%	0%	0%	0%	0%	0%

Firm Order Confirmation Timeliness Detail – Disaggregated View						
Loop-Port Combination	6	6	0	0	0	0
% Loop-Port Combination	50%	50%	0	0	0%	0
TOTALS	**34**	**22**	**3**	**1**	**0**	**0**
	57%	**37%**	**5%**	**2%**	**0%**	**0%**
Non-Flow-Through						
Service Type	**<3 hrs**	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop-Design	7	13	1	0	0	1
% 2-wire Loop-Design	32%	59%	5%	0%	0%	5%
2-wire Loop-Non Design	10	4	2	1	0	0
% 2-wire Loop-Non Design	59%	24%	12%	6%	0%	0%
2-wire Loop w/ INP – Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Design	0%	0%	0%	0%	0%	0%
2-wire Loop w/ INP – Non-Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Non Des.	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Design	0	0	0	0	0	0
% 2-wire Loop w/ LNP – Design	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Non-Design	0	0	0	0	0	0
% 2-wire Loop w/ LNP – Non-Design	0%	0%	0%	0%	0%	0%
INP (Standalone)	0	0	0	0	0	0
% INP (Standalone)	0%	0%	0%	0%	0%	0%
LNP (Standalone)	0	0	0	0	0	0
% LNP (Standalone)	0%	0%	0%	0%	0%	0%
Switch Ports	0	11	3	1	0	1
% Switch Ports	0%	69%	19%	6%	0%	6%
Directory Listings	3	4	0	0	0	0
% Directory Listings	43%	57%	0%	0%	0%	0%
Loop-Port Combination	0	10	0	0	0	2
% Loop-Port Combination	0%	83%	0%	0%	0%	17%
TOTALS	**20**	**42**	**6**	**2**	**0**	**4**
	27%	**57%**	**8%**	**3%**	**0%**	**5%**
Discrepancy						
Service Type	**<3 hrs**	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop-Design	3	0	0	0	0	0
% 2-wire Loop-Design	100%	0%	0%	0%	0%	0%
2-wire Loop-Non Design	2	0	0	0	2	0
% 2-wire Loop-Non Design	50%	0%	0%	0%	50%	0%
2-wire Loop w/ INP – Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Design	0%	0%	0%	0%	0%	0%
2-wire Loop w/ INP – Non-Design	0	0	0	0	0	0
% 2-wire Loop w/ INP – Non Des.	0%	0%	0%	0%	0%	0%
2-wire Loop w/ LNP – Design	0	7	1	1	0	0
% 2-wire Loop w/ LNP – Design	0%	78%	11%	11%	0%	0%
2-wire Loop w/ LNP – Non-Design	0	5	7	0	0	0
% 2-wire Loop w/ LNP – Non-	0%	42%	58%	0%	0%	0%

Firm Order Confirmation Timeliness Detail – Disaggregated View						
Design						
INP (Standalone)	0	0	0	0	0	0
% INP (Standalone)	0%	0%	0%	0%	0%	0%
LNP (Standalone)	0	2	0	0	0	0
% LNP (Standalone)	0%	100%	0%	0%	0%	0%
Switch Ports	0	1	0	0	0	0
% Switch Ports	0%	100%	0%	0%	0%	0%
Directory Listings	2	0	0	0	0	0
% Directory Listings	100%	0%	0%	0%	0%	0%
Loop-Port Combination	0	0	0	0	2	0
% Loop-Port Combination	0%	0%	0%	0%	100%	0%
TOTALS	**7**	**15**	**8**	**1**	**4**	**0**
	20%	**43%**	**23%**	**3%**	**11%**	**0%**

Notes:
(Notes apply to Table V-1.9, Part 1 and 2)

1. Initial re-test results reflect data from August 25, 2000 through November 15, 2000.
2. Directory Listing disaggregation is provided as supplemental information, to maintain consistency in total counts between Part 1 and Part 2. This category is not required by the GPSC's requested levels of disaggregation.
3. Results are based on actual Flow-Through (FT) and Non-Flow-Through (NFT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT or NFT by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FT/NFT classification.
4. 'Discrepancies' refer to those orders for which KCI was unable to obtain actual FT/NFT classifications from BellSouth.
5. The disaggregated breakdown of FOC timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.
6. Totals may not equal 100% due to rounding.

Table V-2.10, Part 1: Firm Order Confirmation Timeliness, Summary View – Second Re-test Data

Firm Order Confirmation Timeliness Detail						
Flow-Through						
	<3 hrs	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
FT	38	5	1	0	1	0
% FT	84%	11%	2%	0%	2%	0%

Table V-2.10, Part 2: Firm Order Confirmation Timeliness, Disaggregated View – Second Re-test Data

Firm Order Confirmation Timeliness Detail -- Disaggregated View						
Flow-Through						
Service Type	**<3 hrs**	**3-24 hrs**	**24-36 hrs**	**36-48 hrs**	**48-72 hrs**	**>72 hrs**
2-wire Loop Design	**4**	**0**	**0**	**0**	**0**	**0**
% 2-wire Loop-Design	**100%**	**0%**	**0%**	**0%**	**0%**	**0%**
2-wire Loop-Non Design	**5**	**0**	**1**	**0**	**1**	**0**
% 2-wire Loop-Non Design	**71%**	**0%**	**14%**	**0%**	**14%**	**0%**
2-wire Loop w/ LNP - Design	**2**	**2**	**0**	**0**	**0**	**0**
% 2-wire Loop w/ LNP - Design	**50%**	**50%**	**0%**	**0%**	**0%**	**0%**
2-wire Loop w/ LNP - Non Design	**0**	**2**	**0**	**0**	**0**	**0**
% 2-wire Loop w/ LNP - Non Design	**0%**	**100%**	**0%**	**0%**	**0%**	**0%**
Loop Port Combination	**27**	**1**	**0**	**0**	**0**	**0**
% Loop Port Combination	**96%**	**4%**	**0%**	**0%**	**0%**	**0%**
DL	**0**	**0**	**0**	**0**	**0**	**0**
% DL	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
TOTALS	**38**	**5**	**1**	**0**	**1**	**0**
	84%	**11%**	**2%**	**0%**	**2%**	**0%**

Notes:
(Notes apply to Table V-2.10, Parts 1 and 2)

1. Second re-test results reflect data from January 19 through February 27, 2001.
2. Results are based on actual Flow-Through (FT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FT classification.
3. Timeliness information pertaining to the LNP service requests for which BellSouth was unable to provide actual FT / NFT data is not included in the above table.
4. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
5. The disaggregated breakdown of FOC timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.
6. Totals may not equal 100% due to rounding.

Table V-2.11, Part 1: Completion Notice Due Date (CN DD) vs. Completion Notification Delivery Date – Initial Test Data

	TOTAL		Flow-Through					
	CNs Received	% of Total CN	Flow-Through[1]	% Flow -Through[2]	% of Total Flow-Through[3]	Non-Flow-Through[4]	% Non-Flow - Through[5]	% of Total Non-Flow -Through[6]
CN Date Received = CN DD	134	77%	29	22%	88%	91	68%	72%
CN Date Received = CN DD + 1 day	21	12%	2	10%	6%	19	900%	15%
CN Date Received = CN DD + 2 days	3	2%	0	0%	0%	3	100%	2%
CN Date Received = CN DD + 3-5 days	8	5%	1	13%	3%	7	88%	6%
CN Date Received = CN DD + >=6 days	7	4%	1	14%	3%	6	86%	5%
TOTAL	**173**	**100%**	**33**		**100%**	**126**		**100%**

Notes:

1. Initial test results include data from November 9, 1999 through May 31, 2000.
2. Flow-Through = The number of CNs received on within the specified timeframe that were Flow-Through LSRs.
3. % Flow-Through = The percentage of CNs received within the specified timeframe that were Flow-Through LSRs.
4. % of Total Flow-Through = The percentage of total Flow-Through LSRs that received CNs within the specified timeframe.
5. Non Flow-Through = The number of CNs received within the specified timeframe that were Non-Flow-Through LSRs.
6. % Non-Flow-Through = The percentage of CNs received within the specified timeframe that were Non-Flow- Through LSRs.
7. % of Total Non-Flow-Through = The percentage of total Non-Flow-Through LSRs that received CNs within the specified timeframe.
8. Results are based on actual Flow-Through (FT) and Non-Flow-Through (NFT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT or NFT by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FT / NFT classification.
9. CN Timeliness information pertaining to the LNP service requests for which BellSouth was unable to provide actual FT / NFT data *is* included in the above table. However, the FT-specific detail in not included. As a result, the Total CNs Received will not equal the sum of FT Received and NFT Received columns.
10. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
11. Totals may not equal 100% due to rounding.

Table V-2.11, Part 2: Completion Notice Due Date (CN DD) vs. Completion Notification Delivery Date – Initial Test Data

	TOTAL		Product Delivery Analysis														
	CNs Received	% of Total CNs	No. of Loops[1]	Loops as a % of CNs Received[2]	% of Total Loops3	No. of Ports[1]	Ports as a % of CNs Received[2]	% of Total Ports[3]	No. Of Combos[1]	Combos as a % of CNs Received[2]	% of Total Combos[3]	No. NP[1]	NP as a % of CNs Received[2]	% of Total NP[3]	No. DL[1]	NP as a % of CNs Received[2]	% of Total DL[3]
CN Date Received = CN DD	134	77%	32	24%	80%	26	19%	72%	38	28%	78%	17	13%	74%	21	16%	84%
CN Date Received = CN DD + 1 day	21	12%	6	29%	15%	5	24%	14%	5	24%	10%	2	10%	9%	3	14%	12%
CN Date Received = CN DD + 2 days	3	2%	0	0%	0%	1	33%	3%	1	33%	2%	1	33%	4%	0	0%	0%
CN Date Received = CN DD + 3-5 days	8	5%	1	13%	3%	2	25%	6%	3	38%	6%	1	13%	4%	1	13%	4%
CN Date Received = CN DD + >=6 days	7	4%	1	14%	3%	2	29%	6%	2	29%	4%	2	2%	9%	0	0%	0%
TOTAL	**173**	**100%**	**40**		**100%**	**36**		**100%**	**49**		**100%**	**23**		**100%**	**25**		**100%**

Notes:

1. The number of CNs by product type (Loop, Port, Port-Loop Combo, Number Portability, Directory Listing) that received LSRs within the specified timeframe.
2. The percentage of CNs by product type (Loop, Port, Port-Loop Combo, Number Portability, Directory Listing) that received LSRs within the specified timeframe.
3. The percentage of Total LSRs by product type (Loop, Port, Port-Loop Combo, Number Portability, Directory Listing) that were received within the specified timeframe.
4. Calculations are based on business days (i.e. weekends and BellSouth holidays are not counted).
5. Loop with Number Portability LSRs are included in the NP column.
6. Totals may not equal 100% due to rounding.

Table V-2.12, Part 1: Completion Notice Due Date (CN DD) vs. Completion Notification Delivery Date – Re-test Data

	TOTAL		Flow-Through					
	CNs Received	% of Total CN	Flow-Through[1]	% Flow-Through[2]	% of Total Flow-Through3	Non- Flow-Through[4]	% Non-Flow-Through[5]	% of Total Non-Flow-Through[6]
CN Date Received = CN DD	57	70%	20	35%	67%	37	65%	73%
CN Date Received = CN DD + 1 day	15	19%	5	33%	17%	10	67%	20%
CN Date Received = CN DD + 2 days	4	5%	3	75%	10%	1	25%	2%
CN Date Received = CN DD + 3-5 days	4	5%	2	50%	7%	2	50%	4%
CN Date Received = CN DD + >=6 days	1	1%	0	0%	0%	1	100%	2%
TOTAL	**81**	**100%**	**30**		**100%**	**51**		**100%**

Table V-2.12, Part 2: Completion Notice Due Date (CN DD) vs. Completion Notification Delivery Date – Re-test Data

	TOTAL		Product Delivery Analysis														
	CNs Received	% of Total CNs	No. of Loops[1]	Loops as a % of CNs Received[2]	% of Total Loops3	No. of Ports[1]	Ports as a % of CNs Received[2]	% of Total Ports[3]	No. Of Combos[1]	Combos as a % of CNs Received[2]	% of Total Combos[3]	No. NP[1]	NP as a % of CNs Received[2]	% of Total NP[3]	No. DL[1]	DL as a % of CNs Received[2]	% of Total DL[3]
CN Date Received = CN DD	40	83%	10	25%	91%	9	23%	82%	13	33%	72%	4	10%	100%	4	10%	100%
CN Date Received = CN DD + 1 day	5	10%	1	20%	9%	1	20%	9%	3	60%	17%	0	0%	0%	0	0%	0%
CN Date Received = CN DD + 2 days	0	0%	0	0%	0%	0	0%	0%	0	0%	0%	0	0%	0%	0	0%	0%
CN Date Received = CN DD + 3-5 days	2	4%	0	0%	0%	1	50%	9%	1	50%	6%	0	0%	0%	0	0%	0%
CN Date Received = CN DD + >=6 days	1	2%	0	0%	0%	0	0%	0%	1	100%	6%	0	0%	0%	0	0%	0%
TOTAL	**48**	**100%**	**11**		**100%**	**11**		**100%**	**18**		**100%**	**4**		**100%**	**4**		**100%**

	TOTAL		Product Delivery Analysis														
	CNs Received	% of Total CNs	No. of Loops[1]	Loops as a % of CNs Received[2]	% of Total Loops3	No. of Ports[1]	Ports as a % of CNs Received[2]	% of Total Ports[3]	No. Of Combos[1]	Combos as a % of CNs Received[2]	% of Total Combos[3]	No. NP[1]	NP as a % of CNs Received[2]	% of Total NP[3]	No. DL[1]	DL as a % of CNs Received[2]	% of Total DL[3]
CN Date Received = CN DD	57	70%	12	21%	52%	12	21%	80%	15	26%	65%	10	18%	91%	8	14%	89%
CN Date Received = CN DD + 1 day	15	19%	9	60%	39%	2	13%	13%	3	20%	13%	1	7%	9%	0	0%	0%
CN Date Received = CN DD + 2 days	4	5%	1	25%	4%	0	0%	0%	2	50%	9%	0	0%	0%	1	25%	11%

CN Date Received = CN DD + 3-5 days	4	5%	1	25%	4%	1	25%	7%	2	50%	9%	0	0%	0%	0	0%	0%
CN Date Received = CN DD + >=6 days	1	1%	0	0%	0%	0	0%	0%	1	100%	4%	0	0%	0%	0	0%	0%
TOTAL	**81**	**100%**	**23**		**100%**	**15**		**100%**	**23**		**100%**	**11**		**100%**	**9**		**100%**

Notes:

1. Re-test results include data from August 25, 2000 through November 15,2000.
2. The number of CNs by product type (Loop, Port, Port-Loop Combo, Number Portability, Directory Listing) that received LSRs within the specified timeframe.
3. The percentage of CNs by product type (Loop, Port, Port-Loop Combo, Number Portability, Directory Listing) that received LSRs within the specified timeframe.
4. The percentage of Total LSRs by product type (Loop, Port, Port-Loop Combo, Number Portability, Directory Listing) that were received within the specified timeframe.
5. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
6. Loop with Number Portability LSRs are included in the NP column.
7. Totals may not equal 100% due to rounding.

Table V-2.13: Desired Due Date from KCI's Local Service Request (LSR DDD) vs. Committed Due Date from BLS's Firm Order Confirmation (FOC DD)

	Total		**Flow-Through Analysis**				**Delivery Method Analysis**									
	Number	Percent	FT	% FT	NFT	%NFT	Loops	% Loops	Ports	% Ports	Port-Loop Combo	% Port-Loop Combo	NP	%NP	DL	% DL
LSR DDD = FOC DD	219	88%	37	80%	188	90%	55	95%	42	84%	52	79%	45	96%	25	93%
LSR DDD not = FOC DD	29	12%	9	20%	20	10%	3	5%	8	16%	14	21%	2	4%	2	7%
Total	**248**	**100%**	**46**	**100%**	**208**	**100%**	**58**	**100%**	**50**	**100%**	**66**	**100%**	**47**	**100%**	**27**	**100%**
Distribution of Earlier Due Dates																
DD = DDD - 1 day	3	38%	0	0%	3	43%	0	0%	1	33%	2	67%	0	0%	0	0%
DD = DDD - 2 days	1	13%	1	100%	0	0%	0	0%	1	33%	0	0%	0	0%	0	0%
DD = DDD - 3-5 days	3	38%	0	0%	3	43%	0	0%	1	33%	1	33%	0	0%	1	100%
DD = DDD - >=6 days	1	13%	0	0%	1	14%	1	100%	0	0%	0	0%	0	0%	0	0%
Total Earlier (DD before DDD)	**8**	**3%**	**1**	**3%**	**7**	**4%**	**1**	**2%**	**3**	**6%**	**3**	**5%**	**1**	**2%**	**1**	**4%**
Distribution of Later Due Dates																
DD = DDD + 1 day	10	48%	4	50%	6	46%	0	0%	4	80%	5	46%	1	50%	0	0%
DD = DDD + 2 days	4	19%	3	38%	1	8%	0	0%	1	20%	3	27%	0	0%	0	0%
DD = DDD + 3-5 days	3	14%	1	13%	2	15%	1	50%	0	0%	1	9%	1	50%	0	0%
DD = DDD + >=6 days	4	19%	0	0%	4	31%	1	50%	0	0%	2	18%	0	0%	1	100%
Total Later (DD after DDD)	**21**	**9%**	**8**	**25%**	**13**	**7%**	**2**	**3%**	**5**	**10%**	**11**	**17%**	**2**	**4%**	**1**	**4%**

Notes:

1. Initial test results include data from November 9, 1999 through May 31, 2000.
2. LSRs on which KCI's Desired Due Date was earlier than the standard interval for the order type (as documented in BellSouth's *Product and Services Interval Guide*) were excluded from this report.
3. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
4. Results are based on actual Flow-Through (FT) and Non-Flow-Through (NFT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT or NFT by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BellSouth-provided data against the KCI-obtained data for consistency in FT / NFT classification.
5. Totals may not equal 100% due to rounding.

Table V-2.14: Desired Due Date from KCI's Local Service Request (LSR DDD) vs. Committed Due Date from BLS's Firm Order Confirmation (FOC DD) – Re-test Data

	Total		**Flow-Through Analysis**				**Delivery Method Analysis**									
	Number	Percent	FT	% FT	NFT	% NFT	Loops	% Loops	Ports	% Ports	Port - Loop Combo	% Port - Loop Combo	NP	% NP	DL	% DL
LSR DDD = FOC DD	135	90%	53	87%	82	92%	50	91%	11	65%	20	83%	31	100%	23	100%
LSR DDD not = FOC DD	15	10%	8	13%	7	8%	5	9%	6	35%	4	17%	0	0%	0	0%
Total	**150**	**100%**	**61**	**100%**	**89**	**100%**	**55**	**100%**	**17**	**100%**	**24**	**100%**	**31**	**100%**	**23**	**100%**
Distribution of Earlier Due Dates																
DD = DDD - 1 day	1	50%	1	50%	0	0%	1	50%	0	0%	0	0%	0	0%	0	0%
DD = DDD - 2 days	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
DD = DDD - 3-5 days	1	50%	1	50%	0	0%	1	50%	0	0%	0	0%	0	0%	0	0%
DD = DDD - >=6 days	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total Earlier (DD before DDD)	2	1%	2	3%	0	0%	2	4%	0	0%	0	0%	0	0%	0	0%
Distribution of Later Due Dates																
DD = DDD + 1 day	2	18%	2	50%	0	0%	0	0%	0	0%	4	100%	0	0%	0	0%
DD = DDD + 2 days	2	18%	0	0%	2	29%	1	33%	1	17%	0	0%	0	0%	0	0%
DD = DDD + 3-5 days	7	64%	2	50%	5	71%	2	67%	5	83%	0	0%	0	0%	0	0%
DD = DDD + >=6 days	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total Later (DD after DDD)	11	7%	4	7%	7	8%	3	5%	6	35%	4	17%	0	0%	0	0%

Notes:

1. Re-test results include data from August 25, 2000 through October 9, 2000. The re-test has not yet completed.
2. LSRs on which KCI's Desired Due Date was earlier than the standard interval for the order type (as documented in BellSouth's *Product and Services Interval Guide*) were excluded from this report.
3. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
4. Results are based on actual Flow-Through (FT) and Non-Flow-Through (NFT) performance of LSRs submitted by KCI. KCI determined that a FOC was FT or NFT by analyzing BellSouth back-end system data provided to KCI's Flow-Through Evaluation team. KCI also created an algorithm, based on BellSouth Flow-Through definitions, used to obtain actual performance data on KCI-issued service requests. KCI validated the BLS-provided data against the KCI-obtained data for consistency in FT / NFT classification. For those cases where KCI was unable to obtain Actual Flow-Through Indicators from BellSouth, KCI placed the orders in a FT / NFT category based on their *expected* FT status.
5. Totals may not equal 100% due to rounding.

Table V-2.53: Jeopardy Notification Timeliness Detail

Jeopardy Notification Detail – Disaggregated View Jeopardy Date Received versus FOC DD						
Service Type	**>48 hrs before DD**	**24-48 hrs before DD**	**Same day as DD**	**24 hrs after DD**	**24-48 hrs after DD**	**TOTAL**
UNE Loop-Port Combination	2	0	0	0	0	2
% Loop-Port Combination	40%	0%	0%	0%	0%	100%
UNE 2-wire Loop with Number Portability	0	0	0	0	0	0
% 2-wire Loop with NP	0%	0%	0%	0%	0%	0%
UNE 2-wire Loop without Number portability	3	0	0	0	0	0
% 2-wire Loop without NP	60%	0%	0%	0%	0%	100%
UNE Other	0	0	0	0	0	0
% UNE Other	0%	0%	0%	0%	0%	0%
TOTAL	**5**	**0**	**0**	**0**	**0**	**0**
	100%	**0%**	**0%**	**0%**	**0%**	**0%**

Notes:

1. Calculations are based on business days (i.e., weekends and BellSouth holidays are not counted).
2. KCI has included the following service order types in the "UNE Other" category: UNE Port; UNE Stand Alone Directory Listing; and UNE Stand Alone Number Portability.
3. The disaggregated breakdown of Jeopardy timeliness reflects the GPSC's disaggregation levels outlined in the June 6, 2000 – test-specific Service Quality Measurements.

Table V-2.16: Pre-Order-Order Integration Test Results

Pre-Order Response			Order Form		Comments
Form Name	**Field Name**	**Format**	**Field Name**	**Format**	
SAQ					
1.	USOC	5 A / N Characters	FEATURE	3-6 A / N Characters	The pre-order response returns the USOC data in the correct format to populate an order form. However, the corresponding field name in the PS order form is FEATURE.
2.	CLLI	11 A / N Characters	LST	11 A / N Characters	The pre-order response returns the CLLI data in the correct format to populate an order form. However, the corresponding field name in the LSR order form is LST.
3.	CIC	4 Numeric Characters	PIC / LPIC	4 A / N Characters	The pre-order response returns the PIC / LPIC data in the correct format to populate an order form. However, the RS order form has two fields, PIC and LPIC. There is no notation on the pre-order form indicating whether the number returned is the PIC or LPIC.
AVQ					
1.	HOUSE-NUM THOROUGHFARE STREET-NAME 1 STREET-SUFFIX	13 A / N Characters 35 A / N Characters 44 A / N Characters 4 A / N Characters	EU-STREET 1	35 A / N Characters	The order field EU-STREET 1 is constructed by concatenating the four fields from the pre-order query. The combined length of the four pre-order fields could exceed the maximum length of the order field.
2.	CITY	32 A / N Characters	EU-CITY	25 A / N Characters	The pre-order response returns the data in the correct format. However, the field name is different on the order form. The pre-order response could exceed the size limitation of the EU-CITY field on the order form.
3.	STATE	2 Alpha Characters	EU-STATE	2 Alpha Characters	The pre-order response returns the data in the correct format. However, the field name is different on the order form.

Pre-Order Response			Order Form		Comments
Form Name	**Field Name**	**Format**	**Field Name**	**Format**	
4.	FLR	14 A / N Characters	EU-FLOOR	12 A / N Characters	The pre-order returns the data in an incorrect format. The response added the FLR abbreviation to the data. The field name is also different on the order form. The pre-order response could exceed the size limitation of the EU-FLOOR field on the order form.
AAQ					
1.	COAVAIL DAYS	Mon-Sun (Y or N) XXXXXXX	DDD	YYMMDD	The pre-order response returned the data in Y or N form, specifying the days of the week available to perform service. The response is incompatible with the field DDD on the order form which requires Year, Month, and Date numerals.
2.	COAVAIL DAYS	Mon-Sun (Y or N) XXXXXXX	DDDO-CC	CC	The pre-order response returned the data in Y or N form, specifying the days of the week available to perform service. The response is incompatible with the field DDDO-CC order form, which requires two Century numerals.
CDD					
1.	CDD	CCYYMMDD	DDD DDDO-C	YYMMDD	The pre-order response returned the data in the form Century, Century, Year, Year, Month, Month, and Day, Day. The response is inconsistent with the order form requirement, which splits the date into two fields.
AVQ-TN					
1.	HOUSE-NUM THOROUGHFARE STREET-NAME 1 STREET SUFFIX	13 A / N Characters 10 A / N Characters 44 A / N Characters 4 A / N Characters	EU-STREET 1	35 A / N Characters	The order field EU-STREET 1 is constructed by concatenating the four fields from the pre-order query. The combined length of the four pre-order fields could exceed the maximum length of the order field.

Pre-Order Response			Order Form		Comments
Form Name	**Field Name**	**Format**	**Field Name**	**Format**	
2.	CITY	32 A / N Characters	EU-CITY	25 A / N Characters	The pre-order response returns the data in the correct format. However, the field name is different on the order form. The pre-order response could exceed the size limitation of the EU-CITY field on the order form.
3.	STATE	2 Alpha Characters	EU-STATE	2 Alpha Characters	The pre-order response returns the data in the correct format. However the field name is different on the order form.
4.	ZIPCODE	5 Numeric Characters	EU-ZIPCODE	5 Numeric Characters	The pre-order response does not return any data that can be used for the EU-ZIPCODE field on the order form. Therefore, an error was returned when submitting an order with this field left blank.
5.	UNIT-ROOM	RM 14 A / N Characters	EU-ROOM	9 A / N Characters	The pre-order response returns the data in an incorrect format. The response added the RM abbreviation to the data. The field name is also different on the order form. The pre-order response could exceed the size limitation of the EU-ROOM field on the order form field.
6.	ELEV-FLOOR	FLR 14 A / N Characters	EU-FLOOR	12 A / N Characters	The pre-order returns the data in an incorrect format. The response added the FLR abbreviation to the data. The field name is also different on the order form. The pre-order response could exceed the size limitation of the EU-FLOOR field on the order form.
TNAQ					
1.	TN	10 A / N Characters	TN	10 A / N Characters	The Telephone Numbers were returned in the correct format. The numbers were entered into the TNSQ pre-order.
TNSQ					
1.	TN	10 A / N Characters	TN	10 A / N Characters	The Telephone Numbers were confirmed in the correct format

C. Test Results: EDI/TAG Normal Volume Performance Test (O&P-3)

1.0 Description

The objective of the Electronic Data Interchange (EDI)/Telecommunications Access Gateway (TAG) Normal Volume Performance Test (O&P-3) was to evaluate BellSouth's Operating Support Systems (OSS) associated with ordering at specified volumes. Competitive Local Exchange Carriers (CLECs) submit orders to BellSouth's OSS via two primary Application Program Interfaces: EDI and TAG. O&P-3 evaluated BellSouth's ability to accurately and quickly process orders using the EDI and TAG interfaces under "normal" year-end 2001 (YE01) projected transaction load conditions[1] in the Reengineered Services, Installation and Maintenance Management System (RSIMMS) environment[2].

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section V, "Ordering & Provisioning Overview" for a description of the BellSouth ordering process via EDI and TAG.

2.2 Scenarios

Test scenarios for the EDI/TAG Normal Volume Test fall into two categories: Resale and Unbundled Network Elements (UNEs).

2.2.1 Resale

Appendix B-2: Resale Ordering Scenarios of the *Master Test Plan (MTP)*[3] describes 26 resale test scenarios. During the initial pre-testing of the BellSouth ordering systems, six of the scenarios would not flow-through[4] the system and therefore were not used for the test. From the remaining 20 scenarios, 20 test seeds were generated by applying BellSouth's OSS electronic ordering business rules[5] and logical business requirements to format orders. The following table describes each of the Resale scenarios used during this test:

[1] KCI forecasted hourly transaction rates for individual order and pre-order types drawing on data from current order and pre-order daily volume rates, BellSouth 2001 transaction forecasts and from CLEC 2001 transaction forecasts, where obtainable.

[2] See the *RSIMMS and Production System Review* for a description of the differences between the production and RSIMMS environments.

[3] Version 4.1, March 28, 2000.

[4] Flow-through is defined as electronic transmission through a gateway and acceptance into BellSouth's back-office ordering systems without manual intervention by a customer service representative.

[5] KCI used the *Local Exchange Ordering (LEO) Implementation Guide*, Volume 1, Issues 7J, 7K, 7L, 7M, 7N, 7O, 7P, and 7Q to apply BellSouth's business rules.

Table V-3.1: Resale Scenarios

Scenario Number	Scenario Category	Scenario Description
201	Resale	Migration "As Is" of a business customer from BellSouth with Plain Old Telephone Service (POTS) lines to CLEC.
202	Resale	Migration "As Is" of a residential customer with POTS line from BellSouth to CLEC.
204	Resale	Partial migration of a business customer with POTS lines from BellSouth to CLEC on a trial basis.
205	Resale	Migration "As Specified" of a residential POTS customer from BellSouth to CLEC.
206	Resale	Partial migration of a residential customers second POTS line from BellSouth to CLEC.
207	Resale	New business customer installs POTS lines.
208	Resale	New residence customer installs POTS line.
209	Resale	Add five POTS lines to existing CLEC business customer.
210	Resale	Add POTS line to existing residential CLEC customer.
213	Resale	Suspend POTS service of a CLEC residential customer (seasonal suspend).
214	Resale	Restore POTS service of a CLEC residential customer.
218	Resale	Change TN of CLEC residential customer with POTS line.
219	Resale	CLEC residential customer with two POTS lines requests TN change on ancillary line.
220	Resale	Change Long Distance Service Provider for a CLEC residential POTS customer.
221	Resale	Change Long Distance Service Provider for a CLEC business POTS customer.
222	Resale	Partially disconnect four of six business POTS lines.
223	Resale	Disconnect a CLEC business customers five POTS lines.
224	Resale	Disconnect a residential CLEC customers two POTS lines.
225	Resale	Change information in directory listing (DL) for a residential customer with POTS service.
226	Resale	CLEC residential customer with POTS line changes information on DL.

2.2.2 Unbundled Network Element (UNE)-based Scenarios

Appendix B-3: UNE Ordering Scenarios of the *MTP* describes 40 UNE test scenarios intended for use in the EDI/TAG Normal Volume Performance Test. During the initial pre-testing of the BellSouth ordering systems, 29 of the scenarios did not flow through the system and were therefore not used for the test[6]. From the remaining 11 scenarios, 11 test seeds were generated by applying BellSouth's OSS electronic ordering business rules and logical business requirements to format orders. The following table describes each of the UNE scenarios used during this test:

Table V-3.2: UNE Scenarios

Scenario Number	Scenario Category	Scenario Description
301	Loop	A CLEC orders two new SL1 unbundled analog loops from BLS in support of a customer's service request.
305	Loop	A CLEC orders two SL1 unbundled analog loops in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC business.
350	Loop LNP	A CLEC orders two SL1 unbundled analog loops with LNP in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC.
387	LNP	A CLEC orders Local Number Portability (LNP) for two lines in support of an existing resale customer migration to CLEC facilities.
395	Port	A CLEC orders two new business unbundled analog ports from BLS in support of a new business customer's service request.
397	Port	A CLEC orders two new residential unbundled analog ports from BLS in support of a new business customer's service request.
420	Combo	A CLEC orders two new business unbundled analog loop – port combinations from BLS in support of a new business customer's service request.
422	Combo	A CLEC orders two new residential unbundled analog loop – port combinations from BLS in support of a new residential customer's service request.
428	Combo	A CLEC orders two residential unbundled analog loop – port combinations from BLS for one of its resale residential customers.
445	Combo	An existing CLEC customer is moving to another state. The CLEC orders BLS to disconnect both of its unbundled loop-port combinations.
610	Combo	A CLEC changes the Billing Telephone Number (BTN) of an analog loop / port combination two-line residential customer.

[6] The volume test methodology is designed to assess electronic interface and back-end system processing capabilities, not manual processes. Therefore, orders that must fall out for manual processing are not included in the test.

2.3 Test Targets & Measures

The test target was the EDI and TAG interfaces and back-end systems[7] supporting order processing. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table V-3.3: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Submit Orders in Projected Normal Volumes	Create order transactions	Availability of Interface	O&P-3-1-1 O&P-3-1-2
		Timeliness of Response	O&P-3-3-1 O&P-3-3-2
	Send orders in LSR format	Availability of Interface	O&P-3-1-1 O&P-3-1-2
	Receive acknowledgements	Availability of Interface	O&P-3-1-1 O&P-3-1-2
		Accuracy of Response	O&P-3-2-1 O&P-3-2-1 O&P-3-4-1 O&P-3-4-2
		Timeliness of Response	O&P-3-3-1 O&P-3-3-2
	Receive FOCs or error / reject notifications	Availability of Interface	O&P-3-1-1 O&P-3-1-2
		Accuracy of Response	O&P-3-2-1 O&P-3-2-1 O&P-3-4-1 O&P-3-4-2
		Timeliness of Response	O&P-3-3-3 O&P-3-3-4

[7] The RSIMMS environment is designed to access copies of the PSIMMS, COFFI, BOCRIS, BOCABS and LMOS / Host systems, and to access the production COFIUSOC, ATLAS, RSAG, and DSAP systems.

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table V-3.4: Data Sources for EDI/TAG Normal Volume Performance Test (O&P-3)

Document	File Name	Location in Work Papers	Source
Local Exchange Ordering (LEO) Implementation Guide, Volume 1 Issues 7J, 7K, 7M, 7N, 7O, And 7P were utilized.	No Electronic Copy	O&P-1-B-1	BLS
LEO Implementation Guide, Volume 2. Issue 6B, July 99	No Electronic Copy	O&P-1-B-2	BLS
LEO Implementation Guide, Volume 3. Issue3A August 98	No Electronic Copy	O&P-1-B-3	BLS
LEO Implementation Guide, Volume 4. Issue 7F October 99	No Electronic Copy	O&P-1-B-4	BLS
Product and Services Interval Guide	No Electronic Copy	O&P-1-B-5	BLS
Local Servcie Request Error Messages (Version TCIF 7)	O&P_ errors.pdf	O&P-1-A-4	BLS
*CLEC Service Order Tracking System (*CSOTS) Users Guide	O&P_csots.pdf	O&P-1-A-1	BLS
Local Number Portability (LNP) Odering Guide (Issue 1b-October 1999)	O&P_LNPgd.pdf	O&P-1-A-3	BLS
EDI Interfacing Testing Agreement-LNP	O&P-EDIvalid.doc	O&P-1-A-8	BLS
Telecommunications Access Gateway (TAG) API Reference Guide, Versions 2.2.0.2, 2.2.0.4, 2.2.0.5, 2.2.0.7, 2.2.0.8, and 2.2.1.1	No Electronic Copy	PRE-1-A-3	BLS
BellSouth 3 Month Hourly Order History	Order history.xls	O&P-3-A-1	BLS
2000, 2001 Bellsouth LSR Volume Forecast	BSTFORCAST.xls	O&P-3-A-2	BLS
2000, 2001 Aggergated CLEC Forecast	CLEC_BST_FORECAST.xls	O&P-3-A-3	CLECs
YE2001 Normal and Peak Forecast Methedology	Fcast Summary.ppt	O&P-3-A-4	KCI
Volume Test RSIMMS Test Scenarios	Volum_Test_Cases.xls	O&P-3-A-5	KCI

Document	File Name	Location in Work Papers	Source
Local Exchange Ordering (LEO) Implementation Guide, Volume 1 Issues 7J, 7K, 7M, 7N, 7O, And 7P were utilized.	No Electronic Copy	O&P-1-B-1	BLS
Normal Volume Test Schedule	Schedule.xls	O&P-3-A-6	KCI
System Readiness Test Log	SRT_by_date_.doc	O&P-3-A-7	KCI
Results Data Tables	CD ROM	O&P-3-A-8	KCI
GPSC Order Adopting Standards and Benchmarks	GPSC_standards.tif	O&P-3-A-9	GPSC

2.4.1 Data Generation/Volumes

The TAG/EDI Normal Volume Test evaluated BellSouth's performance by sending approximately 35,000 orders with 118,000 associated pre-orders on two occasions over a ten-hour period. This test and the pre-ordering (PRE-4) volume test were executed concurrently.

Volumes for this test were determined by forecasting BellSouth's expected order volume for year-end 2001. To support forecast development, KCI obtained a detailed order history and anticipated transaction growth rates from CLECs and BellSouth. Transaction types were forecasted individually based on expected growth rates for each order and pre-order type. KCI also analyzed the distribution of transactions over the course of a normal business day. These data were then combined to determine the number and type of orders to be sent each hour. Orders were then scheduled for transmission to BellSouth via TAG and EDI. 60% of the transactions submitted were via the TAG interface, while 40% were via EDI[8].

Table V-3.5 shows the order volumes submitted during each day of the Normal Volume Test[9].

[8] Volumes for order transmission interface type (EDI or TAG) were determined based on current CLEC usage and projected implementation dates provided by CLECs. To best replicate the actual ordering process, EDI orders were "batched" prior to transmission to BellSouth.

[9] Two normal volume test cycles were initially planned. However, BellSouth performance failure required "re-testing" of Normal Volume Day 1 on three subsequent days. Following implementation of system fixes by BellSouth, KCI/HP conducted System Readiness Testing (SRTs) to verify that BellSouth's system was functioning. After these SRTs, additional Normal Volume Day 1 tests were conducted. Normal Volume Day 2 was executed successfully in one attempt.

Table V-3.5: Normal Test Generated Volumes

Delivery Method	Day 1 06/02/00	Day 1, Retest 1[10] 06/14/00	Day 1, Retest 2 06/20/00	Day 1, Retest 3 07/24/00	Day 2 08/1/00
DL	646	646	646	646	644
LNP	3,396	3,396	3,396	3,396	3,395
Loop with LNP	5,097	5,097	5,097	5,097	5,096
Resale	15,288	15,282	15,288	15,289	15,269
UNE Loop	1,988	1,987	1,988	1,988	1,986
UNE Loop-Port Combo	8,474	8,474	8,474	8,474	8,469
UNE Port	67	67	67	67	65
Total	**34,956**	**34,949**	**34,956**	**34,957**	**34,924**

2.5 Evaluation Methods

In preparation for the test, order transaction seeds were written according to BellSouth business rules, and loaded into the KCI transaction test system. These templates were then submitted to Hewlett Packard (HP) and to BellSouth during Systems Readiness Testing (SRT)[11]. SRT confirmed the functionality of HP and KCI's transactional systems and verified that orders would flow-through the BellSouth system. The order seeds were used as templates to build the order volumes used in the subsequent tests. Orders were submitted on a scheduled submission date and time determined by KCI prior to the start of the test. As appropriate, testers made final updates (e.g., desired due dates or other information) and processed the transactions.

The EDI/TAG Normal Volume Performance Test (O&P-3) evaluated BellSouth's interfaces and systems at year-end, 2001 (YE01) projected order volumes in BellSouth's RSIMMS environment for two ten-hour periods. This test was executed by submitting Resale and UNE orders against test-bed accounts[12] that were provisioned by BellSouth based on KCI's specifications and verified by KCI prior to initiation of the test.

In order to fully test the capacity of BellSouth's OSS supporting ordering under realistic load conditions, the test was conducted simultaneously with the TAG Normal Volume Performance Test (PRE-4), which tested the OSS components

[10] The Normal Volume test was originally scheduled for two test cycles. KCI conducted retests in accordance with the "test until you pass" testing philosophy specified in the *MTP*.

[11] KCI conducted a number of SRTs between April 11, 2000 and August 1, 2000. After completing several of the SRTs, BellSouth requested additional testing. These additional tests were used by BellSouth to ensure that its back-end systems and the Interfaces were functioning correctly.

[12] Refer to Section V, "Overview" for a detailed description of the Ordering and Provisioning test bed process and detail of accounts.

supporting pre-ordering. The order transaction loads were distributed geographically across four Central Offices (COs) in the state of Georgia. BellSouth established and configured customer test accounts prior to initiation of the test.

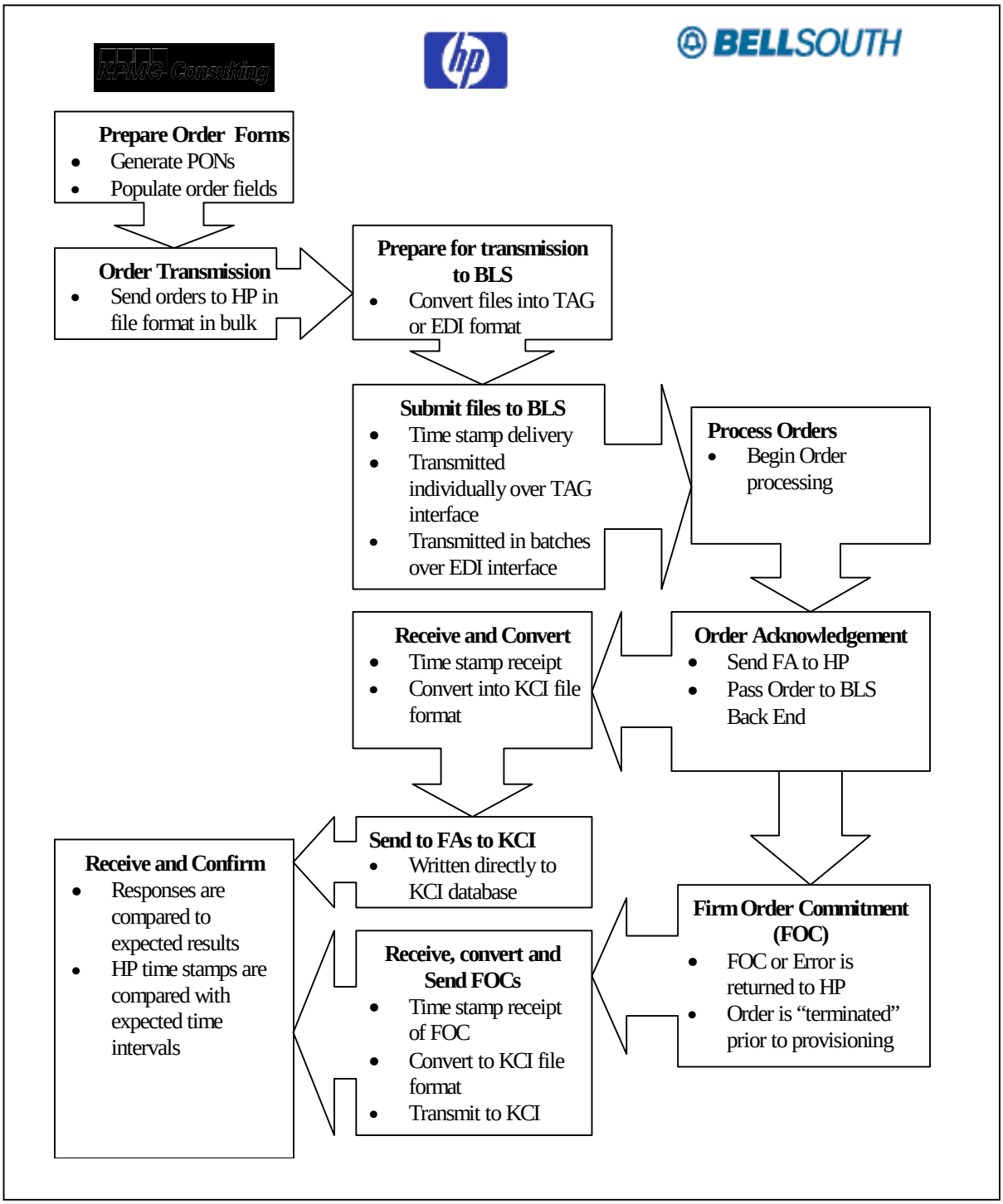
The test cases for the EDI/TAG Normal Volume Test were submitted in an automated fashion. Transactions were provided in bulk to HP for conversion from the business file format to the TAG and EDI formats. HP time-stamped and forwarded the transactions to BellSouth for processing according to the schedule provided by KCI. BellSouth processed the transactions and returned Functional Acknowledgements (FAs) and Firm Order Commitments (FOCs) to HP. The test process is depicted in Figure V-3.1.[13]

As pre-order and order volume transactions were submitted, error messages or positive responses were returned. A transaction was deemed complete if a Functional Acknowledgment (FA) and a Firm Order Confirmation (FOC) were received (or if an expected error was received). The results were logged and compared to expected ordering system functionality and business processes, as outlined in Section V, "Ordering & Provisioning Overview." A representative number of intentional errors were included in a specified number of orders. These orders were sent to test BellSouth's ability to process errors and to ensure that systems could not be programmed for automatic response. Fifty EDI orders and 75 TAG orders containing planned errors were submitted during the EDI/TAG Normal Volume Test.

Transactions (LSRs) were submitted and the results logged and compared to the expected ordering system functionality and business processes, as outlined in Section V, "Ordering & Provisioning Overview." The number, timeliness, and correctness of responses were recorded and evaluated.

[13] See Section V, "Ordering & Provisioning Overview" for a complete description of the file transfer process.

Figure V-3.1: O&P Normal Volume Test Process



2.6 Analysis Methods

The EDI/TAG Normal Volume Performance Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided a framework of norms, standards and guidelines for the EDI/TAG Normal Volume Performance Test.

The Georgia Public Service Commission (GPSC) voted on June 6, 2000 to approve a set of Service Quality Measurement- (SQM-) related measures and standards to be used for purposes of this evaluation.[14] In many cases, results in this section were calculated based on KCI/HP times tamps, which may differ significantly from the BellSouth time measurement points reported in the SQMs. For those evaluation criteria that do not map to the GPSC-approved measures, KCI has applied its own standard, based on our professional judgment.

For quantitative evaluation criteria where the test result did not meet or exceed the established standard or KCI benchmark, KCI conducted a review to determine whether the differential was statistically significant.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table V-3.6: O&P-3 Test Evaluation Criteria and Results[15]

Test Cross-Reference	Evaluation Criteria	Result	Comments
Interface Availability			
O&P-3-1-1	EDI order transaction capability is consistently available during scheduled hours of operation.	Satisfied	The GPSC-approved standard is 99.5% system availability during scheduled hours of operation[16]. BLS maintained 100% EDI availability throughout each iteration of the test[17].

[14] On January 16, 2001, the GPSC issued an order requiring BellSouth to report for business purposes a set of measures that differs in some cases from the requirements of the June 6 test standards.

[15] See Tables V-3.7 through V-3.11 for detailed results on each test day. Percentages are rounded to the nearest whole number.

[16] Regularly scheduled hours of availability for the TAG/EDI interfaces are published on the BellSouth Interconnection Web site (www.interconnection.bellsouth.com/oss/oss_hour.html). Notices of specific scheduled system downtime (e.g., for a new system release or fix) are communicated through Carrier Notifications posted on the BellSouth Web site.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-3-1-2	TAG order transaction capability is consistently available during scheduled hours of operation.	Satisfied	The GPSC-approved standard is 99.5% system availability during scheduled hours of operation[16]. HP continuously sent orders and pre-orders throughout each iteration of the test. While connectivity was maintained throughout the test, HP and BLS conducted "coordinated bounces" of their servers on several occasions. These system restarts were conducted primarily to recover BLS back-end functionality. The combined duration of downtime resulting from these restarts was less than 0.5% of test time.
System Functionality			
O&P-3-2-1	The EDI interface provides expected system responses[18].	Satisfied	The KCI standard is 99% of expected system responses received. The Normal Volume test results are as follows: Day 1- Initial: — 64% (9,001 / 13,983) of expected FAs and 63% (8,748 / 13,983) of expected FOCs were received. Day 1 - Retest 1: — 100% (13,979 / 13,979) of expected FAs and 94% (13,079 / 13,979) of expected FOCs were received. Day 1 - Retest 2: — 100% (13,983 / 13,983) of expected FAs and 75% (10,506 / 13,983) of expected FOCs were received. Day 1 - Retest 3: — 100% (13,983 / 13,983) of expected FAs and 99% (13,872 / 13,983) of expected FOCs were received. Day 2:

[17] During the execution of the Normal Volume test, KCI / HP continuously submitted transactions, via the EDI interface, according to a predetermined schedule. During this period, HP maintained continuous connectivity with BellSouth via EDI and successfully transmitted all of the orders at their scheduled times.

[18] An expected system response is defined for this criterion as an FA for each order, an FOC for each correctly formatted error, and an error or clarification (ERR / CLR) for each invalid service request.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			— 100% (13,973 / 13,973) of expected FAs and 99% (13,838 / 13,973) of expected FOCs were received.
O&P-3-2-2	The TAG interface provides expected system responses[18].	Satisfied	The KCI standard is 99% of expected system responses received. The Normal Volume test results are as follows: Day 1 - Initial — 100% (20,906 / 20,951) of expected FAs and 97% (20,348 / 20,951) of expected FOCs were received. Day 1 - Retest 1: — 84% (17,524 / 20,968) of expected FAs and 77% (16,073 / 20,968) of expected FOCs were received. Day 1 - Retest 2: — 100% (20,880 / 20,973) of expected FAs were received and 99% (20,725 / 20,973) of expected FOCs were received. Day 1 - Retest 3: — 100% (20,929 / 20,974) of expected FAs and 99% (20,829 / 20,974) of expected FOCs were received. Day 2: — 99% (20,904 / 20,951) of expected FAs and 99% (20,776 / 20,951) of expected FOCs were received.
Timeliness of System Response[19]			
O&P-3-3-1	BLS's EDI interface provides timely Functional Acknowledgements (FAs).	Not Satisfied	The KCI standard is 95% of FAs received in less than 30 minutes. Performance on only one test day met or exceeded the test standard. Results from LSRs submitted during the Normal Volume test: Day 1 - Initial: — 2% (21 / 9,001) of FAs were

[19] See Tables V-3.7 through 3.11 and Figures V-3.2 and V-3.3 for additional detail on timeliness of response results.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			received within 30 minutes. Day 1 - Retest 1: — 93% (12,978 / 13,979) of FAs were received within 30minutes . Day 1 - Retest 2: — 30% (4,122 / 13,983) of FAs were received within 30 minutes. Day 1 - Retest 3: — 18% (2,523 / 13,983) of FAs were received within 30 minutes[20]. Day 2: — 98% (13,734 / 13,973) of FAs were received within 30 minutes.
O&P-3-3-2	BLS's TAG interface provides timely Functional Acknowledgements (FAs).	Satisfied	The KCI standard is 95% of FAs received in less than 30 minutes. Results from LSRs submitted during the Normal Volume test are: Day 1 - Initial: — 100% (20,906 / 20,906) of FAs were received within 30 minutes. Day 1 - Retest 1: — 100% (17,482 / 17,524) of FAs were received within 30 minutes. Day 1 - Retest 2: — 100% (20,866 / 20,880) of FAs were received within 30 minutes Day 1 Retest 3: — 100% (20,929 / 20,929) of FAs were received within 30 minutes Day 2: — 100% (20,904 / 20,904) of FAs were received within 30 minutes.

[20] All Functional Acknowledgements were received within 90 minutes of the LSR being sent.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-3-3-3	BLS's EDI interface provides timely Firm Order Confirmations (FOCs).	Satisfied	The GPSC-approved standard for flow-through (FT) FOCs is 95% received within three hours. LSRs submitted during the Normal Volume Day tests received FOCs within the following timeframes[21]: Day 1 – Initial: — 1% (79 / 8,748) of FOCs were received within three hours[22]. Day 1 - Retest 1: — 2% (269 / 13,079) of FOCs were received within three hours. Day 1 - Retest 2: — 81% (8,488 / 10,506) of FOCs were received within three hours. Day 1 - Retest 3: — 100% (13,872 / 13,872) of FOCs were received within three hours. Day 2: — 100% (13,838 / 13,838) of FOCs were received within three hours.
O&P-3-3-4	BLS's TAG interface provides timely Firm Order Confirmations (FOCs).	Satisfied	The GPSC-approved standard for flow-through (FT) FOCs is 95% received within three hours. LSRs submitted during the Normal volume test yielded the following results[21]: Day 1 – Initial: — 34% (6,922 / 20,348) of FOCs were received within three hours. Day 1 - Retest 1: — 33% (5,251 / 16,073) of FOCs were received within three hours. Day 1 - Retest 2: — 100% (20,725 / 20,725) of FOCs were received within three hours.

[21] BellSouth implemented system fixes after unsuccessful volume days prior to KCI's retest activity.
[22] BellSouth experienced internal system problems during the initial hours of the test. These problems resulted in an order backlog that existed for the remainder of the day.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Day 1 Retest 3: — 100% (20,829 / 20,829) of FOCs were received within three hours. Day 2: — 100% (20,776 / 20,776) of FOCs were received within three hours.
Accuracy of System Response			
O&P-3-4-1	BLS systems provide accurate[23] Firm Order Confirmations (FOCs).	Satisfied	The KCI standard is 95% accuracy of response type. Of the FOCs analyzed, 100% were correct relative to the LSR submitted (i.e. were received in response to a correctly formatted LSR).
O&P-3-4-2	BLS systems provide accurate order errors (ERRs) / clarifications (CLRs).	Satisfied	The KCI standard is 95% accuracy of response type. Of the ERRs / CLRs analyzed, 100% were correct relative to the LSR submitted (i.e. incorrectly formatted LSR received expected response).

[23] For this criterion, KCI defined an accurate response to be a system response that is consistent with the technical specifications for EDI / TAG responses *and* to be consistent with the transaction that initiated the response (e.g., a correctly formatted LSR received a FOC). In the case of error / clarification responses, KCI verified that these were only received for incorrectly formatted LSRs. The contents of the response files (FOCs / ERRs / CLRs) were evaluated for accuracy and completeness for purposes of this test on a sample basis only. A more complete accuracy evaluation for conformance to the BellSouth business rules was undertaken in feature / function testing (OP-1, OP-2, and PO&P-11).

Table V-3.7: Day-One Normal Volume Re-Test Three (July 24, 2000) Acknowledgement Detailed Results[24]

Product Type	Interface	LSR Sent	Number of ACKs Received	Percentage of Expected ACKs Received	ACK Received < 30 min	Percentage of ACKs received < 30 min	Average LSR To ACK Business Minutes
DL	EDI	258	258	100.0%	55	21.3%	38.919
LNP	EDI	1,358	1,358	100.0%	274	20.2%	39.490
Loop with LNP	EDI	2,039	2,039	100.0%	383	18.8%	39.045
Resale	EDI	6,118	6,118	100.0%	1,028	16.8%	39.093
UNE Loop	EDI	795	795	100.0%	162	20.4%	38.216
UNE Loop-Port Combo	EDI	3,389	3,389	100.0%	617	18.2%	39.232
UNE Port	EDI	26	26	100.0%	4	15.4%	39.615
Subtotal		13,983	13,983	100.0%	2,523	18.0%	39.106
DL	TAG	388	373	96.1%	373	100.0%	0.003
LNP	TAG	2,038	2,038	100.0%	2,038	100.0%	0.001
Loop with LNP	TAG	3,058	3,058	100.0%	3,058	100.0%	0.000
Resale	TAG	9,171	9,156	99.8%	9,156	100.0%	0.001
UNE Loop	TAG	1,193	1,178	98.7%	1,178	100.0%	0.002
UNE Loop-Port Combo	TAG	5,085	5,085	100.0%	5,085	100.0%	0.001
UNE Port	TAG	41	41	100.0%	41	100.0%	0.024
Subtotal		20,974	20,929	99.8%	20,929	100.0%	0.001
Total		34,957	34,912	99.9%	23,452	67.2%	15.663

[24] Data from the two successful test cycles are presented.

Table V-3.8: Day-One Normal Volume Re-Test Three (July 24, 2000) FOC Detailed Results

Product Type	Interface	LSRs Sent	Number of FOCs Received	Percentage of Expected FOCs Received	FOCs Received < 3 hrs	Percentage of FOCs Received < 3 hrs	Average LSR To FOC Business Minutes
DL	EDI	258	248	96.1%	248	100.0%	83.477
LNP	EDI	1,358	1,351	99.5%	1,351	100.0%	72.493
Loop with LNP	EDI	2,039	2,039	100.0%	2,039	100.0%	70.820
Resale	EDI	6,118	6,045	98.8%	6,045	100.0%	81.913
UNE Loop	EDI	795	784	98.6%	784	100.0%	86.537
UNE Loop-Port Combo	EDI	3,389	3,389	100.0%	3,389	100.0%	88.645
UNE Port	EDI	26	16	61.5%	16	100.0%	51.346
Subtotal		13,983	13,872	99.2%	13,872	100.0%	81.264
DL	TAG	388	373	96.1%	373	100.0%	19.928
LNP	TAG	2,038	2,036	99.9%	2,036	100.0%	11.784
Loop with LNP	TAG	3,058	3,058	100.0%	3,058	100.0%	12.267
Resale	TAG	9,171	9,075	99.0%	9,075	100.0%	17.675
UNE Loop	TAG	1,193	1,178	98.7%	1,178	100.0%	20.431
UNE Loop-Port Combo	TAG	5,085	5,083	100.0%	5,083	100.0%	20.978
UNE Port	TAG	41	26	63.4%	26	100.0%	12.171
Subtotal		20,974	20,829	99.3%	20,829	100.0%	17.301
Total		34,957	34,701	99.3%	34,701	100.0%	42.870

Table V-3.9: Day-Two Normal Volume Test (August 1, 2000) Acknowledgement Detailed Results

Product Type	Interface	LSR Sent	Number of ACKs[25] Received	Percentage of Expected ACKs Received	ACK Received < 30 min	Percentage of ACKs received < 30 min	Average LSR To ACK Business Minutes
DL	EDI	258	258	100.0%	248	96.1%	15.298
LNP	EDI	1,358	1,358	100.0%	1,358	100.0%	14.655
Loop with LNP	EDI	2,039	2,039	100.0%	2,025	99.3%	15.077
Resale	EDI	6,108	6,108	100.0%	5,956	97.5%	15.029
UNE Loop	EDI	795	795	100.0%	786	98.9%	15.557
UNE Loop-Port Combo	EDI	3,389	3,389	100.0%	3,337	98.5%	15.683
UNE Port	EDI	26	26	100.0%	24	92.3%	13.577
Subtotal		13,973	13,973	100.0%	13,734	98.3%	15.191
DL	TAG	386	371	96.1%	371	100.0%	0.034
LNP	TAG	2,037	2,037	100.0%	2,037	100.0%	0.021
Loop with LNP	TAG	3,057	3,057	100.0%	3,057	100.0%	0.020
Resale	TAG	9,161	9,145	99.8%	9,145	100.0%	0.021
UNE Loop	TAG	1,191	1,175	98.7%	1,175	100.0%	0.025
UNE Loop-Port Combo	TAG	5,080	5,080	100.0%	5,080	100.0%	0.022
UNE Port	TAG	39	39	100.0%	39	100.0%	0.103
Subtotal		20,951	20,904	99.8%	20,904	100.0%	0.022
Total		34,924	34,877	99.9%	34,638	99.3%	6.099

[25] An ACK is a Functional Acknowledgement, which is an electronic acknowledgement sent to a CLEC from BellSouth verifying that BellSouth has received a firm order.

Table V-3.10: Day-Two Normal Volume Test (August 1, 2000) FOC Detailed Results

Product Type	Interface	LSRs Sent	Number of FOCs Received	Percentage of Expected FOCs Received	FOCs Received < 3 hrs	Percentage of FOCs Received < 3 hrs	Average LSR To FOC Business Minutes
DL	EDI	258	248	96.1%	248	100.0%	56.740
LNP	EDI	1,358	1,358	100.0%	1,358	100.0%	38.830
Loop with LNP	EDI	2,039	1,955	95.9%	1,955	100.0%	41.370
Resale	EDI	6,108	6,087	99.7%	6,087	100.0%	51.715
UNE Loop	EDI	795	785	98.7%	785	100.0%	57.470
UNE Loop-Port Combo	EDI	3,389	3,389	100.0%	3,389	100.0%	59.510
UNE Port	EDI	26	16	61.5%	16	100.0%	26.038
Subtotal		13,973	13,838	99.0%	13,838	100.0%	51.285
DL	TAG	386	371	96.1%	371	100.0%	20.648
LNP	TAG	2,037	2,037	100.0%	2,037	100.0%	11.765
Loop with LNP	TAG	3,057	2,960	96.8%	2,960	100.0%	11.782
Resale	TAG	9,161	9,130	99.7%	9,130	100.0%	17.942
UNE Loop	TAG	1,191	1,174	98.6%	1,174	100.0%	20.976
UNE Loop-Port Combo	TAG	5,080	5,080	100.0%	5,080	100.0%	21.589
UNE Port	TAG	39	24	61.5%	24	100.0%	10.308
Subtotal		20,951	20,776	99.2%	20,776	100.0%	17.561
Total		34,924	34,614	99.1%	34,614	100.0%	31.043

The figures below depict the number of orders received for each response time. Normal volume day two had 4004 FOCs that were received within one minute of the LSR being sent to BellSouth; these data are not depicted on the chart.

Figure V-3.2: Normal Volume Test Day One – Re-Test Three

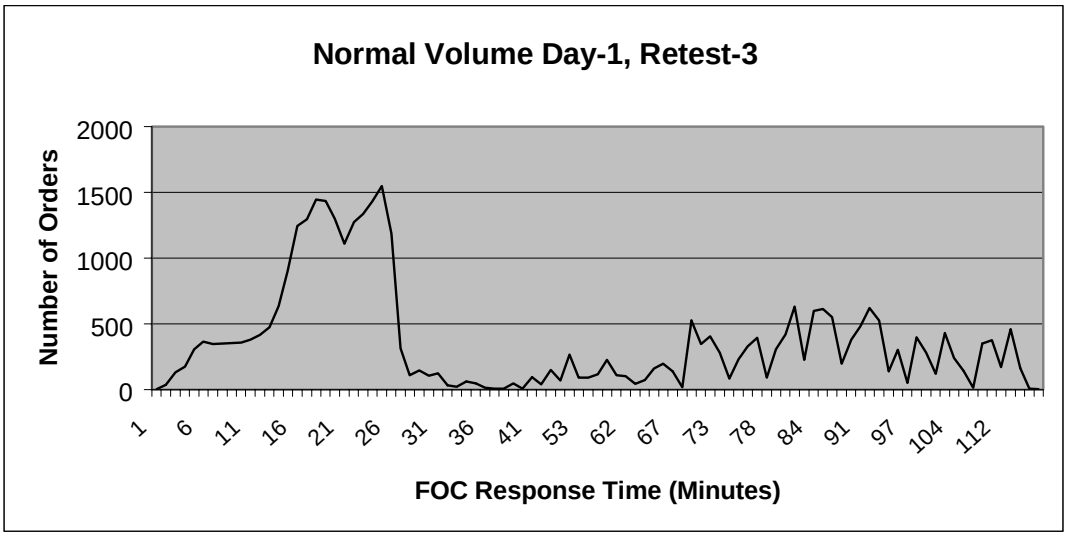
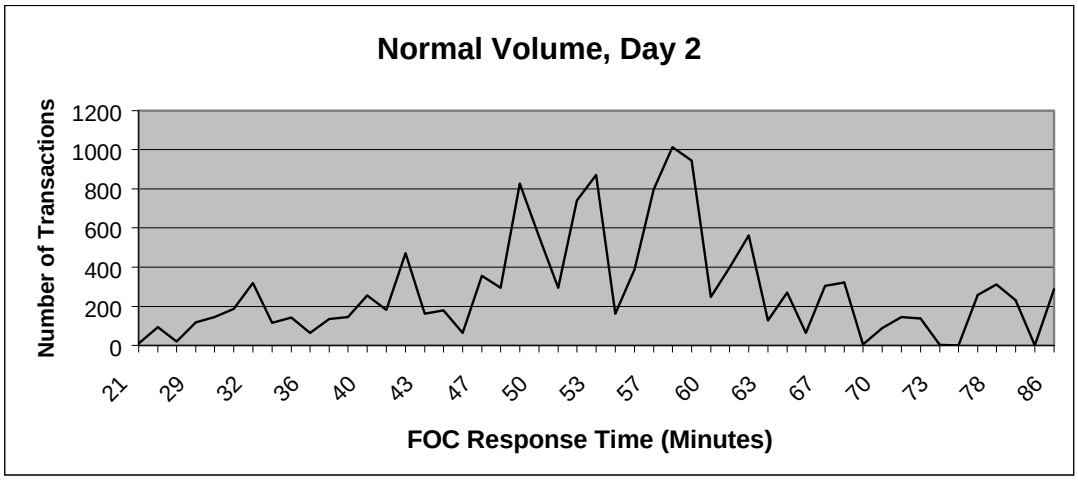


Figure V-3.3: Normal Volume Test Day Two



D. Test Results: EDI/TAG Peak Volume Performance Test (O&P-4)

1.0 Description

The objective of the Electronic Data Interchange (EDI) / Telecommunications Access Gateway (TAG) Peak Volume Performance Test (O&P-4) was to evaluate BellSouth's Operating Support Systems (OSS) associated with ordering at specified volumes. Competitive Local Exchange Carriers (CLECs) submit orders to BellSouth's OSS via two primary Application Program Interfaces: EDI and TAG. O&P-4 evaluated BellSouth's ability to accurately and quickly process orders using the EDI and TAG interfaces under "peak," year-end 2001 (YE01) projected transaction load conditions[1] in the Reengineered Services, Installation and Maintenance Management System (RSIMMS) environment[2].

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section V, "Ordering & Provisioning Overview" for a description of the BellSouth ordering process via EDI and TAG.

2.2 Scenarios

Test scenarios for the EDI/TAG Peak Volume Test fall into two categories: Resale and Unbundled Network Elements (UNEs).

2.2.1 Resale

Appendix B-2: Resale Ordering Scenarios of the *Master Test Plan* (*MTP*)[3] describes 26 resale test scenarios. During the initial pre-testing of the BellSouth ordering systems, six of the scenarios would not flow-through[4] the system and therefore were not used for the test[5]. From the remaining 20 scenarios, 20 test seeds were generated by applying BellSouth's OSS electronic ordering business rules[6] and

[1] KCI forecasted hourly transaction rates for individual order and pre-order types drawing on data from current order and pre-order daily volume rates, BellSouth 2001 transaction forecasts and from CLEC 2001 transaction forecasts, where obtainable.

[2] See the *RSIMMS and Production System Review* for a description of the differences between the production and RSIMMS environment.

[3] Version 4.1, March 28, 2000.

[4] Flow-through is defined as electronic transmission through a gateway and acceptance into BellSouth's back-office ordering systems without manual intervention by a customer service representative.

[5] The volume test methodology is designed to assess electronic interface and back-end system processing capabilities, not manual processes. Therefore, orders that must fall out for manual processing are not included in the volume test.

[6] KCI used the *Local Exchange Ordering (LEO) Implementation Guide*, Volume 1. Issues 7J, 7K, 7L, 7M, 7N, 7O, 7P and 7Q, to apply BellSouth's business rules.

logical business requirements to format orders. The following table describes each of the Resale scenarios used during this test:

Table V-4.1: Resale Scenarios

Scenario Number	Scenario Category	Scenario Description
201	Resale	Migration "As Is" of a business customer from BellSouth with Plain Old Telephone Service (POTS) lines to CLEC.
202	Resale	Migration "As Is" of a residential customer with POTS line from BellSouth to CLEC.
204	Resale	Partial migration of a business customer with POTS lines from BellSouth to CLEC on a trial basis.
205	Resale	Migration "As Specified" of a residential POTS customer from BellSouth to CLEC.
206	Resale	Partial migration of a residential customer's second POTS line from BellSouth to CLEC.
207	Resale	New business customer installs POTS lines.
208	Resale	New residence customer installs POTS line.
209	Resale	Add five POTS lines to existing CLEC business customer.
210	Resale	Add POTS line to existing residential CLEC customer.
213	Resale	Suspend POTS service of a CLEC residential customer (seasonal suspend).
214	Resale	Restore POTS service of a CLEC residential customer.
218	Resale	Change TN of CLEC residential customer with POTS line.
219	Resale	CLEC residential customer with two POTS lines requests TN change on ancillary line.
220	Resale	Change Long Distance Service Provider for a CLEC residential POTS customer.
221	Resale	Change Long Distance Service Provider for a CLEC business POTS customer.
222	Resale	Partially disconnect four of six business POTS lines.
223	Resale	Disconnect a CLEC business customers five POTS lines.
224	Resale	Disconnect a residential CLEC customers two POTS lines.
225	Resale	Change information in directory listing (DL) for a residential customer with POTS service.
226	Resale	CLEC residential customer with POTS line changes information on DL.

2.2.2 UNE-based Scenarios

Appendix B-3: UNE Ordering Scenarios of the *MTP* describes 40 UNE test scenarios intended for use in the EDI/TAG Peak Volume Performance Test[7]. During the initial pre-testing of the BellSouth ordering systems, 29 of the scenarios did not flow through the system and were therefore not used for the test. From the remaining 11 scenarios, 11 test seeds were generated by applying BellSouth's OSS electronic ordering business rules and logical business requirements to format orders. The following table describes each of the UNE scenarios used during this test:

Table V-4.2: UNE Scenarios

Scenario Number	Scenario Category	Scenario Description
301	Loop	A CLEC orders two new SL1 unbundled analog loops from BLS in support of a customer's service request.
305	Loop	A CLEC orders two SL1 unbundled analog loops in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC business.
350	Loop LNP	A CLEC orders two SL1 unbundled analog loops with LNP in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC.
387	LNP	A CLEC orders Local Number Portability (LNP) for two lines in support of an existing resale customer migration to CLEC facilities.
395	Port	A CLEC orders two new business unbundled analog ports from BLS in support of a new business customer's service request.
397	Port	A CLEC orders two new residential unbundled analog ports from BLS in support of a new business customer's service request.
420	Combo	A CLEC orders two new business unbundled analog loop – port combinations from BLS in support of a new business customer's service request.
422	Combo	A CLEC orders two new residential unbundled analog loop – port combinations from BLS in support of a new residential customer's service request.
428	Combo	A CLEC orders two residential unbundled analog loop - port combinations from BLS for one of its resale residential customers.
445	Combo	An existing CLEC customer is moving to another state. The CLEC orders BLS to disconnect both of its unbundled loop-port combinations.
610	Combo	A CLEC changes the (Billing Telephone Number) BTN of an analog loop / port combination two-line residential customer.

[7] The volume test methodology is designed to assess electronic interface and back-end system processing capabilities, not manual processes. Therefore orders that must fall out for manual processing are not included in the volume test.

2.3 Test Targets & Measures

The test targets were the EDI and TAG interfaces and back-end systems[8] supporting order processing. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table V-4.3: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Submit Orders in Projected Peak Volumes	Create order transactions	Availability of Interface	O&P-4-1-1 O&P-4-1-2
		Timeliness of Response	O&P-4-3-1 O&P-4-3-2
	Send orders in LSR format	Availability of Interface	O&P-4-1-1 O&P-4-1-2
	Receive acknowledgements	Availability of Interface	O&P-4-1-1 O&P-4-1-2
		Accuracy of Response	O&P-4-2-1 O&P-4-2-1 O&P-4-4-1 O&P-4-4-2
		Timeliness of Response	O&P-4-3-1 O&P-4-3-2
	Receive FOCs or error / reject notifications	Availability of Interface	O&P-4-1-1 O&P-4-1-2
		Accuracy of Response	O&P-4-2-1 O&P-4-2-1 O&P-4-4-1 O&P-4-4-2
		Timeliness of Response	O&P-4-3-3 O&P-4-3-4

[8] The RSIMMS environment is designed to access copies of the PSIMMS, COFFI, BOCRIS BOCABS and the LMOS / Hose systems, and to access the production COFIUSOC, ATLAS, RSAG, and DSAP systems.

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table V-4.4: Data Sources for EDI/TAG Peak Volume Performance Test (O&P-4)

Document	File Name	Location in Work Papers	Source
Telecommunications Access Gateway (TAG) API Reference Guide, Versions 2.2.0.2, 2.2.0.4, 2.2.0.5, 2.2.0.7, 2.2.0.8, and 2.2.1.1	No Electronic Copy	PRE-1-A-3	BLS
Local Exchange Ordering (LEO) Implementation Guide, Volume 1 Issues 7J, 7K, 7M, 7N, 7O, And 7P were utilized.	No Electronic Copy	O&P-1-B-1	BLS
LEO Implementation Guide, Volume 2. Issue 6B, July 99	No Electronic Copy	O&P-1-B-2	BLS
LEO Implementation Guide, Volume 3. Issue3A August 98	No Electronic Copy	O&P-1-B-3	BLS
LEO Implementation Guide, Volume 4. Issue 7F October 99	No Electronic Copy	O&P-1-B-4	BLS
Product and Services interval Guide	No Electronic Copy	O&P-1-B-5	BLS
Local Servcie Request Error Messages (Version TCIF 7)	O&P_ errors.pdf	O&P-1-A-4	BLS
*CLEC Service Order Tracking System (*CSOTS) Users Guide	O&P_csots.pdf	O&P-1-A-1	BLS
Local Number Portability (LNP) Odering Guide (Issue 1b-October 1999)	O&P_LNPgd.pdf	O&P-1-A-3	BLS
BellSouth 3 Month Hourly Order History	Order history.xls	O&P-4-A-1	BLS
2000, 2001 Bellsouth LSR Volume Forecast	BSTFORCAST.xls	O&P-4-A-2	BLS
2000, 2001 Aggergated CLEC Forecast	CLEC_BST_FORECAST.xls	O&P-4-A-3	CLECs
YE2001 Normal and Peak Forecast Methodology	Fcast Summary.ppt	O&P-4-A-4	KCI
Volume Test RSIMMS Test Scenarios	Volum_Test_Cases.xls	O&P-4-A-5	KCI
Peak Volume Test Schedule	Schedule.xls	O&P-4-A-6	KCI
System Readiness Test Log	SRT_by_date_.doc	O&P-4-A-7	KCI
Results Data Tables	CD ROM	O&P-4-A-8	KCI
GPSC Order Adopting Standards and Benchmarks	GPSC_standards.tif	O&P-4-A-9	GPSC

2.4.1 Data Generation/Volumes

The TAG/EDI Peak Volume Test tested BellSouth's performance by sending approximately 43,000 orders with 118,000 associated pre-orders on two occasions over an eight-hour period. This test and the pre-order (PRE-5) peak volume test were executed concurrently.

Volumes for this test were determined by forecasting BellSouth's expected order volume for year-end 2001. To support forecast development, KCI obtained a detailed ordering history and anticipated transaction growth rates from CLECs and BellSouth. Transaction types were forecasted individually based on expected growth rates for each order and pre-order type. KCI also analyzed the distribution of transactions over the course of a normal business day. These data were then combined to determine the number and types of orders to be sent each hour. 60% of transactions submitted were via the TAG interface, while 40% were via EDI[9].

Peak Volumes were defined as 150% of transaction volume levels during the busiest consecutive eight hours of the Normal Volume Test.

Table V-4.5 shows the order volumes submitted during each day of the Peak Volume Test[10].

Table V-4.5: Peak Volume Test Generated Volumes

Delivery Method	Day 1, 07/10/00	Day 1, Retest 1[11], 07/13/00	Day 2, 07/17/00
DL	825	825	825
LNP	4,435	4,435	4,435
Loop with LNP	4,441	4,440	4,441
Resale	19,894	19,902	19,896
UNE Loop	2,572	2,571	2,573

[9] Volumes for order transmission interface type (EDI or TAG) were determined based on current CLEC usage and projected implementation dates provided by CLECs. To best replicate the actual ordering process, EDI orders were "batched" prior to transmission to BellSouth.

[10] Two peak volume test cycles were initially planned. However, BellSouth performance failure required "re-testing" of Peak Volume Day 1 on one subsequent day. Following implementation of system fixes by BellSouth, KCI conducted SRTs to verify that BellSouth's system was functioning. After these SRTs, additional Peak Volume Day 1 tests were conducted. Peak Volume Day 2 was executed successfully in one attempt.

[11] The Peak volume test was originally scheduled for two testing days. Upon analyzing data from Day 1, KCI chose to conduct a retest in accordance with the "test until pass" testing philosophy detailed in the *MTP*.

Delivery Method	Day 1, 07/10/00	Day 1, Retest 1[11], 07/13/00	Day 2, 07/17/00
UNE Loop-Port Combo	11,054	11,052	11,054
UNE Port	71	69	71

2.5 Evaluation Methods

In preparation for the test, order transaction seeds were written according to BellSouth business rules and loaded into the KCI transaction test system. These templates were then submitted to Hewlett Packard (HP) and to BellSouth during Systems Readiness Testing (SRT)[12]. SRT confirmed the functionality of HP and KCI's transactional systems and verified that orders would flow-through the BellSouth system. The order seeds were used as templates to build the order volumes used in the subsequent tests. Orders were submitted on a scheduled submission date and time determined by KCI prior to the start of the test. As appropriate, testers made final updates (e.g., desired due dates or other information) and processed the transactions.

The EDI/TAG Peak Volume Performance Test (O&P-4) evaluated BellSouth's interfaces and systems at year-end, 2001 (YE01) projected order volumes in BellSouth's RSIMMS environment for two eight-hour periods. This test was executed by submitting Resale and UNE orders against test-bed accounts[13] that were provisioned by BellSouth based on KCI's specifications and verified by KCI prior to initiation of the test.

In order to fully test the capacity of BellSouth's OSS under realistic load conditions, the test was conducted simultaneously with the TAG Volume Performance Test (PRE-5), which tested the OSS components supporting pre-ordering. The order transaction loads were distributed geographically across four Central Offices (COs) in the state of Georgia. BellSouth established and configured customer test accounts prior to initiation of the test.

The test cases for the EDI/TAG Peak Volume Test were submitted in an automated fashion. Transactions were provided in bulk to HP for conversion from the business file format to the TAG and EDI formats. HP time stamped and forwarded the transactions to BellSouth for processing according to the schedule provided by the KCI. BellSouth processed the transactions and

[12] KCI conducted a number of SRTs between April 11, 2000 and August 1, 2000. After completing several of the SRTs, BellSouth requested additional testing. These additional tests were used by BellSouth to ensure that its back-end systems and the Interfaces were functioning correctly.

[13] Refer to Section V, "Overview" for a detailed description of the Ordering and Provisioning test bed process and detail of accounts.

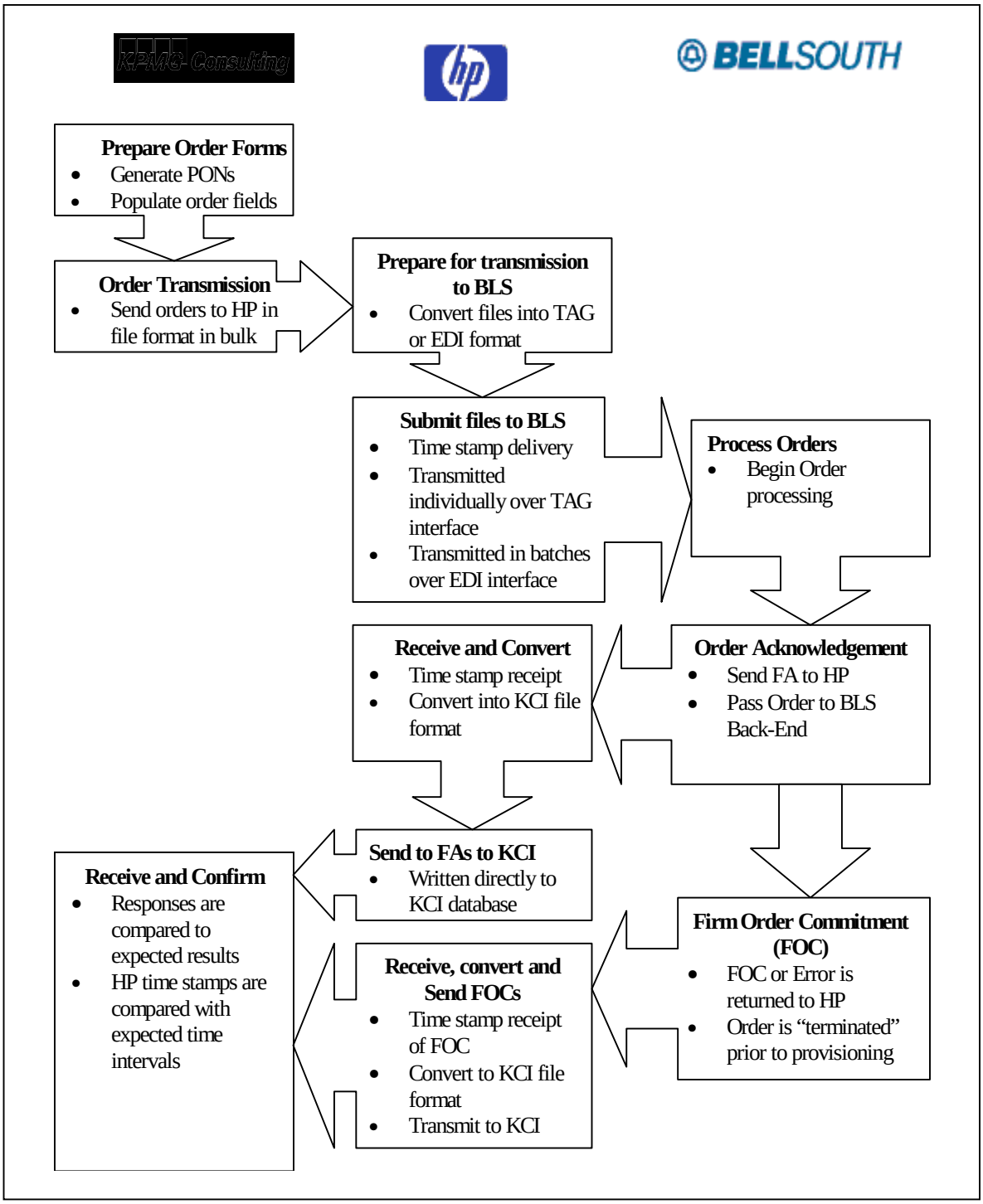
returned Functional Acknowledgements (FAs) and Firm Order Commitments (FOCs) to HP. The test process is depicted in Figure V-4.1[14].

As pre-order and order volume transactions were submitted, error messages or positive responses were returned. A transaction was deemed complete if a Functional Acknowledgement (FA) and a Firm Order Confirmation (FOC) were received (or if an expected error was received). The results were logged and compared to expected ordering system functionality and business processes, as outlined in Section V Overview. A representative number of intentional errors were included in a specified number of orders. These orders were sent to test BellSouth's ability to process errors and to ensure that systems could not be programmed for automatic response. Forty-one EDI orders and 58 TAG orders containing planned errors were submitted during the EDI/TAG Peak Volume Test.

Transactions (LSRs) were submitted and the results logged and compared to the expected ordering system functionality and business processes, as outlined in Section V, "Overview." The number, timeliness, and correctness of responses were recorded and evaluated.

[14] See Section V, "Overview" for a complete description of the file transfer process.

Figure V-4.1: O&P Peak Volume Test Process



2.6 Analysis Methods

The EDI/TAG Peak Volume Performance Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided a framework of norms, standards and guidelines for the test.

The Georgia Public Service Commission (GPSC) voted on June 6, 2000 to approve a set of Service Quality Measurement- (SQM-) related measures and standards to be used for purposes of this evaluation.[15] In many cases, results in this section were calculated based on KCI/HP time stamps, which may differ significantly from the BellSouth time measurement points reported in the SQMs. For those evaluation criteria that do not map to the GPSC-approved measures, KCI has applied its own standard, based on KCI's professional judgment.

For quantitative evaluation criteria where the test result did not meet or exceed the established standard or KCI benchmark, KCI conducted a review to determine whether the differential was statistically significant.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table V-4.6: O&P-4 Test Evaluation Criteria and Results[16]

Test Cross-Reference	Evaluation Criteria	Result	Comments
Interface Availability			
O&P-4-1-1	EDI order transaction capability is consistently available during scheduled hours of operation.	Satisfied	The GPSC-approved standard is 99.5% system availability during scheduled hours of operation[17]. BLS maintained 100% EDI availability throughout each iteration of the test[18].

[15] On January 16, 2001, the GPSC issued an order requiring BellSouth to report for business purposes a set of measures that differs in some cases from the requirements of the June 6 test standards.

[16] See Tables V-4.7 through V-4.11 for detailed results on each test day. Percentages are rounded to the nearest whole number.

[17] Regularly scheduled hours of availability for the TAG/EDI interfaces are published on the BellSouth Interconnection Web site (www.interconnection.bellsouth.com/oss/oss_hour.html). Notices of specific scheduled system downtime (e.g., for a new system release or fix) are communicated through Carrier Notifications posted on the BellSouth Web site.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-4-1-2	TAG order transaction capability is consistently available during scheduled hours of operation.	Satisfied	The GPSC-approved standard is 99.5% system availability during scheduled hours of operation[19]. HP continuously sent orders and pre-orders throughout each iteration of the test. While connectivity was maintained throughout the test, HP and BLS conducted "coordinated bounces" of their servers on several occasions. These system restarts were conducted primarily to recover BLS back-end functionality. The combined duration of downtime resulting from these restarts was less than 0.1% of test time.
System Functionality[20]			
O&P-4-2-1	The EDI interface provides expected system responses[21].	Satisfied	The KCI standard is 99% of expected system responses received. The Peak Volume test yielded the following results: Day 1 Initial: — 100% (17,319 / 17,319) of expected FAs were received. — 70% (12,040 / 17,319) of expected FOCs were received. Day 1, Retest 1: — 100% (17,319 / 17,319) of expected FAs, were received. — 100% (15,816 / 15,863) of expected FOCs were received[22]. Day 2: — 100% (17,321 / 17,321) of expected FAs were received. — 99% (17,198 / 17,321) of expected

[18] During the execution of the Peak Volume test, KCI / HP continuously submitted transactions, via the EDI interface, according to a predetermined schedule. During this period, HP maintained continuous connectivity with BellSouth via EDI and successfully transmitted all of the orders at their scheduled times.

[19] Regularly scheduled hours of availability for the TAG interface are published on the BellSouth Interconnection Web site (www.interconnection.bellsouth.com / oss / oss_hour.html). Notices of specific scheduled system downtime (e.g., for a new system release or fix) are communicated through Carrier Notifications posted on the BellSouth Web site.

[20] An expected system response is defined for this criterion as any system response that is consistent with technical specifications for EDI and TAG responses.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			FOCs were received.
O&P-4-2-2	The TAG interface provides expected system responses.	Satisfied	The KCI standard is 99% of expected system responses received. The Peak Volume test yielded the following results: Day 1 Initial: — 96% (24,902 / 25,973) of expected FAs were received. — 74% (19,337 / 25,973) of expected FOCs were received. Day 1, Retest 1: — 99% (25,644 / 25,975) of expected FAs, were received. — 99% (23,428 / 23,784) of expected FOCs were received.[23] Day 2: — 100% (25,882 / 25,974) of expected FAs were received. — 99% (25,697 / 25,867) of expected FOCs were received[24].
Timeliness of System Response[25]			
O&P-4-3-1	BLS's EDI interface provides timely Functional Acknowledgements (FAs).	Not Satisfied[26]	The KCI standard is 95% of FAs received in less than 30 minutes. Performance on only one test day met or exceeded the test standard. Results from LSRs submitted during

[21] An expected system response is defined for this criterion as an FA for each order, an FOC for each correctly formatted error, and an error or clarification (ERR / CLR) for each invalid service request.

[22] The number of expected EDI FOCs for the day one Peak Retest is less than the number of expected FAs because 1,456 planned errors were submitted to BellSouth. These "planned errors" were processed by the BellSouth EDI interface, identified as non-flow-through, fallout orders.

[23] The number of expected TAG FOCs for the day one Peak Retest is less than the number of expected FAs because 2,225 planned errors were submitted to BellSouth and handled appropriately. These "planned errors" were processed by the BellSouth TAG interface and identified as non-flow-through, fallout orders.

[24] Following the submission of orders during the test, KCI identified 1,099 LSRs for which we had no record of receiving FOCs from BellSouth. PONs from those 1,099 were transmitted to BellSouth. BellSouth provided detailed logs indicating that the FOCs relating to 929 of those LSRs had been transmitted to HP. In accordance with established FOC retransmission procedures and BellSouth's proof that the FOCs in question were available, KCI determined that BellSouth had provided expected system responses for those orders.

[25] See Tables V-4.7 through V-4.9 for additional detail on timeliness results.

[26] 100% (17,319 / 17,319) (17,319 / 17,319) (17,321 / 17,321) of FAs received from BellSouth on each day of peak volume testing were received within 90 minutes of the submission of the LSR.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			the Peak Volume test are: Day 1 Initial: — 100% (17,110 / 17,319) of FAs were received within 30 minutes. Day 1, Retest 1: — 86% (14,858 / 17,319) of FAs were received within 30 minutes. Day 2: — 98% (16,931 / 17,321) of expected FAs were received within 30 minutes[27].
O&P-4-3-2	BLS's TAG interface provides timely Functional Acknowledgements (FAs).	Satisfied	The KCI standard is 95% of FAs received in less than 30 minutes. Results from LSRs submitted during the Peak Volume test are: Day 1 Initial: — 100% (24,902 / 24,902) of received FAs were received in less than 30 minutes. Day 1, Retest 1: — 100%(25,632 / 25,632) of received FAs were received within 30 minutes. Day 2: — 100% (25,882 / 25,882) of received FAs were received within 30 minutes.
O&P-4-3-3	BLS's EDI interface provides timely Firm Order Confirmations (FOCs).	Satisfied	The GPSC-approved standard for flow-through (FT) FOCs is 95% received within three hours. LSRs submitted during the Peak Volume Day Tests received FOCs within the following timeframes[28]: Day 1 Initial: — 100% (12,040 / 12,040) of FOCs received were received in less than three hours for FT LSRs.

[27] During the third test, all late FAs were received during the same time period.
[28] BellSouth implemented system fixes after unsuccessful volume days prior to KCI executing retest activity.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Day 1, Retest 1: — 99% (15,661 / 15,816) of FOCs received were received in less than three hours for FT LSRs. Day 2: — 96% (16,560 / 17,198) of FOCs received were received in less than three hours for FT LSRs.
O&P-4-3-4	BLS's TAG interface provides timely Firm Order Confirmations (FOCs).	Satisfied	The GPSC-approved standard for flow-through (FT) FOCs is 95% received within three hours. LSRs submitted during the Peak volume Test: Day 1 Initial: — 92% (17,717 / 19,337) of FOCs received were received in less than three hours for FT LSRs. Day 1, Retest 1: — 100% (23,421 / 23,421) of FOCs received were received in less than three hours for FT LSRs. Day 2: — 98% (24,228 / 24,790) of FOCs received were received in less than three hours for FT LSRs..
Accuracy of System Response			
O&P-4-4-1	BLS systems provide accurate[29] Firm Order Confirmations (FOCs).	Satisfied	The KCI standard is 95% accuracy of response type. Of the FOCs analyzed, 100% were correct relative to the LSR submitted (i.e., were received in response to a correctly formatted LSR).

[29] For this criterion, KCI defined an accurate response to be a system response that is consistent with the technical specifications for EDI / TAG responses *and* to be consistent with the transaction that initiated the response (e.g. a correctly formatted LSR received a FOC). In the case of error / clarification responses, KCI verified that these were only received for incorrectly formatted LSRs. The contents of the response files (FOCs / ERRs / CLRs) were evaluated for accuracy and completeness for purposes of this test on a sample basis only. A more complete accuracy evaluation for conformance to the BellSouth business rules was undertaken in feature / function testing (OP-1, OP-2, and PO&P-11).

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-4-4-2	BLS systems provide accurate order errors (ERRs) / clarifications (CLRs).	Satisfied	The KCI standard is 95% accuracy of response type. Of the ERRs / CLRs analyzed, 100% were correct relative to the LSR submitted (i.e. incorrectly formatted LSR received expected response).

Table V-4.7: Day-One Retest One Peak Volume Test (July 13, 2000) Acknowledgement Detailed Results[30]

Product Type	Interface	LSR Sent	Number of ACK[31]s Received	Percentage of Expected ACKs Received	ACK Received < 30 min	Percentage of ACKs received < 30 min	Average LSR To ACK Business Minutes
DL	EDI	330	330	100.0%	286	86.7%	19.148
LNP	EDI	1,774	1,774	100.0%	1,534	86.5%	19.289
Loop with LNP	EDI	1,776	1,776	100.0%	1,505	84.7%	19.793
Resale	EDI	7,960	7,960	100.0%	6,746	84.7%	19.296
UNE Loop	EDI	1,030	1,030	100.0%	886	86.0%	19.354
UNE Loop-Port Combo	EDI	4,421	4,421	100.0%	3,878	87.7%	19.23
UNE Port	EDI	28	28	100.0%	23	82.1%	19.464
Subtotal		17,319	17,319	100.0%	14,858	85.8%	19.330
DL	TAG	495	480	97.0%	479	99.8%	0.097
LNP	TAG	2,661	2,633	98.9%	2,630	99.9%	0.106
Loop with LNP	TAG	2,664	2,634	98.9%	2,634	100.0%	0.074
Resale	TAG	11,942	11,794	98.8%	11,792	100.0%	0.056
UNE Loop	TAG	1,541	1,501	97.4%	1,500	99.9%	0.13
UNE Loop-Port Combo	TAG	6,631	6,562	99.0%	6,557	99.9%	0.056
UNE Port	TAG	41	40	97.6%	40	100.0%	0.
Subtotal		25,975	25,644	98.7%	25,632	100.0%	0.068
Total		**43,294**	**42,963**	**99.2%**	**40,490**	**94.2%**	**7.833**

[30] Only data from the two successful test cycles is presented here.

[31] An ACK is a Functional Acknowledgement, which is an electronic acknowledgement sent to a CLEC from BellSouth, verifying that BellSouth has received a firm order.

Table V-4.8: Day-One Retest One Peak Volume Test (July 13, 2000) FOC Detailed Results

Product Type	Interface	LSRs Sent	Number of FOCs Received	Percentage of Expected FOCs Received	FOCs Received < 3 hrs	Percentage of FOCs Received < 3 hrs	Average LSR To FOC Business Minutes
DL	EDI	330	322	97.6%	315	97.8%	71.136
LNP	EDI	1,774	1,771	99.8%	1,771	100.0%	50.474
Loop with LNP	EDI	1,776	1,734	97.6%	1,734	100.0%	49.246
Resale	EDI	7,960	7,944	99.8%	7,850	98.8%	72.089
UNE Loop	EDI	1,030	1,022	99.2%	1,014	99.2%	68.556
UNE Loop-Port Combo	EDI	4,421	3,003	67.9%	2,957	98.5%	51.702
UNE Port	EDI	28	20	71.4%	20	100.0%	48.786
Subtotal		17,319	15,816	91.3%	15,661	99.0%	63.016
DL	TAG	495	479	96.8%	479	100.0%	25.529
LNP	TAG	2,661	2,616	98.3%	2,616	100.0%	29.977
Loop with LNP	TAG	2,664	2,554	95.9%	2,554	100.0%	29.27
Resale	TAG	11,942	11,792	98.7%	11,792	100.0%	26.742
UNE Loop	TAG	1,541	1,503	97.5%	1,503	100.0%	26.18
UNE Loop-Port Combo	TAG	6,631	4,450	67.1%	4,450	100.0%	18.365
UNE Port	TAG	41	27	65.9%	27	100.0%	15.683
Subtotal		25,975	23,421	90.2%	23,421	100.0%	25.714
Total		43,294	39,237	90.6%	39,082	99.6%	40.750

Table V-4.9: Day-Two Peak Volume Test (July 17, 2000) Acknowledgement Detailed Results

Product Type	Interface	LSR Sent	Number of ACKs Received	Percentage of Expected ACKs Received	ACK Received < 30 min	Percentage of ACKs received < 30 min	Average LSR To ACK Business Minutes
DL	EDI	330	330	100.0%	306	92.7%	19.776
LNP	EDI	1,774	1,774	100.0%	1,649	93.0%	20.448
Loop with LNP	EDI	1,776	1,776	100.0%	1,592	89.6%	20.485
Resale	EDI	7,962	7,962	100.0%	7,294	91.6%	20.143
UNE Loop	EDI	1,030	1,030	100.0%	961	93.3%	20.15
UNE Loop-Port Combo	EDI	4,421	4,421	100.0%	3,983	90.1%	19.933
UNE Port	EDI	28	28	100.0%	26	92.9%	19.893
Subtotal		17,321	17,321	100.0%	15,811	91.3%	20.1485
DL	TAG	495	482	97.4%	482	100.0%	0.044
LNP	TAG	2,661	2,660	100.0%	2,660	100.0%	0.014
Loop with LNP	TAG	2,665	2,658	99.7%	2,658	100.0%	0.057
Resale	TAG	11,934	11,885	99.6%	11,885	100.0%	0.033
UNE Loop	TAG	1,543	1,532	99.3%	1,532	100.0%	0.023
UNE Loop-Port Combo	TAG	6,633	6,622	99.8%	6,622	100.0%	0.06
UNE Port	TAG	43	43	100.0%	43	100.0%	0.
Subtotal		25,974	25,882	99.6%	25,882	100.0%	0.040
Total		43,295	43,203	99.8%	41,693	96.5%	8.102

Table V-4.10: Day-Two Peak Volume Test (July 17, 2000) FOC Detailed Results

Product Type	Interface	LSRs Sent[32]	Number of FOCs Received	Percentage of Expected FOCs Received	FOCs Received < 3 hrs	Percentage of FOCs Received < 3 hrs	Average LSR To FOC Business Minutes
DL	EDI	330	322	97.6%	308	95.7%	76.788
LNP	EDI	1,774	1,766	99.5%	1,766	100.0%	58.824
Loop with LNP	EDI	1,776	1,723	97.0%	1,723	100.0%	55.564
Resale	EDI	7,962	7,938	99.7%	7,550	95.1%	81.465
UNE Loop	EDI	1,030	1,022	99.2%	981	96.0%	76.946
UNE Loop-Port Combo	EDI	4,421	4,407	99.7%	4,214	95.6%	81.976
UNE Port	EDI	28	20	71.4%	18	90.0%	65.786
Subtotal		17,321	17,198	99.3%	16,560	96.3%	76.3019
DL	TAG	495	462	93.3%	446	96.5%	33.115
LNP	TAG	2,661	2,600	97.7%	2,600	100.0%	28.316
Loop with LNP	TAG	2,665	2,528	94.9%	2,528	100.0%	26.913
Resale	TAG	11,934	11,370	95.3%	10,994	96.7%	34.034
UNE Loop	TAG	1,543	1,466	95.0%	1,424	97.1%	34.497
UNE Loop-Port Combo	TAG	6,633	6,335	95.5%	6,207	98.0%	34.052
UNE Port	TAG	43	29	67.4%	29	100.0%	21.163
Subtotal		25,974	24,790[33]	95.4%	24,228	97.7%	32.708
Total		**43,295**	**41,988**	**97.0%**	**40,788**	**97.1%**	**50.564**

[32] Includes planned errors, where no response is expected to be returned.
[33] Does not include 929 FOCs that were transmitted by BellSouth but not received by KCI.

E. Test Results: Provisioning Verification (O&P-5)

1.0 Description

The objective of the Provisioning Verification Test (O&P-5) was to perform a comprehensive review of BellSouth's ability to accurately and expeditiously complete the provisioning of Competitive Local Exchange Carrier (CLEC) orders. The test incorporated orders submitted through both the Telecommunications Access Gateway (TAG), tested in (O&P-2), and Electronic Data Interface (EDI), tested in (O&P-1) interfaces. This analysis focused on electronically ordered Unbundled Network Elements (UNEs) and on types of orders that require physical provisioning.

The Provisioning and Verification Test verified that orders submitted were properly provisioned, were completed within the pre-defined BellSouth intervals, and followed BellSouth methods and procedures for provisioning. This evaluation included orders supplemented and cancelled, as well as those submitted with anticipated errors in order to test the impact on provisioning.

For selected scenarios, specifically UNE-Loop orders with local number portability (LNP), involvement of CLECs operating in Georgia was solicited to incorporate the use of their facilities[1], as well as to enhance the "real world" nature of the test. Through interviews, the CLECs were also asked to provide information regarding their experiences with provisioning.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

The provisioning process begins once the Service Order Control System (SOCS) produces a complete and accurate service order[2]. The process for provisioning is determined by the type of service order (designed or non-designed). Once SOCS receives the order information, it is transmitted to the Service Order Analysis & Control System (SOAC). SOAC determines which downstream assignment and control systems require information necessary to complete order provisioning based on information contained in the service order.

There are four sub-processes associated with provisioning:

Order Assignment: Orders requiring cable pair assignments are routed to the Loop Facility Assignment Control System (LFACS) or are manually assigned

[1] The KCI CLEC did not utilize its own switch or facilities.

[2] See Section V, "Ordering & Provisioning Overview" for a complete description of the ordering process.

through the Address Facilities Inventory Group (AFIG). LFACS feeds appropriate downstream systems based on the service work assignment.

Order Design: This sub-process includes all circuit design activities. Orders for designed circuits are routed to the Trunks Integrated Record Keeping System (TIRKS) for automated design model matching, or are manually assigned by the Circuit Provisioning Group (CPG).

Service Work: This sub-process begins once the order assignment and design information is received by the various BellSouth Service Centers (i.e. Work Management Center [WMC] utilizing Work Force Administration [WFA] systems) for service work (i.e., implementation and testing of service). Service work is final once the service center systems are updated with work completion information.

Provisioning Completion: This sub-process begins once the service completion information is received by WFA – Control (WFA-C) for designed services, or by the Line Maintenance Operations System (LMOS) for non-designed services. Provisioning is complete once completion notice information is sent to SOCS and WFA, and billing information has been sent to either the Customer Records Information System (CRIS) or the Carrier Access Billing Systems (CABS).

The BellSouth UNE Center is the focal point for UNE conversions, including UNE analog loops and UNE ports. Specifically, the coordination center is responsible for all provisioning activity involving plain old telephone service (POTS), as well as special service circuits for UNE products, Interim Number Portability (INP), and Local Number Portability (LNP).

CLECs have the opportunity to choose from the following three types of analog loop conversions:

- Non-coordinated – Loop conversion occurs on a specific frame due date, with no coordination required from the BellSouth UNE Center.
- Coordinated non-time specific – Loop conversion occurs on a specific frame due date and is coordinated with the BellSouth UNE Center prior to the conversion. The BellSouth UNE Center coordinates conversion between the CLEC customer and a Central Office technician(s).
- Coordinated time specific – Loop conversion is performed at a specific frame due date and time. The BellSouth UNE Center coordinates conversion between the CLEC customer and a Central Office technician(s).

The provisioning process begins once BellSouth's UNE Center provisioning systems receive local service requests (LSRs). For coordinated analog loop conversions and port orders, a coordinator at the UNE Center verifies the order and places a call to the CLEC to obtain concurrence. During actual provisioning of a coordinated order, the UNE Center directs the relevant BellSouth

provisioning organizations, including the Central Office technician and Recent Change Management Administration Group (RCMAG) switch translation personnel, through the process. Following provisioning, the UNE Center then places another call to the CLEC to confirm completion and obtain acceptance of the ordered service installation.

2.2 Scenarios

Scenarios for this test can be found in Section 2.2 of O&P-1 EDI Functional Test and O&P-2 TAG Functional Test.

2.3 Test Targets & Measures

The test target was the provisioning of UNEs ordered through the EDI and TAG interfaces. Sub-processes, functions, evaluation criteria and associated test cross-reference numbers are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table V-5.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Receive Completion Notification	Receive completion notification transaction	Timeliness of Response Completeness of Data Accuracy of Response	O&P- 1-2-4, O&P-1-3-4, O&P-2-2-3, O&P- 2-2-4
	Match response to order transaction and confirmation	Provisioning Validation	O&P- 5-1-1
	Verify timeliness of completion	Provisioning Timeliness of Response / Completion	O&P- 5-1-1
Support Provisioning Process	Perform provisioning activity accurately	Provisioning Accuracy Procedural Adherance OS/DA Accuracy	O&P-5-2-1, O&P-5-2-2, O&P-5-2-3, O&P-5-2-4, O&P-5-2-5, O&P-5-2-7
	Confirm provisioning on orders requiring coordination	Provisioning Coordination Procedural Adherence	O&P-5-2-3, O&P-5-2-4
	Manage provisioning process	Provisioning Accuracy Procedural Adherence	O&P-5-2-1, O&P-5-2-2, O&P-5-2-3, O&P-5-2-4, O&P-5-2-5, O&P-5-2-6, O&P-5-2-7
BellSouth Provisioned Service	BellSouth provisioning methods and procedures	Procedural Adherence	O&P-5-2-4, O&P-5-3-1, O&P-5-3-2, O&P-5-3-3, O&P-5-3-4, O&P-5-3-5, O&P-5-3-6,

2.4 Data Sources

The data collected for the test are summarized in the table below. The data analyzed for this report include test results collected through January 2, 2001.

Table V-5.2: Data Sources for Provisioning Verification Test

Document	File Name	Location in Work Papers	Source
UNEC / CLEC Timing for Acceptance, MARCH input, and Completion Policy JA-UCTA-001 Issue 1, October, 1999	No Electronic Copy	O&P-5–A-2	BLS
SD / MA Policy Interconnection Services UG-SDMA-001 Issue 2a, September, 1999	No Electronic Copy	O&P-5-A-3	BLS
Central Office Unbundled Local Loops Provisioning Job Aid – September 24, 1999	No Electronic Copy	O&P-5-A-4	BLS
UNE Specific Work Instructions	No Electronic Copy	O&P-5-A-5	BLS
BellSouth Practices BellSouth Telecommunications Standard Unbundled Local Loops (ULL) Section 660-230-338 Draft Issue March 18, 1999	No Electronic Copy	O&P-5-A-6	BLS
UNE Turn-Up Designed Inside Cut Only Conversion Order – Interconnection Services UTDIC001 1b, August, 1999	No Electronic Copy	O&P-5-A-7	BLS
UNE Turn Up- Non-Designed Inside Cut Only Conversion UNE UTNIC001, August, 1999	No Electronic Copy	O&P-5-A-8	BLS
Screening – Designed Provisioning U-SDPR001 1c, September 10, 1999	No Electronic Copy	O&P-5-A-9	BLS
Screening – Non-Designed Provisioning UNE USNDP001 1c, October, 1999	No Electronic Copy	O&P-5–A-10	BLS
UNE- Ports & Combos Interconnections Services UG-ULSP-001 Issue 3c, September, 1999	No Electronic Copy	O&P-5-A-11	BLS
Network & Carrier Services – Non-Designed, Non-Coordinated, UBL SL1 with LNP	No Electronic Copy	O&P-5-A-12	BLS
BellSouth Interconnections Services Business Process and Performance Measurement Analysis September	No Electronic Copy	O&P-5-B-1	BLS

Document	File Name	Location in Work Papers	Source
3, 1999			
Provisioning Verification Benchmarks	No Electronic Copy	O&P-5-A-13	KCI
KCI Provisioning Tracking Sheet	No Electronic Copy	O&P-5-A-14	KCI
BellSouth SL1 Unbundled Loops Central Office Operations	No Electronic Copy	O&P-5-A-15	
Interview Summaries	No Electronic Copy	O&P-5-A-16	KCI/BLS
Interview Reports – LCSC, UNE Center, Recent Change Management Administratin Group (RCMAG)/Address Facilities Inventory Group (AFIG), AT&T, NextLink	Disk 2 – GA O&P 5.2.0	O&P-5-A-1	KCI/BLS
BellSouth *Job Aid for CLEC Pending Facilities (PF) Report* August 16, 1999	No Electronic Copy	O&P-5-A-17	BLS
BellSouth Job Aid – Pending Order Status Required Action by CLECs	No Electronic Copy	O&P-5-A-18	BLS

2.4.1 Data Generation/Volumes

This test did not rely on data generation or volume testing. This test relied on the submission of order transactions across BellSouth's TAG and EDI interfaces and observations of BellSouth provisioning personnel.

2.5 Evaluation Methods

Operational analysis techniques were used to evaluate BellSouth systems and processes. Selected test instances utilized in pre-order and order functional testing were verified for provisioning accuracy and coordination.

The Provisioning Verification Test was conducted through post-order activity validation of Customer Service Records (CSRs), switch translation reports, and Central Office validation on a sample of accounts. Interviews were held with BellSouth-GA provisioning personnel and with CLECs that purchase UNEs from BellSouth to provide a better understanding of the provisioning process from end-to-end. In addition, Loop "hot cuts" were observed for accuracy of provisioning as well as procedural adherence.

2.6 Analysis Methods

The Provisioning Verification Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provide the framework of norms, standards and guidelines for the Provisioning Verification Test.

The Georgia Public Service Commission voted on June 6, 2000 to approve a set of Service Quality Measurement- (SQM-) related measures and standards to be used for purposes of this evaluation[3]. For those evaluation criteria that do not map to the GPSC-approved measures, KCI has applied its own standard, based on our professional judgment.

For quantitative evaluation criteria where the test result did not meet or exceed the established standard or KCI benchmark, KCI conducted a review to determine whether the differential was statistically significant.

The data collected were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II. The results described below include analysis through January 2, 2001.

Table V-5.3: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Provisioning Validation			
O&P-5-1-1	Provisioning activity occurs on the date and time (if applicable) confirmed to the CLEC.	Satisfied	Since there is no documented BLS standard for timeliness of provisioning, KCI applied a standard of 95% for provisioning timeliness.[4] KCI reviewed 308 orders that completed for timeliness of provisioning. Of these, 90% completed on the confirmed due date provided on the Firm Order Confirmation (FOC). (See Table V-5.4) KCI conducted retest activity for timeliness of provisioning. KCI reviewed 130 orders that completed. Of these, 95% completed on the confirmed due date provided on the FOC. (See Table V-5.4)

[3] On January 16, 2001, the GPSC issued an order requiring BellSouth to report for business purposes a set of measures that differs in some cases from the requirements of the June 6 test standards.

[4] KCI applied standards based on its professional judgment in the absence of 1) GPSC-approved standards or 2) documented BLS guidelines.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-5-2-1	Provisioning was completed accurately for orders placed in O&P-1 EDI Functional Test and O&P-2 TAG Functional Test– Switch Translations Verification.	Not Satisfied	Since there is no documented BLS standard for accuracy of provisioning, KCI applied a standard of 95% for provisioning accuracy for switch translations. KCI verified the provisioning activity for 315 lines that have gone to completion. Of these, 91% of lines were provisioned correctly. (See Table V-5.6) KCI conducted retest activity for accuracy of provisioning based on analysis of switch translations. KCI verified the provisioning activity for 89 lines that had gone to completion. Of these, 77 (87)% were provisioned correctly. (See Table V-5.7) KCI has recommended closure of Exception 76 to the GPSC, with results for this evaluation criterion remaining Not Satisfied. See Exception 76 for additional information on this issue.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-5-2-2	Provisioning was completed accurately for orders placed in O&P-1 EDI Functional Test and O&P-2 TAG Functional Test – Customer Service Record (CSR) Verification.	Satisfied[5]	Since there is no documented BLS standard for accuracy of provisioning, KCI applied a standard of 95% for provisioning accuracy for CSRs. KCI verified the provisioning activity for 279 orders that went to completion. Of these, 65% of the orders were provisioned correctly. (See Table V-5.6) KCI conducted retest activity for accuracy of provisioning based on analysis of CSRs. KCI verified the provisioning activity for 72 orders that had gone to completion. Of these, 90% were provisioned correctly. (See Table V-5.7)
O&P-5-2-3	Coordinated Customer Conversions (Hot-Cuts) are completed on time by BLS technicians.	Satisifed[6]	The BLS Service Quality Measurements Plan – Provisioning – Report Measurement P-6A (revision date 7/00) applies a benchmark of 95% within + or – 15 minutes of the scheduled start time for coordinated customer conversions. KCI observed 63 actual coordinated customer conversions (Hot-Cuts) scheduled with Georgia CLECs. BLS completed 57 (90.4%) of the observed conversions within the specified interval. See Exceptions 82 and 106 for additional information on this issue. Exception 82 is closed. KCI has recommended closure of Exception 106 to the GPSC.

[5] Although the test percentage is below the benchmark of 95%, the statistical evidence is not strong enough to conclude that the performance is below the benchmark with 95% confidence. In other words, the inherent variation in the process is large enough to have produced the substandard result, even with a process that is operating above the benchmark standard. The p-value, which indicates the chance of observing this result when the benchmark is being met, is 0.0682 , above the .0500 cut-off for a statistical conclusion of failure.

[6] Although the test percentage is below the benchmark of 95%, the statistical evidence is not strong enough to conclude that the performance is below the benchmark with 95% confidence. In other words, the inherent variation in the process is large enough to have produced the substandard result, even with a process that is operating above the benchmark standard. The p-value, which indicates the chance of observing this result when the benchmark is being met, is 0. 0945 , above the .0500 cut-off for a statistical conclusion of failure.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-5-2-4	The coordinated provisioning procedures are practiced in the Central Office locations-Methods and Procedures.	Satisfied	Since there is no documented BLS standard for adherence to Methods and Procedures, KCI applied a standard of 85% adherence to specified methods and procedures. In total, KCI observed 1,377 tasks during loop conversions for adherence to Methods and Procedures. Of these, BLS performed 93% of the tasks without Methods and Procedure errors. Initally, KCI observed 220 tasks associated with coordinated loop conversions for which BLS's performance did not meet the target evaluation measures. On May 5, 2000, BLS modified its existing Methods and Procedures for loop conversions. Following release of the modified Methods and Procedures, KCI observed 1,157 tasks. Of these, BLS performed 97% of the tasks without Method and Procedures errors. See Exceptions 58 and 82 for additional information on this issue. Exceptions 58 and 82 are closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-5-2-5	Provisioning was completed accurately for orders placed in O&P-1 EDI Functional Test and O&P-2 TAG Functional Test – Directory Listings.	Satisfied[7]	Since there is no documented BLS standard for accuracy of provisioning of Directory Listings, KCI applied a standard of 95% for provisioning accuracy of Directory Listings. KCI verified 138 Directory Listing orders. Of the 138 orders tested, 88% provided correct directory information. (See Table V-5.6) KCI conducted retest activity for accuracy of provisioning based on analysis of the Directory Listing database. KCI verified the provisioning activity for 55 orders that had gone to completion. Of these, 91% of orders were provisioned correctly. (See Table-5.7) KCI has recommended closure of Exception 76 to the GPSC. See Exception 76 for additional information on this issue.
O&P-5-2-6	Jeopardy (Pending Facilities) Notifications provide complete information.	Satisfied	Seventeen Jeopardy (Pending Facilities) notifications[8] have been received by KCI. Of these, 11 were provided electronically, three were provided both electronically and via fax, and three were provided via fax only. Once the jeopardy notification is received, information regarding the status of the Pending Facilities (PF) order can be found on the CLECs personal Web pages (https://clec.bellsouth.com[9]) provided by BLS. This report includes details regarding the status of the facilities in

[7] Although the test percentage is below the benchmark of 95%, the statistical evidence is not strong enough to conclude that the performance is below the benchmark with 95% confidence. In other words, the inherent variation in the process is large enough to have produced the substandard result, even with a process that is operating above the benchmark standard. The p-value, which indicates the chance of observing this result when the benchmark is being met, is 0. 1397 , above the .0500 cutoff for a statistical conclusion of failure.

[8] Please see O&P-1 and O&P-2 results for additional information regarding Jeopardy Notification completeness.

[9] This is a secure Web site requiring passwords which are obtained through the BellSouth account team representatives.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			addition to estimated completion date[10] (ECD) and estimated service date[11] (ESD) provide by BLS. Information regarding the order is provided on the CLEC Web page while the order remains in PF status. KCI did not observe the Web page prior to orders being removed from PF status. KCI evaluated orders placed into Pending Facilities status during retest activity. Information regarding status of order was found on the CLEC Web page while the order remained in PF status.
O&P-5-2-7	Design Layout Records are provided for SL2 (Design) Loops.	Satisfied	From December 10, 1999 through April 30, 2000, BLS did not provide Design Layout Records (DLR) for SL2 Loops to KCI, as required in BLS internal procedures. On May 1, 2000, BLS began providing KCI with DLRs on SL2 loops. Additionally, BLS has now provided KCI with the DLRs that were not previously received.
Methods and Procedures			
O&P-5-3-1	Procedures in the coordination process are in place.	Satisfied	The procedures for coordinated conversions are currently in place. This information is found in the *UNE Specific Work Instructions*, a BLS internal document. This document includes activities for both the UNE Center and the Central Office. Based on information obtained from CLEC interviews, this information is also included in CLEC contracts.

[10] Estimated Completion Date is provided by BellSouth engineering when construction jobs are necessary to resolve a PF condition. This information is posted to the Web site within five days of the order being placed into PF status.

[11] Estimated Service Date provides information regarding when the CLECs end-user will be placed in service. This information is posted to the Web site within five days of the order being placed into PF status.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-5-3-2	Procedures for Central Office work are defined and utilized.	Satisfied	The processes for BLS Central Office work are documented in internal BLS M&Ps regarding provisioning activities for both coordinated and non-coordinated conversions, as well as for designed and non-designed conversions . These M&Ps include: – *Non-Design Unbundled Voice Loops and Non-Designed Unbundled Sub-Loops (5/5/00)* – *Designed 2-Wire Loops and Ground Start Voice Loops (5/5/00)* – *Unbundled Local Loops ULL (section 660-230-338 5/5/2000)* – *Central Office UNE Specific Work instructions* – *Central Office Unbundled Loop Provisioning Job Aid* – *Interconnection Service, UNE Turn Up documents* – *BellSouth Practices–BellSouth Telecommunications Standard Section (660-230-338*).
O&P-5-3-3	Procedures for placing an order into Missed Appointment (MA) Status are defined.	Satisfied	Procedures are documented in the *SD/MA Policy Interconnections Services* internal BLS document. The CLEC is responsible for supplementing an order in all cases in which it is placed in Missed Appointment (MA) status.
O&P-5-3-4	CLEC procedures for escalation are defined.	Satisfied	The escalation procedures, cycle times, and contact numbers are documented in the *CLEC Facilties Based Advisory Guide* (10/22/98). The escalation procedure begins with the UNE Center representative and can rise to the AVP level.
O&P-5-3-5	Non-available facilites (Pending Facilities) policy is clearly defined.	Satisfied	Definitions for an order placed in Pending Facilities (PF) are clearly defined in the *Job Aid for CLEC Pending Facilities (PF) Report* posted on the BLS Web site (http://www.interconnection.bellsouth.com/carrier/carrier_pdf/91081508.pdf).

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-5-3-6	Policy for acceptance of completed orders is clearly stated.	Satisfied	The policy for acceptance of conversions by CLECs is clearly stated in the *UNEC/CLEC Timing for Acceptance, MARCH input and Completions Policy (10/99).*

Table V-5.4: Initial Results[12] - Provisioned Date[13] vs. FOC Due Date[14]

Interval (Provisioning Date) – (FOC Due Date)	Number of Instances	Percent of Total
-2	1	3%
-1	2	6%
1	7	22%
2	3	10%
4	1	3%
5+	18	56%
Total	32	100%

Table V-5.5: Retest Results[15] - Provisioned Date vs. FOC Due Date

Interval (Provisioning Date) – (FOC Due Date)	Number of Instances	Percent of Total
-4	1	14%
1	2	29%
2	1	14%
4	2	29%
5	1	14%
Total	7	100%

[12] Data presented in this table includes provisioning verification results for transactions submitted during the initial test conducted December 1999 through July 2000.

[13] Provisioned date is defined by BellSouth as the date on which provisioning work, inclusive of systems, Central Office, and field activity, has been completed

[14] FOC Due Date is defined as the due date provided in the FOC. It is the date on which BellSouth commits to complete provisioning of a customer's service, subject to a facilities check.

[15] Data presented in this table includes provisioning verification results for transactions submitted during the retest conducted on August 2000 through October 2000.

Table V-5.6: Initial Results[16] - Summary of Provisioning Validation Results[17]

	Total Tested	Accurately Provisioned	% of Total	Number of Errors - Flow Through[18]	% of Total Errors	Number of Errors- Non-Flow Through	% of Total Errors
Customer Service Record	279	181	65%	42	43%	56	57%
Switch Translation	315	288	91%	17	63%	10	37%
Directory Listing	138	121	88%	6	35%	11	65%

Table V-5.7: Retest Results[19] - Summary of Provisioning Validation Results[20]

	Total Tested	Accurately Provisioned	% of Total	Number of Errors - Flow Through[21]	% of Total Errors	Number of Errors- Non-Flow Through	% of Total Errors
Customer Service Record	72	65	90%	2	29%	5	71%
Switch Translation	89	77	87%	0	0%	12	100%
Directory Listing	55	50	91%	0	0%	5	100%

[16] Data presented in this table includes provisioning verification results for transactions submitted during the initial test conducted on December 1999 through July 2000.
[17] For CSRs and Directory Listings, validation was conducted on a per-order basis. For switch translations, validation was conducted on a per-line basis. Note that some of the validation figures are disputed by BellSouth. Meetings to validate KCI data are in progress.
[18] For electronically submitted LSRs, a flow through service request proceeds through BellSouth's OSS to generate an FOC without manual intervention. A non-flow through service request falls out for manual handling prior to generation of an FOC.
[19] Data presented in this table includes provisioning verification results for transactions submitted during the retest conducted on August 2000 through October 2000.
[20] For CSRs and Directory Listings, validation was conducted on a per-order basis. For switch translations, validation was conducted on a per-line basis. Note that some of the validation figures are disputed by BellSouth. Meetings to validate KCI data are in progress.
[21] For electronically submitted LSRs, a flow through service request proceeds through BellSouth's OSS to generate an FOC without manual intervention. A non-flow through service request falls out for manual handling prior to generation of an FOC.

F. Test Results: Order Processing Systems Capacity Management Evaluation (O&P-6)

1.0 Description

The Order Processing Systems Capacity Management Evaluation entailed a detailed review of the methods and procedures in place to plan for and manage projected growth in the use of the Electronic Data Interchange (EDI), Telecommunications Access Gateway (TAG), Local Exchange Ordering (LEO), Local Exchange Service Order Generator (LESOG), Local Number Portability (LNP), and Service Order Control System (SOCS) order processing systems.

The objectives of this evaluation were to analyze the capabilities of BellSouth capacity management functions in relation to the order processing applications, and to determine whether the procedures were adequate to identify and implement capacity increments to satisfy projected customer business volumes on a timely basis.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

The EDI Gateway supports the transmission of orders, order receipt acknowledgements, and order notices. LEO performs formatting checks on orders and passes the Local Service Request (LSR) to LESOG. LESOG converts the LSR into a BellSouth internal service order and passes the order to SOCS. Orders for LNP are routed through the LNP Gateway, which performs edit checks and passes the order to SOCS for provisioning. SOCS receives and routes service orders to the appropriate downstream provisioning and billing systems. TAG, like EDI, provides the CLECs with order functionality including LSR submission, order status, and order notices. See Section V, "Ordering & Provisioning Overview," for a complete description of TAG, EDI, LEO, LESOG, LNP, and SOCS.

The capacity management process for the EDI, LEO, LESOG, LNP, SOCS, and TAG systems is distributed along various lines of responsibility. BellSouth has outsourced operation and application support for mainframe and mid-range systems.

The EDI, LEO, and SOCS systems operate in a mainframe environment. The mainframe operations groups manage the mainframe hardware, which includes Central Processing Unit (CPU), core memory, Direct Access Storage Device (DASD), and tape library systems. The application teams manage the production software and databases.

The LESOG, LNP, and TAG systems operate in a mid-range environment. The midrange operations groups manage the midrange hardware. The application teams provide mid-range software support.

The BellSouth Transport Team manages day-to-day operations for the network and collects data on network performance.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was the order processing systems capacity management process. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table V-6.1: Test Target Cross Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Order Processing Systems Capacity Management	Data collection and reporting of business volumes, resource utilization, and performance monitoring	Adequacy and Completeness of data collection and reporting	O&P-6-1-1, O&P-6-1-2, O&P-6-1-3, O&P-6-1-4, O&P-6-1-5, O&P-6-1-6
	Data verification and analysis of business volumes, resource utilization, and performance monitoring	Adequacy and Completeness of data verification and analysis	O&P-6-1-7, O&P-6-1-8, O&P-6-1-9, O&P-6-1-10, O&P-6-1-11
	Systems and capacity planning	Adequacy and Completeness of systems and capacity planning	O&P-6-1-12, O&P-6-1-13, O&P-6-1-14, O&P-6-1-15

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table V-6.2: Data Sources for Order Processing Systems Capacity Management Evaluation

Document	File Name	Location in Work Papers	Source
EDI Overview, EDI In- & Out-Bound Processing, LEO, LEO – Test, TCIF Issue 7 EDI Map and Application File Format Design	Edi4KCL.ppt, ls7_42.xls	O&P-6-A-1	BLS
Telecommunications Access Gateway (TAG) Architecture/Detailed Design [Issue 1, September 1999, Release 3.1]	Design.doc	O&P-6-A-2	BLS
TAG Configurations	Tagconfig.doc	O&P-6-A-3	BLS
Tivoli Checklist, Tivoli for BLP, Tivoli for TAG, Tivoli Monitoring (15 November, 1999)	Tivcheck.doc, Tivmon.doc, Tivoli_blp.doc, Tivoli_tac.doc	O&P-6-A-4	BLS
Monthly Metric Data Summary (LENS, TAG)	No electronic copy	O&P-6-A-5	BLS
Interview Summary – TAG Administration	Interview_summary_110499.doc	O&P-6-A-6	KCI
Interview Summary – Encore Management	Interview_summary_120999.doc	O&P-6-A-7	KCI
Interview Summary – EDI Management	Interview_summary2_121099.doc	O&P-6-A-8	KCI
Interview Summary – EDI Project Team	Interview_summary_121499.doc	O&P-6-A-9	KCI
EDI Daily Monitoring and Help Guide	EDIMONIT.DOC	O&P-6-A-10	BLS
EDI Reports (Bytes by Month, Trading Partners, Trading Partner Relationships, EDI Bytes)	REPORT1B.XLS, REPORT2T.XLS, REPORT3R.XLS, REPORT4C.XLS	O&P-6-A-11	BLS
Interview Summary – Capacity Planner	Interview_summary3_03292000.doc	O&P-6-A-12	KCI
Interview Summary2 – Product Manager	Interview_summary_03292000.doc	O&P-6-A-13	KCI
Interview Summary3 – Second Capacity Planner	Interview_summary2_03292000.doc	O&P-6-A-14	KCI

Document	File Name	Location in Work Papers	Source
Interview Summary – Product Support Manager	Interview_summary2_04132000.doc	O&P-6-A-15	KCI
Interview Summary2 – Forecast Manager	Interview_summary_04132000.doc	O&P-6-A-16	KCI
Interview Summary – Capacity Planning Project Manager	Interview_summary2_04182000.doc	O&P-6-A-17	KCI
Interview Summary2 – Capacity Planning Manager	Interview_summary_04182000.doc	O&P-6-A-18	KCI
Interview Summary – Support Manager	Interview_summary_04192000	O&P-6-A-19	KCI
BellSouth Telecommunications Information Technology – Capacity Planning Methodology, Practices and Requirements – July, 1999	Cap_methodology.doc	PRE-6-A-1	BLS
Mainframe Software Support Procedure Manual	ipsa5001.doc	BLG-3-A-3	BLS
BellSouth Mainframe CPU Configuration RAO's	hardware.txt RAO.ppt	BLG-3-A- 4	BLS
Framework and Column Descriptions for Mainframe Performance Reporting	PT.xls	BLG-3-A-9	BLS
Scratch Tape Statistics By Site, 10/01/99	SCRATCH TAPE STATISTICS BY SITE.doc	BLG-3-A-10	BLS
Active Tape Count By Site, 07/01/99-10/01/99	ACTT1099.doc	BLG-3-A-11	BLS
Strobe Performance Profile, 11/04/98	stbrtp.doc	BLG-3-A-12	BLS
StorageGUARD Pool Utilization	Stguard.doc	BLG-3-A-13	BLS
Concurrent Tape Drive Usage Report Card, September, 1999	CONC0999.XLS.xls	BLG-3-A-14	BLS
StorageGUARD Pool Summary History	History.doc	BLG-3-A-15	BLS
InTune Report	Snap.txt	BLG-3-A-16	BLS
CPU Measurement Reports	CPU.xls	BLG-3-A-17	BLS

Document	File Name	Location in Work Papers	Source
Interview Summary – Mainframe Operations	Interview_summary2_111699.doc	BLG-3-A-18	KCI
Interview Summary – Billing test team	Interview_summary2_112999.doc	BLG-3-A-20	KCI
Interview Summary – Database administration	Interview_summary1_112999.doc	BLG-3-A-21	KCI
Interview Summary – Mainframe Performance & Tuning	Interview_summary3_112999.doc	BLG-3-A-22	KCI
Mainframe Resource Utilization--Top 10 (CPU, DASD, and Tape) Consumers	Top 10 Consumers Sept.xls	BLG-3-A-23	BLS
MIP Projections	MVS MIPS Projections.xls	BLG-3-A-27	BLS
Projected DASD Retirements for 2000	2000-DASD-Retirements.xls	BLG-3-A-28	BLS
B2SY-S2ST-G2SY Application Hours	Trend CPU_Corp.xls	BLG-3-A-29	BLS
A6SY Application Hours	Trend CPU-RAO.xls	BLG-3-A-30	BLS
Letter on Mainframe Asset Planning inputs	MF-capacity planning letter.doc	BLG-3-A-31	BLS
EDS Mainframe Requirements	EDS Mainframe reqs.doc	BLG-3-A-32	BLS
System Production Readiness Requirements	Readiness checklist.doc	BLG-3-A-33	BLS
Critical Application Availability (Andersen & EDS)	KCIdata.xls	BLG-3-A-34	BLS
Application Availability	GA2000SLAs.xls	BLG-3-A-35	BLS
Interview Summary – BCS Transport	Interview_summary_121599.doc	PRE-6-A-2	KCI
BOSIP Network Diagrams	Atlntadc.ppt Bosipcor.ppt Brmghmdc.ppt Chrltdc.ppt Jcksondc.ppt Miamidc.ppt Nsvlledc.ppt	PRE-6-A-3	BLS
Birmingham BayNet Protocol Distribution	Bay1.gif	PRE-6-A-4	BLS
Monthly Average Utilization - Birmingham	FDDI1.gif	PRE-6-A-5	BLS
LAN Interface With In Utilization over 20%	LAN~1.htm	PRE-6-A-6	BLS
Average Latency Between RDC's Originating from Birmingham	Monthl~1.gif	PRE-6-A-7	BLS

Document	File Name	Location in Work Papers	Source
Monthly Maximum IP Routes Known to Core	Monthl~2.gif	PRE-6-A-8	BLS
WAN Interface With In Utilization over 30%	SMDS1.gif	PRE-6-A-9	BLS
Daily Interface Performance Statistics for PNSCGS04 to JCVLBA19	Pnscgs04.gif	PRE-6-A-10	BLS
Total Traffic Across Core	WAN~1.htm	PRE-6-A-11	BLS
Server Utilization Report	Viewar~1.csv	PRE-6-A-12	BLS
Interview Summary – Transport Solutions	Interview_summary1_ 121099.doc	PRE-6-A-13	KCI
Interview Summary – Asset Planning	Interview_summary1_ 01202000.doc	PRE-6-A-14	KCI
BSCN – DS3 Equivalent Capacity	Bscncap.ppt	PRE-6-A-15	BLS
BellSouth Official Communications Special Services Facility Forecast for 2000 – 2002 and Update to the 1999 Forecast (Cover Letter)	Ss99ltr.doc	PRE-6-A-16	BLS
BellSouth Telecommunications Official Communications Service Requirements And Special Service Forecast	Bscn1999.doc	PRE-6-A-17	BLS
Capacity Planning Metrics for BST Assets Managed by BCS	Capaci~1.doc	PRE-6-A-18	BLS
BellSouth Telecommunications Official Communications Service Requirements Mechanized Input Form	Bscnele.xls	PRE-6-A-19	BLS
Trunk Utilization Report	Rpdn_0110.doc	PRE-6-A-20	BLS
BellSouth Integrated Broadband Network Diagram	Ibtcp911.ppt	PRE-6-A-22	BLS
Transport Asset Planning – Infrastructures	Infraex.ppt	PRE-6-A-23	BLS
Interview Summary – Network Asset Planner	Interview_summary2_0 1202000.doc	PRE-6-A-24	KCI
Questionnaire designed to aid Capacity Planner and / or Technical Architect in characterizing an application workload	Config.xls	PRE-6-A-25	BLS
Interview Summary – Midrange Performance Monitoring	Interview_summary_01 252000.doc	PRE-6-A-26	KCI
Printouts from Midrange Performance Data Warehouse	No Electronic Copy	PRE-6-A-27	BLS

Document	File Name	Location in Work Papers	Source
BGSCOLL Problem Resolution Guide for Collection of Nodes	Probres.doc	PRE-6-A-28	BLS
Data Collected 11/19/99 – (Status Report, by project, of Midrange data collection tool installation)	Perforn1.doc	PRE-6-A-29	BLS
Interview Summary – Capacity Planner	Interview_summary_ 01272000.doc	PRE-6-A-30	KCI
LNP Usage Report	LNP Usage.xls	PRE-6-A-32	BLS
TAG Usage Report	TAG Usage.xls	PRE-6-A-35	BLS
BOSIP Support Web Site Printouts – Homepage	No Electronic Copy	PRE-6-A-39	BLS
BOSIP Support Web Site Printouts – Shared BOSIP Network	No Electronic Copy	PRE-6-A-40	BLS
BOSIP Support Web Site Printouts – BCS Support	No Electronic Copy	PRE-6-A-41	BLS
BOSIP LAN and WAN Network Topology Overview	No Electronic Copy	PRE-6-A-42	BLS
Datakit Support Homepage and affiliated web pages	No Electronic Copy	PRE-6-A-43	BLS
ENCORE Successful Logins vs. Failed Logins	No Electronic Copy	PRE-6-A-44	BLS
TRENDview HTML Reports	No Electronic Copy	PRE-6-A-45	BLS
TRENDview HTML Reports – Overutilized/Underutilized WAN Interfaces	No Electronic Copy	PRE-6-A-46	BLS
TRENDview HTML Reports – WAN interface utilization graphed over time	No Electronic Copy	PRE-6-A-47	BLS
Printouts from EDS Midrange Performance Data Warehouse Web Site	No Electronic Copy	PRE-6-A-48	BLS
Project List	No Electronic Copy	PRE-6-A-49	BLS
ENCORE-LESOG Performance Data	No Electronic Copy	PRE-6-A-51	BLS
LNP Performance Data	No Electronic Copy	PRE-6-A-54	BLS
LNPIT Performance Data	No Electronic Copy	PRE-6-A-55	BLS
LNPTAG Performance Data	No Electronic Copy	PRE-6-A-56	BLS
LSOG (LESOG – sp) Performance Data	No Electronic Copy	PRE-6-A-57	BLS
TAG Performance Data	No Electronic Copy	PRE-6-A-60	BLS

Document	File Name	Location in Work Papers	Source
Capacity Planning & Management Playbook (What we do & How we do it) Working Draft – Not Approved	No Electronic Copy	O&P-6-C-1	BLS
BST Product Forecasts	No Electronic Copy	PRE-6-A-61	BLS
N&CS Forecasting Process	Foreca~1.ppt	PRE-6-A-62	BLS
Network & Carrier Service Forecasting	No Electronic Copy	PRE-6-A-63	BLS
The Forecast Process	No Electronic Copy	PRE-6-A-64	BLS
Capacity Management Notification Process	Capnot1.doc	PRE-6-A-65	BLS
Capacity Forecasts Contacts for Encore & LNP Applications	Capconts.doc	PRE-6-A-66	BLS
LSR Actuals & Forecast Report (1998 – 2004)	No Electronic Copy	PRE-6-A-67	BLS
Monthly Capacity Report – Network Summary – March 2000	Network summary.xls	PRE-6-A-68	BLS
LSR Volume Report by data source for 3/2000	Totals.gif	PRE-6-A-69	BLS
LCSC Center Activity Report (3/2000)	Resale.doc	PRE-6-A-70	BLS
LCSC Center Activity Report (4/2000)	April car.doc	PRE-6-C-1	BLS
LCSC Center Activity Report (NON Reqtyp E + NON Reqtyp J)	Non-E-J.doc	PRE-6-C-2	BLS
LCSC Center Activity Report (Reqtyp M Only)	TypeM.doc	PRE-6-C-3	BLS
LCSC Center Activity Report (Reqtyp J Only)	TypeJ.doc	PRE-6-C-4	BLS
Daily LCSC Order Flow Summaries	Lesog.doc	PRE-6-C-5	BLS
Third Party Testing Forecast of Volumes – EOY 2001	No Electronic Copy	PRE-6-C-6	BLS
Numbers Ported per Day (Week of 3/1/99 – 9/20/99)	No Electronic Copy	PRE-6-C-7	BLS
Maximum Number of Ports Per Day Per Week and Projection through 2001	No Electronic Copy	PRE-6-C-8	BLS
Number of LSRs Process Per Day (Week of 3/1/99 – 9/20/99)	No Electronic Copy	PRE-6-C-9	BLS

Document	File Name	Location in Work Papers	Source
Maximum Number of LSRs Per Day Per Week and Projections through 2001	No Electronic Copy	PRE-6-C-10	BLS
Transaction to System Activity Map	No Electronic Copy	PRE-6-C-11	BLS
Business Drivers Form	No Electronic Copy	PRE-6-C-12	BLS
Email with LCSC Service Rep Headcount Forecast	No Electronic Copy	PRE-6-C-13	BLS
Electronic Interface Trends	Nov99T~1.ppt Trends.ppt Trends1.ppt FEBLSR.ppt MARLSR.ppt	PRE-6-C-14	BLS
Server Usage Report (LSOG)	LSOGUsage.xls	PRE-6-C-15	BLS
Encore Forecasts	Encore Forecasts.xls	PRE-6-C-16	BLS
Encore Capacity Analysis Assumptions	Encore capacity analysis assumptions.doc	PRE-6-C-17	BLS
Capacity Analysis Report Encore Systems	Encore.doc	PRE-6-C-18	BLS
Selective Carrier Routing, Full Deployment, Decision Package for Interconnection	No electronic copy	PRE-6-C-19	BLS
Memorandum to EDS Centralized System Administrators re: BTSI Capacity Planning	CSA Performance Letter.doc	PRE-6-C-20	BLS
BTSI Capacity Upgrade Request / EDS Performance Analysis Workflow	BTSI Performance Process.doc	PRE-6-C-21	BLS
Project Charter: Encore SLA Performance	ProjCharter063000.doc	PRE-6-C-22	BLS
Memo to Capacity Planners re: CLEC SQM Performance information availability via the PMAP website	CapPlanmemo0700.doc	PRE-6-C-23	BLS

2.4.1 Data Generation/Volumes

This test relied on documentation reviews and interviews with BellSouth personnel.

2.5 Evaluation Methods

The capacity management evaluation began with a review of systems documentation and process flows for order processing. Interviews were

conducted with system administration personnel responsible for the operation of EDI, LEO, LESOG, LNP, SOCS, and TAG order processing systems. These interviews were supplemented with an analysis of BellSouth capacity management procedures as well as collection of evidence of related activities such as: periodic capacity management reviews; system reconfiguration / load balancing; load increase induced upgrades; and, resource utilization and performance management reporting.

2.6 Analysis Methods

The Order Processing Systems Capacity Management Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria, provided the framework of norms, standards, and guidelines for the Order Processing Systems Capacity Management Evaluation.

The data collected from inspections and interviews were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table V-6.3: O&P-6 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-6-1-1	There is an established process for capturing business and transaction volumes	Satisfied	For EDI, the Harbinger tool provides the capability to measure and track business transaction volumes. Data is currently collected on EDI monthly volumes. The Tools & Support Team can identify the number of transaction sets, types of transactions, etc. Reports are created with historical trending of monthly transaction volumes in the mainframe environment. For TAG, the LSR Volume Report, from the BLS ICOPS (Interconnection Operations) Web site, provides a listing of TAG LSRs received from LEO and LNP. LSRs in this report are organized by Service / Activity Type (e.g., Loop,

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Loop with INP, BLS Retail, Resale, etc.). The LCSC Center Activity Reports provide a monthly view of (Resale and UNE) LSRs received from BLS customers via FAX, EDI, LENS, and TAG. LEO, LESOG, and SOCS order information is also referenced within the LCSC Center Activity Reports. Collection and reporting of transaction volumes was discussed during interviews with the application managers. KCI was provided copies of the EDI and LCSC reports.
O&P-6-1-2	There is an established process for capturing resource utilization	Satisfied	The EDI translator is a mainframe application. EDI system resource utilization and performance monitoring are covered under the efforts in the mainframe operations groups. Mainframe resource utilization data is collected and reported monthly. Midrange and network resource utilization data is tracked and reported on the Midrange Performance Monitoring Web site and the BellSouth Open System Interconnect Protocol (BOSIP) home page respectively. These Web sites are available to and accessed by the resources responsible for monitoring the performance of systems and networks. The processes for capturing resource utilization were described during interviews with members of the groups responsible for these activities. In addition, KCI reviewed the BOSIP home page and the Mid-range Performance Monitoring Web site. Sample resource utilization reports were collected and reviewed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-6-1-3	Resource utilization is monitored for system components and elements	Satisfied	The Performance and Tuning Group monitors Multiple Virtual Storage (MVS) mainframe components such as storage utilization (central storage), memory paging rates, batch jobs, Time Sharing Option (TSO) sessions, Direct Access Storage Device (DASD) response times, tape drives allocated, Central Processing Unit (CPU) percentage busy, etc. Sample mainframe resource utilization reports were collected during the test. For midrange systems, Disk input/output (I/O), Network I/O, as well as resource utilization for CPUs, memory, and file systems are tracked and reported. BLS also collects resource utilization data on CPU, buffer and memory utilization for the routers, circuits utilization of the routers, LAN interfaces on routers, hubs and the Fiber Distributed Data Interface (FDDI) rings. For the circuits and LAN interfaces, reports are generated for the devices with the highest utilization. The midrange and network resource utilization data collection processes were described during interviews and verified through a review of the BOSIP home page, review of the Midrange Performance Monitoring Web site and through the collection of sample reports.
O&P-6-1-4	Instrumentation and other tools are used to collect resource utilization data	Satisfied	InTune and Strobe are mainframe MVS tools used to provide information on where applications are spending CPU cycles, wait times, DASD volumes and tracks accessed, etc. These application-profiling tools operate on IMS and DB2 databases. Storage Guard is an on-line system that takes a snapshot of DASD storage (each VTOC) every 30 minutes. Through the on-line

Test Cross-Reference	Evaluation Criteria	Result	Comments
			facility it is possible to view the capacity and utilization of each storage pool. DFSMS is a hierarchical storage manager that checks for previous messages. Targets are set for storage utilization. If a device is over the utilization target, then the utility searches for old data (past period set for retention for all data types) that can be moved to a lower priority stage. These tools were identified through interviews with the mainframe operation group, and sample reports were provided to KCI. The data used to produce midrange system resource utilization reports are gathered through a variety of tools and utilities including Best/1, BGSCOLL, GlancePlus, System Activity Recorder (SAR), Unicenter TNG, and Tivoli. The Best/1 modeling and simulation capacity planning tool is used for monitoring of mid-range system resources. The BGSCOLL tool collects data in 15-minute intervals daily. The data is compiled into daily and monthly averages. Three months of data are stored for trending. The tools used to collect midrange resource utilization data were described during interviews and sample reports were collected and reviewed. Tools running to collect network resource utilization data include TRENDsnmp (from DeskTalk), Spectrum Enterprise Manager, OpenView, Nerve Center for BOSIP (the router network), and Starkeeper (for the Datakit networks). These tools were described during interviews with the BOSIP Support manager and sample reports were provided to KCI.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-6-1-5	Performance is monitored at all applicable levels (e.g. network, database server, application server, client, etc.)	Satisfied	The Performance and Tuning Group monitors system resources for mainframe computers [i.e., MVS mainframe components such as storage utilization (central storage), memory paging rates, batch jobs, TSO sessions, DASD response times, tape drives allocated, CPU percentage busy, etc.] The site manager ensures that DFSMS is running, checks for previous messages, and checks tape drive status. The performance of the (midrange) application servers is monitored daily by the midrange operations groups. The BLS Transport Team is responsible for day-to-day operations of the networks (comprised of components such as routers, ATM switches, and hubs.). The team is comprised of three groups: PACS, which provides support and problem resolution for escalated network performance issues; Proactive Performance Analysis, which looks at the networks to prevent problems; and the Tools Group. This team collects the data on network performance. Homegrown scripts have been written to collect data such as latency and packet loss across the BOSIP core. These activities were described during interviews with the Application Support Teams, Midrange Operations Group, and Network Support Team. In addition, sample performance reports were collected.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-6-1-6	Instrumentation and other tools are used to monitor performance	Satisfied	The CMF tool looks at system logs to collect mainframe performance data. MainView (a graphical user interface for CMF) presents the performance data collected by CMF in a graphical format so that trending can be performed. The Mid-Range Performance Monitoring and the BOSIP Web sites are available to and accessed by the resources responsible for monitoring the performance of (midrange) systems and network elements. Best/1, GlancePlus, SAR, Unicenter TNG, and Tivoli are tools used to monitor mid-range performance. TRENDsnmp (from DeskTalk), Spectrum Enterprise Manager, OpenView, Nerve Center for BOSIP (the router network), and Starkeeper (for the Datakit networks) are tools used to monitor network performance. Performance monitoring activities were described during interviews and sample reports were provided to KCI. The Midrange Performance Monitoring Web site and the BOSIP home page were reviewed.
O&P-6-1-7	There is an established process for forecasting business volumes and transactions	Satisfied	During initial testing, no established, ongoing process for forecasting business volumes and transactions was observed for BLS's order processing systems. See Exception 25 for additional information on this issue. KCI conducted additional interviews and gathered further process documentation during retest activities. KCI observed that the product managers prepare a five-year LSR forecast, which is provided to the capacity planners. The product managers also provide information on changes in the percentage of manual work and the distribution of the LSR volume

Test Cross-Reference	Evaluation Criteria	Result	Comments
			between the various electronic interfaces. Exception 25 is closed.
O&P-6-1-8	The business volume tracking and forecasting data is at an appropriate level of detail to use for capacity management	Satisfied	Mainframe (EDI) business volumes and transactions are tracked and reported monthly. The MVS Storage Management Group receives data from the Mainframe Tower Management Group on expected growth, by site. These data are analyzed to determine how much of the forecast growth can be absorbed by current storage capacity and this information is brought to the Triad / Quarterly meetings. During these meetings, decisions are made on how much storage capacity to purchase for each site. During initial testing, no process was observed for the collection of mid-range (LESOG, LNP, and TAG) business and transaction volumes, and no established, ongoing process for forecasting business and transaction volumes was observed for BLS's EDI or TAG interfaces. See Exception 25 for additional information on this issue. As retest activities, KCI conducted additional interviews and gathered further documentation of BLS's capacity management processes. KCI also observed the capacity planning process and was provided with a copy of the Capacity Analysis Report, ENCORE Systems. (The ENCORE environment includes LENS, LEO, LESOG, LNP, TAG and EDI.) Historical data is collected and analyzed to develop / confirm assumptions used in the capacity planning process. For example, pre-order to order transaction ratios and peak hourly daily volume are determined from reports of transaction volumes. In the capacity

Test Cross-Reference	Evaluation Criteria	Result	Comments
			planning model, LSR forecast data is used to modify the system(s) workload over time to assess the impact of changes in transaction volume on system resources and capacity. For BLS's network, capacity planning is done annually as part of the budgeting process and also for each application release. Application development, system administration, and production support resources participate in the capacity planning process. The planning process takes as input the Network Carrier Services (NCS) Marketing Group forecast, current volumes, trend data and anticipated volume changes that may result from new system functionality. This information is used to project future hardware and software needs. If additional capacity is needed, the request is brought to BLS (Delivery and Customer Service Managers) for approval, equipment purchase and installation. Exception 25 is closed.
O&P-6-1-9	There is an established process for reviewing the performance of the business and transaction volume forecasting process	Satisfied	During initial testing, no established, ongoing process for reviewing the performance of the mainframe, mid-range, or network business and transaction volume forecasting process was observed. See Exception 25 for additional information on this issue. KCI interviewed a Network & Carrier Service (N&CS) forecast manager and reviewed the forecasting process and capacity management process documentation. The N&CS forecasting process outlines steps to compare actuals to the forecast on a monthly and year-to-date basis, to identify reasons for significant differences and to revise the

Test Cross-Reference	Evaluation Criteria	Result	Comments
			forecast, as necessary. The BLS Capacity Planning Methodology, Practices and Requirements defines ongoing Forecast Business Application Activities, which includes steps to review the accuracy of the most recent forecast, identify large variances, and prioritize improvements in the forecast cycle methodology. Exception 25 is closed.
O&P-6-1-10	There is an established process for verification and validation of performance data	Satisfied	Mainframe hardware performance is monitored daily. Any anomalies detected are reported, investigated and resolved. The performance monitoring, database administration, and application support groups participate in this process of verification and validation of performance data. Data from the system hardware resources are downloaded for personal computer access. This information is formatted into PC reports and is analyzed and/or reviewed periodically by the team members responsible for mainframe performance and tuning analysis. These data are retained for a minimum of one year. In the midrange and network environments, performance data are verified and validated by System Administrators and the Transport Group. Performance reports are reviewed regularly on the Midrange Performance Monitoring Web site, on the BOSIP home page, and through on-line tools. The reports and tools define thresholds for utilization of system and network resources. Any values exceeding the established threshold are highlighted in the reports, investigated, and resolved. Performance monitoring activities were described during interviews.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			KCI reviewed and collected sample performance and resource utilization reports.
O&P-6-1-11	Performance monitoring results are compared to service level agreements and other metrics	Satisfied	BLS and the third party managing the systems operations have contracts in place governing system performance. These contracts define targets for system availability for EDI, TAG, LEO, LESOG, LNP and SOCS. KCI was provided with the targets for sytsem availability and copies of reports on vendor performance, by system. Service Quality Measurements are defined for availability of the TAG, LEO, LESOG, SOCS, and EDI interfaces [OSS-2. Interface Availability (Pre-Ordering)], for EDI and TAG reject intervals (O-6. Reject Interval), for EDI and TAG confirmation intervals (O-7. Firm Order Confirmation Timeliness), for LNP reject intervals (O-10. LNP-Reject Interval Distribution & Average Reject Interval), and for LNP confirmation intervals (O-11. LNP – Firm Order Confirmation Timeliness Interval Distribution & Firm Order Confirmation Average Interval). (See BellSouth Service Quality Measurements Plan document dated 07/2000.) Performance results for these metrics are reported through the Performance Monitoring and Analysis Platform (PMAP). BLS's capacity planning process identifies PMAP data as an input for the midrange capacity planning process. BLS monitors its own network performance results. Network availability (i.e., trunk and node availability) results are tracked against established performance targets/objectives. The Transport Group works with the BLS Architecture & Standards (A&S) Group to address any network

Test Cross-Reference	Evaluation Criteria	Result	Comments
			performance issues. Network performance activities were described during interviews with the BOSIP Support Manager.
O&P-6-1-12	The Capacity Management process is defined and documented	Satisfied	The processes that are executed for performance monitoring and capacity planning activities are defined and documented. The document, BLS Telecommunications Information Technology Capacity Planning Methodology, Practices, and Requirements July 1999, outlines a capacity planning process for the mainframe, midrange, and network environments. BLS's capacity planning process is part of the IT Engagement Process (ITEP). Process flows for the new capacity planning process have been developed and are posted on the BLS IT Web site. These flows are also contained in a document entitled Capacity Planning & Management Playbook. The capacity planning process has been communicated within the Engineering & Design group. The links within the Asset Management group and the interfaces to other organizations are defined in the process documentation. BLS is refining the definition of process links between the remaining functional groups. Documentation depicting the current mainframe performance monitoring process was provided to KCI. Midrange and network performance monitoring is addressed in the capacity planning and management documentation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-6-1-13	Resource usage and capacity is considered in the planning process for capacity management	Satisfied	On a monthly basis, the mainframe operations management group uses data collected for each mainframe box to 1) fit a trend line through the monthly utilization data points; 2) estimate, based on trends and rates of growth, when upgrades or new purchases must occur; and 3) purchase additional capacity, as needed. If anomalies in CPU utilization, DASD, etc. occur, the operations group will contact the appropriate application support group to determine the root cause of the anomaly. In addition, TRIAD meetings are held every three months. TRIAD meetings include representatives from hardware procurement, mainframe performance monitoring, and customer representatives for the applications running in the mainframe environment with the largest DASD usage. Customer representatives provide input on changes to applications and how they may impact various components of system capacity. Resource utilization reports are examined on an ongoing basis and as part of the quarterly capacity planning process. Server usage reports and LAN / WAN interface and FDDI utilization reports are examined on an ongoing basis as part of the midrange and network capacity planning processes. These capacity planning activities were described during interviews.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-6-1-14	Performance monitoring results are considered in the planning process for capacity management	Satisfied	Mainframe and midrange performance monitoring reports are examined on an ongoing basis and as part of the quarterly capacity planning process. The BLS Architecture & Standards (A&S) Group is responsible for network capacity planning. The BLS Transport Team analyzes network performance data and resolves capacity issues. If unable to resolve capacity issues, the Transport Team alerts the A&S Group, which purchases equipment or makes architecture changes in order to increase or adjust system capacity. These capacity planning activities were described during interviews.
O&P-6-1-15	Capacity Management procedures define performance metrics that trigger the addition of capacity, load re-balancing or system tuning	Satisfied	Mainframe application hours are tracked monthly. Historical growth trends of these hours are tracked against known thresholds and used to estimate future growth and determine when upgrades or new purchases must occur. Scratch tape counts and scratch tape thresholds are tracked monthly by site. These counts and thresholds are used to assist in determining when additional tapes should be ordered. Active tape counts and corresponding Average Growth per Month are tracked monthly. Thresholds have been set for resource utilization and performance measures in both mainframe and midrange environments. Values that exceed the established thresholds are flagged and investigated. In the network environment, WAN interface utilization is tracked to identify opportunities for load balancing. Procedures for performance management were described during

Test Cross-Reference	Evaluation Criteria	Result	Comments
			interviews. In addition, KCI viewed and collected sample reports.

G. Test Results: Ordering & Provisioning Performance Measures Evaluation (O&P - 7)

1.0 Description

The Ordering and Provisioning Performance Measures Evaluation (O&P-7) involved (1) Calculation and Reporting Validation, and (2) Data Comparison, for ordering and provisioning-related Service Quality Measurements (SQMs) produced by BellSouth. More detail on the activities undertaken by KCI to execute Performance Measures Evaluations is provided in Section III-F, "Performance Measures Evaluation Overview."

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

The procedures supporting metrics data processing and reporting at BellSouth are described in Section III-F, "Performance Measures Evaluation Overview."

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target for the Calculation and Reporting Validation component of this evaluation is the set of values reported by BellSouth for ordering and provisioning Service Quality Measurements (SQMs). The test target for the Data Comparison component is the raw data that BellSouth produces for SQM validation purposes. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in Section 3.1 " Results & Analysis."

Table V-7.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Percent Rejected Service Requests	Resale Residence Resale Business Resale Specials UNE UNE Loop with NP Other	BLS reports are correctly disaggregated and complete.	O&P-7-1-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-1-2
		Test data collected by KCI agree with BLS raw data.	O&P-7-1-3

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Reject Interval	Resale – Residence Resale – Business Resale – Design UNE Design UNE Non-Design UNE Loop with and w/o NP Mechanized (0-4 min., 4-8 min., 8-12 min.,12-60 min., 0-1 hr., 1-8 hrs., 8-24 hrs., >24 hrs.) Non-Mechanized (0-1 hr., 1-4 hrs., 4-8 hrs., 8-12 hrs., 12-16 hrs., 16-20 hrs., 20-24 hrs., >24 hrs.) Average Interval in Days	BLS reports are correctly disaggregated and complete.	O&P-7-2-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-2-2
		Test data collected by KCI agree with BLS raw data.	O&P-7-2-3
Firm Order Confirmation Timeliness	Resale – Residence Resale – Business Resale – Design UNE Design UNE Non-Design UNE Loop with and w/o NP Mechanized (0-15 min., 15-30 min., 30-45 min., 45-60 min., 60-90 min., 90-120 min., 120-240 min., 4-8 hrs., 8-12 hrs., 12-16 hrs., 16-20 hrs., 20-24 hrs., 24-48 hrs., >48 hrs.) Non-Mechanized (0-4 hrs., 4-8 hrs., 8-12 hrs., 12-16 hrs., 16-20 hrs., 20-24 hrs., 24-48 hrs., >48 hrs.) Average Interval in Days	BLS reports are correctly disaggregated and complete.	O&P-7-3-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-3-2
		Test data collected by KCI agree with BLS raw data.	O&P-7-3-3
Speed of Answer in Ordering Center[1]	Not disaggregated	BLS reports are correctly disaggregated and complete.	O&P-7-4-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-4-2

[1] This SQM is reported only for the CLEC aggregate and is not specific to the KCI test CLEC.

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Mean Held Order Interval & Distribution Intervals	Circuit Breakout <10, >=10 POTS – Residence POTS – Business Design UNE Design UNE Non-Design	BLS reports are correctly disaggregated and complete.	O&P-7-5-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-5-2
		Test data collected by KCI agree with BLS raw data.	O&P-7-5-3
Average Jeopardy Notice Interval & Percentage of Orders Given Jeopardy Notices	POTS – Residence POTS – Business Design UNE Design UNE Non-Design	BLS reports are correctly disaggregated and complete.	O&P-7-6-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-6-2
		Test data collected by KCI agree with BLS raw data.	O&P-7-6-3
Percent Missed Installation Appointments	<10 Lines / Circuits >10 Lines / Circuits	BLS reports are correctly disaggregated and complete.	O&P-7-7-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-7-2
		Test data collected by KCI agree with BLS raw data.	O&P-7-7-3
Average Completion Interval / Order Completion Interval Distribution	Dispatch / No Dispatch Residence and Business Reported in Day Intervals: 0, 1, 2, 3, 4, 5, 5+ UNE and Design Reported in Day Intervals: 0-5, 5-10, 10-15, 15-20, 20-25, 25-30, >=30 <10 lines / circuits >=10 lines / circuits POTS – Residence POTS – Business Design UNE Design UNE Non-Design	BLS reports are correctly disaggregated and complete.	O&P-7-8-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-8-2
		Test data collected by KCI agree with BLS raw data.	O&P-7-8-3

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Average Completion Notice Interval	Reporting Intervals in hours: 0-1, 1-2, 2-4, 4-8, 8-12, 12-24, >24, plus Overall Average Hour Interval <10 Lines / Circuits >=10 Lines / Circuits POTS – Residence POTS – Business Design UNE Design UNE Non-Design	BLS reports are correctly disaggregated and complete.	O&P-7-9-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-9-2
		Test data collected by KCI agree with BLS raw data.	O&P-7-9-3
Coordinated Customer Conversions	Reported in Intervals: <=5 min., >5 and <=15 min., >15 min., plus Overall Average Interval	BLS reports are correctly disaggregated and complete.	O&P-7-10-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-10-2
Percent Provisioning Troubles within 30 days of Service Order Activity	<10 Lines / Circuits >10 Lines / Circuits Dispatch / No Dispatch POTS – Residence POTS – Business Design UNE Design UNE Non-Design	BLS reports are correctly disaggregated and complete.	O&P-7-11-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-11-2
Total Service Order Cycle Time	Dispatch / No Dispatch POTS – Residence POTS – Business Design UNE Design UNE Non-Design	BLS reports are correctly disaggregated and complete.	O&P-7-12-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-12-2
		Test data collected by KCI agree with BLS raw data.	O&P-7-12-3
Service Order Accuracy	<10 Lines / Circuits >10 Lines / Circuits	BLS reports are correctly disaggregated and complete.	O&P-7-13-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	O&P-7-13-2

2.4 Data Sources

The data collected for the Ordering and Provisioning Performance Measures Evaluation are summarized in the table below.

Table V-7.2: Data Sources for Ordering & Provisioning Performance Measures Evaluation

Document	File Name	Location in Work Papers	Source
November 1999 Raw Data – Percent Rejected Service Requests – BLS Proprietary	order_rejintand%rejbyint_KPMG_november_rawdata.txt	O&P-7-B-3	BLS (Performance Measurement Analysis Platform "PMAP" Web site)
November 1999 Raw Data – Percent Rejected Service Requests – BLS Proprietary	order_servorder_KPMG_november_rawdata.txt	O&P-7-B-3	BLS (PMAP Web site)
December 1999 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ord Reject Interval & % Reject by Interval.txt	O&P-7-A-17	BLS (PMAP Web site)
December 1999 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ord Service Orders.txt	O&P-7-A-17	BLS (PMAP Web site)
January 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ord Reject Interval & % Reject by Interval.txt	O&P-7-B-24	BLS (PMAP Web site)
January 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ord Service Orders.txt	O&P-7-B-24	BLS (PMAP Web site)
February 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-G-3	BLS (PMAP Web site)
February 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Service Orders.txt	O&P-7-G-3	BLS (PMAP Web site)
March 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-H-3	BLS (PMAP Web site)
March 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Service Orders.txt	O&P-7-H-3	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
April 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-I-3	BLS (PMAP Web site)
April 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Service Orders.txt	O&P-7-I-3	BLS (PMAP Web site)
May 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-J-3	BLS (PMAP Web site)
May 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Service Orders.txt	O&P-7-J-3	BLS (PMAP Web site)
June 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-K-3	BLS (PMAP Web site)
June 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Service Orders.txt	O&P-7-K-3	BLS (PMAP Web site)
July 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-L-3	BLS (PMAP Web site)
July 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Service Orders.txt	O&P-7-L-3	BLS (PMAP Web site)
August 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-M-3	BLS (PMAP Web site)
August 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Service Orders.txt	O&P-7-M-3	BLS (PMAP Web site)
September 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-N-3	BLS (PMAP Web site)
September 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Service Orders.txt	O&P-7-N-3	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
October 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-O-3	BLS (PMAP Web site)
October 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Service Orders.txt	O&P-7-O-3	BLS (PMAP Web site)
November 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-P-3	BLS (PMAP Web site)
November 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Service Orders.txt	O&P-7-P-3	BLS (PMAP Web site)
December 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-Q-3	BLS (PMAP Web site)
December 2000 Raw Data – Percent Rejected Service Requests – BLS Proprietary	Ordering Service Orders.txt	O&P-7-Q-3	BLS (PMAP Web site)
November 1999 Raw Data – Reject Interval – BLS Proprietary	order_rejintand%rejbyint_KPMG_november_rawdata.txt	O&P-7-B-10	BLS (PMAP Web site)
December 1999 Raw Data – Reject Interval – BLS Proprietary	Ord Reject Interval & % Reject by Interval.txt	O&P-7-A-10	BLS (PMAP Web site)
January 2000 Raw Data – Reject Interval – BLS Proprietary	Ord Reject Interval & % Reject by Interval.txt	O&P-7-B-31	BLS (PMAP Web site)
February 2000 Raw Data – Reject Interval – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-G-10	BLS (PMAP Web site)
March 2000 Raw Data – Reject Interval – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-H-10	BLS (PMAP Web site)
April 2000 Raw Data – Reject Interval – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-I-10	BLS (PMAP Web site)
May 2000 Raw Data – Reject Interval – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-J-10	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
June 2000 Raw Data – Reject Interval – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-K-10	BLS (PMAP Web site)
July 2000 Raw Data – Reject Interval – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-L-10	BLS (PMAP Web site)
August 2000 Raw Data – Reject Interval – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-M-10	BLS (PMAP Web site)
September 2000 Raw Data – Reject Interval – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-N-10	BLS (PMAP Web site)
October 2000 Raw Data – Reject Interval – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-O-10	BLS (PMAP Web site)
November 2000 Raw Data – Reject Interval – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-P-10	BLS (PMAP Web site)
December 2000 Raw Data – Reject Interval – BLS Proprietary	Ordering Reject Interval and Percent Reject by Interval.txt	O&P-7-Q-10	BLS (PMAP Web site)
November 1999 Raw Data – Firm Order Confirmation (FOC) Timeliness – BLS Proprietary	order_foctimeliness_KPMG_november_rawdata.txt	O&P-7-B-17	BLS (PMAP Web site)
December 1999 Raw Data – FOC Timeliness – BLS Proprietary	Ord FOC Timeliness.txt	O&P-7-A-3	BLS (PMAP Web site)
January 2000 Raw Data – FOC Timeliness – BLS Proprietary	Ord FOC Timeliness.txt	O&P-7-B-38	BLS (PMAP Web site)
February 2000 Raw Data – FOC Timeliness – BLS Proprietary	Ordering FOC Timeliness.txt	O&P-7-G-17	BLS (PMAP Web site)
March 2000 Raw Data – FOC Timeliness – BLS Proprietary	Ordering FOC Timeliness.txt	O&P-7-H-17	BLS (PMAP Web site)
April 2000 Raw Data – FOC Timeliness – BLS Proprietary	Ordering FOC Timeliness.txt	O&P-7-I-17	BLS (PMAP Web site)
May 2000 Raw Data – FOC Timeliness – BLS Proprietary	Ordering FOC Timeliness.txt	O&P-7-J-17	BLS (PMAP Web site)
June 2000 Raw Data – FOC Timeliness – BLS Proprietary	Ordering FOC Timeliness.txt	O&P-7-K-17	BLS (PMAP Web site)
July 2000 Raw Data – FOC Timeliness – BLS Proprietary	Ordering FOC Timeliness.txt	O&P-7-L-17	BLS (PMAP Web site)
August 2000 Raw Data – FOC Timeliness – BLS Proprietary	Ordering FOC Timeliness.txt	O&P-7-M-17	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
September 2000 Raw Data – FOC Timeliness – BLS Proprietary	Ordering FOC Timeliness.txt	O&P-7-N-17	BLS (PMAP Web site)
October 2000 Raw Data – FOC Timeliness – BLS Proprietary	Ordering FOC Timeliness.txt	O&P-7-O-17	BLS (PMAP Web site)
November 2000 Raw Data – FOC Timeliness – BLS Proprietary	Ordering FOC Timeliness.txt	O&P-7-P-17	BLS (PMAP Web site)
December 2000 Raw Data – FOC Timeliness – BLS Proprietary	Ordering FOC Timeliness.txt	O&P-7-Q-17	BLS (PMAP Web site)
December 1999 Raw Data – Speed of Answer in Ordering Center – Local Carrier Service Center (LCSC) – CLEC Proprietary	dec_1st week_LCSC ATL1.txt	O&P-7-A-24	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Raw Data – Speed of Answer in Ordering Center - LCSC – CLEC Proprietary	dec_1st week_LCSC Birm1.txt	O&P-7-A-24	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Raw Data – Speed of Answer in Ordering Center - LCSC – CLEC Proprietary	dec_2nd week_LCSC ATL.txt	O&P-7-A-24	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Raw Data – Speed of Answer in Ordering Center – LCSC – CLEC Proprietary	dec_2nd week_LCSC Birm.txt	O&P-7-A-24	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Raw Data – Speed of Answer in Ordering Center – LCSC – CLEC Proprietary	dec_3rd week_LCSC ATL.txt	O&P-7-A-24	BLS – Interconnection Operations – CLEC Performance Measurements

Document	File Name	Location in Work Papers	Source
December 1999 Raw Data – Speed of Answer in Ordering Center - LCSC – CLEC Proprietary	dec_3rd week_LCSC Birm.txt	O&P-7-A-24	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Raw Data – Speed of Answer in Ordering Center – LCSC – CLEC Proprietary	dec_4th week_LCSC ATL.txt	O&P-7-A-24	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Raw Data – Speed of Answer in Ordering Center – LCSC – CLEC Proprietary	dec_4th week_LCSC Birm.txt	O&P-7-A-24	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Raw Data – Speed of Answer in Ordering Center – LCSC – CLEC Proprietary	dec_last week_LCSCATL.txt	O&P-7-A-24	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Raw Data – Speed of Answer in Ordering Center – LCSC Raw Data– CLEC Proprietary	dec_last week_LCSCBirm.txt	O&P-7-A-24	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Raw Data – Speed of Answer in Ordering Center – LCSC – CLEC Proprietary	Dec_Month_LCSC Birm.txt	O&P-7-A-24	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Raw Data – Speed of Answer in Ordering Center – LCSC – CLEC Proprietary	Dec_Month_LCSC ATL.txt	O&P-7-A-24	BLS – Interconnection Operations – CLEC Performance Measurements
November 1999 Raw Data – Mean Held Order Interval – BLS Proprietary	Prov_Held_Orders.txt	O&P-7-C-3	BLS (PMAP Web site)
December 1999 Raw Data – Mean Held Order Interval – BLS Proprietary	Prov_Held_Orders.txt	O&P-7-D-3	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
January 2000 Raw Data – Mean Held Order Interval – BLS Proprietary	Prov Held Orders.txt	O&P-7-E-3	BLS (PMAP Web site)
February 2000 Raw Data – Mean Held Order Interval – BLS Proprietary	Provisioning Held Orders.txt	O&P-7-G-24	BLS (PMAP Web site)
March 2000 Raw Data – Mean Held Order Interval – BLS Proprietary	Provisioning Held Orders.txt	O&P-7-H-24	BLS (PMAP Web site)
March 2000 Raw Data – Mean Held Order Interval Re-test Data – BLS Proprietary	GACLECHeldOrder0300.txt	O&P-7-H-24	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Raw Data – Mean Held Order Interval – BLS Proprietary	Provisioning Held Orders.txt	O&P-7-I-24	BLS (PMAP Web site)
May 2000 Raw Data – Mean Held Order Interval – BLS Proprietary	Provisioning Held Orders.txt	O&P-7-J-24	BLS (PMAP Web site)
June 2000 Raw Data – Mean Held Order Interval – BLS Proprietary	Provisioning Held Orders.txt	O&P-7-K-24	BLS (PMAP Web site)
July 2000 Raw Data – Mean Held Order Interval – BLS Proprietary	Provisioning Held Orders.txt	O&P-7-L-24	BLS (PMAP Web site)
August 2000 Raw Data – Mean Held Order Interval – BLS Proprietary	Provisioning Held Orders.txt	O&P-7-M-24	BLS (PMAP Web site)
September 2000 Raw Data – Mean Held Order Interval – BLS Proprietary	Provisioning Held Orders.txt	O&P-7-N-24	BLS (PMAP Web site)
October 2000 Raw Data – Mean Held Order Interval – BLS Proprietary	Provisioning Held Orders.txt	O&P-7-O-24	BLS (PMAP Web site)
November 2000 Raw Data – Mean Held Order Interval – BLS Proprietary	Provisioning Held Orders.txt	O&P-7-P-24	BLS (PMAP Web site)
December 2000 Raw Data – Mean Held Order Interval – BLS Proprietary	Provisioning Held Orders.txt	O&P-7-Q-24	BLS (PMAP Web site)
November 1999 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Prov Jeopardy Notice Interval.txt	O&P-7-C-38	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
December 1999 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Prov Jeopardy Notice Interval.txt	O&P-7-D-38	BLS (PMAP Web site)
January 2000 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Prov Jeopardy Notice Interval.txt	O&P-7-E-38	BLS (PMAP Web site)
February 2000 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Provisioning Jeopardy Notice Interval.txt	O&P-7-G-31	BLS (PMAP Web site)
March 2000 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Provisioning Jeopardy Notice Interval.txt	O&P-7-H-31	BLS (PMAP Web site)
March 2000 Raw Data – Average Jeopardy Notice Interval Re-test Data – BLS Proprietary	GACLECJeopardy0300.txt	O&P-7-H-31	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Provisioning Jeopardy Notice Interval.txt	O&P-7-I-31	BLS (PMAP Web site)
May 2000 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Provisioning Jeopardy Notice Interval.txt	O&P-7-J-31	BLS (PMAP Web site)
June 2000 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Provisioning Jeopardy Notice Interval.txt	O&P-7-K-31	BLS (PMAP Web site)
June 2000 Raw Data – Average Jeopardy Notice Interval Re-test Data– BLS Proprietary	GA0600CLECJeopardy.txt	O&P-7-K-31	BLS – Interconnection Operations – CLEC Performance Measurements
July 2000 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Provisioning Jeopardy Notice Interval.txt	O&P-7-L-31	BLS (PMAP Web site)
August 2000 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Provisioning Jeopardy Notice Interval.txt	O&P-7-M-31	BLS (PMAP Web site)
September 2000 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Provisioning Jeopardy Notice Interval.txt	O&P-7-N-31	BLS (PMAP Web site)
October 2000 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Provisioning Jeopardy Notice Interval.txt	O&P-7-O-31	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
November 2000 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Provisioning Jeopardy Notice Interval.txt	O&P-7-P-31	BLS (PMAP Web site)
December 2000 Raw Data – Average Jeopardy Notice Interval – BLS Proprietary	Provisioning Jeopardy Notice Interval.txt	O&P-7-Q-31	BLS (PMAP Web site)
November 1999 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Prov_%_Missed_Installation_Appointments.txt	O&P-7-C-17	BLS (PMAP Web site)
December 1999 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Prov_%_Missed_Installation_Appointments.txt	O&P-7-D-17	BLS (PMAP Web site)
January 2000 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Prov % Missed_Installation_Appointments.txt	O&P-7-E-17	BLS (PMAP Web site)
February 2000 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Provisioning Percent Missed Installation Appointments.txt	O&P-7-G-38	BLS (PMAP Web site)
March 2000 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Provisioning Percent Missed Installation Appointments.txt	O&P-7-H-38	BLS (PMAP Web site)
March 2000 Raw Data – Percent Missed Installation Appointments Re-test Data– BLS Proprietary	GACLECPMI0300.txt	O&P-7-H-38	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Provisioning Percent Missed Installation Appointments.txt	O&P-7-I-38	BLS (PMAP Web site)
May 2000 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Provisioning Percent Missed Installation Appointments.txt	O&P-7-J-38	BLS (PMAP Web site)
June 2000 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Provisioning Percent Missed Installation Appointments.txt	O&P-7-K-38	BLS (PMAP Web site)
July 2000 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Provisioning Percent Missed Installation Appointments.txt	O&P-7-L-38	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
August 2000 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Provisioning Percent Missed Installation Appointments.txt	O&P-7-M-38	BLS (PMAP Web site)
September 2000 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Provisioning Percent Missed Installation Appointments.txt	O&P-7-N-38	BLS (PMAP Web site)
October 2000 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Provisioning Percent Missed Installation Appointments.txt	O&P-7-O-38	BLS (PMAP Web site)
November 2000 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Provisioning Percent Missed Installation Appointments.txt	O&P-7-P-38	BLS (PMAP Web site)
December 2000 Raw Data – Percent Missed Installation Appointments – BLS Proprietary	Provisioning Percent Missed Installation Appointments.txt	O&P-7-Q-38	BLS (PMAP Web site)
November 1999 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Prov_Order_Completion_Interval_Distn.txt	O&P-7-C-24	BLS (PMAP Web site)
December 1999 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Prov_Order_Completion_Interval_Distn.txt	O&P-7-D-24	BLS (PMAP Web site)
January 2000 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Prov Order Completion_Interval_Distn.txt	O&P-7-E-24	BLS (PMAP Web site)
February 2000 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Provisioning Order Completion Distribution.txt	O&P-7-G-45	BLS (PMAP Web site)
March 2000 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Provisioning Order Completion Distribution.txt	O&P-7-H-45	BLS (PMAP Web site)
March 2000 Raw Data – Average Completion Interval - Order Completion Interval Re-test Data– BLS Proprietary	GACLECOCI0300.txt	O&P-7-H-45	BLS – Interconnection Operations – CLEC Performance Measurements

Document	File Name	Location in Work Papers	Source
April 2000 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Provisioning Order Completion Distribution.txt	O&P-7-I-45	BLS (PMAP Web site)
April 2000 Raw Data – Average Completion Interval - Order Completion Interval Revised Data– BLS Proprietary	GACLECOCI0400.txt	O&P-7-I-45	BLS – Interconnection Operations – CLEC Performance Measurements
May 2000 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Provisioning Order Completion Distribution.txt	O&P-7-J-45	BLS (PMAP Web site)
June 2000 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Provisioning Order Completion Interval Distribution.txt	O&P-7-K-45	BLS (PMAP Web site)
July 2000 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Provisioning Order Completion Interval Distribution.txt	O&P-7-L-45	BLS (PMAP Web site)
August 2000 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Provisioning Order Completion Interval Distribution.txt	O&P-7-M-45	BLS (PMAP Web site)
September 2000 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Provisioning Order Completion Interval Distribution.txt	O&P-7-N-45	BLS (PMAP Web site)
October 2000 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Provisioning Order Completion Interval Distribution.txt	O&P-7-O-45	BLS (PMAP Web site)
November 2000 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Provisioning Order Completion Interval Distribution.txt	O&P-7-P-45	BLS (PMAP Web site)
December 2000 Raw Data – Average Completion Interval - Order Completion Interval – BLS Proprietary	Provisioning Order Completion Interval Distribution.txt	O&P-7-Q-45	BLS (PMAP Web site)
November 1999 Raw Data – Average Completion Notice Interval – BLS Proprietary	prov_avecompnotint_KPMG_november_rawdata.txt	O&P-7-C-45	BLS (PMAP Web site)
December 1999 Raw Data – Average Completion Notice Interval – BLS Proprietary	Prov Avg Completion Notice Interval.txt	O&P-7-D-45	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
January 2000 Raw Data – Average Completion Notice Interval – BLS Proprietary	Prov Avg Completion Notice Interval.txt	O&P-7-E-45	BLS (PMAP Web site)
February 2000 Raw Data – Average Completion Notice Interval – BLS Proprietary	Provisioning Average Completion Notice Interval.txt	O&P-7-G-52	BLS (PMAP Web site)
March 2000 Raw Data – Average Completion Notice Interval – BLS Proprietary	Provisioning Average Completion Notice Interval.txt	O&P-7-H-52	BLS (PMAP Web site)
March 2000 Raw Data – Average Completion Notice Interval Re-test Data – BLS Proprietary	GACLECACNI0300.txt	O&P-7-H-52	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Raw Data – Average Completion Notice Interval – BLS Proprietary	Provisioning Average Completion Notice Interval.txt	O&P-7-I-52	BLS (PMAP Web site)
May 2000 Raw Data – Average Completion Notice Interval – BLS Proprietary	Provisioning Average Completion Notice Interval.txt	O&P-7-J-52	BLS (PMAP Web site)
June 2000 Raw Data – Average Completion Notice Interval – BLS Proprietary	Provisioning Average Completion Notice Interval.txt	O&P-7-K-52	BLS (PMAP Web site)
July 2000 Raw Data – Average Completion Notice Interval – BLS Proprietary	Provisioning Average Completion Notice Interval.txt	O&P-7-L-52	BLS (PMAP Web site)
August 2000 Raw Data – Average Completion Notice Interval – BLS Proprietary	Provisioning Average Completion Notice Interval.txt	O&P-7-M-52	BLS (PMAP Web site)
September 2000 Raw Data – Average Completion Notice Interval – BLS Proprietary	Provisioning Average Completion Notice Interval.txt	O&P-7-N-52	BLS (PMAP Web site)
October 2000 Raw Data – Average Completion Notice Interval – BLS Proprietary	Provisioning Average Completion Notice Interval.txt	O&P-7-O-52	BLS (PMAP Web site)
November 2000 Raw Data – Average Completion Notice Interval – BLS Proprietary	Provisioning Average Completion Notice Interval.txt	O&P-7-P-52	BLS (PMAP Web site)
December 2000 Raw Data – Average Completion Notice Interval – BLS Proprietary	Provisioning Average Completion Notice Interval.txt	O&P-7-Q-52	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
February 2000 Raw Data - Coordinated Customer Conversions – BLS Proprietary	Febzxc.xls	O&P-7-G-59	BLS – Interconnection Operations – CLEC Performance Measurements
March 2000 Raw Data - Coordinated Customer Conversions – BLS Proprietary	zxcmar.xls	O&P-7-H-59	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Raw Data - Coordinated Customer Conversions – BLS Proprietary	zxcapr.xls	O&P-7-I-59	BLS – Interconnection Operations – CLEC Performance Measurements
May 2000 Raw Data - Coordinated Customer Conversions – BLS Proprietary	zxcmay.xls	O&P-7-J-59	BLS – Interconnection Operations – CLEC Performance Measurements

Document	File Name	Location in Work Papers	Source
September 2000 Raw Data - Coordinated Customer Conversions – BLS Proprietary	Provisioning Coordinated Customer Conversions.txt	O&P-7-N-73	BLS (PMAP Web site)
October 2000 Raw Data - Coordinated Customer Conversions – BLS Proprietary	Provisioning Coordinated Customer Conversions.txt	O&P-7-O-73	BLS (PMAP Web site)
November 2000 Raw Data - Coordinated Customer Conversions – BLS Proprietary	Provisioning Coordinated Customer Conversions.txt	O&P-7-P-73	BLS (PMAP Web site)
December 2000 Raw Data - Coordinated Customer Conversions – BLS Proprietary	Provisioning Coordinated Customer Conversions.txt	O&P-7-Q-73	BLS (PMAP Web site)
October 2000 Raw Data - Coordinated Customer Conversions- Hot Cuts Timeliness – BLS Proprietary	Provisioning CCC Hot Cut Timeliness.txt	O&P-7-O-80	BLS (PMAP Web site)
November 2000 Raw Data - Coordinated Customer Conversions- Hot Cuts Timeliness – BLS Proprietary	Provisioning CCC Hot Cut Timeliness.txt	O&P-7-P-80	BLS (PMAP Web site)
December 2000 Raw Data - Coordinated Customer Conversions- Hot Cuts Timeliness – BLS Proprietary	Provisioning CCC Hot Cut Timeliness.txt	O&P-7-Q-80	BLS (PMAP Web site)
December 1999 Raw Data – Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	Prov_Trbls_wi_30_days _Non_Trunks.txt	O&P-7-D-10	BLS (PMAP Web site)
March 2000 Raw Data – Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	% Prov. Trouble wi 30 Days CLEC.txt	O&P-7-H-66	BLS (PMAP Web site)
March 2000 Raw Data – Percent Provisioning Troubles within 30 days of Service Order Activity Re-test Data – BLS Proprietary	GACLECTroubles300300.txt	O&P-7-H-66	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Raw Data – Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	Provisioning Troubles Within 30 Days of Provisioning (Non Trunk).txt	O&P-7-I-66	BLS (PMAP Web site)
May 2000 Raw Data – Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	Provisioning Troubles within 30 Days of Provisioning (Non Trunk).txt	O&P-7-J-66	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
June 2000 Raw Data – Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	Provisioning Troubles within 30 Days of Provisioning (Non Trunk).txt	O&P-7-K-59	BLS (PMAP Web site)
July 2000 Raw Data – Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	Provisioning Troubles within 30 days of Provisioning.txt	O&P-7-L-59	BLS (PMAP Web site)
August 2000 Raw Data – Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	Provisioning Troubles within 30 days of Provisioning.txt	O&P-7-M-59	BLS (PMAP Web site)
September 2000 Raw Data – Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	Provisioning Troubles within 30 days of Provisioning.txt	O&P-7-N-59	BLS (PMAP Web site)
October 2000 Raw Data – Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	Provisioning Troubles within 30 days of Provisioning.txt	O&P-7-O-59	BLS (PMAP Web site)
November 2000 Raw Data – Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	Provisioning Troubles within 30 days of Provisioning.txt	O&P-7-P-59	BLS (PMAP Web site)
December 2000 Raw Data – Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	Provisioning Troubles within 30 days of Provisioning.txt	O&P-7-Q-59	BLS (PMAP Web site)
November 1999 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Tsoct_~1.txt	O&P-7-C-31	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Raw Data – Total Service Order Cycle Time – BLS Proprietary	121999~1.txt	O&P-7-D-31	BLS – Interconnection Operations – CLEC Performance Measurements
January 2000 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Prov Total Service Order Cycle Time.txt	O&P-7-E-31	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
February 2000 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Provisioning Total Service Order Cycle Time.txt	O&P-7-G-66	BLS (PMAP Web site)
March 2000 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Provisioning Total Service Order Cycle Time.txt	O&P-7-H-73	BLS (PMAP Web site)
March 2000 Raw Data – Total Service Order Cycle Time Re-test Data– BLS Proprietary	GACLECTSOCT0300.txt	O&P-7-H-73	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Provisioning Total Service Order Cycle Time.txt	O&P-7-I-73	BLS (PMAP Web site)
May 2000 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Provisioning Total Service Order Cycle Time.txt	O&P-7-J-73	BLS (PMAP Web site)
June 2000 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Provisioning Total Service Order Cycle Time.txt	O&P-7-K-66	BLS (PMAP Web site)
July 2000 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Provisioning Total Service Order Cycle Time.txt	O&P-7-L-66	BLS (PMAP Web site)
August 2000 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Provisioning Total Service Order Cycle Time.txt	O&P-7-M-66	BLS (PMAP Web site)
September 2000 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Provisioning Total Service Order Cycle Time.txt	O&P-7-N-66	BLS (PMAP Web site)
October 2000 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Provisioning Total Service Order Cycle Time.txt	O&P-7-O-66	BLS (PMAP Web site)
November 2000 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Provisioning Total Service Order Cycle Time.txt	O&P-7-P-66	BLS (PMAP Web site)
December 2000 Raw Data – Total Service Order Cycle Time – BLS Proprietary	Provisioning Total Service Order Cycle Time.txt	O&P-7-Q-66	BLS (PMAP Web site)
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Mech GA Business under 10.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements

Document	File Name	Location in Work Papers	Source
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Mech GA Residence Resale over 10.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Mech GA Residence Resale under 10.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Non-Mech GA Business over 10.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Non-Mech GA Business under 10.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Non-Mech GA Residence Resale under 10.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Non-Mech GA UNE Design under 10.xls (Unbundled Network Elements "UNE")	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Non-Mech GA UNE Loop over 10.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Non-Mech GA UNE Loop under 10.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements

Document	File Name	Location in Work Papers	Source
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Non-Mech GA UNE Non-Designs over 10.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Non-Mech GA UNE Non-Designs under 10.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Non-mechanized Residence Greater Than 10.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	Non-mechanized UNE Designs Less than 10 - FL.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	SPECIALS.XLS	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	TRUNKS GREATER THAN 10 CIRCUITS1.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Service Order Accuracy – BLS Proprietary	trunks LESS than 10 circuits1.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
May 2000 Raw Data – Service Order Accuracy – BLS Proprietary	Regula~1.xls	O&P-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements

Document	File Name	Location in Work Papers	Source
November 1999 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%RejectRequestFullyMechanizedCLEC.txt	O&P-7-B-1	BLS (PMAP Web site)
November 1999 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%RejectRequestPrtlyMechanizedCLEC.txt	O&P-7-B-1	BLS (PMAP Web site)
November 1999 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%RejectRequestTotalMechanizedCLEC.txt	O&P-7-B-1	BLS (PMAP Web site)
November 1999 Report - Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%RejectRequestNonMechanizedCLEC.txt	O&P-7-B-1	BLS (PMAP Web site)
December 1999 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%RejectFullyMechanizedKPMG.txt	O&P-7-A-15	BLS (PMAP Web site)
December 1999 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%RejectPrtlyMechanizedKPMG.txt	O&P-7-A-15	BLS (PMAP Web site)
December 1999 Report - Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%RejectTotalMechanizedKPMG.txt	O&P-7-A-15	BLS (PMAP Web site)
December 1999 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%RejectNonMechanizedKPMG.txt	O&P-7-A-15	BLS (PMAP Web site)
January 2000 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%Reject Svc Request Fully Mech CLEC.txt	O&P-7-B-22	BLS (PMAP Web site)
January 2000 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%Reject Svc Request Prtly Mech CLEC.txt	O&P-7-B-22	BLS (PMAP Web site)
January 2000 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%Reject Svc Request Total Mech CLEC.txt	O&P-7-B-22	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
January 2000 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%Reject Svc Request Non-Mech CLEC.txt	O&P-7-B-22	BLS (PMAP Web site)
February 2000 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%Reject Svc Request Fully Mech CLEC.txt	O&P-7-G-1	BLS (PMAP Web site)
February 2000 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%Reject Svc Request Prtly Mech CLEC.txt	O&P-7-G-1	BLS (PMAP Web site)
February 2000 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%Reject Svc Request Total Mech CLEC.txt	O&P-7-G-1	BLS (PMAP Web site)
February 2000 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%Reject Svc Request Non-Mech CLEC.txt	O&P-7-G-1	BLS (PMAP Web site)
March 2000 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%Reject Svc Request Fully Mech CLEC.txt	O&P-7-H-1	BLS (PMAP Web site)
March 2000 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%Reject Svc Request Prtly Mech CLEC.txt	O&P-7-H-1	BLS (PMAP Web site)
March 2000 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%Reject Svc Request Total Mech CLEC.txt	O&P-7-H-1	BLS (PMAP Web site)
March 2000 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%Reject Svc Request Non-Mech CLEC.txt	O&P-7-H-1	BLS (PMAP Web site)
April 2000 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%Reject Svc Request Fully Mech CLEC.txt	O&P-7-I-1	BLS (PMAP Web site)
April 2000 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%Reject Svc Request Prtly Mech CLEC.txt	O&P-7-I-1	BLS (PMAP Web site)
April 2000 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%Reject Svc Request Total Mech CLEC.txt	O&P-7-I-1	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
April 2000 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%Reject Svc Request Non-Mech CLEC.txt	O&P-7-I-1	BLS (PMAP Web site)
May 2000 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%Reject Svc Request Fully Mech CLEC.txt	O&P-7-J-1	BLS (PMAP Web site)
May 2000 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%Reject Svc Request Prtly Mech CLEC.txt	O&P-7-J-1	BLS (PMAP Web site)
May 2000 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%Reject Svc Request Total Mech CLEC.txt	O&P-7-J-1	BLS (PMAP Web site)
May 2000 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%Reject Svc Request Non-Mech CLEC.txt	O&P-7-J-1	BLS (PMAP Web site)
June 2000 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%Reject Svc Request Fully Mech CLEC.txt	O&P-7-K-1	BLS (PMAP Web site)
June 2000 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%Reject Svc Request Prtly Mech CLEC.txt	O&P-7-K-1	BLS (PMAP Web site)
June 2000 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%Reject Svc Request Total Mech CLEC.txt	O&P-7-K-1	BLS (PMAP Web site)
June 2000 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%Reject Svc Request Non-Mech CLEC.txt	O&P-7-K-1	BLS (PMAP Web site)
July 2000 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%Reject Svc Request Fully Mech CLEC.txt	O&P-7-L-1	BLS (PMAP Web site)
July 2000 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%Reject Svc Request Prtly Mech CLEC.txt	O&P-7-L-1	BLS (PMAP Web site)
July 2000 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%Reject Svc Request Total Mech CLEC.txt	O&P-7-L-1	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
July 2000 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%Reject Svc Request Non-Mech CLEC.txt	O&P-7-L-1	BLS (PMAP Web site)
August 2000 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%Reject Svc Request Fully Mech CLEC.txt	O&P-7-M-1	BLS (PMAP Web site)
August 2000 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%Reject Svc Request Prtly Mech CLEC.txt	O&P-7-M-1	BLS (PMAP Web site)
August 2000 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%Reject Svc Request Total Mech CLEC.txt	O&P-7-M-1	BLS (PMAP Web site)
August 2000 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%Reject Svc Request Non-Mech CLEC.txt	O&P-7-M-1	BLS (PMAP Web site)
September 2000 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%Reject Svc Request Fully Mech CLEC.txt	O&P-7-N-1	BLS (PMAP Web site)
September 2000 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%Reject Svc Request Prtly Mech CLEC.txt	O&P-7-N-1	BLS (PMAP Web site)
September 2000 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%Reject Svc Request Total Mech CLEC.txt	O&P-7-N-1	BLS (PMAP Web site)
September 2000 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%Reject Svc Request Non-Mech CLEC.txt	O&P-7-N-1	BLS (PMAP Web site)
October 2000 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%Reject Svc Request Fully Mech CLEC.txt	O&P-7-O-1	BLS (PMAP Web site)
October 2000 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%Reject Svc Request Prtly Mech CLEC.txt	O&P-7-O-1	BLS (PMAP Web site)
October 2000 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%Reject Svc Request Total Mech CLEC.txt	O&P-7-O-1	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
October 2000 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%Reject Svc Request Non-Mech CLEC.txt	O&P-7-O-1	BLS (PMAP Web site)
November 2000 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%Reject Svc Request Fully Mech CLEC.txt	O&P-7-P-1	BLS (PMAP Web site)
November 2000 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%Reject Svc Request Prtly Mech CLEC.txt	O&P-7-P-1	BLS (PMAP Web site)
November 2000 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%Reject Svc Request Total Mech CLEC.txt	O&P-7-P-1	BLS (PMAP Web site)
November 2000 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%Reject Svc Request Non-Mech CLEC.txt	O&P-7-P-1	BLS (PMAP Web site)
October 2000 Report - Percent Rejected Service Requests – Fully Mechanized – BLS Proprietary	%Reject Svc Request Fully Mech CLEC.txt	O&P-7-Q-1	BLS (PMAP Web site)
October 2000 Report - Percent Rejected Service Requests – Partially Mechanized – BLS Proprietary	%Reject Svc Request Prtly Mech CLEC.txt	O&P-7-Q-1	BLS (PMAP Web site)
October 2000 Report- Percent Rejected Service Requests – Total Mechanized – BLS Proprietary	%Reject Svc Request Total Mech CLEC.txt	O&P-7-Q-1	BLS (PMAP Web site)
October 2000 Report- Percent Rejected Service Requests – Non-Mechanized – BLS Proprietary	%Reject Svc Request Non-Mech CLEC.txt	O&P-7-Q-1	BLS (PMAP Web site)
November 1999 Report – Reject Interval – Fully Mechanized – BLS Proprietary	RejectIntervalFullyMechCLEC.txt	O&P-7-B-8	BLS (PMAP Web site)
November 1999 Report – Reject Interval – Partially Mechanized – BLS Proprietary	RejectIntervalPrtlyMechCLEC.txt	O&P-7-B-8	BLS (PMAP Web site)
November 1999 Report – Reject Interval – Total Mechanized – BLS Proprietary	RejectIntervalTotalMechCLEC.txt	O&P-7-B-8	BLS (PMAP Web site)
November 1999 Report – Reject Interval – Non-Mechanized – BLS Proprietary	RejectIntervalNonMechCLEC.txt	O&P-7-B-8	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
December 1999 Report – Reject Interval – Fully Mechanized – BLS Proprietary	RejectIntervalFullyMechanizedKPMG.txt	O&P-7-A-8	BLS (PMAP Web site)
December 1999 Report – Reject Interval – Partially Mechanized – BLS Proprietary	RejectIntervalPrtlyMechanizedKPMG.txt	O&P-7-A-8	BLS (PMAP Web site)
December 1999 Report – Reject Interval – Total Mechanized – BLS Proprietary	RejectIntervalTotMechanizedKPMG.txt	O&P-7-A-8	BLS (PMAP Web site)
December 1999 Report – Reject Interval – Non-Mechanized – BLS Proprietary	RejectIntervalNonMechanizedKPMG.txt	O&P-7-A-8	BLS (PMAP Web site)
January 2000 Report – Reject Interval – Fully Mechanized – BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-B-29	BLS (PMAP Web site)
January 2000 Report – Reject Interval – Partially Mechanized – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-B-29	BLS (PMAP Web site)
January 2000 Report – Reject Interval – Total Mechanized – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-B-29	BLS (PMAP Web site)
January 2000 Report – Reject Interval – Non-Mechanized – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-B-29	BLS (PMAP Web site)
February 2000 Report – Reject Interval – Fully Mechanized – BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-G-8	BLS (PMAP Web site)
February 2000 Report – Reject Interval – Partially Mechanized – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-G-8	BLS (PMAP Web site)
February 2000 Report – Reject Interval – Total Mechanized – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-G-8	BLS (PMAP Web site)
February 2000 Report – Reject Interval – Non-Mechanized – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-G-8	BLS (PMAP Web site)
March 2000 Report – Reject Interval – Fully Mechanized – BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-H-8	BLS (PMAP Web site)
March 2000 Report – Reject Interval – Partially Mechanized – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-H-8	BLS (PMAP Web site)
March 2000 Report – Reject Interval – Total Mechanized – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-H-8	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
March 2000 Report – Reject Interval – Non-Mechanized – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-H-8	BLS (PMAP Web site)
April 2000 Report – Reject Interval – Fully Mechanized – BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-I-8	BLS (PMAP Web site)
April 2000 Report – Reject Interval – Partially Mechanized – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-I-8	BLS (PMAP Web site)
April 2000 Report – Reject Interval – Total Mechanized – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-I-8	BLS (PMAP Web site)
April 2000 Report – Reject Interval – Non-Mechanized – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-I-8	BLS (PMAP Web site)
May 2000 Report – Reject Interval – Fully Mechanized – BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-J-8	BLS (PMAP Web site)
May 2000 Report – Reject Interval – Partially Mechanized – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-J-8	BLS (PMAP Web site)
May 2000 Report – Reject Interval – Total Mechanized – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-J-8	BLS (PMAP Web site)
May 2000 Report – Reject Interval – Non-Mechanized – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-J-8	BLS (PMAP Web site)
May 2000 Report – Reject Interval – Fully Mechanized Updated Report– BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-J-8	BLS (PMAP Web site)
May 2000 Report – Reject Interval – Partially Mechanized Updated Report – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-J-8	BLS (PMAP Web site)
May 2000 Report – Reject Interval – Total Mechanized Updated Report – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-J-8	BLS (PMAP Web site)
May 2000 Report – Reject Interval – Non-Mechanized Updated Report – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-J-8	BLS (PMAP Web site)
June 2000 Report – Reject Interval – Fully Mechanized – BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-K-8	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
June 2000 Report – Reject Interval – Partially Mechanized – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-K-8	BLS (PMAP Web site)
June 2000 Report – Reject Interval – Total Mechanized – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-K-8	BLS (PMAP Web site)
June 2000 Report – Reject Interval – Non-Mechanized – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-K-8	BLS (PMAP Web site)
July 2000 Report – Reject Interval – Fully Mechanized – BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-L-8	BLS (PMAP Web site)
July 2000 Report – Reject Interval – Partially Mechanized – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-L-8	BLS (PMAP Web site)
July 2000 Report – Reject Interval – Total Mechanized – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-L-8	BLS (PMAP Web site)
July 2000 Report – Reject Interval – Non-Mechanized – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-L-8	BLS (PMAP Web site)
August 2000 Report – Reject Interval – Fully Mechanized – BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-M-8	BLS (PMAP Web site)
August 2000 Report – Reject Interval – Partially Mechanized – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-M-8	BLS (PMAP Web site)
August 2000 Report – Reject Interval – Total Mechanized – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-M-8	BLS (PMAP Web site)
August 2000 Report – Reject Interval – Non-Mechanized – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-M-8	BLS (PMAP Web site)
September 2000 Report – Reject Interval – Fully Mechanized – BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-N-8	BLS (PMAP Web site)
September 2000 Report – Reject Interval – Partially Mechanized – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-N-8	BLS (PMAP Web site)
September 2000 Report – Reject Interval – Total Mechanized – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-N-8	BLS (PMAP Web site)
September 2000 Report – Reject Interval – Non-Mechanized – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-N-8	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
October 2000 Report – Reject Interval – Fully Mechanized – BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-O-8	BLS (PMAP Web site)
October 2000 Report – Reject Interval – Partially Mechanized – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-O-8	BLS (PMAP Web site)
October 2000 Report – Reject Interval – Total Mechanized – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-O-8	BLS (PMAP Web site)
October 2000 Report – Reject Interval – Non-Mechanized – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-O-8	BLS (PMAP Web site)
November 2000 Report – Reject Interval – Fully Mechanized – BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-P-8	BLS (PMAP Web site)
November 2000 Report – Reject Interval – Partially Mechanized – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-P-8	BLS (PMAP Web site)
November 2000 Report – Reject Interval – Total Mechanized – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-P-8	BLS (PMAP Web site)
November 2000 Report – Reject Interval – Non-Mechanized – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-P-8	BLS (PMAP Web site)
December 2000 Report – Reject Interval – Fully Mechanized – BLS Proprietary	Reject Interval Fully Mech CLEC.txt	O&P-7-Q-8	BLS (PMAP Web site)
December 2000 Report – Reject Interval – Partially Mechanized – BLS Proprietary	Reject Interval Partially Mech CLEC.txt	O&P-7-Q-8	BLS (PMAP Web site)
December 2000 Report – Reject Interval – Total Mechanized – BLS Proprietary	Reject Interval Total Mech CLEC.txt	O&P-7-Q-8	BLS (PMAP Web site)
December 2000 Report – Reject Interval – Non-Mechanized – BLS Proprietary	Reject Interval Non-Mech CLEC.txt	O&P-7-Q-8	BLS (PMAP Web site)
November 1999 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOCFullyMechanizedCLEC.txt	O&P-7-B-15	BLS (PMAP Web site)
November 1999 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOCPrtlyMechanizedCLEC.txt	O&P-7-B-15	BLS (PMAP Web site)
November 1999 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOCTotalMechanizedCLEC.txt	O&P-7-B-15	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
November 1999 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOCNonMechanizedCLEC.txt	O&P-7-B-15	BLS (PMAP Web site)
December 1999 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOCFullyMechanizedKPMG.txt	O&P-7-A-1	BLS (PMAP Web site)
December 1999 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOCPrtlyMechanizedKPMG.txt	O&P-7-A-1	BLS (PMAP Web site)
December 1999 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOCTotMechanizedKPMG.txt	O&P-7-A-1	BLS (PMAP Web site)
December 1999 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOCNonMechanizedKPMG.txt	O&P-7-A-1	BLS (PMAP Web site)
January 2000 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-B-36	BLS (PMAP Web site)
January 2000 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-B-36	BLS (PMAP Web site)
January 2000 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-B-36	BLS (PMAP Web site)
January 2000 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-B-36	BLS (PMAP Web site)
February 2000 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-G-15	BLS (PMAP Web site)
February 2000 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-G-15	BLS (PMAP Web site)
February 2000 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-G-15	BLS (PMAP Web site)
February 2000 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-G-15	BLS (PMAP Web site)
March 2000 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-H-15	BLS (PMAP Web site)
March 2000 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-H-15	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
March 2000 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-H-15	BLS (PMAP Web site)
March 2000 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-H-15	BLS (PMAP Web site)
April 2000 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-I-15	BLS (PMAP Web site)
April 2000 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-I-15	BLS (PMAP Web site)
April 2000 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-I-15	BLS (PMAP Web site)
April 2000 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-I-15	BLS (PMAP Web site)
May 2000 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-J-15	BLS (PMAP Web site)
May 2000 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-J-15	BLS (PMAP Web site)
May 2000 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-J-15	BLS (PMAP Web site)
May 2000 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-J-15	BLS (PMAP Web site)
May 2000 Report – FOC Timeliness – Fully Mechanized Updated Report– BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-J-15	BLS (PMAP Web site)
May 2000 Report – FOC Timeliness – Partially Mechanized Updated Report – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-J-15	BLS (PMAP Web site)
May 2000 Report – FOC Timeliness – Total Mechanized Updated Report – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-J-15	BLS (PMAP Web site)
May 2000 Report – FOC Timeliness – Non-Mechanized Updated Report – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-J-15	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
May 2000 Report – FOC Timeliness –Revised Updated Reports – BLS Proprietary	CKSfocMay.xls	O&P-7-J-15	BLS – Interconnection Operations – CLEC Performance Measurements
June 2000 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-K-15	BLS (PMAP Web site)
June 2000 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-K-15	BLS (PMAP Web site)
June 2000 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-K-15	BLS (PMAP Web site)
June 2000 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-K-15	BLS (PMAP Web site)
June 2000 Report – FOC Timeliness – Revised Reports– BLS Proprietary	GAEX 110.2-FOC TEST CLEC JUNE.xls	O&P-7-K-15	BLS – Interconnection Operations – CLEC Performance Measurements
July 2000 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-L-15	BLS (PMAP Web site)
July 2000 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-L-15	BLS (PMAP Web site)
July 2000 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-L-15	BLS (PMAP Web site)
July 2000 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-L-15	BLS (PMAP Web site)
August 2000 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-M-15	BLS (PMAP Web site)
August 2000 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-M-15	BLS (PMAP Web site)
August 2000 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-M-15	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
August 2000 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-M-15	BLS (PMAP Web site)
September 2000 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-N-15	BLS (PMAP Web site)
September 2000 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-N-15	BLS (PMAP Web site)
September 2000 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-N-15	BLS (PMAP Web site)
September 2000 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-N-15	BLS (PMAP Web site)
October 2000 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-O-15	BLS (PMAP Web site)
October 2000 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-O-15	BLS (PMAP Web site)
October 2000 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-O-15	BLS (PMAP Web site)
October 2000 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-O-15	BLS (PMAP Web site)
November 2000 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-P-15	BLS (PMAP Web site)
November 2000 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-P-15	BLS (PMAP Web site)
November 2000 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-P-15	BLS (PMAP Web site)
November 2000 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-P-15	BLS (PMAP Web site)
December 2000 Report – FOC Timeliness – Fully Mechanized – BLS Proprietary	FOC Timeliness Fully Mech CLEC.txt	O&P-7-Q-15	BLS (PMAP Web site)
December 2000 Report – FOC Timeliness – Partially Mechanized – BLS Proprietary	FOC Timeliness Partially Mech CLEC.txt	O&P-7-Q-15	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
December 2000 Report – FOC Timeliness – Total Mechanized – BLS Proprietary	FOC Timeliness Total Mech CLEC.txt	O&P-7-Q-15	BLS (PMAP Web site)
December 2000 Report – FOC Timeliness – Non-Mechanized – BLS Proprietary	FOC Timeliness Non-Mech CLEC.txt	O&P-7-Q-15	BLS (PMAP Web site)
December 1999 Report – Speed of Answer in the Ordering Center – BLS and CLEC Proprietary	Speed of Answer in Ordering Center SQM.txt	O&P-7-A-22	BLS (PMAP Web site)
November 1999 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-C-1	BLS (PMAP Web site)
December 1999 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-D-1	BLS (PMAP Web site)
January 2000 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-E-1	BLS (PMAP Web site)
February 2000 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-G-22	BLS (PMAP Web site)
March 2000 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-H-22	BLS (PMAP Web site)
March 2000 Report – Held Order Interval Re-test Report– BLS Proprietary	CKS Held Order March- April 2000.xls	O&P-7-H-22	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-I-22	BLS (PMAP Web site)
May 2000 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-J-22	BLS (PMAP Web site)
June 2000 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-K-22	BLS (PMAP Web site)
July 2000 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-L-22	BLS (PMAP Web site)
August 2000 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-M-22	BLS (PMAP Web site)
September 2000 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-N-22	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
October 2000 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-O-22	BLS (PMAP Web site)
November 2000 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-P-22	BLS (PMAP Web site)
December 2000 Report – Held Order Interval – BLS Proprietary	Held Order Intvl & Mean CLEC.txt	O&P-7-Q-22	BLS (PMAP Web site)
November 1999 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-C-36	BLS (PMAP Web site)
December 1999 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-D-36	BLS (PMAP Web site)
January 2000 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-E-36	BLS (PMAP Web site)
February 2000 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-G-29	BLS (PMAP Web site)
March 2000 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-H-29	BLS (PMAP Web site)
March 2000 Report – Jeopardy Interval Re-test Report– BLS Proprietary	CKS March CLEC reports GA - Provisioning.xls	O&P-7-H-29	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-I-29	BLS (PMAP Web site)
May 2000 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-J-29	BLS (PMAP Web site)
June 2000 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-K-29	BLS (PMAP Web site)
July 2000 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-L-29	BLS (PMAP Web site)
August 2000 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-M-29	BLS (PMAP Web site)
September 2000 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-N-29	BLS (PMAP Web site)
October 2000 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-O-29	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
November 2000 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-P-29	BLS (PMAP Web site)
December 2000 Report – Jeopardy Interval – BLS Proprietary	Jeopardy Interval & % Jeopardy CLEC.txt	O&P-7-Q-29	BLS (PMAP Web site)
November 1999 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.xls	O&P-7-C-15	BLS (PMAP Web site)
December 1999 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-D-15	BLS (PMAP Web site)
January 2000 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-E-15	BLS (PMAP Web site)
February 2000 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-G-36	BLS (PMAP Web site)
March 2000 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-H-36	BLS (PMAP Web site)
March 2000 Report – Percent Missed Installation Appointments Re-test Report – BLS Proprietary	CKS March CLEC reports GA - Provisioning.xls	O&P-7-H-36	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-I-36	BLS (PMAP Web site)
May 2000 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-J-36	BLS (PMAP Web site)
June 2000 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-K-36	BLS (PMAP Web site)
July 2000 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-L-36	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
August 2000 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-M-36	BLS (PMAP Web site)
September 2000 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-N-36	BLS (PMAP Web site)
October 2000 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-O-36	BLS (PMAP Web site)
November 2000 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-P-36	BLS (PMAP Web site)
December 2000 Report – Percent Missed Installation Appointments – BLS Proprietary	% Missed Installation Appmts CLEC.txt	O&P-7-Q-36	BLS (PMAP Web site)
November 1999 Report – Order Completion Interval (OCI) – Plain Old Telephone Service (POTS) Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-C-22	BLS (PMAP Web site)
November 1999 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-C-22	BLS (PMAP Web site)
November 1999 Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-C-22	BLS (PMAP Web site)
November 1999 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-C-22	BLS (PMAP Web site)
November 1999 Report – Order Completion Interval – Non-UNE Design Dispatch – BLS Proprietary	OCI Non-UNE Design Dispatch CLEC.txt	O&P-7-C-22	BLS (PMAP Web site)
November 1999 Report – Order Completion Interval Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design Non-Dspch CLEC.txt	O&P-7-C-22	BLS (PMAP Web site)
December 1999 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-D-22	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
December 1999 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-D-22	BLS (PMAP Web site)
December 1999 Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-D-22	BLS (PMAP Web site)
December 1999 Report – Order Completion Interval UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-D-22	BLS (PMAP Web site)
December 1999 Report – Order Completion Interval Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design Dispatch CLEC.txt	O&P-7-D-22	BLS (PMAP Web site)
December 1999 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design Non-Dspch CLEC.txt	O&P-7-D-22	BLS (PMAP Web site)
January 2000 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-E-22	BLS (PMAP Web site)
January 2000 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-E-22	BLS (PMAP Web site)
January 2000Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-E-22	BLS (PMAP Web site)
January 2000 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-E-22	BLS (PMAP Web site)
January 2000 Report – Order Completion Interval – Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design Dispatch CLEC.txt	O&P-7-E-22	BLS (PMAP Web site)
January 2000 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design Non-Dispatch CLEC.txt	O&P-7-E-22	BLS (PMAP Web site)
February 2000 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-G-43	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
February 2000 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-G-43	BLS (PMAP Web site)
February 2000Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-G-43	BLS (PMAP Web site)
February 2000 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-G-43	BLS (PMAP Web site)
February 2000 Report – Order Completion Interval – Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design - Dispatch CLEC.txt	O&P-7-G-43	BLS (PMAP Web site)
February 2000 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design - Non-Dspch CLEC.txt	O&P-7-G-43	BLS (PMAP Web site)
March 2000 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-H-43	BLS (PMAP Web site)
March 2000 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-H-43	BLS (PMAP Web site)
March 2000Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-H-43	BLS (PMAP Web site)
March 2000 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-H-43	BLS (PMAP Web site)
March 2000 Report – Order Completion Interval – Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design - Dispatch CLEC.txt	O&P-7-H-43	BLS (PMAP Web site)
March 2000 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design - Non-Dspch CLEC.txt	O&P-7-H-43	BLS (PMAP Web site)
March 2000 Report – Order Completion Interval Re-test Report– BLS Proprietary	CKS March CLEC reports GA - Provisioning.xls	O&P-7-H-43	BLS – Interconnection Operations – CLEC Performance Measurements

Document	File Name	Location in Work Papers	Source
April 2000 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-I-43	BLS (PMAP Web site)
April 2000 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-I-43	BLS (PMAP Web site)
April 2000Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-I-43	BLS (PMAP Web site)
April 2000 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-I-43	BLS (PMAP Web site)
April 2000 Report – Order Completion Interval – Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design - Dispatch CLEC.txt	O&P-7-I-43	BLS (PMAP Web site)
April 2000 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design - Non-Dspch CLEC.txt	O&P-7-I-43	BLS (PMAP Web site)
May 2000 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-J-43	BLS (PMAP Web site)
May 2000 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-J-43	BLS (PMAP Web site)
May 2000 Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-J-43	BLS (PMAP Web site)
May 2000 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-J-43	BLS (PMAP Web site)
May 2000 Report – Order Completion Interval – Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design - Dispatch CLEC.txt	O&P-7-J-43	BLS (PMAP Web site)
May 2000 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design - Non-Dspch CLEC.txt	O&P-7-J-43	BLS (PMAP Web site)
June 2000 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-K-43	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
June 2000 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-K-43	BLS (PMAP Web site)
June 2000 Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-K-43	BLS (PMAP Web site)
June 2000 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-K-43	BLS (PMAP Web site)
June 2000 Report – Order Completion Interval – Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design - Dispatch CLEC.txt	O&P-7-K-43	BLS (PMAP Web site)
June 2000 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design - Non-Dspch CLEC.txt	O&P-7-K-43	BLS (PMAP Web site)
July 2000 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-L-43	BLS (PMAP Web site)
July 2000 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-L-43	BLS (PMAP Web site)
July 2000 Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-L-43	BLS (PMAP Web site)
July 2000 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-L-43	BLS (PMAP Web site)
July 2000 Report – Order Completion Interval – Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design - Dispatch CLEC.txt	O&P-7-L-43	BLS (PMAP Web site)
July 2000 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design - Non-Dspch CLEC.txt	O&P-7-L-43	BLS (PMAP Web site)
August 2000 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-M-43	BLS (PMAP Web site)
August 2000 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-M-43	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
August 2000 Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-M-43	BLS (PMAP Web site)
August 2000 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-M-43	BLS (PMAP Web site)
August 2000 Report – Order Completion Interval – Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design - Dispatch CLEC.txt	O&P-7-M-43	BLS (PMAP Web site)
August 2000 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design - Non-Dspch CLEC.txt	O&P-7-M-43	BLS (PMAP Web site)
September 2000 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-N-43	BLS (PMAP Web site)
September 2000 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-N-43	BLS (PMAP Web site)
September 2000 Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-N-43	BLS (PMAP Web site)
September 2000 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-N-43	BLS (PMAP Web site)
September 2000 Report – Order Completion Interval – Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design - Dispatch CLEC.txt	O&P-7-N-43	BLS (PMAP Web site)
September 2000 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design - Non-Dspch CLEC.txt	O&P-7-N-43	BLS (PMAP Web site)
October 2000 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-O-43	BLS (PMAP Web site)
October 2000 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-O-43	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
October 2000 Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-O-43	BLS (PMAP Web site)
October 2000 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-O-43	BLS (PMAP Web site)
October 2000 Report – Order Completion Interval – Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design - Dispatch CLEC.txt	O&P-7-O-43	BLS (PMAP Web site)
October 2000 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design - Non-Dspch CLEC.txt	O&P-7-O-43	BLS (PMAP Web site)
November 2000 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-P-43	BLS (PMAP Web site)
November 2000 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-P-43	BLS (PMAP Web site)
November 2000 Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-P-43	BLS (PMAP Web site)
November 2000 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-P-43	BLS (PMAP Web site)
November 2000 Report – Order Completion Interval – Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design - Dispatch CLEC.txt	O&P-7-P-43	BLS (PMAP Web site)
November 2000 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design - Non-Dspch CLEC.txt	O&P-7-P-43	BLS (PMAP Web site)
December 2000 Report – Order Completion Interval – POTS Dispatch – BLS Proprietary	OCI POTS Dispatch CLEC.txt	O&P-7-Q-43	BLS (PMAP Web site)
December 2000 Report – Order Completion Interval – POTS Non-Dispatch – BLS Proprietary	OCI POTS Non-Dispatch CLEC.txt	O&P-7-Q-43	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
December 2000 Report – Order Completion Interval – UNE Dispatch – BLS Proprietary	OCI UNE Dispatch CLEC.txt	O&P-7-Q-43	BLS (PMAP Web site)
December 2000 Report – Order Completion Interval – UNE Non-Dispatch – BLS Proprietary	OCI UNE Non-Dispatch CLEC.txt	O&P-7-Q-43	BLS (PMAP Web site)
December 2000 Report – Order Completion Interval – Non-UNE Design – Dispatch – BLS Proprietary	OCI Non-UNE Design - Dispatch CLEC.txt	O&P-7-Q-43	BLS (PMAP Web site)
December 2000 Report – Order Completion Interval – Non-UNE Design – Non-Dispatch – BLS Proprietary	OCI Non-UNE Design - Non-Dspch CLEC.txt	O&P-7-Q-43	BLS (PMAP Web site)
November 1999 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Interval CLEC.txt	O&P-7-C-43	BLS (PMAP Web site)
December 1999 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Interval CLEC.txt	O&P-7-D-43	BLS (PMAP Web site)
January 2000 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Interval CLEC.txt	O&P-7-E-43	BLS (PMAP Web site)
February 2000 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Intvl CLEC.txt	O&P-7-G-50	BLS (PMAP Web site)
March 2000 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Intvl CLEC.txt	O&P-7-H-50	BLS (PMAP Web site)
March 2000 Report – Average Completion Notice Interval Retest Report– BLS Proprietary	CKS March CLEC reports GA - Provisioning.xls	O&P-7-H-50	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Intvl CLEC.txt	O&P-7-I-50	BLS (PMAP Web site)
May 2000 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Intvl CLEC.txt	O&P-7-J-50	BLS (PMAP Web site)
June 2000 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Intvl CLEC.txt	O&P-7-K-50	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
June 2000 Report – Average Completion Notice Interval Retest Report– BLS Proprietary	GAEX 110.1-ACNI TEST CLEC JUNE.xls	O&P-7-K-50	BLS (PMAP Web site)
July 2000 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Intvl CLEC.txt	O&P-7-L-50	BLS (PMAP Web site)
August 2000 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Intvl CLEC.txt	O&P-7-M-50	BLS (PMAP Web site)
September 2000 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Intvl CLEC.txt	O&P-7-N-50	BLS (PMAP Web site)
October 2000 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Intvl CLEC.txt	O&P-7-O-50	BLS (PMAP Web site)
November 2000 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Intvl CLEC.txt	O&P-7-P-50	BLS (PMAP Web site)
December 2000 Report – Average Completion Notice Interval – BLS Proprietary	Avg Completion Notice Intvl CLEC.txt	O&P-7-Q-50	BLS (PMAP Web site)
February 2000 Report - Coordinated Customer Conversions – BLS Proprietary	ZXC_Coordinated_Customer_Conversions.txt	O&P-7-G-57	BLS (PMAP Web site)
March 2000 Report - Coordinated Customer Conversions – BLS Proprietary	ZXC_Coordinated_Customer_Conversions.txt	O&P-7-H-57	BLS (PMAP Web site)
April 2000 Report - Coordinated Customer Conversions – BLS Proprietary	ZXC_Coordinated_Customer_Conversions.txt	O&P-7-I-57	BLS (PMAP Web site)
May 2000 Report - Coordinated Customer Conversions – BLS Proprietary	ZXC_Coordinated_Customer_Conversions.txt	O&P-7-J-57	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
September 2000 Report - Coordinated Customer Conversions – BLS Proprietary	CCC CLEC.txt	O&P-7-N-71	BLS (PMAP Web site)
October 2000 Report - Coordinated Customer Conversions – BLS Proprietary	CCC CLEC.txt	O&P-7-O-71	BLS (PMAP Web site)
November 2000 Report - Coordinated Customer Conversions – BLS Proprietary	CCC CLEC.txt	O&P-7-P-71	BLS (PMAP Web site)
December 2000 Report - Coordinated Customer Conversions – BLS Proprietary	CCC CLEC.txt	O&P-7-Q-71	BLS (PMAP Web site)
October 2000 Report - Coordinated Customer Conversions- Hot Cuts Timeliness – BLS Proprietary	CCC - Hot Cuts Timeliness CLEC.txt	O&P-7-O-78	BLS (PMAP Web site)
November 2000 Report - Coordinated Customer Conversions- Hot Cuts Timeliness – BLS Proprietary	CCC - Hot Cuts Timeliness CLEC.txt	O&P-7-P-78	BLS (PMAP Web site)
December 2000 Report - Coordinated Customer Conversions- Hot Cuts Timeliness – BLS Proprietary	CCC - Hot Cuts Timeliness CLEC.txt	O&P-7-Q-78	BLS (PMAP Web site)
December 1999 Report - Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	% Prov. Trouble within 30 Days CLEC.txt	O&P-7-D-8	BLS (PMAP Web site)
December 1999 Report - Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	% Prov. Trouble within 30 Days POTS CLEC.txt	O&P-7-D-8	BLS (PMAP Web site)
March 2000 Report - Percent Provisioning Troubles within 30 days of Service Order Activity Re-test Report– BLS Proprietary	CKS March CLEC reports GA - Provisioning.xls	O&P-7-H-64	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Report - Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	% Prov. Trouble wi 30 Days CLEC.txt	O&P-7-I-64	BLS (PMAP Web site)
May 2000 Report - Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	% Prov. Trouble wi 30 Days CLEC.txt	O&P-7-J-64	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
June 2000 Report - Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	% Prov. Trouble w-i 30 Days CLEC.txt	O&P-7-K-57	BLS (PMAP Web site)
July 2000 Report - Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	% Prov. Trouble w-i 30 Days CLEC.txt	O&P-7-L-57	BLS (PMAP Web site)
August 2000 Report - Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	% Prov. Trouble w-i 30 Days CLEC.txt	O&P-7-M-57	BLS (PMAP Web site)
September 2000 Report - Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	% Prov. Trouble w-i 30 Days CLEC.txt	O&P-7-N-57	BLS (PMAP Web site)
October 2000 Report - Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	% Prov. Trouble w-i 30 Days CLEC.txt	O&P-7-O-57	BLS (PMAP Web site)
November 2000 Report - Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	% Prov. Trouble w-i 30 Days CLEC.txt	O&P-7-P-57	BLS (PMAP Web site)
December 2000 Report - Percent Provisioning Troubles within 30 days of Service Order Activity – BLS Proprietary	% Prov. Trouble w-i 30 Days CLEC.txt	O&P-7-Q-57	BLS (PMAP Web site)
November 1999 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-C-29	BLS (PMAP Web site)
November 1999 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-C-29	BLS (PMAP Web site)
November 1999 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-C-29	BLS (PMAP Web site)
December 1999 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-D-29	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
December 1999 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-D-29	BLS (PMAP Web site)
December 1999 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-C-29	BLS (PMAP Web site)
January 2000 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-E-29	BLS (PMAP Web site)
January 2000 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-E-29	BLS (PMAP Web site)
January 2000 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-E-29	BLS (PMAP Web site)
February 2000 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-G-64	BLS (PMAP Web site)
February 2000 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-G-64	BLS (PMAP Web site)
February 2000 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-G-64	BLS (PMAP Web site)
March 2000 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-H-71	BLS (PMAP Web site)
March 2000 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-H-71	BLS (PMAP Web site)
March 2000 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-H-71	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
March 2000 Report – Total Service Order Cycle Time Re-test Report– BLS Proprietary	CKS March CLEC reports GA - Provisioning.xls	O&P-7-H-71	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-I-71	BLS (PMAP Web site)
April 2000 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-I-71	BLS (PMAP Web site)
April 2000 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-I-71	BLS (PMAP Web site)
May 2000 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-J-71	BLS (PMAP Web site)
May 2000 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-J-71	BLS (PMAP Web site)
May 2000 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-J-71	BLS (PMAP Web site)
June 2000 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-K-64	BLS (PMAP Web site)
June 2000 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-K-64	BLS (PMAP Web site)
June 2000 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-K-64	BLS (PMAP Web site)
July 2000 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-L-64	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
July 2000 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-L-64	BLS (PMAP Web site)
July 2000 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-L-64	BLS (PMAP Web site)
August 2000 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-M-64	BLS (PMAP Web site)
August 2000 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-M-64	BLS (PMAP Web site)
August 2000 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-M-64	BLS (PMAP Web site)
September 2000 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-N-64	BLS (PMAP Web site)
September 2000 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-N-64	BLS (PMAP Web site)
September 2000 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-N-64	BLS (PMAP Web site)
October 2000 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-O-64	BLS (PMAP Web site)
October 2000 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-O-64	BLS (PMAP Web site)
October 2000 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-O-64	BLS (PMAP Web site)
November 2000 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-P-64	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
November 2000 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-P-64	BLS (PMAP Web site)
November 2000 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-P-64	BLS (PMAP Web site)
December 2000 Report – Total Service Order Cycle Time – Fully Mechanized – BLS Proprietary	TSOCT Fully Mech CLEC.txt	O&P-7-Q-64	BLS (PMAP Web site)
December 2000 Report – Total Service Order Cycle Time – Partially Mechanized – BLS Proprietary	TSOCT Partially Mech CLEC.txt	O&P-7-Q-64	BLS (PMAP Web site)
December 2000 Report – Total Service Order Cycle Time – Non-Mechanized – BLS Proprietary	TSOCT Non-Mech CLEC.txt	O&P-7-Q-64	BLS (PMAP Web site)
October 1999 Report – Service Order Accuracy – BLS Proprietary	SOAOCT.xls	O&P-7-C-50	BLS – Interconnection Operations – CLEC Performance Measurements
May 2000 Report – Service Order Accuracy – BLS Proprietary	Service Order Accuracy SQM.txt	O&P-7-C-50	BLS – Interconnection Operations – CLEC Performance Measurements
PMAP Raw Data User Manual – Version 2.0 – December 15, 1999 – BLS Proprietary	Raw Data Documentation v2_0 - December 15.doc	PMR-A-2	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.0 – February 15, 2000 – BLS Proprietary	Raw Data Documentation v2.0.4 - Feb 15 2000.doc	PMR-A-3	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.04 – April 15, 2000 – BLS Proprietary	Raw Data Documentation v2.0.4 - April 15 2000.doc	PMR-A-4	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.0.4 – May 15, 2000 – BLS Proprietary	Raw Data Documentation 05152000.doc	PMR-A-5	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.0.7 – July 26, 2000 – BLS Proprietary	Raw Data Documentation v2.0.7 - July 26 2000.doc	PMR-A-6	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
PMAP Raw Data User Manual – Version 2.0.8 – August 31, 2000 – BLS Proprietary	Raw Data Documentation v2.0.8 - Aug 31 2000.doc	PMR-A-7	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.0.10 – October 11, 2000 – BLS Proprietary	Raw_Data_Documentation_v2.0.10 - Oct11 2000.doc	PMR-A-8	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.0.12 – December 15, 2000 – BLS Proprietary	RDUM v2.0.12 - Dec15 2000 posted.doc	PMR-A-10	BLS (PMAP Web site)
Speed of Answer in the Ordering Center - Instructions – CLEC Proprietary	ASA.doc	O&P-7-A-23	BLS – Interconnection Operations – CLEC Performance Measurements
10/22/99 Georgia SQM documentation – BLS Proprietary	No Electronic Copy	PMR-A-9	BLS (PMAP Web site)
May 2000 Georgia SQM documentation – BLS Proprietary	No Electronic Copy	PMR-A-11	BLS (PMAP Web site)
KCI – Ordering & Provisioning - Evaluation Criteria and Results Table – BLS Proprietary	Table V-7.3.doc	O&P-7-E-57	KCI
KCI – Ordering & Provisioning - Evaluation Criteria and Results Table – Workpaper References – BLS Proprietary	Table V-7.3wp.doc	O&P-7-E-58	KCI
KCI Test Data – BLS Proprietary	ODS Data for Metrics.xls	O&P-7-F-1	KCI

2.4.1 Data Generation/Volumes

The data for this test are the Ordering and Provisioning SQM values reported by BellSouth for the KCI test CLEC, or, if applicable, the CLEC aggregate.

2.5 Evaluation Methods

The Evaluation Methods for Ordering and Provisioning Performance Measures Evaluation are described in Section III-F, ”Performance Measures Evaluation Overview.”

2.6 Analysis Methods

The Performance Measures Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms,

standards, and guidelines for the Ordering and Provisioning Performance Measures Evaluation.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table V-7.3: O&P-7 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Percent Rejected Service Requests			
O&P-7-1-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation.
O&P-7-1-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, BLS subject matter experts instructed KCI to map the "Combos – Loop and Port (Ordering)" product to the SQM report category "UNE." Following these instructions, KCI was unable to match the BLS-reported values. BLS then directed KCI to map it to "Other" instead. Following these instructions, all calculated values matched reported values exactly. See Exceptions 45 and 46 for additional information on this issue. Exceptions 45 and 46 are closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-7-1-3	Test data collected by KCI agree with BLS raw data.	Not Complete	The time-stamp data provided by Hewlett Packard (HP) to KCI for "Local service request sent/received" and "reject/clarification requested" did not match BLS raw data for March, April, and May 2000. BLS explained that the TAG discrepancies in many instances were due to the HP listener being down. BLS did not have logs for some of the PONs in March and April, therefore BLS could not address some of the TAG discrepancies. BLS explained that the EDI discrepancies arose because of the wait time between the creation of a record by LEO and its translation into an EDI transaction. Further, BLS explained that this problem in EDI was resolved in June 2000. KCI also compared the HP-provided time stamp data for "Local Service Request sent/received" and "reject/clarification requested" with the corresponding BLS raw data for the months of August through November 2000. KCI found that there were some discrepancies in the LSR sent/received time stamp for both the TAG & EDI interfaces in these months. See Exception 136 and Draft Exception 178 for additional information on this issue. Additionally, KCI could not complete its review of the June and July 2000 data, because BLS included data that did not belong to KCI, in the BLS-provided KCI raw data file. These additional data represented volume testing in preparation for the KCI test. Because of the nature of the issue, KCI and BLS do not anticipate this problem reoccuring. KCI also found that certain

Test Cross-Reference	Evaluation Criteria	Result	Comments
			mechanized PONs and VERs were incorrectly classified as "non-mechanized" in the BLS-reported raw data files for August and September 2000. BLS explained that the identified records were incorrectly classified as "non-mechanized" orders. These records had been submitted electronically, but fell out for manual handling. Therefore, they should have been classified as "partially mechanized." BLS explained that it had taken steps to ensure that "partially mechanized" orders are not incorrectly classified as "non-mechanized" orders.[2] KCI retested these data for October and November 2000, and found no such discrepancies. See Exception 120 for additional information on this issue. Exception 120 is closed.
Reject Interval			
O&P-7-2-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS provides report values for every level of disaggregation, as required by the Georgia SQM documentation. Initially, KCI determined that BLS did not provide report values for the following levels of disaggregation, as required in the 10/22/99 Georgia SQM documentation: Design, UNE Non-Design, and UNE Loop without NP. BLS informed KCI that the 10/22/99 SQM documentation was not specific to Georgia – that is, it is a BLS region-wide document. BLS suggested that KCI use the May 2000 SQM documentation that specifies which levels of disaggregation apply to Georgia and which do not. KCI reviewed the May 2000 documentation, and determined that BLS reported all of the values at

[2] BellSouth classified records where the first character of the 'image' field is 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9 as non-mechanized. Any records that do not have a fax image number in the 'image' field are counted as mechanized or partially mechanized, differentiated by the "claimed by" field.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			every required disaggregation level that the document indicated was appropriate for Georgia reporting. See Exception 74 for additional information on this issue. Exception 74 is closed.
O&P-7-2-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, KCI determined that BLS did not provide report values for certain levels of disaggregation (see O&P-7-2-1 comments above). Additionally, BLS revised the methodology for calculating this SQM, and requested that KCI review reports beginning with June 2000. The editions of the Raw Data User Manual from July onward document this new methodology. KCI reviewed the June report and subsequent reports to evaluate reporting accuracy under this new methodology. The KCI-calculated values agree with the BLS values reported beginning with those reported in June. See Exceptions 45, 46, and 74 for additional information on these issues. Exceptions 45, 46 and 74 are closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-7-2-3	Test data collected by KCI agree with BLS raw data.	Not Complete	The time-stamp data provided by Hewlett Packard (HP) to KCI for "Local service request sent/received" and "reject/clarification requested" did not match BLS raw data for March, April, and May 2000. BLS explained that the TAG discrepancies in many instances were due to the HP listener being down. BLS did not have logs for some of the PONs in March and April, therefore BLS could not address some of the TAG discrepancies. BLS explained that the EDI discrepancies arose because of the wait time between the creation of a record by LEO and its translation into an EDI transaction. Further, BLS explained that this problem in EDI was resolved in June 2000. KCI also compared the HP-provided time stamp data for "Local Service Request sent/received" and "reject/clarification requested" with the corresponding BLS raw data for the months of August through November 2000. KCI found that there were some discrepancies in the LSR sent/received time stamp both the TAG& EDI interfaces in these months. See Exception 136 and Draft Exception 178 for additional information on this issue. Additionally, KCI could not complete its review of the June and July 2000 data, because BLS included data that did not belong to KCI, in the BLS-provided KCI raw data file. These additional data represented volume testing in preparation for the KCI test. Because of the nature of the issue, KCI and BLS do not anticipate this problem reoccuring. KCI also found that certain

Test Cross-Reference	Evaluation Criteria	Result	Comments
			mechanized PONs and VERs were incorrectly classified as "non-mechanized" in the BLS-reported raw data files for August and September 2000. BLS explained that the identified records were incorrectly classified as "non-mechanized" orders. These records had been submitted electronically, but fell out for manual handling. Therefore, they should have been classified as "partially mechanized." As noted above, BLS explained that it had taken steps to make sure that "partially mechanized" orders are not incorrectly classified as "non-mechanized" orders.[3] KCI retested for October and November 2000 and found that no such discrepancies existed. See Exception 120 for additional information on this issue. Exception 120 is closed.
Firm Order Confirmation Timeliness			
O&P-7-3-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS provides report values for every level of disaggregation, as required by the Georgia SQM documentation. Initially, KCI determined that BLS did not provide report values for the following levels of disaggregation, as required in the 10/22/99 Georgia SQM documentation: Design, UNE Non-Design, and UNE Loop without NP (see comments for O&P-7-2-1 above). BLS informed KCI that the 10/22/99 SQM documentation was not specific to Georgia – that is, it is a BLS region-wide document. BLS suggested that KCI use the May 2000 SQM documentation that specifies which levels of disaggregation apply to Georgia and which do not. KCI reviewed the May 2000 documentation, and determined that

[3] BellSouth classified records where the first character of the 'image' field is 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9 as non-mechanized. Any records that do not have a fax image number in the 'image' field are counted as mechanized or partially mechanized, differentiated by the "claimed by" field.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			BLS reported all of the values at every required disaggregation level that the document indicated was appropriate for Georgia reporting. See Exception 74 for additional information on this issue. Exception 74 is closed.
O&P-7-3-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, KCI determined that BLS did not provide report values for certain levels of disaggregation (see O&P-7-3-1 comments above). Also, KCI was unable to match the KCI-calculated SQM values and the BLS-reported values for a number of months. BLS then informed KCI that the reports for the months prior to May 2000 had been prepared using an improper calculation methodology. BLS revised its calculation methodology beginning with the May 2000 report. KCI reviewed the May report and subsequent reports, and matched the KCI-calculated values and the BLS values in these reports. See Exceptions 23, 46, 62, 74, 90, and 110 for additional information on these issues. Exceptions 23, 46, 62, 74, 90, and 110 are closed.
O&P-7-3-3	Test data collected by KCI agree with BLS raw data.	Not Complete	Initially, the time-stamped data did not match the corresponding BLS raw data for March, April, and May 2000. BLS explained that the TAG discrepancies in many instances were due to the HP listener's being down. BLS did not have logs for some of the PONs in March and April, therefore BLS could not

Test Cross-Reference	Evaluation Criteria	Result	Comments
			address some of the TAG discrepancies. BLS explained that the EDI discrepancies arose because of the wait time between the creation of a record by LEO and its translation into an EDI transaction. Further BLS explained that this problem in EDI was resolved in June 2000. KCI also tested the HP-provided time stamp data for firm order confirmation with the corresponding BLS raw data for the months of August through November 2000. KCI found that there were some discrepancies in the firm order confirmation time stamp during the months of October and November 2000. See Draft Exception 178 for additional information on this issue. Additionally, KCI could not complete its review of the June and July 2000 data because BLS included data that did not belong to KCI in the BLS-provided KCI raw data file. These additional data represented volume testing in preparation for the KCI test. Because of the nature of the issue, KCI and BLS do not anticipate this problem reoccuring.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Speed of Answer in Ordering Center			
O&P-7-4-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an aggregated value for the SQM, as specified in the May 2000 Georgia SQM documentation.
O&P-7-4-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, KCI was unable to match the reported values. However, upon clarification of the instructions by BLS, the updated KCI-calculated values agreed with the BLS-reported values. See Exception 23 for additional information on this issue. Exception 23 is closed.
Mean Held Order Interval and Distribution Intervals			
O&P-7-5-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation.
O&P-7-5-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Initially, KCI was unable to match the reported values. However, upon clarification of the instructions, as provided in the February *PMAP Raw Data User Manual*, KCI was able to match all KCI-calculated values to the corresponding BLS-reported values, exactly. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. See Exception 23 for additional information on this issue. Exception 23 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-7-5-3	Test data collected by KCI agree with BLS raw data.	Satisfied	The time-stamp data provided by Hewlett Packard (HP) to KCI for "commitment date" agreed with the corresponding BLS-provided raw data. Initially, the time-stamped data for "commitment date" did not match BLS raw data for March, April, and May 2000. BLS explained that KCI was using the older, inaccurate versions of the raw data files for data comparison purposes. BLS provided KCI with the re-run of the raw data for March, April, and May 2000. KCI then compared the commitment date data between the two sources and found that the commitment date did not match for certain PONs and Service Order Numbers for March, April, and May 2000. BLS explained that the difference arose because of the way the raw data files are populated from the processing systems. Held Order processing methodology states that the last due date that carries a company Missed Appointment code and does not have a subsequent due date should be captured. The held interval is measured as the reporting period end date minus the first company missed date on the service order. The date that should be captured is the original date. Therefore, the dates listed in the BLS raw data are correct. See Exception 113 for additional information on this issue KCI has recommended closure of Exception 113 to the GPSC. KCI also compared the commitment date for the months of June through November 2000. KCI found that the data collected by the test CLEC agreed with the raw data reported by BLS for all the months.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Average Jeopardy Notice Interval and Percent of Orders Given Jeopardy Notices			
O&P-7-6-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation.
O&P-7-6-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, KCI could not match the BLS-reported values for June. However, BLS provided an updated data file, and KCI recalculated the SQM values. The updated KCI-calculated values matched the BLS-reported values, exactly. See Exception 110 for additional information on this issue. Exception 110 is closed..
O&P-7-6-3	Test data collected by KCI agree with BLS raw data.	Not Complete	Initially, the time-stamped data for "commitment date" provided by Hewlett Packard (HP) to KCI did not match the corresponding BLS raw data for March, April, and May 2000. BLS explained that KCI used the older, inaccurate versions of the raw data files for data comparison purposes. BLS provided KCI with the re-run of the raw data reports for March, April, and May 2000. KCI then compared the commitment date data between the two sources and found that the commitment date did not match for certain PONs and service order numbers for March through November 2000. BLS explained that the reason for the discrepancy was the way in which the raw data files were created. According to BLS, raw data, prior to any exclusions, contains all the "CMTT_DATE"s for each service order. The Raw Data User Manual

Test Cross-Reference	Evaluation Criteria	Result	Comments
			exclusion criteria for "Jeopardy Interval" and "Percent Jeopardy" dictate that the latest "CMTT_DATE" in a group of records be within the given reporting month. The latest record is retained for calculation of the "Jeopardy Interval" and "Percent Jeopardy" measures. If the latest record does not fall within the given month, the entire group of records is excluded from the calculations for that month. If the latest "CMTT_DATE" does fall within the reporting month, it is retained, and all other records in the group are excluded. See Exceptions 113 and 127 for additional information on this issue. KCI has recommended closure of Exceptions 113 and 127 to the GPSC. Further KCI compared the actual date of completion of a service order - "completion date" - between the HP-recorded data and the BLS-reported raw data for the months of March through November 2000. KCI found that the completion date did not match for certain PONs and service order numbers. BLS explained the differences between all the PONs and Service Order Numbers for the months of March through September 2000. For one of the PONs and Service Order Numbers, BLS explained that even though the order was completed in the field, due to system entry error it did not get processed until the following month. BLS will institute procedures to ensure that the record gets counted in the SQM calculation for the month when it is updated in the system.These procedures are expected to be instituted by April 2001. During the testing of "completion date" for nine months – March through November 2000, this is the only instance that KCI found

Test Cross-Reference	Evaluation Criteria	Result	Comments
			that a record did not get accounted for in the SQM calculations due to system entry error. See Exception 119 for additional information on this issue. KCI has recommended closure of Exception 119 to the GPSC. BLS is still investigating another PON and service order number in the month of October 2000 where the KCI-collected value for "completion date" did not match the BLS-reported value. See Exception 128 for additional information on this issue.
Percent Missed Installation Appointments			
O&P-7-7-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation.
O&P-7-7-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values.
O&P-7-7-3	Test data collected by KCI agree with BLS raw data.	Satisfied	The time-stamp data provided by Hewlett Packard (HP) to KCI for "commitment date" agreed with the corresponding BLS-provided raw data. Initially, the time-stamped data for "commitment date" did not match BLS raw data for March, April, and May 2000. BLS explained that KCI was using the older inaccurate versions of the raw data files for data comparison purposes. BLS provided KCI with the re-run of the raw data for March, April, and May 2000. KCI then compared the commitment date data between the two sources and found that it did not match for certain PONs and service order numbers for

Test Cross-Reference	Evaluation Criteria	Result	Comments
			March, April, and May 2000. KCI also compared the commitment dates for the months of June through November 2000, and found discrepancies for these months as well. BLS explained that the discrepancies were due to the way in which raw data files are created. According to the Business Rules section of the SQM for Percent Missed Installation (PMI) Appointments, the first "CMTT_DATE" (original due date) on the service order is used in the PMI calculation. Records with a SO_CMTT_TYPE_CD = 1 represent the original due date (CMTT_DATE) for a service order. The exclusion criteria, which only select records with a SO_CMTT_TYPE_CD = 1, are included as part of the program code used to generate PMI raw data. See Exceptions 113 and 127 for additional information on this issue. KCI has recommended closure of Exceptions 113 and 127 to the GPSC. Further KCI compared the actual date of completion of a service order - "completion date" - between the HP-recorded data and the BLS-reported raw data for the months of March through November 2000. KCI found that the KCI-collected data agreed with the BLS-reported raw data.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Average Completion Interval / Order Completion Interval Distribution			
O&P-7-8-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation.
O&P-7-8-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Initially, KCI was unable to match the KCI-calculated SQM values to the BLS-reported values in several months' reports. BLS then informed KCI that the reports for the months prior to March 2000 were not calculated properly. KCI received additional information (revised data and SQM reports for March 2000), and verified BLS calculations for this month. Additionally, KCI had been initially unable to replicate the BLS-reported values for the month of April 2000. BLS then provided revised computation instructions, and KCI recalculated its SQM values. The updated KCI-calculated values matched the BLS-reported values, exactly. See Exceptions 46, 62, and 90 for additional information on this issue. Exceptions 46, 62, and 90 are closed.
O&P-7-8-3	Test data collected by KCI agree with BLS raw data.	Satisfied	The time-stamp data provided by Hewlett Packard (HP) to KCI for "commitment date" agreed with the corresponding BLS-provided raw data. Initially, the time-stamped data for "commitment date" did not match BLS raw data for March, April, and May 2000. BLS explained that KCI was using the older inaccurate versions of the raw data files for data comparison purposes. BLS provided KCI with the re-run of the raw data for March,

Test Cross-Reference	Evaluation Criteria	Result	Comments
			April, and May 2000. KCI then compared the commitment date data between the two sources and found that the commitment date agreed for March, April, and May 2000. KCI also compared the commitment date for the months of June through November 2000, and found that the data from the two sources agreed. Further KCI compared the actual date of completion of a service order - "completion date" - between the HP-recorded data and the BLS-reported raw data for the months of March through September 2000. KCI found that the completion date collected by KCI matched the data reported by BLS.
Average Completion Notice Interval			
O&P-7-9-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation. The reports also disaggregate further than is required, by Dispatch / No Dispatch.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-7-9-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, KCI could not match the BLS-reported values for June. BLS provided an updated report, and the KCI-calculated values matched these revised BLS-reported values, exactly. See Exception 110 for additional information on this issue. Exception 110 is now closed.
O&P-7-9-3	Test data collected by KCI agree with BLS raw data.	Satisfied	KCI compared the actual date of completion of a service order - "completion date" - between the HP-recorded data and the BLS-reported raw data for the months of March through November 2000. KCI found that the data from the two sources agreed.
Coordinated Customer Conversions			
O&P-7-10-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation.
O&P-7-10-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	Initially, KCI was unable to match the KCI-calculated SQM values to the BLS-reported values for the March and May 2000 periods. BLS then provided KCI with additional data for March (with which KCI recalculated its SQM values) and an updated report for May. The updated KCI-calculated values matched the BLS-reported values for March, and the KCI-calculated values matched the updated BLS-reported values for May. See Exceptions 90 and 100 for additional information on these issues. Exceptions 90 and 100 are now closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Percent Provisioning Troubles within 30 days of Service Order Activity			
O&P-7-11-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation.
O&P-7-11-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS for March 2000 through September 2000. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values for these months. Initially, KCI was unable to match the KCI-calculated SQM values to the BLS-reported values. BLS then informed KCI that the raw data were incomplete and that the remaining data could not be provided for months prior to March 2000. KCI has confirmed that BLS accurately calculated and reported these SQM values for months beginning with March 2000 through September 2000. However, KCI was unable to attempt replication for October 2000 due to insufficient data provided by BLS. The BLS-provided Order Completion Interval data file for October 2000 was missing two fields that are referenced in the November 15, 2000 Raw Data Users Manual, which KCI used to attempt replication for the month in question. BLS responded that the November 15, 2000 Raw Data Users Manual erroneously included two additional fields that were not needed in the calculation the SQM. KCI was instructed to use the December 15, 2000 Raw Data Users Manual for its analysis. KCI has confirmed that BLS accurately calculated and reported the SQM values for the month of October 2000. Additionally, KCI has confirmed the BLS-reported values

Test Cross-Reference	Evaluation Criteria	Result	Comments
			for this SQM, for the months of November and December 2000. See Exceptions 23 and 123 for additional information on these issues. Exceptions 23 and 123 are closed.
Total Service Order Cycle Time			
O&P-7-12-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation.
O&P-7-12-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	Initially, KCI was unable to match the reported values for months prior to August 2000. However, upon receipt of revised instructions, as provided in the May *PMAP Raw Data User Manual (* later revised again in the October 2000 *Manual)*, KCI was able to match all KCI-calculated values and to the corresponding BLS-reported values, exactly. See Exceptions 46, 62, and 111 for additional information on these issues. Exceptions 46, 62, and 111 are closed.
O&P-7-12-3	Test data collected by KCI agree with BLS raw data.	Satisfied	The time-stamped data for "commitment date" provided by Hewlett Packard (HP) to KCI did not match BLS raw data for March, April, and May 2000. BLS explained that KCI was using the older inaccurate versions of the raw data files for data comparison purposes. BLS provided KCI with the re-run of the raw data for March, April, and May 2000. KCI then compared the commitment date data between the two sources and found that the commitment date from the two sources matched. KCI also compared the commitment date for the months of June through November 2000, and found no discrepancies for these months. Further KCI compared the actual

Test Cross-Reference	Evaluation Criteria	Result	Comments
			date of completion of a service order - "completion date" - between the HP-recorded data and the BLS-reported raw data for the months of March through November 2000. KCI found that the data from the two sources agreed.
Service Order Accuracy			
O&P-7-13-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation. Initially, KCI determined that BLS did not report values at the Dispatch / Not Dispatch levels of disaggregation, as required by the 10/22/99 Georgia SQM documentation BLS informed KCI that the 10/22/99 SQM documentation was not specific to Georgia – that is, it is a BLS region-wide document. BLS suggested that KCI use the May 2000 SQM documentation that specifies which levels of disaggregation apply to Georgia and which do not. KCI reviewed the May 2000 documentation, and determined that BLS reported all of the values at every required disaggregation level that the document indicated was appropriate for Georgia reporting. See Exception 74 for additional information on this issue. Exception 74 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-7-13-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, KCI determined that BLS did not provide report values for certain levels of disaggregation (see O&P-7-13-1 comments above). Additionally, KCI was initially unable to match the KCI-calculated SQM value to the BLS-reported value for Mechanized <10 Circuits – Resale Residence Orders Reviewed. BLS subsequently updated their SQM report. Using the updated report, KCI was able to match the calculations in the revised report exactly. KCI also conducted a review of the June SQM data and report, and determined that the KCI-calculated SQM values agreed with BLS-reported SQM values, exactly. See Exceptions 64 and 74 for additional information on these issues. Exceptions 64 and 74 are closed.

Table V-7.4 shows the raw data values in the KCI-generated and BellSouth-reported data that do not match, as identified in the Data Comparison.[4]

[4] The discrepancies identified in this table reflect discrepancies that could not be accounted for by the following known factors:

(a) The HP clock is based on the eastern time zone and BellSouth clock is based on the central time zone, leading to a time difference of 60 minutes between the HP clock and the BellSouth clock;

(b) The HP system clock is one minute and eight seconds behind the BellSouth system clock.

(c) Transactions through the EDI servers have a 30 minute batch processing time for both the incoming and outgoing transactions, which theoretically could introduce a discrepancy of up to 60 minutes.

KCI has also included an additional two minutes leeway to account for problems not related to BellSouth's operations, before listing the values in the table below. Additionally, any time taken by BellSouth to review the transactions submitted by HP (for Firm Order Confirmation) would be reflected in the time stamps recorded by BellSouth and reported in the PMAP raw data.

Table V-7.4: Details of Results

Test Cross-Reference	Month	Account Identifier (PON)	Account Identifier (VER / Service Order Number)	KCI-Reported	BellSouth-Reported
O&P-7-1-3 O&P-7-2-3 (Local Service Request Sent / Received Time stamp	August	305R222PEH000001	0	8/25/00 11:45 AM	8/28/00 4:15 PM
	August	318R112PEH000001	0	8/28/00 4:56 PM	8/28/00 5:01 PM
	August	320R212PEH000001	0	8/28/00 4:53 PM	8/28/00 5:01 PM
	August	399R213PEM100001	1	8/28/00 3:55 PM	8/28/00 4:15 PM
	September	307R122PEF000003	0	9/14/00 10:27 AM	9/14/00 1:15 PM
	September	409R223PEM100001	0	9/13/00 4:16 PM	9/13/00 5:00 PM
	October	302R312PEF000006	0	10/12/00 3:35 PM	10/13/00 7:45 AM
	October	309R122PTH001001	1	10/2/00 10:36 AM	10/2/00 10:06 AM
	October	320R212PTH102017	3	10/20/00 11:03 AM	10/20/00 11:22 AM
	November	317R122PEH001002	0	11/13/00 4:34 PM	11/9/00 1:15 PM
	November	309R122PEH002002	0	11/13/00 4:38 PM	11/10/00 12:3 PM
O&P-7-1-3 & O&P-7-2-3 (Reject / Clarification Requested Time stamp	October	319R122PTH002004	0	10/17/00 3:15 PM	10/17/00 1:38 PM
	October	320R212PTH101017	0	10/17/00 3:15 PM	10/17/00 1:30 PM
	October	320R212PTH102017	0	10/19/00 6:48 AM	10/18/00 5:21 PM
	October	320R212PTF100008	0	10/23/00 11:50 AM	10/23/00 10:47 AM
	October	454R126PTF001002	0	10/25/00 11:47 AM	10/26/00 6:27 AM
	October	307R222PTH100009	0	10/25/00 11:47 AM	10/25/00 4:32 AM
	November	318R112PEH101007	0	11/10/00 7:21 AM	11/10/00 8:55 AM
O&P-7-3-3 Firm Order Confirmation Time stamp	October	302R312PEH000003	0	10/11/00 4:55 PM	10/10/00 5:41 PM
	October	301R112PEF000001	2	10/10/00 11:43 AM	10/9/00 4:30 PM
	October	305R112PTF102002	6	10/10/00 11:43 AM	10/10/00 8:00 AM
	October	409R223PEM101001	0	10/11/00 4:55 PM	10/11/00 10:47 AM
	October	404R223PTM102001	0	10/12/00 6:16 AM	10/11/00 9:02 AM
	November	302R312PTH001002	6	12/1/00 1:15 PM	11/30/00 2:50 PM
	November	303R222PTH000011	1	12/1/00 7:29 AM	11/30/00 3:07 PM
O&P-7-6-3 Completion Date	October	324R112PEH000003	CO33BBN0	10/13/00	None

H. Test Results: EDI Documentation Evaluation (O&P-8)

1.0 Description

The EDI Documentation Evaluation (O&P-8) was an operational review of the documentation developed by BellSouth to provide support to Competitive Local Exchange Carriers (CLECs) carrying out the business processes of ordering through BellSouth's Operational Support Systems (OSS).

This test was a high-level review to determine the degree to which documentation prepared and distributed by BellSouth was subject to acceptable management and business practices, as defined in the evaluation criteria. The evaluation was not a comprehensive review of the content accuracy of all BellSouth OSS-related documentation. Rather, it focused primarily on the ordering business rules. The Georgia Public Service Commission's (GPSC) May 20, 1999 Order authorizing third-party testing did not call for development of an EDI order interface; therefore, documentation pertaining to interface development (e.g., Local Exchange Ordering [LEO] Guide 4) was not formally reviewed.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

Instructions for using the EDI interface are available to CLECs in training classes and in documentation provided by BellSouth. BellSouth provides ordering documentation to define the order business rules, field formats, required fields, Universal Service Order Codes (USOCs), tariffs and error messages associated with the Local Service Request (LSR) form. In addition to the documentation provided during training, BellSouth posts order documentation on its Web site at www.interconnection.bellsouth.com/guides/guides/html. Notifications of updates to the documents are provided via Carrier Notifications, which are posted on the BellSouth Web site prior to actual delivery of a revised version of the document. In addition, Carrier Notifications provide CLECs with BellSouth operations information such as system downtime and holiday hours of operation.

See Section V, "Ordering & Provisioning Overview" for a description of the ordering process at BellSouth.

2.2 Scenarios

The scenarios developed for the EDI Ordering Functional Test (O&P-1) were used to evaluate BellSouth business rules documentation.

2.3 Test Targets & Measures

The test targets were the availability, organization, usability, comprehensiveness, and accuracy of the documentation. Sub-processes, functions, and evaluation criteria are summarized in the following tables. The last column "Test Cross Reference" indicates where the particular measures are addressed in Section 3.1 "Results and Analysis."

Table V-8.1: Test Target Cross Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
EDI Order Documentation	Release Management	Existence and adequacy of the update process Availability of document(s)	O&P-8-1-1 O&P-8-1-2 O&P-8-1-3 O&P-8-1-4 O&P-8-1-5
	Document Structure and Format	Existence of structural elements Completeness of data	O&P-8-2-1 O&P-8-2-2 O&P-8-2-3 O&P-8-2-4 O&P-8-2-5 O&P-8-2-6 O&P-8-2-7 O&P-8-2-8 O&P-8-2-9
	Document Content	Accuracy of document(s) Content of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3
	Document Accuracy	Accuracy of document(s)	O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
Submit an Order	Create and send order in LSR format	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Receive acknowledgement	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Receive Firm Order Confirmation (FOC) / error / reject notification	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Send Expedited Order Transaction	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
Submit an Error	Create and send order in LSR format	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Receive acknowledgement	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Receive planned error / reject notification	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Correct errors	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Receive FOC	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
Supplement an Order	Create and send supplement transactions	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Receive acknowledgement	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Receive FOC / error / reject notification	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Correct errors	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Re-send supplement	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Receive FOC	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
Pre-Order / Order Integration	Populate integration orders with information returned from designated pre-order response	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Submit integration orders	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Receive acknowledgement	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Receive error / reject notification	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Correct error(s)	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
	Re-send integration order	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Receive FOC	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
Receive Completion Notice (CN)	Receive CN transaction	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
Receive Jeopardy Notification	Receive Jeopardy Notification transaction	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5
Check Service Order Status	Check Service Order Status	Content of document(s) Accuracy of document(s)	O&P-8-3-1 O&P-8-3-2 O&P-8-3-3 O&P-8-4-1 O&P-8-4-2 O&P-8-4-3 O&P-8-4-4 O&P-8-4-5

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table V-8.2: Data Sources for O&P-8

Document	File Name	Location in Work Papers	Source
Local Exchange Ordering Guide Volume 1 Version 7J	O&P8_LEO Guide Vol. 1 Issue 7J.pdf	O&P-8-A-Disk 5	BLS
Local Exchange Ordering Guide Volume 1 Version 7K	O&P8_LEO Guide Vol. 1 Issue 7K.pdf	O&P-8-B-1	BLS
Local Exchange Ordering Guide Volume 1 Version 7L	No Electronic Copy	O&P-8-A-Disk 25	BLS
Local Exchange Ordering Guide Volume 1 Version 7M	No Electronic Copy	O&P-8-A-Disk 25	BLS
Local Exchange Ordering Guide Volume 1 Version 7N	O&P8_LEO Guide Vol. 1 Issue 7N.pdf	O&P-8-A-Disk 2	BLS
Local Exchange Ordering Guide Volume 1 Version 7O	O&P8_LEO Guide Vol. 1 Issue 7O.pdf	O&P-8-A-Disk 9	BLS
Local Exchange Ordering Guide Volume 1 Version 7P	O&P8_LEO Guide Vol. 1 Issue 7P.pdf	O&P-8-A-Disk 10	BLS
Local Exchange Ordering Guide Volume 1 Version 7Q	O&P8_LEO Guide Vol. 1 Issue 7Q.pdf	O&P-8-A-Disk 15	BLS
Local Exchange Ordering Guide Volume 1 Version 7U	O&P8_LEO Guide Vol. 1 Issue 7U.pdf	O&P-8-A-Disk 24	BLS
Local Exchange Ordering Guide Volume 1 Version 7R	O&P8_LEO IG Volume 1 Issue 7R.pdf	O&P-8-A-Disk 18	BLS
Local Exchange Ordering Guide Volume 1 Version 7S	O&P8_LEO IG (Volume 1) Issue 7S.pdf	O&P-8-A-Disk 21	BLS
Local Exchange Ordering Guide Volume 1 Version 7T	O&P8_LEO IG (Volume 1) Issue 7T.pdf	O&P-8-A-Disk 23	BLS
Local Exchange Ordering Guide Volume 2 Issue 6B	O&P8_LEO Guide Vol. 2 Issue 6B.pdf	O&P-8- C-1	BLS
Local Exchange Ordering Guide Volume 2 Issue 6C	O&P8_LEO Guide Vol. 2 Issue 6C.pdf	O&P-8-A-Disk 16	BLS
Local Exchange Ordering Guide Volume 2 Issue 6D	O&P8_LEO IG Volume2_Issue 6d.pdf	O&P-8-A-Disks 22 & 23	BLS
Local Exchange Ordering Guide Volume 3 Issue 3A	O&P8_LEO Guide Vol. 3 Issue 3A.pdf	O&P-8-A-Disk 3	BLS
Local Exchange Ordering Guide Volume 3 Issue 3b	O&P8_LEO IG Vol 3_Issue 3b.pdf	O&P-8-A-Disk 17	BLS
Local Number Portability Ordering Guide Issue 1A	O&P8_LNP Ordering Guide Issue 1A.pdf	O&P-8-A-Disk 3	BLS

Document	File Name	Location in Work Papers	Source
Local Number Portability Ordering Guide Issue 1B	O&P8_LNP Ordering Guide Issue 1B.pdf	O&P-8-A-Disk 3	BLS
Local Number Portability Ordering Guide Issue 2	O&P8_LNP Ordering Guide Issue 2.pdf	O&P-8-A-Disk 8	BLS
Local Number Portability Reference Guide Issue 2b	O&P8_LNP Reference Guide Issue 2b.pdf	O&P-8-A-Disk 14	BLS
Local Number Portability Reference Guide Issue 2c	O&P8_LNP Reference Guide Issue 2c.pdf	O&P-8-A-Disk 18	BLS
Local Number Portability Reference Guide Issue 2d	O&P8_LNP Reference Guide_Issue 2d.pdf	O&P-8-A-Disk 21	BLS
Facility Based Activation Requirements Issue 1A	O&P8_Facility Based Act Rqmts Issue 1A.pdf	O&P-8-A-Disk 1	BLS
Facility Based Advisory Guide Issue 4.1	O&P8_Facility Based Adv Guide Issue 41.pdf	O&P-8-A-Disk 26	BLS
CLEC Service Order Tracking System User's Guide Issue 2	O&P8_SOTS Issue 2.pdf	O&P-8-A-Disk 6	BLS
CLEC Service Order Tracking System User's Guide Issue 3	O&P8_SOTS Issue 3.pdf	O&P-8-A-Disk 13	BLS
CLEC Service Order Tracking System User's Guide Issue 5	CLEC Service Order Tracking System User's Guide Issue 5.pdf	O&P-8-A-Disk 19 &20	BLS
Pending Service Order Job Aid	O&P8_Pending Service Order Job Aid.pdf	O&P-8-A-Disk 9	BLS
Pending Order Status Job Aid Version 1B	Pending Order Status Job Aid.pdf	O&P-8-A-Disk 15	BLS
Products and Services Interval Guide Issue 2B	Products and Services Interval Guide Issue 2B.pdf	O&P-8-A-Disk 8	BLS
Products and Services Interval Guide Issue 3	BellSouth Products and Services Interval Guide_Issue3.pdf	O&P-8-A-Disk 17	BLS
Local Service Request (LSR) Error Messages (TCIF 7) Version 6.0	O&P8_Local Service Request (LSR) Error Messages (TCIF 7) Version 6.0.pdf	O&P-8-A-Disk 26	BLS
Local Service Request (LSR) Error Messages (TCIF 7) Version 6.1	Local Service Request (LSR) Error Messages (TCIF 7) Version 6.1.pdf	O&P-8-A-Disk 7	BLS
Local Service Request (LSR) Error Messages (TCIF 7) Version 6.4	LSR Error Messages TCIF_7 Release 6.4.pdf	O&P-8-A-Disk 17	BLS

Document	File Name	Location in Work Papers	Source
Local Service Request (LSR) Error Messages (TCIF 7) Version 7.2	LSR Error Messages Ver 72 tcif7.pdf	O&P-8-A-Disk 23	BLS
Work Aid for Ordering Complex Services Issue 3E	BellSouth Work Aid for Ordering Complex Services_Issue 3E.pdf	O&P-8-A-Disk 17	BLS
BellSouth Pre-Order and Ordering Overview Issue 1	BellSouth Pre-Order and Ordering Overview Issue 1.pdf	O&P-8-A-Disk 11	BLS
BellSouth Start-Up Guide Issue 1	BellSouth Start-Up Guide Issue 1.pdf	O&P-8-D-1	BLS
BellSouth Operational Understanding Guide Issue 1	BellSouth Operational Understanding Guide Issue 1.pdf	O&P-8-A-Disk 8	BLS
Carrier Notifications (EDI related)	No Electronic Copy	O&P-8-A-30 to 38	BLS
Evaluation Checklists	O&P8_Documentation Checklist.xls	O&P-8-A-39	KCI
LEO Guide Volumes 1, 2, 3 Interview Report	O&P8_BLS Interview Report LEOs 1 2 3.doc	O&P-8-A-7	KCI
LNP Ordering Guide Interview Report	O&P8_BLS Interview Report LNP Ordering Guide.doc	O&P-8-A-8	KCI
AT&T Interview Report	O&P8_AT&T Interview Report .doc	O&P-8-A-9 & 10	KCI
Mpower Interview Report	O&P8_Mpower Interview Report.doc	O&P-8-A-4	KCI
NextLink Interview Report	No Electronic Copy	O&P-8-A-5	KCI
Documentation Issues Log	No Electronic Copy	O&P-8-A-3	KCI

2.4.1 Data Generation/Volumes

This test relied on input from KCI subject matter experts who reviewed BellSouth ordering documentation in order to conduct the EDI Functional Test (O&P-1), as well as structured reviews of the format of the documentation and interviews with BellSouth and CLEC personnel.

2.5 Evaluation Methods

Operational analysis techniques were used to evaluate BellSouth documentation. Prior to the initiation of the test, evaluation checklists were created to facilitate a structured review of documentation based on standard criteria set forth in the *Master Test Plan*. KCI performed a structured review of BellSouth documentation, visited Web sites where documentation is posted, conducted interviews with BellSouth and CLEC personnel, and verified the accuracy of

documentation during functional tests of BellSouth's Electronic Data Interchange (EDI). The documentation review undertaken during the course of EDI ordering functional testing (O&P-1) allowed for evaluation of the accuracy and usability of the documentation in a functional business environment.

BellSouth revised documents several times during the course of testing. Newly released or revised documents essential to functional testing activity were reviewed expeditiously and in-depth to allow functional testing to continue with minimal interruption.

The test methodology of the documentation evaluation was to review BellSouth documentation for conformance to a pre-defined checklist of expected characteristics. Further, an "incident report" template was created to document occurrences of inconsistencies, errors, or unclear language that were identified during the test. Errors were discussed with BellSouth during the course of the test. Exceptions were filed for documentation errors, inconsistencies, or instances of unclear language that were deemed to have a potentially significant impact on a CLEC's ability to conduct business operations.

Documentation was examined for quality of structure, existence of acceptable management procedures, and quality of content using pre-defined checklists.

2.6 Analysis Methods

The EDI Documentation Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the test.

The data collected from documentation reviews and interviews with BellSouth and CLECs were analyzed employing the evaluation criteria referenced above. Data analyzed for this report include test results collected through February 26, 2001.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table V-8.3: Evaluation Criteria and Results[1]

Test Cross-Reference	Evaluation Criteria	Result	Comments
Release Management			
O&P-8-1-1	BLS documentation is readily available via the BellSouth Web site or in hardcopy.	Satisfied	KCI was able to obtain ordering documentation readily on the BLS Web site and / or in hard copy.
O&P-8-1-2	BLS makes updates to documents readily available to the CLECs.	Satisfied	KCI was able to obtain ordering documentation updates via the BLS Web site. During KCI's initial testing documentation omissions were discovered. The *Facility Based Advisory Guide* updates had not been posted to the BLS Web site. This document, however, is no longer available and has been replaced by *The BellSouth Start-Up Guide*, which has been posted on the BLS Web site.
O&P-8-1-3	Training is available for use of documentation.	Satisfied	KCI received training on the use of ordering documentation while attending BLS training courses.
O&P-8-1-4	Responsibilities and procedures for developing, updating, and correcting documentation are clearly defined.	Satisfied	KCI's initial interviews indicated that BLS did not have an internally documented process and procedure for developing, updating, and correcting documentation. In response to this deficiency, KCI issued Exception 53. To address this issue, BLS created a Quality Documentation Review process. KCI verified through documentation reviews that the procedures for developing, updating, and correcting documentation are clearly defined. See Exception 53 for additional information on this issue. Exception 53 is now closed.

1 The analysis presented in Table V-8.3 is based upon an evaluation of the documentation in effect as of November 13, 2000.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-8-1-5	Responsibilities and procedures for distributing documentation are clearly defined.	Satisfied	KCI's interviews indicate that responsibilities and procedures for distribution of ordering documentation are defined and supported through Carrier Notifications on the BLS Web site.
Document Structure and Format			
O&P-8-2-1	Document version is indicated clearly within and throughout each document.	Satisfied	BLS ordering documentation includes clearly indicated versions within and throughout the document. KCI's initial tests revealed that some documentation contained errors or omissions. As an example, *The BellSouth Start-Up Guide* version number is inconsistent with BLS's Web site documentation listing. BLS corrected this issue by including the correct version number consistently in documentation. See Exception 55 for additional information on this issue. Exception 55 is closed.
O&P-8-2-2	BLS document organization is consistent with its intended use.	Satisfied	BLS ordering documentation facilitates access of critical business rule information and ordering procedures.
O&P-8-2-3	BLS documents contain information that is relevant to its intended audience.	Satisfied	BLS ordering documentation contains information that allows the CLECs to order wholesale products.
O&P-8-2-4	BLS documents contain tables of contents.	Satisfied	BLS ordering documentation contains tables of contents. KCI's initial tests revealed that some documentation contained errors or omissions. BLS subsequently addressed these issues by including the appropriate table of contents information. See Exception 55 for additional information on this issue. Exception 55 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-8-2-5	BLS documents are logically organized with clear page numbering and section labeling.	Satisfied	BLS ordering documentation is logically organized including clear page numbering and section labeling. During initial testing, KCI discovered that some documentation contained errors or omissions. BLS subsequently addressed these deficiencies by updating the relevant documentation to include page numbering and section labeling. See Exception 55 for additional information on these issues. Exception 55 is closed.
O&P-8-2-6	BLS Documents contain contact / help desk numbers.	Satisfied	Consistent contact / helpdesk information was contained in BLS ordering documentation analyzed by KCI. During initial testing, KCI discovered that some documentation contained errors or omissions. BLS subsequently addressed these deficiencies by updating the relevant documentation to include the appropriate contact information. See Exception 55 for additional information on this issue. Exception 55 is closed.
O&P-8-2-7	BLS documents clearly indicate purpose and scope.	Satisfied	BLS ordering documentation clearly indicates its purpose and scope. KCI discovered during initial testing that some documentation contained errors or omissions. BLS subsequently addressed these deficiencies by updating the relevant documentation to include the appropriate purpose and scope. See Exception 55 for additional information on this issue. Exception 55 is closed.
O&P-8-2-8	Cross-references are clearly stated directing readers to relevant sources of additional information.	Satisfied	The majority of BLS ordering documentation contains relevant sources of additional information. During initial testing, KCI discovered that documentation like the *LEO Guide Volumes 2* and *3* contained

Test Cross-Reference	Evaluation Criteria	Result	Comments
			errors or omissions. BLS subsequently addressed these deficiencies by updating the relevant documentation to include the relevant sources of additional information. See Exception 55 for additional information on this issue. Exception 55 is closed.
O&P-8-2-9	BLS documents clearly instruct users how to notify BLS of document errors and omissions.	Satisfied	Contact information for reporting documentation errors or omissions has been posted on the BLS Web site. KCI's initial testing, revealed that the *Products and Services Interval Guide* and the *LNP Reference Guide* omitted instructions on how to notify BLS of document errors or omissions. BLS subsequently posted instructions on how to notify BLS of document errors and omissions on its Web site. See Exception 55 for additional information on this issue. Exception 55 is closed.
Document Content			
O&P-8-3-1	BLS documents provide description of error messages and potential steps for resolution.	Satisfied	The *Local Service Request (LSR) Error Messages (TCIF7)* document is available to assist in error resolution.
O&P-8-3-2	BLS documents clearly identify inputs / outputs of the specific processes.	Satisfied	BLS ordering documentation contains inputs / outputs of critical ordering related processes such as order submission, comfirmation, and completion. During initial testing, KCI discovered that some documentation contained errors or omissions. KCI identified these deficiencies by issuing Exceptions 5 and 75. In response to Exception 5, BLS issued a new version of the *LEO Implementation Guide, Volume 1* in June 2000. KCI reviewed the new documentation release and verified inputs and outputs of the ordering

Test Cross-Reference	Evaluation Criteria	Result	Comments
			process to be adequately identified. See Exception 5 for additional information on this issue. Exception 5 is closed. In response to Exception 75, BLS released an updated version of the *LEO Implementation Guide, Volume 1*, which defined output fields and their applicability. See Exception 75 for additional information on this issue. Exception 75 is closed.
O&P-8-3-3	BLS documents include expected results of process and cycle times.	Satisfied	BLS ordering documentation provided expected results of process and cycle times. During initial testing, KCI discovered that some documentation contained errors or omissions. In response to these deficiencies, KCI issued Exception 75. BLS subsequently addressed these deficiencies by updating the relevant documentation to include the relevant sources of additional information. See Exception 75 for additional information on this issue. Exception 75 is closed. Additionally, BLS ordering documentation did not initially state batch processing time intervals. In response to these deficiencies, KCI issued Exception 59. BLS subsequently documented the appropriate methods to successfully process batch files. See Exception 59 for additional information on this issue. Exception 59 is closed. The delivery process for Jeopardy and Missed Appointments was also subsequently defined in addressing KCI's test results. See Exception 72 for additional information on this issue. Exception 72 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Document Accuracy			
O&P-8-4-1	BLS documents correctly define all data fields.	Satisfied	KCI's intitial testing revealed that some BLS documents do not correctly define all data fields. *LEO Guide Volume 1* has, therefore, been updated to define data fields for Clarifications, Electronic Errors, Jeopardy, and Missed Appointments. See Exception 75 for additional information on this issue. Exception 75 is closed.
O&P-8-4-2	BLS documents accurately define acceptable formats for all data fields.	Satisfied	Based on documentation analyzed by KCI, BLS ordering documentation defines acceptable formats for data fields. During initial testing, however, KCI discovered that BLS documentation did not accurately define values for the Line Class of Service (LNECLS SVC) data element. KCI subsequently issued Exception 18. In response to Exception 18, BLS specified valid entries for the LNECLS SVC data element. See Exception 18 for additional information on this issue. Exception 18 is closed.
O&P-8-4-3	BLS documents clearly identify required and optional fields.	Satisfied	BLS ordering documentation contains required and optional field definitions. During initial testing, KCI discovered that *LEO Guide, Volume 1* did not identify two specific fields that cannot be changed when issuing a supplemental order. As a result, KCI issued Exception 5. In response to Exception 5, BLS issued a new version of the *LEO Implementation Guide, Volume 1*, which adequately identified the two specific fields, in June 2000. See Exception 5 for additional information on this issue. Exception 5 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Additionally, *LEO Guide, Volume 1* did not initially define data element requirements and valid entries for loop service requests, and omitted complete and accurate rules for populating the Local Billing Account Number (LOCBAN) data element. KCI issued Exception 33. KCI reviewed the updated *LEO Guide* release and verified the LOCBAN data element to be adequately identified. See Exception 33 for additional information on this issue. Exception 33 is closed. While *LEO Guide, Volume 1* was updated to accurately reflect the data elements returned on responses (e.g., FOC, CN, Jeopardy), the *Guide* did not adequately define usage. As a result, KCI issued Exception 68. In response to Exception 68, BLS issued a new version of *LEO Guide, Volume 1* on January 31, 2001, which included additional usage information for responses. See Exception 68 for additional information on this issue. Exception 68 is closed.
O&P-8-4-4	BellSouth documents clearly describe expected system responses / outputs.	Satisfied	BLS ordering documentation states expected system response outputs. During initial testing, KCI discovered that the *LEO Guide, Volume 1* did not adequately define the functional message delivery process for Jeopardy and Missed Appointments. BLS subsequently addressed the documentation deficiency in its October 16, 2000 (Version 7S) release by adequately defining procedures for delivering Jeopardy and Missed Appointment notifications. See Exception 72 for additional information on this issue. Exception 72 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-8-4-5	BellSouth document(s) contain methods and procedures to correctly execute processes.	Satisfied	BLS ordering documentation contains methods and procedures to execute essential ordering processes. When first analyzed by KCI, some documentation contained errors or omissions. As an example, *LEO Guide, Volume 1* failed initially to identify two specific fields that cannot be changed when issuing a supplemental order. As a result, KCI issued Exception 5. To address this issue, BLS updated the *LEO Guide* to reflect the required process for submitting supplements. See Exception 5 for additional information on this issue. Exception 5 is closed.

I. Test Results: TAG Documentation Evaluation (O&P-9)

1.0 Description

The Telecommunications Access Gateway (TAG) Documentation Evaluation was an operational review of the documentation developed by BellSouth to support Competitive Local Exchange Carriers (CLECs) requiring Operational Support Systems (OSS) information, or having questions or issues related to carrying out the business processes of ordering.

This test was a high-level review to determine the degree to which documentation prepared and distributed by BellSouth was subject to acceptable management and business practices, as defined in the evaluation criteria. The evaluation was not a comprehensive review of the content accuracy of all BellSouth OSS-related documentation. Rather, it focused primarily on the ordering business rules.

2.0 Ordering Documentation Analysis

BellSouth provides the business rules for both the Electronic Data Interchange (EDI) and TAG interfaces in *Local Exchange Ordering (LEO) Guide Volume 1*. These rules provide the definition of field formats and requirements, including length, alpha/numeric characters, and usage requirements. The business rules contained in *LEO Guide Volume 1* were used by KCI in executing the EDI Functional Test (O&P-1) and TAG Functional Test (O&P-2).

In addition to the *LEO Guide*, BellSouth provides other TAG-related documentation, including the *TAG API Guide*, the *TAG Programmer's Job Aid*, and the *TAG Training Binder*. The primary purpose of these documents is to facilitate CLEC development of a TAG interface.

Interface development, and the documentation supporting this process, was not part of the evaluation scope outlined by the Georgia Public Service Commission (GPSC) in its May 20, 1999 *Petition for Third Party Testing*.

As a result, the only TAG-related documentation evaluated by KCI as part of the BellSouth - Georgia OSS Evaluation is the *LEO Guide*.

The *LEO Guide* has been examined as part of the EDI Documentation Evaluation (O&P-8). Please refer to this test section for specifics on the Evaluation Methodology and Test Results.

J. Test Results: EDI/TAG Production Volume Performance Test (O&P-10)

1.0 Description

The objective of the Electronic Data Interchange (EDI)/Telecommunications Access Gateway (TAG) Production Volume Performance Test (O&P-10) was to evaluate BellSouth's Operating Support Systems (OSS) associated with ordering at specified volumes. Competitive Local Exchange Carriers (CLECs) submit orders to BellSouth's OSS via two primary Application Program Interfaces: EDI and TAG. O&P-10 evaluated BellSouth's ability to accurately and quickly process orders and their associated pre-orders using the EDI and TAG interfaces using the projected year-end 2001 (YE01) transaction mix[1] in the production environment at current system capacity[2].

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section V, "Ordering & Provisioning Overview" for a description of the BellSouth ordering process via EDI and TAG.

2.2 Scenarios

Test scenarios for the EDI/TAG Production Volume Test fall into three categories: Resale, Unbundled Network Elements (UNEs), and Pre-orders.

2.2.1 Resale

Appendix B-2: Resale Ordering Scenarios of the *Master Test Plan* (*MTP*)[3] describes 25 resale test scenarios. During the initial pre-testing of the BellSouth ordering systems, six of the scenarios would not flow-through[4] the system and therefore were not used for the test[5]. From the remaining 19 scenarios, 19 test seeds were generated by applying BellSouth's OSS electronic ordering business rules[6] and logical business requirements to format orders. The following table describes each of the Resale scenarios used during this test:

[1] KCI forecasted hourly transaction rates for individual order and pre-order types drawing on data from current order and pre-order daily volume rates, BellSouth 2001 transaction forecasts and from CLEC 2001 transaction forecasts.

[2] BellSouth provided current system capacity to KCI as average transactions per hour.

[3] Version 4.1, March 28, 2000.

[4] Flow-through is defined as electronic transmission through a gateway and acceptance into BellSouth's back-office ordering systems without manual intervention by a customer service representative.

[5] The volume test methodology is designed to assess electronic interface and back-end system processing capabilities, not manual processes. Therefore, orders that must fall out for manual processing are not included in the test.

[6] BellSouth's *Local Exchange Ordering (LEO) Implementation Guide*, Volume 1, Issues 7J, 7K, 7L, 7M, 7N, 7O, 7P and 7Q were used.

Table V-10.1: Resale Scenarios

Scenario Number	Scenario Category	Scenario Description
201	Resale	Migration "As Is" of a business customer from BLS with Plain Old Telephone System (POTS) lines to CLEC.
202	Resale	Migration "As Is" of a residential customer with POTS line from BLS to CLEC.
204	Resale	A business customer partially migrates POTS lines from BLS to CLEC on a trial basis.
205	Resale	Migration "As Specified" of a residential POTS customer from BLS to CLEC.
206	Resale	A residential customer partially migrates their second POTS line from BLS to CLEC.
207	Resale	A new company starts up and needs POTS lines.
208	Resale	A resident is building a new house and needs POTS line.
209	Resale	An existing CLEC customer, a small business, adds five more POTS lines.
210	Resale	Existing residential CLEC customer adds POTS line.
213	Resale	A residential customer wants to suspend phone service on POTS line for their summer cabin during the winter months.
214	Resale	CLEC residential customer wants to restore phone service on their POTS line for their summer cabin.
218	Resale	Change Telephone Number (TN) of CLEC residential customer with POTS line.
220	Resale	CLEC residential customer with a POTS line changes Long Distance Service Providers.
221	Resale	CLEC business customer with a POTS line changes Long Distance Service Providers.
222	Resale	Business CLEC customer disconnects four of their six POTS lines.
223	Resale	A CLEC business customer disconnects all five POTS lines.
224	Resale	A residential CLEC customer disconnects both POTS lines.
225	Resale	A residential customer with POTS line changes information in Directory Listing (DL).
226	Resale	CLEC residential customer with POTS line changes information on DL.

2.2.2 UNE-based Scenarios

Appendix B-3: UNE Ordering Scenarios of the *MTP* describes 40 UNE test scenarios intended for the EDI/TAG Production Volume Performance Test.

During the initial pre-testing of the BellSouth ordering systems, 29 of the scenarios did not flow-through the system and were therefore not used for the test. In addition, BellSouth requested that Unbundled Network Element-Local Number Portability (UNE-LNP) orders not be used for the production test[7]. From the remaining eight scenarios, eight test seeds were generated by applying BellSouth's OSS electronic ordering business rules and logical business requirements to format orders. The following table describes each of the UNE scenarios used during this test:

Table V-10.2: UNE Scenarios

Scenario Number	Scenario Category	Scenario Description
301	Loop	A CLEC orders two new SL1 unbundled analog loops from BLS in support of a customer's service request.
305	Loop	A CLEC orders two SL1 unbundled analog loops in support of a full migration service request from an existing BLS customer. The customer lines are migrated "as-specified" to the CLEC business.
395	Port	A CLEC orders two new business unbundled analog ports from BLS in support of a new business customer's service request.
397	Port	A CLEC orders two new residential unbundled analog ports from BLS in support of a new business customer's service request.
420	Combo	A CLEC orders two new business unbundled analog loop – port combinations from BLS in support of a new business customer's service request.
422	Combo	A CLEC orders two new residential unbundled analog loop – port combinations from BLS in support of a new residential customer's service request.
428	Combo	A CLEC orders two residential unbundled analog loop - port combinations from BLS for one of its resale residential customers.
445	Combo	An existing CLEC customer is moving to another state. The CLEC orders BLS to disconnect both of its unbundled loop-port combinations.

2.2.3 Pre-order Scenarios

For the list of pre-order scenarios refer to Section V, Table IV-1.1: Pre-Order Scenario Description.

2.3 Test Targets & Measures

The test targets were the TAG and EDI interfaces, and back-end systems supporting order processing and pre-order queries. Sub-processes, functions and evaluation criteria are summarized in the following table. The last column

[7] The LNP database assignments could not be readily obtained for the KCI test CLEC.

"Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table V-10.3: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Submit Orders in Projected Production Volumes	Create order transactions	Availability of Interface Timeliness of Response	O&P-10-1-1 O&P-10-1-2 O&P-10-2-1 O&P-10-2-2
	Send orders in LSR format	Availability of Interface	O&P-10-1-1 O&P-10-1-2
	Receive acknowledgements	Availability of Interface Accuracy of Response Timeliness of Response	O&P-10-1-1 O&P-10-1-2 O&P-10-2-1 O&P-10-2-2 O&P-10-3-1 O&P-10-3-2
	Receive Firm Order Confirmations (FOCs) or error / reject notifications	Availability of Interface Accuracy of Response Timeliness of Response	O&P-10-1-1 O&P-10-1-2 O&P-10-2-1 O&P-10-2-2 O&P-10-3-3 O&P-10-3-4
Submit Pre-Orders in Projected Production Volumes	Address Validation	Availability of Interface Accuracy of Response Timeliness of Response	O&P-10-2-1 O&P-10-2-2 O&P-10-2-3 O&P-10-2-4 O&P-10-3-5 O&P-10-3-6 O&P-10-4-1
	Customer Service Record (CSR) Retrieval	Availability of Interface Accuracy of Response Timeliness of Response	O&P-10-2-1 O&P-10-2-2 O&P-10-2-3 O&P-10-3-9 O&P-10-4-1
	Switched Service Availability	Availability of Interface Accuracy of Response Timeliness of Response	O&P-10-2-1 O&P-10-2-2 O&P-10-2-3 O&P-10-3-12 O&P-10-4-1

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	InterLATA Presubscription Indicator Code (PIC) / InraLATA Presubscription Indicator Code (LPIC) Availability	Availability of Interface Accuracy of Response Timeliness of Response	O&P-10-2-1 O&P-10-2-2 O&P-10-2-3 O&P-10-3-12 O&P-10-4-1
	Product / Service Availability	Availability of Interface Accuracy of Response Timeliness of Response	O&P-10-2-2 O&P-10-2-1 O&P-10-2-3 O&P-10-3-12 O&P-10-4-1
	Telephone Number(s) Availability	Availability of Interface Accuracy of Response Timeliness of Response	O&P-10-2-1 O&P-10-2-2 O&P-10-2-3 O&P-10-3-8 O&P-10-3-10 O&P-10-3-11 O&P-10-4-1
	Reserve TNs	Availability of Interface Accuracy of Response Timeliness of Response	O&P-10-2-1 O&P-10-2-2 O&P-10-2-3 O&P-10-3-8 O&P-10-4-1
	Cancel TN Reservation	Availability of Interface Accuracy of Response Timeliness of Response	O&P-10-2-1 O&P-10-2-1 O&P-10-2-3 O&P-10-3-8 O&P-10-3-10 O&P-10-3-11 O&P-10-4-1
	Determine Due Date / Appointment Availability	Availability of Interface Accuracy of Response Timeliness of Response	O&P-10-1-3 O&P-10-1-4 O&P-10-1-16 O&P-10-1-17 O&P-10-2-7 O&P-10-2-13 O&P-10-3-1

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table V-10.4: Data Sources for EDI/TAG Production Performance Test (O&P-10)

Document	File Name	Location in Work Papers	Source
Local Exchange Ordering (LEO) Implementation Guide, Volume 1, Issues 7J, 7K, 7M, 7N, 7O, and 7P	No Electronic Copy	O&P-1-B-1	BLS
LEO Implementation Guide, Volume 2, Issue 6B, July 99	No Electronic Copy	O&P-1-B-2	BLS
LEO Implementation Guide, Volume 3, Issue3A, August 98	No Electronic Copy	O&P-1-B-3	BLS
LEO Implementation Guide, Volume 4, Issue 7F, October 99	No Electronic Copy	O&P-1-B-4	BLS
Product and Services Interval Guide	No Electronic Copy	O&P-1-B-5	BLS
Local Servcie Request Error Messages (Version TCIF 7)	O&P_ errors.pdf	O&P-1-A-4	BLS
*CLEC Service Order Tracking System (*CSOTS) Users Guide	O&P_csots.pdf	O&P-1-A-1	BLS
Local Number Portability (LNP) Odering Guide (Issue 1b, October 1999)	O&P_LNPgd.pdf	O&P-1-A-3	BLS
EDI System Availability Logs	O&P-EDIsystem.mdb	O&P-1-A-22	HP
Telecommunications Access Gateway (TAG) API Reference Guide, Versions 2.2.0.2, 2.2.0.4, 2.2.0.5, 2.2.0.7, 2.2.0.8, and 2.2.1.1	No Electronic Copy	PRE-1-A-3	BLS
TAG Programmers Job Aid	No Electronic Copy	PRE-1-A-4	BLS
Volume Test Production Test Scenarios	Prod_Test_Cases.xls	O&P-10-A-1	KCI
YE2001 Normal and Peak Forecast Methedology	Fcast Summary.ppt	O&P-10-A-2	KCI
Production Volume Test, Day 1 Schedule	Schedule.xls	O&P-10-A-3	KCI
Production Volume Test, Day 2 Schedule	Schedule.xls	O&P-10-A-4	KCI
System Readiness Test Log	SRT_by_date_.doc	O&P-10-A-5	KCI
Results Data Tables	CD ROM	O&P-10-A-6	KCI

Document	File Name	Location in Work Papers	Source
GPSC Order Adopting Standards and Benchmarks	GPSC_standards.tif	O&P-10-A-7	GPSC
Pre-Order Response Data for June, July, August 2000	Response Data Fro June-August 2000.xls	O&P-10-A-8	BLS
Statistical Signifcance Analysis Results	Volume Stats Analysis.xls	O&P-10-A-9	KCI

2.4.1 Data Generation/Volumes

The TAG/EDI Production Volume Test evaluated BellSouth's performance by sending approximately 7,400 orders with 24,600 associated pre-orders over an eight-hour period. To derive the test order and pre-order volumes, BellSouth provided KCI with recent daily transaction volume data. KCI determined the number of additional transactions required to increase BellSouth's daily transaction load to the maximum system capacity as stated by BellSouth. The volumes submitted were spread across order and pre-order types to reflect the expected transaction mix ratio at year end, 2001 (YE01). 60% of the orders submitted were via the TAG interface, while 40% were via EDI[8]. All pre-orders were submitted using the TAG interface. Table V-10.5 shows the order and pre-order volumes submitted during each day of the Production Volume Test[9].

Table V-10.5: Production Test Generated Volumes

Transaction Type	Day 1 07/28/00	Retest 07/31/00
AAQ	2,480	2,759
AVQ-TN	449	499
TNAQ	3,629	4,047
TNSQ	870	930
AVQ	2,881	3,206
SAQ	2,106	2,344
CSRQ	1,711	1,905
CDD	6,672	7,421
TNAQ_MLH	546	607
TNAQ_DID	198	219

[8] Volumes for order transmission interface type (EDI or TAG) were determined based on current CLEC usage and projected interface implementation dates provided by CLECs. To best replicate the actual ordering process, EDI orders were "batched" prior to transmission to BLS.

[9] One production volume test was initially planned. However, BellSouth performance failure required "re-testing" of the production volume test. Following the implementation of system fixes by BellSouth, KCI/HP successfully conducted a production volume retest.

Transaction Type	Day 1 07/28/00	Retest 07/31/00
TNCAN	198	219
TNCAN_MLH	198	219
TNCAN_DID	198	219
DL	16	16
Resale	3,835	4,206
UNE Loop	950	1,059
UNE Loop-Port Combo	1,937	2,132
UNE Port	16	16
Total	**28,890**	**32,023**

2.5 Evaluation Methods

In preparation for the test, order transaction seeds were written, according to BellSouth business rules, and loaded into the KCI transaction test system. These templates were then submitted to Hewlett Packard (HP) and to BellSouth during Systems Readiness Testing (SRT)[10]. SRT confirmed the functionality of HP's and KCI's transactional systems and verified that orders would flow-through the BellSouth system. The order seeds were used as templates to build the order volumes that were used in the subsequent test. Orders were submitted on a scheduled submission date and time determined by the KCI prior to the start of the test. As appropriate, testers made final updates (e.g., desired due dates or other information) and processed the transactions.

The EDI/TAG Production Volume Performance Test (O&P-10) tested BellSouth's interfaces and systems at year-end, 2001 (YE01) projected order volumes in BellSouth's production environment for an eight-hour period. This test was executed by submitting Resale and UNE orders against test bed accounts[11] that were provisioned by BellSouth based on KCI's specifications and verified by KCI prior to initiation of the test.

The order transaction loads were distributed geographically across seven Central Offices (COs) in the state of Georgia. BellSouth established and configured customer test accounts prior to initiation of the test.

The test cases for the Production Volume Performance Test were submitted in an automated fashion. Transactions were provided in bulk to HP for conversion from the business file format to the TAG and EDI formats. HP time stamped

[10] KCI conducted 24 SRTs between April 11, 2000 and August 1, 2000. After completing several of the SRTs, BellSouth requested additional testing. These additional tests were used by BellSouth to ensure that its back-end systems and the Interfaces were functioning correctly.

[11] Refer to Section V, "Ordering and Provisioning Overview" for a detailed description of the Ordering and Provisioning test bed process and detail of accounts.

and forwarded the transactions to BellSouth for processing according to the schedule provided by KCI. BellSouth processed the transactions and returned Functional Acknowledgements (FAs) and Firm Order Commitments (FOCs) for orders and responses for pre-orders to HP.

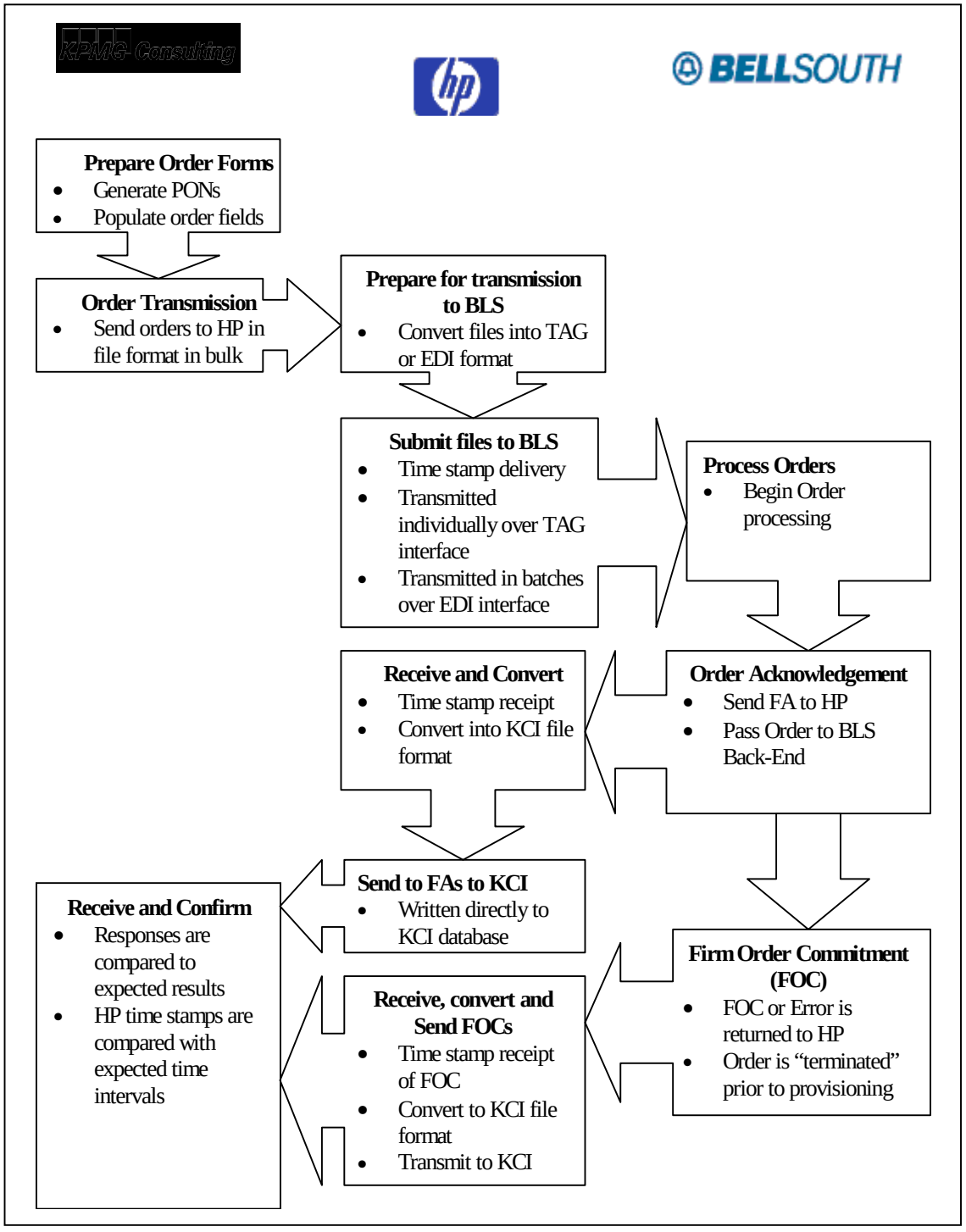
As pre-order and order volume transactions were submitted, error messages or positive responses were returned. A transaction was deemed complete if a FA and FOC were received (or if an expected error was received). Pre-order transactions were deemed complete when positive responses were received. The results were logged and compared to expected ordering system functionality and business processes, as outlined in Section V, "Overview." A number of intentional errors were included in a specified number of orders. These orders were sent to test BellSouth's ability to handle errors and to ensure that systems could not be programmed for automatic response.

Orders submitted during the Production Volume Performance Test did not go through the provisioning process. The flow of data and testing processes comprising the Volume Test are illustrated in Figure V-10.1[12].

Transactions (LSRs) were submitted and the results logged and compared to the expected ordering system functionality and business processes, as outlined in Section V, "Overview." The number, timeliness, and correctness of responses were measured, compared, and recorded.

[12] See Section V, "Ordering and Provisioning Overview" for a complete description of the file transfer process.

Figure V-10.1: O&P Production Volume Test Process



2.6 Analysis Methods

The EDI/TAG Production Volume Performance Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided a framework of norms, standards, and guidelines for the EDI/TAG Production Volume Performance Test.

The Georgia Public Service Commission (GPSC) voted on June 6, 2000 to approve a set of Service Quality Measurement- (SQM-) related measures and standards to be used for purposes of this evaluation[13]. In many cases, results in this section were calculated based on KCI/HP time stamps, which may differ significantly from the BellSouth time measurement points reported in the SQMs[14]. For those evaluation criteria that do not map to the GPSC-approved measures, KCI has applied its own standard, based on our professional judgment.

Pre-order response times for the KCI Test CLEC queries on each volume test day were compared to BellSouth retail performance data for the corresponding day (e.g., July 28, 2000 test data were compared to July 28, 2000 retail data).

For quantitative evaluation criteria, where the test result did not meet or exceed the established standard or KCI benchmark, KCI conducted a review to determine whether the differential was statistically significant.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

[13] On January 16, 2001, the GPSC issued an order requiring BellSouth to report for business purposes a set of measures that differs in some cases from the requirements of the June 6 test standards.

[14] For example, for an LSR, BellSouth records the time received and the time a corresponding FOC or ERR is sent. HP/KCI measures the time an LSR is sent, and the time a corresponding FOC or ERR is received. In most cases, we would expect these times to correspond roughly, allowing for factors such as queuing and transmission time. In some cases, these times may differ significantly as a result of system downtime, network congestion, etc.

Table V-10.6: O&P-10 Test Evaluation Criteria and Results[15]

Test Cross-Reference	Evaluation Criteria	Result	Comments
Interface Availability			
O&P-10-1-1	EDI order transaction capability is consistently available during scheduled hours of operation.	Satisfied	The GPSC-approved standard is 99.5% system availability during scheduled hours of operation[16]. BLS maintained 100% EDI availability throughout each iteration of the test[17].
O&P-10-1-2	TAG order transaction capability is consistently available during scheduled hours of operation.	Satisfied	The GPSC-approved standard is 99.5% system availability during scheduled hours of operation[18]. During the course of this test, Hewlett Packard (HP) attempted to confirm a constant connection to BLS's TAG interface by implementing regular system "pinging." Based on analysis of HP's TAG system availability logs for the period 2/15/00 through 7/27/00[19], KCI observed that the TAG interface was available during 99.5% of scheduled hours of availability[20].

[15] See Tables V-10.7 and V-10.8 for detailed results on each test day. Percentages are rounded to the nearest whole number.

[16] Regularly scheduled hours of availability for the TAG/EDI interfaces are published on the BellSouth Interconnection Web site (www.interconnection.bellsouth.com/oss/oss_hour.html). Notices of specific scheduled system downtime (e.g., for a new system release or fix) are communicated through Carrier Notifications posted on the BellSouth Web site.

[17] During the execution of the Normal Volume test, KCI/HP continuously submitted transactions, via the EDI interface, according to a predetermined schedule. During this period, HP maintained continuous connectivity with BellSouth via EDI and successfully transmitted all of the orders at their scheduled times. Therefore, KCI determined the EDI interface to be consistently available during the test.

[18] Regular scheduled hours of availability for the TAG/EDI interface are published on the BellSouth Interconnection Web site (www.interconnection.bellsouth.com/oss/oss_hour.html). Notices of specific scheduled system downtime (e.g., for a new system release or fix) are communicated through Carrier Notifications posted on the BellSouth Web site.

[19] HP maintained detailed logs of system availability beginning 2/15/00. See O&P-1 for more detailed analysis of BellSouth's production system's availability.

[20] KCI could not conclusively determine the root source (BellSouth or HP) for all recorded system down time.

Test Cross-Reference	Evaluation Criteria	Result	Comments
System Functionality			
O&P-10-2-1	The EDI interface provides expected system responses[21].	Satisfied	The KCI standard is 99% of expected system responses received. The Production Volume test results are as follows: Day 1: — 100% (2,715/2,715) of expected FAs and 100% (2,711/2,715) of expected FOCs were received. Day 1- Retest: — 100% (3,020/3,020) of expected FAs and 100% (3,014/3,020) of expected FOCs were received.
O&P-10-2-2	The TAG interface provides expected system responses.	Satisfied	The KCI standard is 99% of expected system responses received. The Production Volume test results are as follows: Day 1: — 99% (4,003/4,039) of expected FAs and 99% (4,002/4,039) of expected FOCs were received. Day 1- Retest: — 100%(4,407/4,409) of expected FAs and 100% (4,402/4,409) of expected FOCs were received.
O&P-10-2-3	The TAG interface provides expected pre-order system responses[22].	Satisfied	The KCI standard is 99% of expected system responses received. The Production Volume test results are as follows: Day 1: — 99% (21,853/22,136) of pre-order requests received expected system responses. Day 1 - Retest: — 100% (24,574/24,595) of pre-order requests received expected

[21] An expected system response is defined for this criterion as an FA for each order, an FOC for each correctly formatted order, and an error or clarification (ERR/CLR) for each invalid service request.

[22] An expected system response is defined for this criterion as any response that is consistent with technical specifications for EDI and TAG responses. Type of response received is not considered. The accuracy by type of response is evaluated in 10-4-1 and 10-4-2 (e.g., CRSQ received a CSR).

Test Cross-Reference	Evaluation Criteria	Result	Comments
			system responses.
Timeliness of System Response[23]			
O&P-10-3-1	BLS's EDI interface provides timely Functional Acknowledgements (FAs).	Satisfied	The KCI standard is 95% of FAs received in less than 30 minutes. Results from LSRs submitted during the Production Volume test: Day 1: — 100% (2,715 / 2,715) of FAs were received in less than 30 minutes Day 1 - Retest: — 100% (3,020 / 3,020) of FAs were received within 30 minutes
O&P-10-3-2	BLS's TAG interface provides timely Functional Acknowledgements (FAs).	Satisfied	The KCI standard is 95% of FAs received in less than 30 minutes. Results from LSRs submitted during the Production Volume test: Day 1: — 100%(4,003 / 4,003) of FAs were received in less than 30 minutes Day 1- Retest: — 100% (4,407 / 4,407)of received FAs were received within 30 minutes
O&P-10-3-3	BLS's EDI interface provides timely Firm Order Confirmations (FOCs).	Satisfied	The GPSC-approved standard for flow-through (FT) FOCs is 95% received within three hours. LSRs submitted during the Production Volume tests received FOCs within the following timeframes: Day 1: — 100% (2,698 / 2,711) of FOCs were received within 3 hours. Day 1- Retest: — 100% (3,014 / 3,014) of FOCs were

[23] In accordance with the GPSC's June 6, 2000 measures and standards to be used for purposes of this evaluation, KCI reviewed pre-order timeliness results relative to BellSouth Retail pre-order timeliness. This standard does not include allowances for transaction transmission time from the test CLEC to BellSouth and for response transmission time from BellSouth back to the test CLEC.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			received within 3 hours.
O&P-10-3-4	BLS's TAG interface provides timely Firm Order Confirmations (FOCs).	Satisfied	The GPSC-approved standard for flow-through (FT) FOCs is 95% received within three hours. LSRs submitted during the Production Volume tests received FOCs within the following timeframes: Day 1: — 100% (4,001 / 4,002) of FOCs were received within 3 hours. Day 1- Retest: — 100% (4,402 / 4,402) of FOCs were received within 3 hours.
O&P-10-3-5	The TAG interface provides timely pre-order responses from BLS's Regional Street Access Guide-Telephone Number (RSAG-TN) back-end system.	Satisfied[24]	The GPSC-approved standard is parity with retail performance[25]. Based on BLS July performance reports, KCI determined the standard retail response time for AVQ_TN inquiries to be: — 1.0 seconds (7 / 28 / 00 BLS Retail data) — 1.0 seconds (7 / 31 / 00 BLS Retail data) Responses to AVQ_TNs were received in an average of: — Day 1: 2.0 seconds. — Day 1 – Retest: 1.9 seconds. Although the KCI results exceed the BLS retail average by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted AVQ_TN pre-orders is within a reasonable timeframe.

[24] See *Figure V-10.2: AVQ_TN Response Distribution* for a distribution of the AVQ_TN response times that KCI experienced.

[25] KCI analyzed BellSouth-published Retail performance data for the month of July 2000. Since BellSouth data is separated into business and residential pre-order categories, KCI compared test results to a weighted average of BellSouth residential and business results.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-10-3-6	The TAG interface provides timely pre-order responses from BLS's RSAG-Address back-end system.	Satisfied[26]	The GPSC-approved standard is parity with retail performance. Based on BLS July performance reports, KCI determined the standard retail response time for AVQ inquiries to be: — 1.5 seconds (7/28/00 BLS Retail data) — 1.3 seconds (7/31/00 BLS Retail data) Responses to AVQs received were delivered in an average of: — Day 1: 17.5 seconds. — Day 1 – Retest: 2.2 seconds. Although the KCI results exceed the BLS retail average by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted AVQ pre-orders is within a reasonable timeframe.
O&P-10-3-7	The TAG interface provides timely pre-order responses from BLS's Direct Order Entry Support Application Program (DSAP) back-end system.	Satisfied[27]	The GPSC-approved standard is parity with retail performance. Based on BLS July performance reports, KCI determined the standard retail response time for AAQ inquiries to be: — 0.3 seconds (7/28/00 BLS Retail data) — 0.4 seconds (7/31/00 BLS Retail data) Responses to AAQs received during KCI's testing were delivered in an average of: — Day 1: 1.2 seconds. — Day 1 – Retest: 1.4 seconds. Although the KCI results exceed the BLS retail average by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-

[26] See *Figure V-10.3: AVQ Response Distribution* for a distribution of the AVQ response times that KCI experienced.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			submitted AAQ pre-orders is within a reasonable timeframe.
O&P-10-3-8	The TAG interface provides timely pre-order responses from BLS's Application for Telephone Number Load Administration and Selection (ATLAS) back- end system.	Satisfied[28]	The GPSC-approved standard is parity with retail performance. Based on BLS July performance reports, KCI determined the standard retail response time for TNAQ, TNSQ and TNCAN_TN inquiries to be: — 0.7 seconds (7/28/00 BLS Retail data) — 0.7 seconds (7/31/00 BLS Retail data). Responses to TNAQs, TNSQs, and TNCAN_TNs received were delivered in an average of: — Day 1: 2.8 seconds. — Day 1 – Retest: 2.2 seconds. Although the KCI results exceed the BLS retail average by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted TNAQ, TNSQ and TNCAN_TN pre-orders is within a reasonable timeframe.

[27] See *Figure V-10.4: AAQ Response Distribution* for a distribution of the AAQ response times that KCI experienced.

[28] See *Figure V-10.5: ATLAS Response Distribution* for a distribution of the response times that KCI experienced from the ATLAS back-end system.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-10-3-9	The TAG interface provides timely pre-order responses from BLS's CRSECSR back-end system.	Satisfied	The GPSC-approved standard is parity with retail performance. Based on BLS July performance reports, KCI determined the standard retail response time for CSRQ inquiries to be: — 1.0 seconds (7/28/00 BLS Retail data) — 1.1 seconds (7/31/00 BLS Retail data) Responses to CRSQs received were delivered in an average of: — Day 1: 2.4 seconds. — Day 1 – Retest: 2.7 seconds. Although the KCI results exceed the BLS retail average by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted CSRQ pre-orders is within a reasonable timeframe.
O&P-10-3-10	The TAG interface provides timely pre-order responses from BLS's ATLAS-MLH back-end system.	Satisfied[29]	The KCI standard for pre-order timeliness is an average of 8.0 seconds. Responses to TNAQ_MLHs and TNCAN_MLHs received during KCI's testing were delivered in an average of: — Day 1: 5.6 seconds. — Day 1 – Retest: 1.3 seconds.

[29] BellSouth retail analog data on responses from ATLAS-MLH is not currently available. BellSouth retail ordering representatives currently utilize a manual process for selecting and reserving MLH numbers. As a result, KCI is unable to evaluate TNAQ_MLH and TNCAN_MLH timeliness results in comparison to a retail benchmark for electronic response timeliness.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-10-3-11	The TAG interface provides timely pre-order responses from BLS's ATLAS-DID back-end system.	Satisfied[30]	The KCI standard for pre-order timeliness is an average of 8.0 seconds. Responses to TNAQ_DID and TNCAN_DIDs received were delivered in an average of: — Day 1: 4.3 seconds. — Day 1 – Retest: 2.3 seconds.
O&P-10-3-12	The TAG interface provides timely pre-order responses from BLS's OASIS back-end system.	Satisfied[31]	The GPSC-approved standard is parity with retail performance. Based on BLS July performance reports, KCI determined the standard retail response time for SAQ[32] queries to be: — 0.9 seconds (7/28/00 BLS Retail data) — 1.0 seconds (7/31/00 BLS Retail data) Responses to SAQs received were delivered in an average of: — Day 1: 2.9 seconds. — Day 1 – Retest: 3.8 seconds. Although the KCI results exceed the BLS retail average by a statistically significant amount, it is KCI's professional judgment that the response interval for Test-CLEC-submitted SAQ pre-orders is within a reasonable timeframe.

[30] BellSouth retail analog data on responses from ATLAS-DID is not currently available. BellSouth retail ordering representatives currently utilize a manual process for selecting and reserving MLH numbers. As a result, KCI is unable to evaluate TNAQ_DID and TNCAN_DID timeliness results in comparison to a retail benchmark for electronic response timeliness.

[31] See *Figure V-10.6: SAQ Response Distribution* for a distribution of the response times that KCI experienced from the OASIS back-end system.

[32] Service Availability Queries (SAQs) may be performed by requesting a) information on a specific service/feature or group of related features; or b) information on all features available from a particular BellSouth switch.

Test Cross-Reference	Evaluation Criteria	Result	Comments
O&P-10-3-13	The TAG interface provides timely pre-order responses to Calculate Due Date (CDD) inquiries.	Satisfied[33]	The KCI standard for pre-order timeliness is an average of 8.0 seconds. Responses to CDDs received during KCI's testing were delivered in an average of: — Day 1: 0.01 Seconds. — Day 1 – Retest: 0.01 Seconds
Accuracy of System Response[34]			
O&P-10-4-1	BLS systems provide accurate pre-order success responses.	Satisfied	The expected pre-order success responses received during the test were accurate. Responses received by KCI were consistent with the pre-order types associated with them (e.g., CSRQ received a CSR).
O&P-10-4-2	BLS systems provide clear, accurate, and complete Firm Order Confirmations (FOCs).	Satisfied	The KCI standard is 95% accuracy of response type. Of the FOCs analyzed, 100% were correct relative to the LSR submitted (i.e., were received in response to a correctly formatted LSR).
O&P-10-4-3	BLS systems provide accurate order errors (ERRs) / clarifications (CLRs).	Satisfied	The expected pre-order and order error responses received during the test were accurate. Responses received by KCI were consistent with the orders expected.

[33] BellSouth retail analog data is not available for the CDD query. BellSouth retail representatives do not utilize this function when retrieving information needed to process retail orders. As a result, KCI is unable to evaluate CDD timeliness results in comparison to a retail benchmark.

[34] For these criteria, KCI defined an accurate response to be a system response that is consistent with the technical specifications for EDI and TAG success responses *and* to be consistent with the transaction type that initiated the response (e.g., a correctly formatted CSRQ received a Customer Service Record). In the case of error responses, KCI verified that these were only received for incorrectly formatted queries. The contents of the response files (successes and errors) were evaluated for accuracy and completeness for purposes of this test on a sample basis only. A more complete accuracy evaluation for conformance to the BellSouth business rules was undertaken in feature / function testing (OP-1, OP-2 and PRE-1).

Table V-10.7: Production Volume Re-Test (July 31, 2000) Functional Acknowledgement Detailed Results

Product Type	Interface	LSR Sent	Number of ACKs[35] Received	Percentage of Expected ACKs Received	ACK Received < 30 min	Percentage of ACKs received < 30 min	Average LSR To ACK Business Minutes
DL	EDI	8	8	100.0%	8	100.0%	9.75
Resale	EDI	1,709	1,709	100.0%	1,709	100.0%	14.774
UNE Loop	EDI	433	433	100.0%	433	100.0%	15.603
UNE Loop-Port Combo	EDI	862	862	100.0%	862	100.0%	15.255
UNE Port	EDI	8	8	100.0%	8	100.0%	10.75
Subtotal		3,020	3,020	100.0%	3,020	100.0%	15.006
DL	TAG	8	8	100.0%	8	100.0%	0.
Resale	TAG	2,497	2,495	99.9%	2,495	100.0%	0.002
UNE Loop	TAG	626	626	100.0%	626	100.0%	0.003
UNE Loop-Port Combo	TAG	1,270	1,270	100.0%	1,270	100.0%	0.002
UNE Port	TAG	8	8	100.0%	8	100.0%	0.
Subtotal		4,409	4,407	100.0%	4,407	100.0%	0.002
Total		7,429	7,427	100.0%	7,427	100.0%	6.103

[35] An ACK is a Functional Acknowledgement, which is an electronic acknowledgement sent to a CLEC from BLS verifying that BLS has received a firm order.

Table V-10.8: Production Volume Re-Test (July 31, 2000) FOC Detailed Results

Product Type	Interface	LSRs Sent	Number of FOCs Received	Percentage of Expected FOCs Received	FOCs Received < 3 hrs	Percentage of FOCs Received < 3 hrs	Average LSR To FOC Business Minutes
DL	EDI	8	8	100.0%	8	100.0%	73.625
Resale	EDI	1,709	1,707	99.9%	1,707	100.0%	83.548
UNE Loop	EDI	433	429	99.1%	429	100.0%	82.665
UNE Loop-Port Combo	EDI	862	862	100.0%	862	100.0%	85.813
UNE Port	EDI	8	8	100.0%	8	100.0%	100.125
Subtotal		3,020	3,014	99.8%	3,014	100.0%	84.088
DL	TAG	8	8	100.0%	8	100.0%	30.75
Resale	TAG	2,497	2,495	99.9%	2,495	100.0%	22.565
UNE Loop	TAG	626	623	99.5%	623	100.0%	21.703
UNE Loop-Port Combo	TAG	1,270	1,268	99.8%	1,268	100.0%	21.583
UNE Port	TAG	8	8	100.0%	8	100.0%	23.5
Subtotal		4,409	4,402	99.8%	4,402	100.0%	22.177
Total		7,429	7,416	99.8%	7,416	100.0%	47.339

Table V-10.11: Pre-Order Response Timeliness[36]

AAQ	**Appointment Availability Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	1989	380	32	11	2	9	8	2	47	2480
	80%	15%	1%	0%	0%	0%	0%	0%	2%	100%
Day 2	1954	674	79	18	5	13	12	1	3	2759
	71%	24%	3%	1%	0%	0%	0%	0%	0%	100%
AVQ-TN	**Address Validation Query by Telephone Number**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	254	142	22	7	4	2	4	6	8	449
	57%	32%	5%	2%	1%	0%	1%	1%	2%	100%
Day 2	253	187	33	6	4	11	3	1	1	499
	51%	37%	7%	1%	1%	2%	1%	0%	0%	100%
TNAQ	**Telephone Number Assignment Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	1942	1047	227	58	17	47	197	31	63	3629
	54%	29%	6%	2%	0%	1%	5%	1%	2%	100%
Day 2	1629	1696	365	93	18	109	132	4	1	4047
	40%	42%	9%	2%	0%	3%	3%	0%	0%	100%
TNSQ	**Telephone Number Selection Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	492	166	59	10	14	32	72	7	18	870
	57%	19%	7%	1%	2%	4%	8%	1%	2%	100%
Day 2	608	255	36	8	3	7	10	3	0	930
	65%	27%	4%	1%	0%	1%	1%	0%	0%	100%
AVQ	**Address Validation Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	0	0	0	0	0	0	2572	256	53	2881
	0%	0%	0%	0%	0%	0%	89%	9%	2%	100%
Day 2	1072	1720	250	64	22	43	25	9	1	3206
	33%	54%	8%	2%	1%	1%	1%	0%	0%	100%

[36] Totals may not equal 100% due to rounding.

SAQ	Service Availability Query									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	0	208	1790	57	6	5	0	0	40	2106
	0%	10%	85%	3%	0%	0%	0%	0%	2%	100%
Day 2	0	0	1058	1095	119	52	14	6	0	2344
	0%	0%	45%	47%	5%	2%	1%	0%	0%	100%
CSRQ	**Customer Service Record Query**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	116	1195	268	64	12	12	3	9	32	1711
	7%	70%	16%	4%	1%	1%	0%	1%	2%	100%
Day 2	234	978	366	209	59	41	11	6	1	1905
	12%	51%	19%	11%	3%	2%	1%	0%	0%	100%
CDD	**Calculated Due Date**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	6672	0	0	0	0	0	0	0	0	6672
	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Day 2	7421	0	0	0	0	0	0	0	0	7421
	100%	0%	0%	0%	0%	0%	0.0%	0.0%	0.0%	100.0%
TNAQ_MLH	**Telephone Number Availability Query for Multi-line Hunting Numbers**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	194	43	24	9	21	92	144	9	10	546
	36%	8%	4%	2%	4%	17%	26%	2%	2%	100%
Day 2	518	59	10	4	1	2	5	1	7	607
	85%	10%	2%	1%	0%	0%	1%	0%	1%	100%
TNAQ_DID	**Telephone Number Availability Query for Direct Inward Dial Numbers**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	40	85	36	14	5	6	7	1	4	198
	20%	43%	18%	7%	3%	3%	4%	1%	2%	100%
Day 2	42	101	51	21	2	1	0	1	0	219
	19%	46%	23%	10%	1%	0%	0%	0%	0%	100%

TNCAN	Telephone Number Cancellation Query									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	77	26	4	5	14	23	43	3	3	198
	39%	13%	2%	3%	7%	12%	22%	2%	2%	100%
Day 2	162	41	9		2	1	0	1	3	219
	74%	19%	4%	0%	1%	0%	0%	0%	1%	100%
TNCAN_MLH	**Telephone Number Cancellation Query for Multi-line Hunting Numbers**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	152	25	6	1	1	5	4	1	3	198
	77%	13%	3%	1%	1%	3%	2%	1%	2%	100%
Day 2	167	35	7	0	1	2	2	0	5	219
	76%	16%	3%	0%	0%	1%	1%	0%	2%	100%
TNCAN_DID	**Telephone Number Cancellation Query for Direct Inward Dial Numbers**									
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	43	39	30	7	7	23	41	3	5	198
	22%	20%	15%	4%	4%	12%	21%	2%	3%	100%
Day 2	101	75	28	9	5	1	0	0	0	219
	46%	34%	13%	4%	2%	0%	0%	0%	0%	100%
ALL QUERY TYPES										
	<=1 sec	2 sec	3 sec	4 sec	5 sec	6-10 sec	11-20 sec	> 20 sec	No Response	TOTAL
Day 1	11971	3356	2498	243	103	256	3095	328	286	22136
	54%	15%	11%	1%	0%	1%	14%	1%	1%	100%
Day 2	14161	5821	2292	1527	241	283	214	33	22	24594
	58%	24%	9%	6%	1%	1%	1%	0%	0%	100%

Figure V-10.2: AVQ_TN Response Distribution

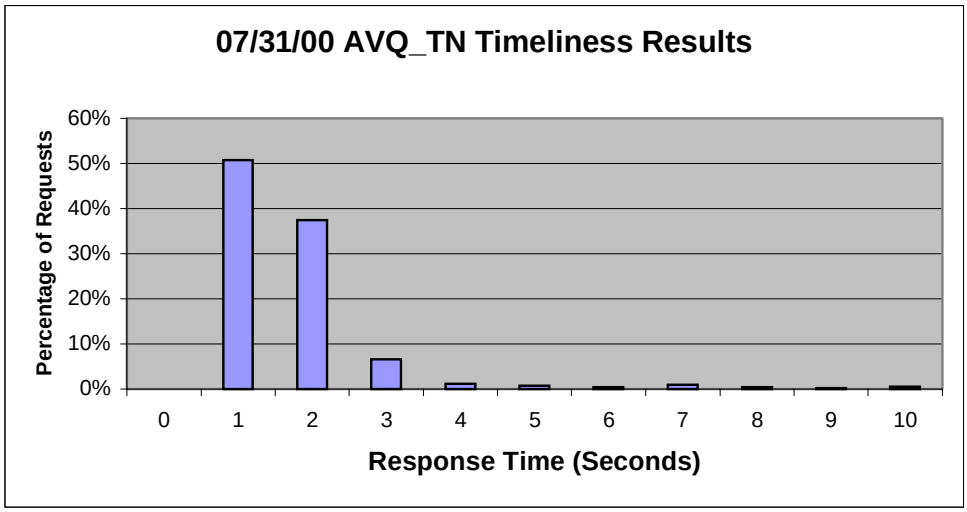


Figure V-10.3: AVQ Response Distribution

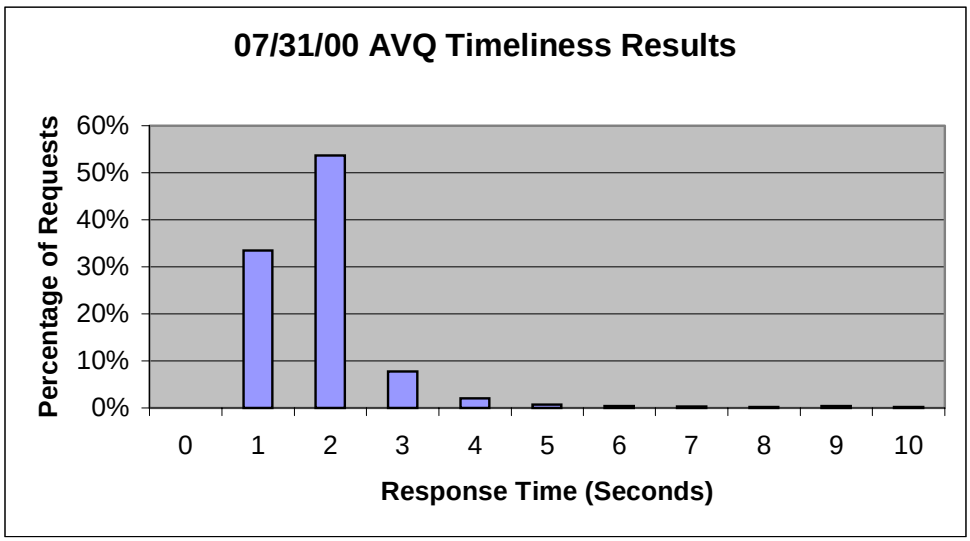


Figure V-10.4: AAQ Response Distribution

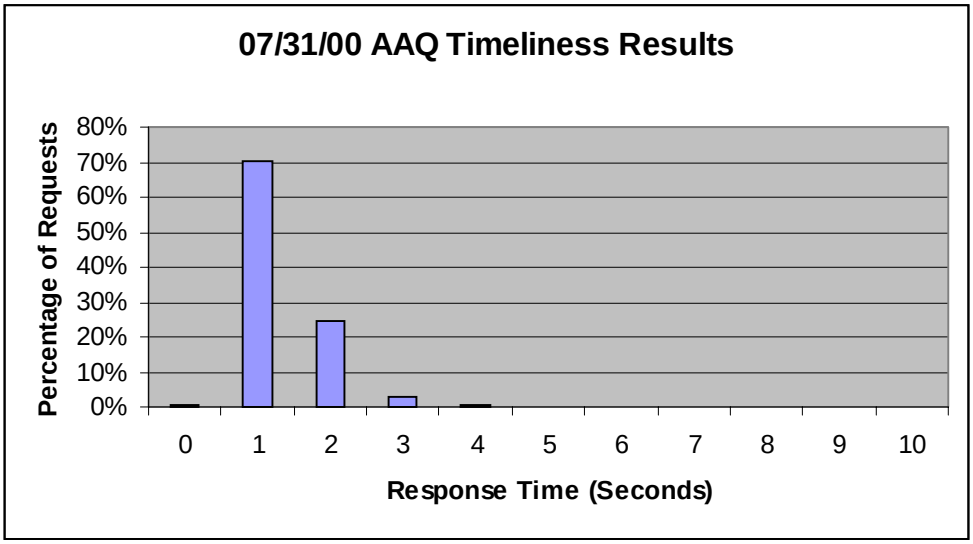
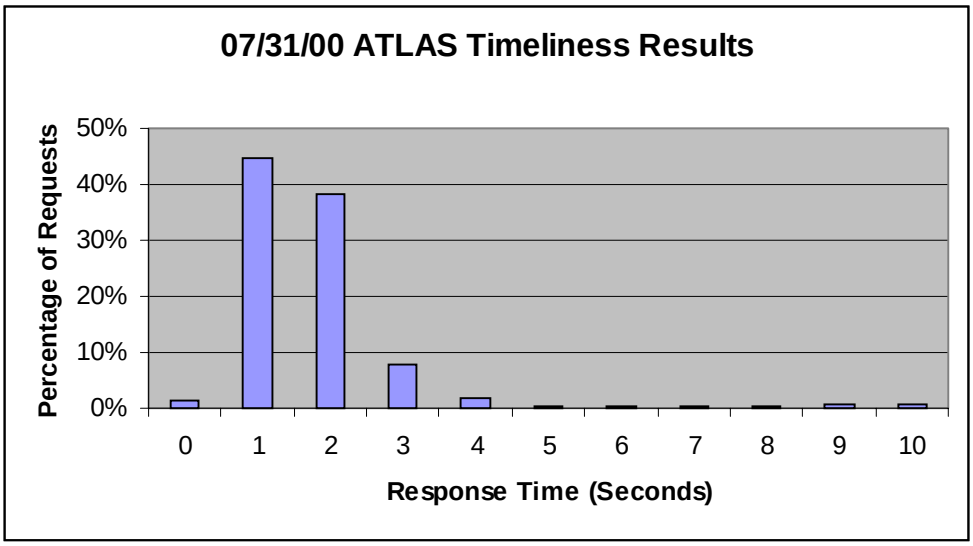
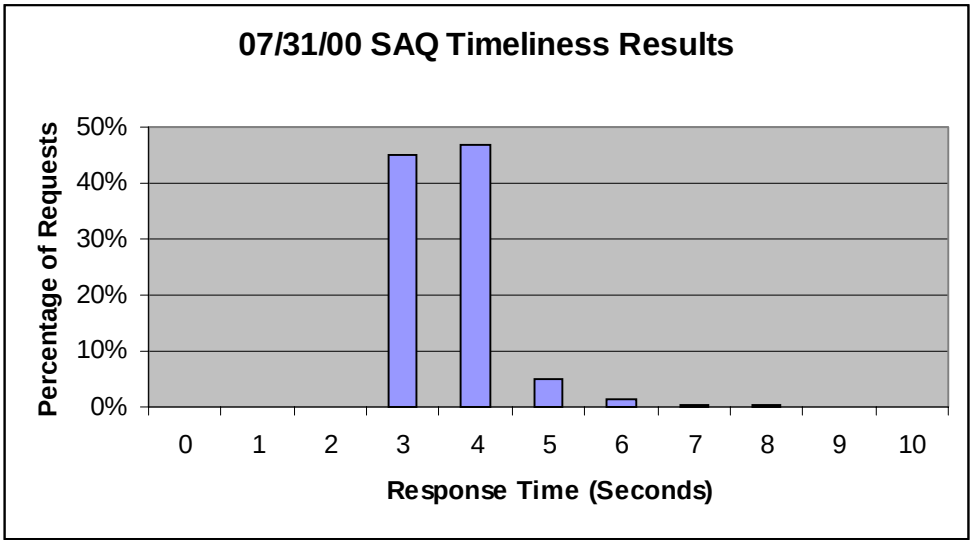


***Figure V-10.5: ATLAS Response Distribution*[37]**



[37] Contains aggregated response times for all pre-order queries on the ATLAS back-end system, including TNAQs, TNSQs, and TN_CANs.

Figure V-10.6: SAQ Response Distribution



Billing

VI. Billing (BLG) Domain Results and Analysis

1.0 Description

The purpose of this section is to present the specific tests, results, and analysis from our evaluation of the systems, processes, and other operational elements associated with BellSouth's support for Wholesale Billing. Billing tests assessed the adequacy and accuracy of BellSouth's wholesale billing systems and functions, operational processes and procedures, documentation management, and performance metrics.

2.0 Methodology

The scope of the Billing tests in Georgia included evaluations of the processes and procedures of BellSouth's Customer Record Information System (CRIS) and Carrier Access Billing System (CABS) billing systems and other related systems used to assemble, route, and process billable messages, as well as the metrics employed by BellSouth to measure performance results. This was accomplished by testing the functionality of BellSouth's billing and message processing systems, reviewing and evaluating relevant processes and documentation, assessing the capability of BellSouth's billing systems for accommodating increases in billing transaction volumes and users, and reviewing metrics reports.

2.1 Business Process Description

Two primary billing systems are utilized by BellSouth to create CLEC bills: CABS and CRIS. The CABS system is used primarily to bill CLECs for charges associated with unbundled network elements (UNEs). The CRIS billing system is used to bill non-UNE services. BellSouth produces many types of wholesale bills, using several media types, which are distributed over the course of a billing period. Each bill type covers a specific set of products and services. Bill production and distribution begins with collection of customer data (e.g. service orders, payments) and usage data. Charges are calculated and the information formatted based on the customer-selected bill media. Bills are then produced on the selected media and mailed or transmitted to the customer.

Message processing of usage data begins at the telephone switch. Usage is recorded by the switch and is retrieved by BellSouth on a daily basis. Usage is assembled and input into Access Daily Usage Files (ADUF) and/or Optional Daily Usage Files (ODUF) which are delivered to CLECs at scheduled intervals. ODUFs include local billable messages carried over the BellSouth network, operator handled calls, and BellSouth incoming calls. ADUFs include originating and terminating call details and Minutes of Use (MOU) generated from IntraLata[1] and InterLATA[2] calls that originate or terminate

[1] IntraLATA calls are calls where the originating and terminating exchanges reside in different local calling regions but in the same Local Access Transport Areas. These are commonly known as "toll calls."

on UNE ports. CLECs use the data provided by ODUFs and ADUFs to facilitate end-user billing.

BellSouth develops billing documentation to provide CLECs with information pertaining to connectivity to gather usage records and invoices, delivery of usage records and invoices, as well as, the overall format and contents of daily usage files and invoices. Updates to billing documentation are based upon changes in billing and DUF-related procedures, industry billing standards, or perception of a need for the provision of new or changed billing information.

2.2 Scenarios

The scenarios used in the Billing Evaluations were defined in the *MTP* and included the following activities: New Install, Change (Add / Modify / Delete), Disconnect, Migrate As-Specified, and Migrate As-Is. The products and services covered in the test case scenarios included: 2-Wire Analog Voice Grade Loop (Non-Designed), 2-Wire Analog Voice Grade Loop (Designed), 2-Wire Analog Voice Grade Loop with Number Portability; 2-Wire Analog Line Port, and 2-Wire Analog Loop / Port Combination. Business and residence classes of service were represented in the test case scenarios.

The test case scenarios referenced above were used to create Local Service Requests (LSRs) which were entered into an Electronic Data Interchange (EDI) PC and transmitted to BellSouth for processing. The scenarios used in the Billing Evaluations were defined in the *MTP*. Orders submitted for billing validation were executed independent of the Pre-Ordering and Ordering and Provisioning Evaluations.

2.3 Test Bed

To facilitate the execution of billing transactions, a test bed of telephone lines was provisioned by BellSouth, based on a set of requirements developed by the previous Test Manager, Hewlett Packard[3]. Upon assuming the role of test manager, KCI reviewed the test bed requirements to ensure that all required products, services, and activities were appropriately represented and provisioned.

[2] InterLATA calls are calls where the originating and terminating exchanges reside in different Local Access Transport Areas. These are commonly known as "long distance calls."

[3] KCI assumed the role of test manager on September 9, 1999.

A. Test Results: CRIS/CABS Invoicing Functional Billing Test (BLG-1)

1.0 Description

The objective of the Customer Records Information System (CRIS)/Carrier Access Billing System (CABS) Invoicing Functional Test (BLG-1) was to evaluate BellSouth's ability to deliver timely and accurate invoices to Competitive Local Exchange Carriers (CLECs). The evaluation consisted of two components: a bill validation component and a process evaluation component.

The bill validation component of this test examined the content and the timeliness of delivery of carrier bills received by KCI in the role of a test CLEC. This evaluation examined BellSouth's ability to accurately bill usage charges, monthly-recurring charges, and non-recurring charges via the appropriate type of Unbundled Network Element (UNE) bill.

In the process evaluation component, KCI examined BellSouth internal procedures associated with the production and distribution of invoices. The objective of this evaluation was to examine the processes by which invoices are produced and distributed to determine whether internal BellSouth procedures are sufficiently complete and monitored to ensure timely and correct invoicing.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

BellSouth prepares many types of bills that are distributed over the course of a monthly billing period. Each bill type covers a specific set of products and services. Bills are produced by two primary billing systems, CABS and CRIS. The CABS billing system principally serves CLECs who choose to lease unbundled services. The CRIS billing system principally produces bills for non-UNE services.

Table VI-1.1 describes the bill types and formats selected for evaluation. KCI selected a subset of UNE product and service offerings for evaluation based on the requirements documented in the BellSouth - Georgia OSS Evaluation *Master Test Plan,* Appendix A: Product Selection & Description.

BellSouth's CLEC bills are structured in a hierarchical manner. At the top of the hierarchy is the Master Account or "Q" Account. Charges for multiple individual Billing Telephone Numbers (BTNs) and Earning Telephone Numbers (ETNs) are aggregated under the "Q" Account.

Bill validation was conducted over multiple bill periods. The majority (over 80%) of test cases were validated over at least two bill periods for the same set of customers. This allowed for evaluation of pro-rated charges for accounts

migrated during a billing period, appropriate one-time charges, and monthly recurring charges encompassing an entire billing cycle. Test cases also allowed for evaluation of the billing of local, intra-LATA toll, operator-handled calls, and other usage generated during the Access Daily Usage File (ADUF)/Optional Daily Usage File (ODUF) Functional Evaluation (BLG-2).

Table VI-1.1: Bill Types and Formats Reviewed for the CRIS/CABS Invoicing Functional Test

Bill Type	Description	Format
CABS "N" Bill	SL1 Loops (2-Wire Analog Non-Designed Loops) SL2 Loops (2-Wire Analog Designed Loops)	Paper Billing Output Specifications-Billing Data Tape (BOS BDT) Diskette Analyzer Bill (DAB) Paper Image CD-ROM
CABS "J" Bill	2-Wire Analog Ports 2-Wire Analog Port-Loop Combinations Associated usage	Paper BOS-BDT DAB Paper Image CD-ROM
CRIS Bill	Local Number Portability (LNP) Interim Number Portability (INP) Administrative charges (e.g., bill media)	Customized Large User Bill (CLUB) Paper Bill DAB transmitted via File Transfer Protocol (FTP) Push DAB Paper Image CD-ROM

2.2 Scenarios

Scenarios that included execution of the following activities were performed on test lines for the bill validation component of the BLG-1 evaluation:

Migration/Conversion

- Migrate a BellSouth customer "as is/as specified"
- Change to Customer (Add/Modify/Delete)
- Add features to existing CLEC UNE customers
- Add new line to existing CLEC UNE customers
- Disconnect a CLEC UNE customer.

These activities covered each UNE retail element across eight central offices providing geographic and switch-type coverage. Scenarios were not applicable to the process evaluation component of the BLG-1 test.

2.3 Test Targets and Measures

The test target was the completeness and accuracy of the CRIS/CABS carrier billing and the processes that support timely and accurate production and distribution of the carrier bills in accordance with BellSouth's published specifications. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results and Analysis."

Table VI-1.2: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Adjustment	Enter adjustments	Presence of Functionality Accuracy of Response	BLG-1-1-1 BLG-1-1-3 BLG-1-1-4 BLG-1-1-5 BLG-1-1-8 BLG-1-1-9 BLG-1-1-15 BLG-1-1-16
	Track adjustments	Presence of Functionality Accuracy of Response	BLG-1-1-1 BLG-1-1-3 BLG-1-1-4 BLG-1-1-5 BLG-1-1-8 BLG-1-1-9 BLG-1-1-15 BLG-1-1-16
Maintain Bill Balance	Carry balance forward	Presence of Functionality Accuracy of Response	BLG-1-1-1 BLG-1-1-3 BLG-1-1-4 BLG-1-1-5 BLG-1-1-8 BLG-1-1-9 BLG-1-1-13 BLG-1-1-15 BLG-1-1-16
Review Bills	Verify normal recurring charges	Presence of Functionality Accuracy of Response	BLG-1-1-4 BLG-1-1-5 BLG-1-1-6 BLG-1-1-13 BLG-1-1-14 BLG-1-1-18
	Verify one-time charges	Presence of Functionality Accuracy of Response	BLG-1-1-7 BLG1-1-11 BLG-1-1-17

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Verify prorated recurring charges	Presence of Functionality Accuracy of Response	BLG-1-1-7 BLG-1-1-11 BLG-1-1-17 BLG-1-1-18
	Verify usage charges	Presence of Functionality Accuracy of Response	BLG-1-1-6 BLG-1-1-12 BLG-1-1-19
	Verify adjustments (debits and credits)	Presence of Functionality Accuracy of Response	BLG-1-1-4 BLG-1-1-5 BLG-1-1-8 BLG-1-1-13
	Verify late charges	Presence of Functionality Clarity of Information Accuracy of Document(s)	BLG-1-1-5 BLG-1-1-10
Balance Cycle	Define balancing and reconciliation procedures	Process Validation Presence of Functionality Clarity of Information Accuracy of Document(s)	BLG-1-1-29 through BLG-1-1-37, BLG-1-1-39 through BLG-1-1-42
	Produce control reports	Presence of Functionality Clarity of Information Accuracy of Document(s)	BLG-1-1-33 through BLG-1-1-37, BLG-1-1-39
	Release cycle	Presence of Functionality Clarity of Information Accuracy of Document(s)	BLG-1-1-33 through BLG-1-1-39
Deliver Bill	Deliver bill media	Presence of Functionality Timeliness of Response	BLG-1-1-20, BLG-1-1-21 through BLG-1-1-28
Maintain Bill History	Maintain billing information	Process Validation Presence of Functionality Clarity of Information Accuracy of Document(s)	BLG-1-1-42 BLG-1-1-43 BLG-1-1-45 BLG-1-1-47 BLG-1-1-49
	Access billing information	Presence of Functionality Clarity of Information Accuracy of Document(s)	BLG-1-1-44 BLG-1-1-45 BLG-1-1-46 BLG-1-1-48 BLG-1-1-49
Request Re-send	Deliver bill media	Process Validation Presence of Functionality Accuracy of Document(s) Timeliness of Response	BLG-1-1-46

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VI-1.3: BLG-1 Data Sources for CRIS/CABS Invoicing Functional Test

Document	File Name	Location in Work Papers	Source
Magnetic Tape Billing Plan Specifications & Change Document	No Electronic Copy	BLG-1-A	BLS
Product Information	Http://www.interconnection.bellsouth.com/products Also in hardcopy	BLG-1-B	BLS
General Subscriber Service Tariff	Http://cpr.bst.bellsouth.com/pdf/ga/a996.pdf Also in hardcopy	BLG-1-C	BLS
Facility Based Activation Requirements – Interconnection Services	Http://www.interconnection.bellsouth.com/guides/actreq2_fac/index.htm Also in hardcopy	BLG-1-D	BLS
CLEC Training Unbundled Network Elements	No Electronic Copy	BLG-1-E	BLS
Facility Based – CLEC Starter Kit	Http://www.interconnection.bellsouth.com/guides/guidepdf/stfb_is2.pdf Also in hardcopy	BLG-1-F	BLS
*CLUB*EDI Customer Handbook*	No Electronic Copy	BLG-1-G-1	BLS
Electronic Payment System Implementation Guidelines	No Electronic Copy	BLG-1-G-2	BLS
Sample CLUB Bill	No Electronic Copy	BLG-1-G-3	BLS
Beyond DAB	No Electronic Copy	BLG-1-G-4	BLS
Diskette Analyzer Bill User's Guide	No Electronic Copy	BLG-1-G-5	BLS
Batch File Processing with DAB	No Electronic Copy	BLG-1-G-6	BLS
FTP Protocol	No Electronic Copy	BLG-1-G-7	BLS
Diskette Billing System ASCII Data Exporting	No Electronic Copy	BLG-1-G-8	BLS
How to Retrieve Data Files and Install/Activate Analyzer Software	No Electronic Copy	BLG-1-G-9	BLS
CRIS Billing Media Options	No Electronic Copy	BLG-1-G-10	BLS

Document	File Name	Location in Work Papers	Source
Bill Samples –" N" & "J" Bill Formats	Http://www.interconnection.bellsouth.com/carrier/carrier_pdf/91081502.pdf Also in hardcopy	BLG-1-H	BLS
BLS FCC Tariff Information	Http://cpr.bst.bellsouth.com/pdf/fcc/fcc.htm	N/A	BLS
BLS GA Intrastate Tariff Information	Http://cpr.bst.bellsouth.com/pdf/ga/ga.htm	N/A	BLS
BLS CLEC Customer Guides	Http://www.interconnection.bellsouth.com/guides/guides.html	N/A	BLS
CLEC UNE Call Scenarios	No Electronic Copy	BLG-1-I	BLS
TelView Online Tariff Research Service	Http://www.ccmi.com	N/A	BLS
Interview Summary/Report: 1	No Electronic Copy	BLG-1-J-1	KCI
BLS Response to Interview Summary/Report: 1	No Electronic Copy	BLG-1-J-2	BLS
Interview Summary/Report: 2	No Electronic Copy	BLG-1-J-3	KCI
BLS Response to Interview Summary/Report: 2	No Electronic Copy	BLG-1-J-4	BLS
Interview Summary/Report: 3	No Electronic Copy	BLG-1-J-5	KCI
BLS Response to Interview Summary/Report: 3	No Electronic Copy	BLG-1-J-6	BLS
Interview Summary/Report: 4	No Electronic Copy	BLG-1-J-7	KCI
BLS Response to Interview Summary/Report: 4	No Electronic Copy	BLG-1-J-8	BLS
Interview Summary/Report: 8	No Electronic Copy	BLG-1-J-9	KCI
BLS Response to Interview Summary/Report: 8	No Electronic Copy	BLG-1-J-10	BLS
Interview Summary/Report: 9	No Electronic Copy	BLG-1-J-11	KCI
Interview Summary/Report: 11	No Electronic Copy	BLG-1-J-12	KCI
Interview Summary/Report: 12 & 13	No Electronic Copy	BLG-1-J-13	KCI
Sample of lists of CABS service order hold file errors	No Electronic Copy	BLG-1-J-14	BLS

Document	File Name	Location in Work Papers	Source
Sample screens from CABS service order hold file tracking system	No Electronic Copy	BLG-1-J-15	BLS
BBI / ICSC agreement on handling hold file service orders that describes prioritization of hold file errors and timeliness guidelines	No Electronic Copy	BLG-1-J-16	BLS
Process documentation for handling rate entry and verification and samples of documents	No Electronic Copy	BLG-1-J-17	BLS
Procedures that describe control checks for BIBS using UNITECH software balancing tool and samples of output UNITECH reports	No Electronic Copy	BLG-1-J-18	BLS
Requirements and plan for mechanical changes for verification of ACCESS bill balances	No Electronic Copy	BLG-1-J-19	BLS
Training procedures used for Bill Verification	No Electronic Copy	BLG-1-J-20	BLS
Internal work sheets used by Bill Distribution for checking job flows	No Electronic Copy	BLG-1-J-21	BLS
Sample of report / transmittal logs used for Magnetic tape – SA 14CO3	No Electronic Copy	BLG-1-J-22	BLS
Sample of worksheets / logs for CD-ROM	No Electronic Copy	BLG-1-J-23	BLS
Sample of worksheets / logs for tapes (serial number)	No Electronic Copy	BLG-1-J-24	BLS
Sample of sign-off of print bill sheets for when printed bills complete	No Electronic Copy	BLG-1-J-25	BLS
Consolidated report for logging measurements	No Electronic Copy	BLG-1-J-26	BLS
Monthly statistical report of bill volumes / postage	No Electronic Copy	BLG-1-J-27	BLS
Report Showing Numbers of Bills Held – Recent Month	No Electronic Copy	BLG-1-J-28	BLS

Document	File Name	Location in Work Papers	Source
Sample Hold Bill and Bill Verification Documentation	No Electronic Copy	BLG-1-J-29	BLS
Sample (Sampling Chart) Showing Items CRIS Bill Verification has reviewed	No Electronic Copy	BLG-1-K-1	BLS
Sample of Letter Used to Notify Customer Operations Unit (COU) of Billing Errors	No Electronic Copy	BLG-1-K-2	BLS
Sample of Fax Sent to Bill Mailing for Bill Release	No Electronic Copy	BLG-1-K-3	BLS
Sample Trouble Ticket (TTS) With Summary of Actions Taken	No Electronic Copy	BLG-1-K-4	BLS
Sample Report Card from Recent CRIS / CABS Release	No Electronic Copy	BLG-1-K-5	BLS
Sample Daily MAPPS Report (e-mail Version)	No Electronic Copy	BLG-1-K-6	BLS
Process Flow Description of Tracking Group Processes	No Electronic Copy	BLG-1-K-7	BLS
Sample Flex Report	No Electronic Copy	BLG-1-K-8	BLS
Copy of Form RF-602	No Electronic Copy	BLG-1-K-9	BLS
Sample Treasury Wire Transfer Notification Summary Report	No Electronic Copy	BLG-1-K-10	BLS
Sample Pocket Cut Ticket	No Electronic Copy	BLG-1-K-11	BLS
Sample Form 6355	No Electronic Copy	BLG-1-K-12	BLS
PRO Process Flow Description	No Electronic Copy	BLG-1-K-13	BLS
Sample Service Fulfillment Report	No Electronic Copy	BLG-1-K-14	BLS
Copy of organization charts (BBI)	No Electronic Copy	BLG-1-K-15	BLS
Top Level Menu for CDIA	No Electronic Copy	BLG-1-K-16	BLS
Two Samples of CDIA Documents	No Electronic Copy	BLG-1-K-17	BLS
Document Showing Scope of ISO 9000 Audit	No Electronic Copy	BLG-1-K-18	BLS
Document Showing ISO 9000 Certification	No Electronic Copy	BLG-1-K-19	BLS
Sample of Two BDATS Cases Which Have Been Completed	No Electronic Copy	BLG-1-K-20	BLS

Document	File Name	Location in Work Papers	Source
Sample of Two ARS Cases Which Have Been Closed	No Electronic Copy	BLG-1-K-21	BLS
Sample of Metrics Used for Review of CPU Utilization and Other Resources	No Electronic Copy	BLG-1-K-22	BLS
Sample Off-Site Pull List (From EDS Data Center Ops)	No Electronic Copy	BLG-1-K-23	BLS
Sample Software Control Management (SCM) Plan	No Electronic Copy	BLG-1-K-24	BLS
Sample STS Batch Process Report	No Electronic Copy	BLG-1-K-25	BLS
Sample SCCB Form	No Electronic Copy	BLG-1-K-26	BLS
Sample MAPS Document for Implementing Software Changes	No Electronic Copy	BLG-1-K-27	BLS
Examples of Completed DCR	No Electronic Copy	BLG-1-K-28	BLS
Examples of Incident Report	No Electronic Copy	BLG-1-K-29	BLS
Sample of Escalation Procedures	No Electronic Copy	BLG-1-K-30	BLS
Sample Summary of Failures for Billing / Corporate Finance Jobs	No Electronic Copy	BLG-1-K-31	BLS
Sample Implementation Guide	No Electronic Copy	BLG-1-K-32	BLS
List of KCI CLEC Billing Account Numbers (BANs) and Bill Media Types	No Electronic Copy	BLG-1-K-33	BLS
Carrier Access Billing System (CABS) Billing Output Specifications	No Electronic Copy	BLG-1-L thru BLG-1-AD	Telcordia Technologies
Facility Based Advisory Guide	No Electronic Copy	BLG-1-AF	BLS
BellSouth CLEC Billing Guide (7/28/00)	http://www.interconnection.bellsouth.com/guides/html/understanding_bill.html Also in hardcopy	BLG-5-A-22	BLS
Understanding Your Bill(7/28/00; Issue 1.0)	http://www.interconnection.bellsouth.com/billing_a_clec/content/index.htm Also in hardcopy	BLG-5-A-19	BLS

2.4.1 Data Generation/Volumes

Data included in the bill validation component of the evaluation were gathered from multiple sources including Local Service Requests (LSRs), Firm Order Confirmations (FOCs), Customer Service Requests (CSRs), Daily Usage Files (DUFs), and the BellSouth carrier bills delivered to KCI. These data were analyzed to create expected results. This evaluation did not rely on volume testing.

2.5 Evaluation Methods

The bill validation component of the CRIS/CABS Invoicing Functional Test (BLG-1) centered on the validation of carrier bills; whereas the process evaluation component centered on the BellSouth procedures associated with the production and distribution of carrier bills. For validation of the bills of the test CLEC, KCI reviewed BellSouth documentation related to bill structure, content, and UNE bill elements for each of the relevant bill types (CRIS and CABS). KCI conducted meetings with BellSouth subject matter experts to review bill format layouts and to determine the applicable rate elements for various services. Upon CLEC request, BellSouth provides sample bill formats supplemented with meetings via conference call to explain the bill formats. Using this information, KCI constructed a detailed test plan and bill validation procedures.

The test framework targeted the various bill types and bill delivery methods provided by BellSouth. Based on the scenarios in appendix B3 of the *Master Test Plan* (*MTP*), test cases were developed and utilized to create LSRs for the products and order activities specified. From this list of scenarios, a comprehensive test bed of retail and new CLEC lines was developed, against which KCI placed orders for purposes of bill validation. This test bed provided the proper mix of line types and line activity to ensure that the test case scenarios of the *MTP* were properly executed. The KCI billing team submitted LSRs for bill validation purposes independent of the KCI order evaluations.[1] In turn, BellSouth processed the LSRs, resulting in the creation of carrier bill invoices.

CSRs, reflecting the completed order activity from test case (LSR) transactions, were used to create an expected billable charge. Expected results were defined for each test case based on the policies and rate structure specified in BellSouth documentation and procedures. These expected results were compared to billing invoices produced by BellSouth to verify that charges were appropriately and accurately billed.

Validation procedures included an examination of recurring and non-recurring charges, pro-ration calculations, service establishment and disconnection dates,

[1] Note: The billing LSRs were submitted using the EDI-PC interface to the EDI gateway available for purchase by CLECs from BellSouth.

adjustments, late payment charges, and unpaid balances. From one to three bill cycles were reviewed, based on the activity being validated. KCI reviewed bills covering the period from September 1999 through January 2000. KCI also examined bills that contained usage charges for billable messages to verify the accuracy of the usage billing components, rates, and quantities.

Daily Usage File (DUF) records, created during the ADUF/ODUF Functional Usage Evaluation (BLG-2) and delivered to KCI, were used to validate billing details for usage-related charges. KCI created expected results based on a subset of calls placed during the Functional Usage Evaluation (BLG-2) and the application of BellSouth business rules governing the billing of usage. Expected results were compared to charges on corresponding bill invoices.

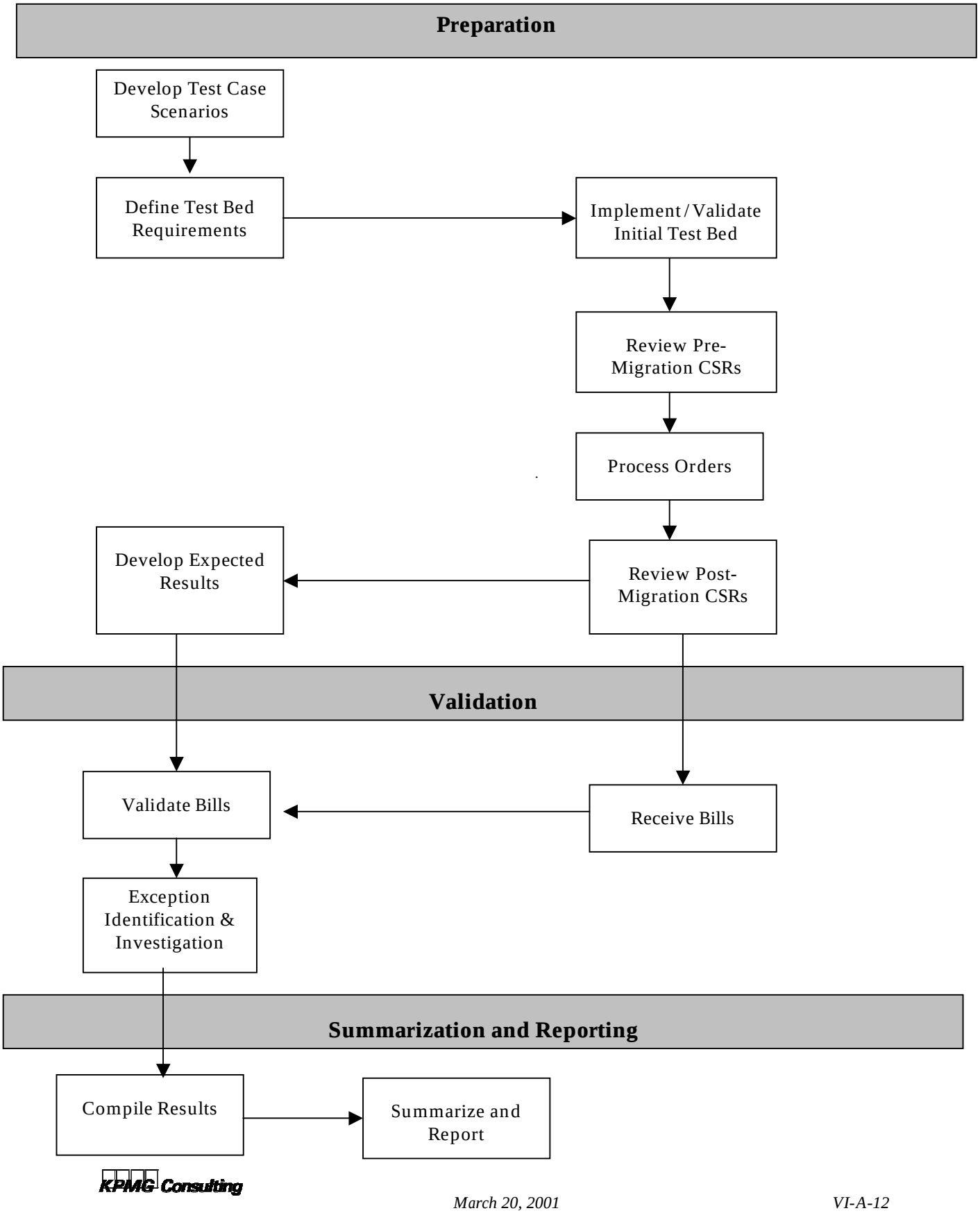
KCI evaluated bill formats to verify that required sections (e.g., pro-rations, Other Charges & Credits [OC&C] recurring charges, and usage charges) appeared on the appropriate bill. KCI also examined both aggregated billing information and customer-level (BTN and/or ETN) information.

KCI analyzed the timeliness of delivery of electronically transmitted invoices. As electronic bill files were received from BellSouth, the invoice and receipt dates were recorded. The number of elapsed business/calendar days was calculated based on the interval in days between the close of the bill cycle and the day that the bills were received. These statistics were evaluated to determine the Mean Time to Deliver Invoices, as defined in the BellSouth Georgia Service Quality Measurements Plan[2].

Figure VI-1.1 below depicts the process flow included in the bill validation process methodology.

[2] September 2000 version.

Figure VI-1.1: CRIS/CABS Invoicing Validation Test Process Flow



For the process evaluation component of this evaluation, KCI conducted interviews with BellSouth subject matter experts, observed BellSouth work operations, and reviewed BellSouth documentation pertaining to the production and distribution of CLEC bills. Using the information gathered, KCI evaluated the processes in place which support the timely and accurate production and distribution of CLEC bills.

Bill production processes evaluated included cycle balancing, reconciliation, and the maintenance of bill history. Bill balancing and reconciliation procedures were evaluated for completeness and effectiveness. KCI reviewed the production of control reports for cycle balancing for completeness and accuracy in generation of control elements. Release cycle procedures were examined for compliance with balancing and reconciliation procedures. In addition, the maintenance of billing information was evaluated for timeliness, accessibility and controllability of billing information.

Bill distribution processes evaluated included timeliness and controls of media delivery and requests for resending of bills. KCI reviewed the delivery of bill media for timeliness and controls. Requests for resending of bills were also examined for timeliness and accuracy of the delivery of the bill media.

2.6 *Analysis Methods*

The CRIS/CABS Invoicing Functional Billing Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards and guidelines for the CRIS/CABS Invoicing Functional Billing Test.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VI-1.4: BLG-1: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Bill Format – Master Account Level			
BLG-1-1-1	The appropriate major bill sections appear on the bills per BLS's documentation	Satisfied	The appropriate major bill sections appeared on the nine types of bills evaluated. However, some elements of bill sections did not appear as indicated in the "N" & "J" Bill

Test Cross-Reference	Evaluation Criteria	Result	Comments
			format samples provided by BLS. For example, the Late Payment Charges Detail Section on the "N" Bill did not contain such line items as the Total Local Late Payment Charge for Invoice and the Base Amount, Factor, and LPC headings. While this makes calculation of such charges more difficult, it does not prevent verification of the accuracy of such charges.
BLG-1-1-2	The appropriate data appears on the page headers per BLS's documentation	Satisfied	The appropriate data such as the Operating Company Number (OCN), billing account number, invoice date, and page number always appeared on the page headers. This finding was consistent with BLS documentation.
BLG-1-1-3	The appropriate data appears on the remittance page per BLS's documentation	Satisfied	For bill types that included a remittance page, KCI found that appropriate data such as the billing account number, customer name, and customer address appeared on the bill as per BLS documentation.
BLG-1-1-4	The appropriate data appear in the Summary Billing section per BLS's documentation	Satisfied	The appropriate data appeared in the Summary Billing section of the nine bill types evaluated. Data such as the balance forward, monthly access charges, and other charges & credits consistently appeared on the bills. This finding was consistent with the BLS documentation.
BLG-1-1-5	Appropriate details appear in the Summary Billing section per BLS's documentation	Satisfied	During initial testing, credit adjustments provided by BLS were mislabeled in the Detail of Adjustments Applied section of the bill. In particular, three Credit Adjustments requested by KCI appeared as one aggregated amount in the Adjustment Detail Section of the bills and were incorrectly labeled as "Credit for Service Disconnected." KCI detailed this issue in Exception 16. In response, BLS implemented a fix on 4/19/00 to correct the mislabeling of credits as "Credits for

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Service Disconnected" to match the phrases used for processing adjustments for retail customers. Upon investigation, BLS determined that the multiple credits requested by KCI were aggregated due to human error. KCI submitted additional credit adjustment requests and found that the adjustments were labeled and itemized appropriately on the July 2000 invoices. KCI has recommended closure of Exception 16 to the GPSC. See Exception 16 for addional information on this issue.
BLG-1-1-6	The appropriate details appear in the Current Charges section per BLS's documentation	Satisfied	Appropriate details including the monthly access charges, other charges and credits, and taxes line items consistently appeared on the bills as per BLS documentation.
BLG-1-1-7	The appropriate details appear in the Other Charges and Credits section per BLS's documentation	Satisfied	Appropriate details, such as the From & Thru Dates, the Purchase Order Numbers (PONs), and the Service Order Ids (SOIDs), appear in the Other Charges and Credits section per the BLS documentation. However, KCI encountered an instance when the PON did not appear on the bill, but the corresponding SOID did appear on the bill. This discrepancy did not have a substantive impact on either bill verification or revenue.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-1-1-8	Summary Page calculations correspond with the calculation definition	Satisfied	The calculations on the Summary Page of the bill correctly corresponded with the calculation definitions provided by BLS in the bill overview work sessions and sample bills. For example, the Total Amount Due was correctly calculated as the sum of the Total Balance Due, Late Payment Charges, and the Total Current Charges.
BLG-1-1-9	Balance Due calculations cross-total as appropriate	Satisfied	The Balance Due calculations on the bills correctly corresponded with the calculation definitions provided by BLS in bill overview work sessions and sample bills. For example, the Total Balance Due was correctly calculated as the sum of the Total Amount of Last Bill less Adjustments Applied.
BLG-1-1-10	Late Payment Charge calculations correspond with the calculation definition in the BLS documentation	Satisfied	The Late Payment Charge calculations on the bills correctly corresponded with the calculation definitions provided by BLS in bill overview work sessions and documentation. For example, KCI found that the Late Payment Charge calculation for CRIS bills as defined in the BLS documentation was correctly calculated on the bills.
BLG-1-1-11	Non-recurring charges correspond appropriately with the BLS tariffs or Interconnection Agreement[3]	Satisfied	KCI's initial test analysis found that BLS generated bills with undocumented or incorrectly rated charges. KCI detailed these issues in Exceptions 16, 35 and 124. BLS billed the KCI test CLEC for non-recurring charges for the USOCs SOMEC and UEAC2 that were not documented in either the BLS tariffs or in rates established for the KCI test CLEC. Upon investigation, BLS determined that no non-recurring charge rate was established for either the USOC SOMEC or the USOC UEAC2 in the

[3] BLS provided KCI with a rate spreadsheet in lieu of an Interconnection Agreement.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			rate tables for the KCI test CLEC. An interim process was developed by BLS to ensure that an accurate USOC rating would occur until a permanent Service Order edit solution could be implemented in December 2000. Upon review, KCI deemed this interim process to adequately address the issues found in the cases of USOCs SOMEC and UEAC2. The permanent Service Order edit solution was implemented on December 21, 2000. KCI submitted orders in January 2001 to test the permanent Service Order edit and found that the non-recurring charges for the USOCs SOMEC and UEAC2 were billed appropriately and accurately. Initial testing demonstrated that the non-recurring rate for the USOC VE1R2 was not documented in the BLS tariffs or in the rates established for the KCI test CLEC. Upon investigation, BLS discovered that a non-recurring rate for the USOC VE1R2 had been developed and added into the applicable rating tables in advance of an approved tariff. Further, BLS determined that no CLECs other than the KCI test CLEC were billed for this USOC. BLS added the USOC VE1R2 to the Standard Agreement in 4Q00 and provided KCI with the applicable section of the revised Standard Agreement KCI confirmed that the documented rate matched the non-recurring rate seen on its invoices. KCI found in its initial testing that, for the USOC UEAL2, BLS incorrectly billed the first and additional non-recurring charges on the test CLEC bills at $0.00. BLS updated the CRIS rate tables with the business rate for the non-recurring charge for USOC UEAL2 on 2/23/00 to correct this issue on a going forward basis. KCI reviewed

Test Cross-Reference	Evaluation Criteria	Result	Comments
			invoices following the rate table update and verified that the update had taken effect. However, KCI noted that first and additional non-recurring charges were being billed using the same rate, rather than at the appropriate rates for first and additional service. In its initial testing, KCI found that BLS also incorrectly billed the first and additional non-recurring charge for the USOC UEPLX using the same rate, rather than at the appropriate rates for first and additional service. BLS implemented a system enhancement to support a two-tier pricing structure for SL1 services on November 24, 2000. KCI submitted orders in January 2001 to test the two-tier pricing structure system enhancement. After review of the corresponding invoices, KCI found that the first and additional non-recurring charges for SL1 services were billed appropriately and accurately on the KCI test CLEC invoices. As a result of these findings, KCI closed investigation of the issues noted above. See Exceptions 16, 35 and 124 for additional information on these issues. KCI has recommended closure of Exceptions 16, 35, and 124 to the GPSC. See Table VI-1.8 for details on Dollar-Based Billing Accuracy measurements.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-1-1-12	Usage rates correspond with those defined in the BLS tariffs or Interconnection Agreement	Satisfied	The usage rates appearing on the bills matched those listed in the BLS tariffs and in the rates established for the KCI CLEC.
BLG-1-1-13	Summary Charge calculations correspond with the calculation definition contained in the BLS tariffs or Interconnection Agreement	Satisfied	Calculations for summary normal recurring charges correspond to calculation definitions in the BLS tariffs or in the rates established for the KCI CLEC. Specifically, the monthly access charges on the summary page of the bill were aggregated correctly from the detail level charges provided in the CSR section of the bill.
BLG-1-1-14	Detailed Charge calculations correspond with the calculation definition contained in the BLS tariffs or Interconnection Agreement	Satisfied	KCI's calculations of Detail Charges on the bills corresponded to the definitions in the BLS tariffs or in the rates established for the KCI CLEC.
BLG-1-1-15	Remittance totals cross-total appropriately	Satisified	On bills with remittance pages, all remittance totals cross-totaled appropriately. For example, the Total Amount Due on the remittance page corresponded to the Total Amount Due on the Summary Page of the bill.
BLG-1-1-16	Summary sections / page correspond with appropriate totals elsewhere in the bills	Satisfied	The totals on the Summary Page of the bill corresponded appropriately to the totals on the Detail Charges pages of the bills. For example, the Other Charges and Credits total on the Summary Page of the bill corresponded to the Total Other Charges and Credits at the end of the Detail of Other Charges and Credits section of the bill.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-1-1-17	Pro-rated monthly recurring charges in the Other Charges & Credits (OC&C) section are applied in accordance with definitions in BLS tariffs and documentation	Satisfied	During validation of the initial test CLEC invoices, KCI found that BLS applied pro-rated monthly-recurring charges in the OC&C section in accordance with definitions in BLS tariffs and documentation. For example, pro-ration calculations were appropriately based on a 30-day month. The problems uncovered with the pro-rated monthly recurring charges in the OC&C section of several bills were a result of the incorrect billing and rating of monthly recurring charge USOCs, as outlined in evaluation criteria BLG-1-1-18. Applicable fixes put in place by BLS and KCI findings are also noted in evaluation criteria BLG-1-1-18. KCI detailed these issues in Exception 16 and Exception 124. KCI has recommended closure of Exceptions 16 and 124 to the GPSC. See Exceptions 16 and 124 for additional information on these issues. See Table VI-1.8 for details on Dollar-Based Billing Accuracy measurements.
BLG-1-1-18	Monthly Recurring Charge detail matches expected results	Satisfied	During validation of the CSR section of the test CLEC invoices, KCI found that BLS billed monthly recurring charges for certain USOCs that did not match expected results. KCI detailed these issues in Exception 16 and Exception 124. The monthly-recurring rate for the USOC VE1R2 was not documented in the BLS tariffs or in the rates established for the KCI test CLEC. Upon investigation, BLS discovered that a monthly-recurring rate for the USOC VE1R2 had been developed and added into the applicable rating tables in advance of an approved tariff. BLS added the USOC VE1R2 to the Standard Agreement in 4Q00, and provided KCI with the applicable section of the revised

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Standard Agreement KCI confirmed that the documented rate matched the monthly-recurring rate seen on its invoices. In its initial testing, KCI found that BLS also applied a $0.00 monthly-recurring charge instead of the expected $16.51 rate for the USOC UEAL2. Upon investigation, BLS found that the CRIS rate had only been updated for the residence rate for USOC UEAL2. The issue encountered by KCI affected business accounts. BLS updated the CRIS rate table with the business rate for the monthly-recurring charge for the USOC UEAL2 on 3/1/00 to correct this issue. KCI reviewed invoices following the rate table update and verified that the update had taken effect. KCI submitted SL1 Loop orders in January 2001 to test the monthly-recurring charge for USOC UEAL2. After review of the corresponding invoices, KCI found that, in most instances, the charges for the USOC UEAL2 matched the expected results. In one instance, KCI found that the monthly-recurring charge for the USOC UEAL2 was billed twice. Further research by KCI revealed additional instances of double-billing of the monthly-recurring charge for the USOC UEAL2. Upon investigation, BLS and KCI determined the orders in question were submitted with two instances of the USOC UEAL2 which resulted in the duplicate appearances of that USOC on the KCI test CLEC invoices. Based on this finding, KCI determined that the duplicate billing of the monthly-recurring USOC UEAL2 was appropriate.In its initial testing, KCI found that BLS billed the KCI test CLEC for monthly-recurring charges for the USOC UEAC2 which was

Test Cross-Reference	Evaluation Criteria	Result	Comments
			not documented in either the BLS tariffs or in rates established for the KCI test CLEC. Upon investigation, BLS determined that no monthly-recurring charge rate was established for the USOC UEAC2 in the rate tables for the KCI test CLEC. An interim process was developed by BLS to ensure that accurate USOC rating would occur until a permanent Service Order edit solution could be implemented. Upon review, KCI deemed this interim process to adequately address the issues found in the case of USOC UEAC2. The permanent Service Order edit solution was implemented on December 21, 2000. KCI submitted orders in January 2001 to test the permanent Service Order edit with respect to the USOC UEAC2. After validating the orders against the KCI test CLEC invoices, KCI found that the monthly-recurring charges for the USOC UEAC2 were billed appropriately and accurately according to the rates provided by BLS. BLS applied a monthly-recurring rate of $2.89 or $1.40 instead of the expected $3.50 rate for the USOC NPU on KCI test CLEC invoices. Upon investigation, BLS found that the KCI test CLEC business Resale discount rate of 17.30% had been applied to the USOC NPU monthly-recurring rate of $3.50 to yield the $2.89 rate seen on the invoices. Further, BLS's investigation determined that the $1.40 rate was the result of the application of the KCI test CLEC residential Resale discount rate of 20.30% and the application of the suspend service discount of 50%. KCI confirmed these findings against the relevant sections of the *Georgia General Subscriber Service Tariff* and its *Georgia Resale Interconnection*

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Agreement, and was able to determine that charges for the USOC NPU were appropriately and accurately applied to the KCI test CLEC invoices. KCI has recommended closure of Exceptions 16 and 124 to the GPSC. See Exception 16 and Exception 124 for additional information on these issues. See Table VI-1.8 for details on Dollar-Based Billing Accuracy measurements.
BLG-1-1-19	Usage charge(s) match expected results	Satisfied	During validation of the initial test CLEC invoices the expected usage charges did not match the bill. Specifically, the billed amount of usage charges for messages generated by KCI did not match the Exchange Message Interface (EMI) records sent by BLS. KCI detailed this issue in Exception 91. KCI conducted additional testing in April 2000 following system changes by BLS. Upon review of the May 2000 invoices, KCI concluded that BLS was correctly billing all usage charges with the exception of underbilling for verification and interrupt calls. BLS scheduled a system modification for September 2000 to rectify this remaining problem. Exception 91 is closed. See Exception 91 for additional information on this issue. See Table VI-1.7 and Table VI-1.7 for details on Dollar-Based Billing Accuracy of Usage Charges.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-1-1-20	Bill delivery timeliness corresponds with the BLS standard	Satisfied	All CRIS and CABS bills sent electronically by BLS were delivered within the BLS standard of 6 business days and 8 calendar days, respectively, of the Bill Period date. KCI evaluated a total of 98 CRIS FTP bills and 99 CABS BOS BDT bills for this criterion and found the bills were delivered in a timely manner 100 percent of the time. See Table VI-1.5 for details on the Timeliness of Delivery of Carrier Bills.
Procedural Scope and Objectives			
BLG-1-1-21	Scope and objectives of the bill delivery services cover all key customer requirements	Satisfied	Interviews indicate that all key customer requirements for the delivery of bills are addressed.
BLG-1-1-22	Bill delivery responsibilities and activities are clearly defined	Satisfied	Responsibilities are vested in a number of different BLS organizations. They are sufficiently well defined and understood by the interviewees, but neither documentation of these responsibilities nor formal definition of organizational interactions was available.
Customer Interface			
BLG-1-1-23	Customer can readily obtain assistance in the event of problems with bill delivery	Satisfied	The customer is instructed to initiate assistance requests through the Account Manager, and help is accessible through a variety of routes (e.g., the Local Carrier Service Center [LCSC]). Proactive notification to the customers regarding problems with bill delivery (e.g., a failed transmission) is at the discretion of the Account Manager. There are no established standards for bill delivery problem resolution intervals.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Process Scope			
BLG-1-1-24	Process includes procedures to ensure creation of customer bills on appropriate medium	Satisfied	Procedures exist for assisting the customer in selecting the bill media and in establishing bill receipt. During validation testing, an instance of delay in updating the tables that specify customer selected media resulted in an inability to produce certain bills on CD-ROM.
BLG-1-1-25	Process includes procedures to ensure bills are shipped or transmitted to the correct location according to the established schedule	Satisfied	Procedures exist for controlling shipment or transmission of bills according to specifications. Production of bill media (electronic, paper, disk, CD, tape) is monitored and control logs are maintained. A limited set of media quality checks are performed. Procedural documentation was available only for printed bills. During transaction testing, an instance occurred where the customer billing address appeared correctly on the bill, but not on the shipping label.
Process Management			
BLG-1-1-26	Process includes complete and consistent procedures for status tracking, management reporting, and management intervention for bill delivery	Satisfied	Procedures exist that support tracking of bill delivery status. During invoicing testing, multiple instances of transmission failures were reported. The described intervention and problem resolution procedures were not initiated. However, these difficulties were limited to the new "J"-Bill on the CD-ROM format. BLS initiated corrective actions prior to completion of the testing.
Performance Management			
BLG-1-1-27	Process performance measures are defined, measured, and reviewed for bill delivery	Satisfied	Bill production statistics are published internally each month. Timeliness measures (Service Quality Measures [SQMs]) are published on the BLS Web site. Printer usage is reported monthly to ensure adequate capacity to meet performance standards.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-1-1-28	Process improvement responsibilities are assigned for bill delivery	Satisfied	Interviews indicate that departmental management is responsible for process improvement and performance. Although no written documentation was available detailing the process improvement methodology, interviews indicated that root cause analyses were performed, the results of which may result in a performance improvement initiative.
Procedural Scope and Objectives			
BLG-1-1-29	Scope and objectives of the bill cycle balancing services cover all key customer requirements	Satisfied	Scope and objectives of BLS's activities address all key customer requirements for production of accurate bills as identified in evaluation criteria BLG-1-1-32 through BLG-1-1-38 below.
BLG-1-1-30	Bill balancing responsibilities and activities are clearly defined	Satisfied	Interviews indicate that responsibilities are vested in a number of different BLS organizations. The responsibilities are defined, but neither documentation of these responsibilities nor formal definition of organizational interactions was available.
Customer Interface			
BLG-1-1-31	Customer can readily obtain assistance in the event of problems with bill content	Satisfied	Interviews indicate that customers are directed to address requests for assistance to the Account Managers, but also have access to other BLS organizations that are capable of providing direct assistance or generating an internal request for such assistance. There are no externally documented targets for BLS response time, and no escalation procedures provided for the customer. These procedures do exist within the LCSC in regard to the working of adjustments or disputes submitted by customers.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Process Scope			
BLG-1-1-32	Internal change management procedures are in place to correct implementation of billing system changes (e.g., code and tables)	Satisfied	Interviews indicate that BLS procedures address the aspects of change management that must be in place to ensure correct implementation of system changes, including requirements definition, release planning, and packaging, development and testing, implementation preparation, and post-implementation verification. Change management techniques are also employed when it is necessary to implement changes to repair system defects. A variety of testing and / or verification measures are employed by the BLS Billing Control Group, including: regression testing (ensuring no introduction of unwanted changes), event verification (ensuring that a planned change actually appeared), and accounts database validation. Four hundred to 500 CRIS bills may be "held" pending verification of a sample drawn from that population. Rate changes are verified at entry, and reverified against contract rates at the completion of the cycle. Transaction testing revealed isolated instances (particularly relating to implementation of changes to USOCs and rates) for which procedures were either inadequate or improperly executed, resulting in billing errors.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-1-1-33	Process includes procedures to ensure all customer data (e.g., service orders, address changes) has been properly introduced and applied	Satisfied	Final validation of service orders occurs at the point of entry to the billing system. Service orders that drop out are routed to a "Hold" file for correction and re-entry. Hold file errors are prioritized by type, and aging information is maintained. During validation testing, KCI noted that BLS was unable to process a global change of address request.
BLG-1-1-34	Process includes procedures to ensure all customer usage has been accounted for and correctly applied	Satisfied	All usage is processed and prepared for billing in the usage processing applications. Refer to the test BLG-2: ODUF / ADUF Usage Functional Test for additional details. Controls exist to ensure that all processed usage actually enters the billing cycle. There is, however, no final, end-of-cycle balancing that ensures that all the usage has been accounted for. A higher-level check for potential problems with usage billing is performed after the cycle by analyzing revenue accounts for unanticipated fluctuations.
BLG-1-1-35	Process includes procedures to ensure all payments and adjustments have been properly introduced and applied	Satisfied	Procedures that support the correct receipt, application, and posting of customer payments are in place. Procedures that support the correct receipt, evaluation, and posting of customer requested billing adjustments are in place. The customer procedure is documented on the BLS Web site. Dispute status is tracked and internal goals for timeliness of dispute resolution exist. A Root Cause Analysis team meets on a monthly basis to try to reduce the number of causes for disputes. Error checking of payments and adjustments takes place at point of entry, however, no balancing controls exist to ensure that all entries generated are actually applied during the bill calculation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-1-1-36	Process includes procedures to ensure customer data has been rolled forward from previous cycle	Satisfied	Run-to-run balancing is in place to ensure that correct roll-forward of customer data (e.g., account balances) occurs.
BLG-1-1-37	Process includes adequate error detection and correction procedures, and reasonability checks to catch errors not susceptible to pre-determined balancing procedures	Satisfied	Numerous edits are performed that can result in "holding" individual bills. Held bills are processed somewhat differently in CRIS or CABS, but the end result is that a correction is made, either by changing the print version and associated databases or by releasing the bill as is and creating a corresponding adjustment. The billing is not regenerated for individual bill errors, however, if certain error threshold counts are reached, the cycle may be held and restarted after remedial action is taken. Single bill errors are reported to the Account Manger for the affected CLEC. The billing cycle contains checkpoints and provides control reports as aids to bill verification. A final mechanized balancing of CRIS bills occurs when they are forwarded to CABS for formatting. A final balancing program for CABS, similar to one existing now for access billing, is under consideration. A single "J" and "N" bill from each processing site is selected for verification. A statistical sampling of other CABS bills is pulled for verification. A single CLUB bill is also verified. Additional problems may be uncovered during the verification of system changes. A higher-level check for potential problems with billing is performed after the cycle by analyzing revenue accounts for unanticipated fluctuations.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-1-1-38	Process provides for visual quality check of bills	Satisfied	Interviews indicate that limited sample visual quality checks (e.g., first and last printed bill) are in place for print, disk and CD-ROM bills.
Process Management			
BLG-1-1-39	Process includes complete and consistent procedures for status tracking, management reporting and management intervention for cycle balancing	Satisfied	Procedures exist that support tracking of bill production status and the detection and correction of problems. The billing runs are actively tracked and procedures for opening and tracking incidents are further supported by problem escalation procedures.
Performance Management			
BLG-1-1-40	Process performance measures are defined, measured and reviewed for cycle balancing	Satisfied	Monthly bill timeliness and accuracy measures (SQMs) are published on the BLS Web site. Billing error statistics (number of bills reported in error divided by total number of bills produced) and billing production failure statistics are reported internally and tracked on a monthy basis. Bill production statistics are reported internally on a monthly basis. No regular reporting of billing errors by type and by time to resolve occurs.
BLG-1-1-41	Process improvement responsibilities are assigned and executed for cycle balancing	Satisfied	Interviews indicate that billing errors are reported via a "Billing Error Notification," which is widely distributed for action. There are inter-organizational mechanisms (e.g., Performance Improvement [PIP] teams) for addressing process problems on an *ad hoc* basis, but no single point of on-going responsibility for overall bill production performance was identified. One example of a standing organizational level PIP activity was noted.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Procedural Scope and Objectives			
BLG-1-1-42	Scope and objectives of the historical bill management services cover all key customer requirements	Satisfied	Interviews indicate that the scope and objectives of BLS's activities address all key customer requirements for the re-sending of bills. The re-send service is limited to re-transmission of what was previously sent. A re-creation of the bill is not supported. Therefore, if the original bill was not created correctly (e.g., on the customer selected medium) a re-send request will not rectify the problem. An instance of such a situation was noted during the validation testing. The instance was limited to bills rendered in the months of September and October in CD-ROM format.
BLG-1-1-43	Bill delivery responsibilities and activities are clearly defined	Satisfied	Interviews indicated that responsibilities are vested in a number of different BLS organizations. They are defined, but neither documentation of these responsibilities nor formal definition of organizational interactions was available.
Customer Interface			
BLG-1-1-44	Customers are provided with instructions on how to request, track, expedite and obtain assistance for billing resends	Satisfied	The customer re-send request procedure is documented on the BLS Web site. Customer access to assistance is provided, but characteristics of this support (such as the procedures other than requesting support from the Account Manager, the scope of support, and the expected response intervals) are not well defined.
Process Scope			
BLG-1-1-45	Process includes procedures to ensure bill history retention requirements are operationally satisfied	Satisfied	Interviews indicated that operational procedures exist to implement defined data retention requirements.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-1-1-46	Process includes procedures to retrieve and transmit customer requested billing information	Satisfied	Interviews indicated that procedures exist to initiate the jobs that result in a bill re-send. The ability to provide handling or distribution instructions that differ from those of a normal production run is present. Otherwise, no significant differences between initial and re-send processing were noted. No instances of procedural fall-downs associated with a re-send request were experienced.
Process Management			
BLG-1-1-47	Process includes complete and consistent procedures for status tracking, management reporting and management intervention for the maintenance of historical bill information	Satisfied	With the exception of the initiation of the re-send request, no significant procedural differences between the re-send and the original bill production and distribution were noted through interviews. Procedures exist throughout the bill production and delivery cycle that support tracking of bill delivery status. No instances of procedural errors associated with a re-send request were experienced during the validation testing.
Performance Management			
BLG-1-1-48	Process performance measures are defined, measured and reviewed for the maintenance of historical bill information	Satisfied	With the exception of the initiation of the re-send request, no significant procedural differences between the re-send and the original bill production and distribution were noted. The same performance measures are in effect. Bill production statistics are published internally each month. Timeliness measures (SQMs) are published on the Web site.
BLG-1-1-49	Process improvement responsibilities are assigned and executed for the maintenance of historical billing information	Satisfied	Responsibility for process performance and improvement is vested in departmental management. While there are mechanisms for addressing process problems on an *ad hoc* basis, no formal, on-going programs were described.

3.1.1 Analysis of Bill Content

The tables and text below provide additional detail on the results of the bill validation evaluation. The bills were examined to verify that actual charges met KCI's expectations of billable charges, and that bills were formatted according to BellSouth specifications. Content evaluations examined Q Account & TN/circuit level charges, bill calculations, and cross-checks of totals. The following bill types were included in the analysis:

CABS "N" Bill

- 2-Wire Unbundled Analog Loops Non-Designed (SL1 Loops)
- 2-Wire Unbundled Analog Loops Designed (SL2 Loops)

CABS "J" Bill

- 2-Wire Unbundled Analog Ports
- 2-Wire Unbundled Analog Port-Loop Combinations
- Usage associated with 2-Wire Unbundled Analog Ports and 2-Wire Unbundled Analog Port-Loop Combinations

CRIS UNE

- Local Number Portability
- Interim Number Portability
- Administrative charges

3.1.2 Analysis of the Timeliness of Carrier Bill Delivery.

KCI utilized the Mean Time to Deliver formula from the Georgia Service Quality Measures to evaluate the timeliness of carrier bill delivery. The sample incorporated CABS BOS BDT bills and CRIS FTP bills for SL1 Loop, SL2 Loop, Port and Port-Loop Combination, LNP, and INP. The statistics reported in the table below represent the time period from October 1999 to February 2000. The metric states that the benchmark for evaluating billing delivery timeliness for CRIS bills is within six business days of the Bill Period date, and for CABS bills within eight calendar days of the Bill Period date.

Table VI-1.5: BLG-1 Timeliness of Delivery of Carrier Bills

Product Type	[(Invoice Transmission Date) – (Close Date of Scheduled Bill Cycle)]	Count of Invoices Transmitted in Reporting Period	Mean Time to Deliver Invoices (days)	Retail/Analog Benchmark (days)	CRIS/CABS	Met/Not Met Relative to Benchmark
UNE						
SL1 Loop	158	34	4.65	8 Calendar Days	CABS	Met
SL2 Loop	184	35	5.26	8 Calendar Days	CABS	Met
Port & Port-Loop Combination	130	30	4.33	8 Calendar Days	CABS	Met
INP	200	49	4.08	6 Business Days	CRIS	Met
LNP	209	49	4.27	6 Business Days	CRIS	Met
Total UNE	*881*	*197*	*4.47*			*Met*
CRIS Bills	409	98	4.17	6 Business Days	CRIS	Met
CABS Bills	472	99	4.77	8 Calendar Days	CABS	Met
All Bills	*881*	*197*	*4.47*			*Met*

3.1.3 Analysis of Completeness of Usage Charges

Table VI-1.6 reflects the evaluation of billed versus expected usage charges associated with Ports and Port-Loop Combinations for calls placed during the Usage Test conducted in November 1999. The table does not include missing charges. Usage discrepancies are explained more fully by the items listed in Table VI-1.4 under BLG-1-1-19. Table VI-1.6 also reports results for the completeness of BellSouth usage charges. Entries are broken out by the type of usage charge listed on the bills (e.g. local, toll, Directory Assistance, etc.). Overall billed versus expected usage charges revealed a negative 723% accuracy rating as indicated in the table below. However, following systems changes by BLS, KCI conducted additional testing in April 2000. Upon review of the May 2000 invoices, KCI concluded that BLS was correctly billing all usage charges with the exception of under-billing for verification and interrupt calls. BLS scheduled a system modification for September 2000 to rectify this remaining

problem. Table VI-1.7 details the results of the April 2000 Usage Test and the under-billing of the verification and interrupt calls.

Table VI-1.6: BLG-1 Bill Validation Dollar Based Billing Accuracy Analysis - Usage Charges for November 1999 Usage Test

Usage Billing Elements	Usage Per EMI Records	Usage Per BLS Invoice	Usage Variance	Rate	Billed Amount Per KCI ($$$)	Billed Amount Per BLS ($$$)	Billing Variance ($$$)	Accuracy Metric[4]
ULS-SF – Total MOU [Unbundled Local Switching (Switching Functionality)]	1,224	1,228	0	0.0016333	N / A	N / A	N / A	
ULS-SF – Initial MOU	242	242	0	0.0016333	0.43	0.43	0.00	
ULS-SF – Additional MOU	986	986	0	0.0016333	1.63	1.63	0.00	
ULS-TP [Unbundled Local Switching (Trunk Port)]	64	64	0	0.0001564	0.09	0.09	0.00	
UIT-S – mileage [Unbundled Transport (Shared Transport)]	N / A	45	N / A	0.000008	N / A	0.09	N / A[5]	
UIT-S – fixed [Unbundled Transport (Facilities Termination)]	41	41	0	0.0004152	0.05	0.05	0.00	
UTS-SF [Unbundled Transport (Tandem Switching)]	41	41	0	0.0006757	0.05	0.05	0.00	
UTS-TP [Unbundled Transport (Tandem Switching – Trunk Port)]	62	62	0	0.0002126	0.07	0.07	0.00	

[4] (Total Billed Revenue – |Total Adjustments[Variance]|)/Total Billed Revenues) X 100

[5] The data elements to support validation of mileage-based charges do not exist in the EMI record format; excluded from overall variance

Usage Billing Elements	Usage Per EMI Records	Usage Per BLS Invoice	Usage Variance	Rate	Billed Amount Per KCI ($$$)	Billed Amount Per BLS ($$$)	Billing Variance ($$$)	Accuracy Metric[4]
Subtotal (Switching and Transport)							**0.00**	
800 Access Ten Digit Screening	63	68	5	0.0004868	0.03	0.04	0.01	
Subtotal (Switching, Transport, and 800 DB)							**0.01**	
Operator Call Handling	31	0	31	0.9680296	30.01	0.00	30.01	
Automated Call Handling	9	0	9	0.0776409	0.70	0.00	0.70	
Verification	4	1	3	0.921083	3.68	0.92	2.76	
Interrupt	3	1	2	0.921083	2.76	0.92	1.84	
DACC	5	0	5	0.0348712	0.17	0.00	0.17	
Total (All Usage Billing Elements)						**4.20**	**35.29**	**723%**

Table VI-1.7: BLG-1 Bill Validation Dollar Based Billing Accuracy Analysis - Usage Charges for April 2000 Usage Test

Usage Billing Elements	Usage Per EMI Records	Usage Per BLS Invoice	Usage Variance	Rate	Billed Amount Per KCI ($$$)	Billed Amount Per BLS ($$$)	Billing Variance ($$$)	Accuracy Metric[6]
800 Access Ten Digit Screening/800 Delivery	101	101	0	0.0004868	0.05	0.05	0.00	
Operator Call Handling[7]	53	47	6	0.9680296	51.31	45.50	5.81	
Automated Call Handling[8]	18	18	0	0.0776409	1.40	1.40	0.00	
Verification	14	3	11	0.921083	12.90	2.76	10.14	
Interrupt	17	3	14	0.921083	15.66	2.76	12.90	
DACC	16	16	0	0.0348712	0.56	0.56	0.00	
Total (All Usage Billing Elements)						53.02	28.85	45.59%

3.1.4 Analysis of Billing Accuracy

The table below reflects BellSouth's billing accuracy as a percent of the total billed revenue of test bills, as defined by BellSouth Billing Accuracy metric. The statistics reported in the table below represent the time periods from October 1999 to January 2000, from September 2000 to November 2000 and from January 2001 to February 2001.

[6] (Total Billed Revenue – |Total Adjustments[Variance]|)/Total Billed Revenues) X 100

[7] EMI standards do not currently support the reporting of operator work time. Therefore, a reasonableness check of billed operator call handling and automated call handling against the actual call durations is use for evaluation purposes.

[8] EMI standards do not currently support the reporting of operator work time. Therefore, a reasonableness check of billed operator call handling and automated call handling against the actual call durations is use for evaluation purposes.

Table VI-1.8: BLG-1 - Overall Billing Accuracy Analysis

All Bill Types ("N," "J" & CRIS)	Total Billed Revenue ($$$)	Absolute Value of Difference ($$$)	Invoice Accuracy[9]
Total Monthly Recurring (Monthly + OC&C – fractional)	$3,512.81	$702.49	80.0%
Total Non-Recurring	$4,069.11	$741.97	81.8%
Total Usage	$57.31	$64.14	-11.9%
Overall Totals	$7,629.23	$1,508.60	80.2%

3.1.5 Analysis of Invoice Presentation Types

BellSouth offers several bill delivery options. Each option is presented in a format unique to the delivery method. KCI verified each bill presentation, commonly referred to as a 'type check,' and found that each met BellSouth specifications. The following bill presentations were reviewed:

- "N" Bill
  - Paper
  - BOS BDT
  - DAB Paper Image CD ROM
- "J" Bill
  - Paper
  - BOS BDT
  - DAB Paper Image CD ROM
- CRIS
  - Paper
  - DAB sent via FTP Push
  - DAB Paper Image CD ROM

[9] (Total Billed Revenue – |Total Adjustments[Variance]|)/Total Billed Revenues) X 100

B. Test Results: ODUF/ADUF Usage Functional Test (BLG-2)

1.0 Description

The Optional Daily Usage File / Access Daily Usage File (ODUF / ADUF)[1] Usage Functional Test evaluated the functional elements associated with message processing of usage data by BellSouth (BLS) on behalf of a Competitive Local Exchange Carrier (CLEC). KCI simulated a non-facility based CLEC providing Unbundled Network Element (UNE) services to business and residential customers. For usage testing purposes, the KCI CLEC subscribed to BellSouth Unbundled Switched Services. Process-oriented reviews of BellSouth internal procedures for creating and distributing Daily Usage Files (DUFs)[2] were conducted to validate the quality and timeliness of the process flows.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

Message processing of usage data begins at the telephone switch. Usage is recorded by the switch and is retrieved by BellSouth on a daily basis. This information is used to create a file of call events. Call events associated with UNE services provided to a CLEC are assembled for input into Daily Usage Files (DUFs) and delivered to CLECs electronically or on cartridge tapes, based on a schedule published by BellSouth (see Table VI-2.1).

Events are consolidated or "packed" to ensure that a CLEC receives only one DUF feed per day, rather than multiple daily feeds. Files may contain a minimum of one message and a maximum of 99,999 messages. In most instances, DUFs are sent to CLECs on the second business day after the actual recording of the message (call details). Customers may request that prior period usage be resent.

For the purposes of the DUF transactional test, only ODUF and ADUF were utilized. The Enhanced Optional Daily Usage File (EODUF) was not specified in the Georgia Public Service Commission's (GPSC) May 20 1999 order and was not tested. ODUFs include local billable messages carried over the BellSouth network, operator handled calls, and BellSouth incoming collect calls. ADUFs include originating and terminating call details and Minutes of Use (MOU)

[1] ODUFs include local billable messages carried over the BellSouth network, operator handled calls, and BellSouth incoming calls. ADUFs include originating and terminating call details and minutes of use generated from IntraLATA and InterLATA calls that originate or terminate on UNE ports.

[2] Daily Usage Files (DUFs) include outbound and inbound local usage, IntraLATA toll usage, BLS operator-assisted calls, and IXC originating and terminating records. Non-billable records generated by the switch may or may not be charged at the operator's discretion. This list is non-exhaustive.

generated from IntraLATA[3] and InterLATA[4] calls that originate or terminate on UNE ports.

KCI completed 1,017 test calls as part of the ODUF/ADUF Functional Evaluation conducted in November 1999. Due to the fact that a high number of the test lines used to place the test calls were still in pending status, BellSouth asserted that the test results reflected a disproportionate number of missing records. BellSouth requested, and KCI agreed, to conduct a re-test that included a mix of test lines in different stages of status.

During the period April 25-27, 2000, KCI conducted a re-test and completed 1,821 test calls on test lines with pending order activity on some lines and with no pending order activity on others.

During the period August 1-4, 2000, KCI conducted an additional re-test and completed 1,434 test calls on test lines, some with pending order activity and others with no pending order activity.

2.2 Scenarios

The usage-based evaluation involved test calls from both business and residential classes of service. Telephone lines used in the test were provisioned across five central offices using three switch types, including #5ESS, DMS 100/200, and 1AES. These telephone lines included UNE port and port/loop combinations. Sixty call types, shown in Table VI-2.1, were included in the DUF test.

Table VI-2.1: DUF Test Call Types

Call Types	
1.	Local Call
2.	Long Distance Call
3.	Toll Call
4.	Collect Local Call with Partial Operator Assistance
5.	Collect Toll Call with Partial Operator Assistance
6.	Collect Long Distance Call with Partial Operator Assistance
7.	Collect Long Distance Call with Complete Operator Assistance
8.	Collect Local Call with Complete Operator Assistance
9.	Collect Toll Call with Complete Operator Assistance

[3] IntraLATA calls are calls where the originating and terminating exchanges reside in different local calling regions but in the same Local Access Transport Areas. These are commonly known as "toll calls."

[4] InterLATA calls are calls where the originating and terminating exchanges reside in different Local Access Transport Areas. These are commonly known as "long distance calls."

Call Types	
10.	Third Party Local Call with Partial Operator Assistance
11.	Third Party Toll Call with Partial Operator Assistance
12.	Third Party Long Distance Call with Partial Operator Assistance
13.	Third Party Local Call with Complete Operator Assistance
14.	Third Party Long Distance Call with Complete Operator Assistance
15.	Third Party Toll Call with Complete Operator Assistance
16.	Operator Interruption of Toll Call
17.	Operator Interruption of Local Call
18.	Operator Interruption of Long Distance Call
19.	Operator Verification of Busy Toll Number
20.	Operator Verification of Busy Local Number
21.	Operator Verification of Busy Long Distance Number
22.	Operator Refund for Local Call
23.	Operator Refund for Toll Call
24.	Operator Refund for Long Distance Call
25.	Operator Assisted Toll Call without Service Charges
26.	Operator Assisted Local Toll Call without Service Charges
27.	Operator Assisted Long Distance Call without Service Charges
28.	Operator Assisted Toll Call with Charges
29.	Operator Assisted Long Distance Call with Charges
30.	Operator Assisted Local Call with Charges
31.	Call Waiting during Long Distance Call
32.	Call Waiting during Local Call
33.	Call Waiting during Toll Call
34.	Directory Assistance for Local Telephone Number
35.	Directory Assistance for Long Distance Telephone Number
36.	Directory Assistance with Local Call Completion
37.	Directory Assistance with Long Distance Call Completion
38.	Alternative Carrier Long Distance Call
39.	Incoming Call
40.	International Call
41.	Customer Service (611) Call
42.	Toll Free 888 Call

Call Types	
43.	Toll Free 877 Call
44.	Toll Free 800 Call
45.	Information Provider 900 Call
46.	Phonesmart Repeat Dial Call (*66)
47.	Phonesmart Dial Back Call (*69)
48.	Three Way Call
49.	Third Party (Out-of-Area Caller) Local Call with Partial Operator Assistance
50.	Third Party(Out-of-Area Caller) Long Distance Call with Partial Operator Assistance
51.	Third Party (Out-of-Area Caller) Toll Call with Partial Operator Assistance
52.	Collect (Out-of-Area Caller) call with Partial Operator Assistance
53.	UNE Outgoing Local Call (Inter-switch)
54.	UNE Outgoing Local Call (Intra-switch)
55.	UNE Outgoing Toll Call (Inter-switch)
56.	UNE Incoming Toll Call (Inter-switch)
57.	UNE Incoming Local Call (Inter-switch)
58.	UNE Incoming Local Call (Intra-switch)
59.	Calling Card Calls
60.	Directory Assistance with Call Completion

2.3 Test Targets & Measures

For the DUF activity test, the test target was the recording, assembly, and delivery of relevant usage data. For the process test, the test target was BellSouth's production and distribution of daily usage files.

Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross- Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table VI-2.2: BLG-2 Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Receipt of Usage	Verify DUF data	Presence of Functionality	BLG-2-1-1 BLG-2-1-2 BLG-2-1-3
	Receive switch records at data center	Process Validation Presence of Functionality	BLG-2-1-5 BLG-2-1-6 BLG-2-1-9
	Verify DUF Data	Presence of Functionality	BLG-2-1-5 BLG-2-1-6 BLG-2-1-9
Daily Usage Feed	Create usage feed	Process Validation Presence of Functionality	BLG-2-1-5 BLG-2-1-6 BLG-2-1-9
	Define balancing and reconciliation procedures	Clarity of Information Accuracy of Document (s)	BLG-2-1-8 BLG-2-1-9
	Route usage	Presence of Functionality	BLG-2-1-9 BLG-2-1-10 BLG-2-1-11 BLG-2-1-12
Deliver usage to CLECs	Send CONNECT: Direct	Presence of Functionality	BLG-2-1-7 BLG-2-1-13
	Acknowledge arrival	Presence of Functionality Timeliness of response	BLG-2-1-7 BLG-2-1-13
Maintain usage history	Create usage backup	Process Validation Presence of Functionality	BLG-2-1-7 BLG-2-1-14
	Request backup data	Presence of Functionality	BLG-2-1-14
Status tracking and reporting	Track valid usage	Presence of Functionality Accuracy of response	BLG-2-1-1 BLG-2-1-2 BLG-2-1-3
	Account for all usage	Presence of Functionality Accuracy of response	BLG-2-1-4
	Report missing usage (gaps)	Presence of Functionality Timeliness of response	BLG-2-1-1 BLG-2-1-2 BLG-2-1-3
	Track valid usage	Presence of Functionality Accuracy of Response	BLG-2-1-15 BLG-2-1-16 BLG-2-1-17
	Account for no usage	Presence of Functionality Accuracy of Response	BLG-2-1-15 BLG-2-1-16 BLG-2-1-17

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Account for missing usage (gaps)	Presence of Functionality Accuracy of Response	BLG-2-1-15 BLG-2-1-16 BLG-2-1-17

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VI-2.3: Data Sources for the ODUF/ADUF Usage Functional Test

Document	File Name	Location in Work Papers	Source
DUF Files Transmitted to KCI CLEC	No Electronic Copy	BLG-2-A-5	BLS
Exchange Message Interface / Ordering and Billing Forum (EMI / OBF)	EMI16r2.pdf Version 16r2, July 1999	BLG-2-A-5	Alliance for Telecomunications Industry Solutions (ATIS)
BLS Access Daily Usage File (ADUF), December 1999	No Electronic Copy	BLG-2-A-6	BLS http://www.interconnection.bellsouth.com/products/billing/aduf.html
BLS Optional Daily Usage File (ODUF), December 1999	No Electronic Copy	BLG-2-A-7	BLS http://www.interconnection.bellsouth.com/products/billing/oduf.html
BLS Enhanced Optional Daily Usage File (EODUF), December 1999	No Electronic Copy	BLG-2-A-8	BLS http://www.interconnection.bellsouth.com/products/billing/eoduf.html
Facility-Based CLEC Starter Kit – Daily Usage File, Issue 2, December 31, 1997	No Electronic Copy	BLG-2-A-15	BLS
ADUF Setup and Testing, Issue Date August 1, 1998 Revision Date: August 17, 1998	No Electronic Copy	BLG-2-A-18	BLS
Usage Processing: Overview of ADUF, Issue Date August 1, 1998 Revision Date: July 12, 1999	No Electronic Copy	BLG-2-A-11	BLS

Document	File Name	Location in Work Papers	Source
Usage Processing: ADUF Problems / Issues, Issue Date August 1, 1998 Revision Date: July 12, 1999	No Electronic Copy	BLG-2-A-12	BLS
Usage Processing: Timing of ADUF Messages, Issue Date February 17, 1998 Revision Date: July 12, 1998	No Electronic Copy	BLG-2-A-13	BLS
Usage Processing: ADUF Recreations / Re-sends, Issue Date August 1, 1998 Revision Date: July 12, 1998	No Electronic Copy	BLG-2-A-14	BLS
CLEC Advisory Training	No Electronic Copy	BLG-2-A-15	BLS
Electronic Interface – Billing Optional Daily Usage Files	No Electronic Copy	BLG-2-B-1	BLS
Access Daily Usage File – ADUF Overview	No Electronic Copy	BLG-2-A-13	BLS
Chapter 3.0 Billing Format Options	No Electronic Copy	BLG-2-A-14	BLS http://www.interconnection.bellsouth.com/guides/actreq2_fac/c3_4.htm
BLS Optional Daily Usage File (ODUF)	No Electronic Copy	BLG-2-B-1	BLS
KCI CLEC UNE Loop & Facilities Diagrams and Photographs	No Electronic Copy	BLG-2-B-2	KCI
Communications from BLS (including supporting documentation)	No Electronic Copy	BLG-2-B-6	BLS
Communications to BLS (including supporting documentation)	No Electronic Copy	BLG-2-B-7	BLS
Interview Summary / Report: 3	No Electronic Copy	BLG-1-J-5	KCI
BLS Response to Interview Summary / Report: 3	No Electronic Copy	BLG-1-J-6	BLS
Interview Summary / Report: 4	No Electronic Copy	BLG-1-J-7	KCI
BLS Response to Interview Summary / Report:4	No Electronic Copy	BLG-1-J-8	BLS
Interview Summary / Report: 5 & 6	No Electronic Copy	BLG-2-C-1	KCI

Document	File Name	Location in Work Papers	Source
BLS Response to Interview Summary / Report:5 & 6	No Electronic Copy	BLG-2-C-2	BLS
Interview Summary / Report: 5 & 6 Follow-On	No Electronic Copy	BLG-2-C-3	KCI
Interview Summary / Report: 8	No Electronic Copy	BLG-1-J-9	KCI
BLS Response to Interview Summary / Report:8	No Electronic Copy	BLG-1-J-10	BLS
Interview Summary / Report: 10	No Electronic Copy	BLG-2-C-4	KCI
Interview Summary / Report: 11	No Electronic Copy	BLG-1-J-12	BLS
Sample Trouble Ticket (TTS) With Summary of Actions Taken	No Electronic Copy	BLG-1-K-3	BLS
Sample Report Card from Recent CRIS / CABS Release	No Electronic Copy	BLG-1-K-4	BLS
Sample Daily MAPPS Report (e-mail Version)	No Electronic Copy	BLG-1-K-5	BLS
Process Flow Description of Tracking Group Processes	No Electronic Copy	BLG-1-K-6	BLS
Sample Flex Report	No Electronic Copy	BLG-1-K-7	BLS
Sample ODUF / ADUF UNITECH Reports	No Electronic Copy	BLG-2-C-5	BLS
Sample Balancing Spreadsheet for 01 / 02 Jobs	No Electronic Copy	BLG-2-C-6	BLS
Sample Access Database Reports (ADUF)	No Electronic Copy	BLG-2-C-7	BLS
Sample IBIS Case (One when initiated, one when completed)	No Electronic Copy	BLG-2-C-8	BLS
Sample Form 8182 Showing MIC Case Inventory	No Electronic Copy	BLG-2-C-9	BLS
Sample Form 2052 Showing Case Activity	No Electronic Copy	BLG-2-C-10	BLS
Samples of on-line MIC Documentation (an LNP error code and a generic error code)	No Electronic Copy	BLG-2-C-11	BLS
Process Flow of MIC Process	No Electronic Copy	BLG-2-C-12	BLS

Document	File Name	Location in Work Papers	Source
Process Flow Overview for Data Collection / Distribution	No Electronic Copy	BLG-2-C-13	BLS
Sample of RVV Task Procedures for Resolving Anomalies	No Electronic Copy	BLG-2-C-15	BLS
Sample of Metrics Used for Review of CPU Utilization and Other Resources (Package reviewed during interview)	No Electronic Copy	BLG-1-K-20	BLS
Sample Off-Site Pull List (From EDS Data Center Ops)	No Electronic Copy	BLG-1-K-21	BLS
Sample Software Control Management (SCM) Plan	No Electronic Copy	BLG-1-K-22	BLS
Sample STS Batch Process Report Private & Confidential	No Electronic Copy	BLG-1-K-25	BLS
Sample SCCB Form	No Electronic Copy	BLG-1-K-23	BLS
Sample MAPS Document for Implementing Software Changes Private & Confidential	No Electronic Copy	BLG-1-K-27	BLS
Examples of Completed DCR Private & Confidential	No Electronic Copy	BLG-1-K-28	BLS
Examples of Incident Report Private & Confidential	No Electronic Copy	BLG-1-K-29	BLS
Sample of Escalation Procedures Private & Confidential	No Electronic Copy	BLG-1-K-30	BLS
Sample Summary of Failures for Billing / Corporate Finance Jobs Private & Confidential	No Electronic Copy	BLG-1-K-31	BLS

2.4.1 Data Generation/Volumes

The process component of the evaluation did not rely on data generation or volume testing.

The ODUF / ADUF usage-based component of the evaluation required data generation. Each tester received instructions and training for placing and recording calls. Testers recorded actual call information in the test call log and

submitted both written and electronic copies of the logs. Testers were instructed to place calls to particular telephone numbers in specific ways. Testers were required to log all attempted and completed calls. A total of 1,017 originating and terminating calls were included in the initial evaluation; a total of 1,821 originating and terminating calls were included in the first retest evaluation; a total of 1,434 originating and terminating calls were included in the second retest evaluation. To generate test calls of sufficient variety, testers were dispatched to five locations within the BellSouth calling region. These locations are listed in Table VI-2.4.

Table VI-2.4: Test Call Sites (BellSouth Central Offices)

Central Office	Address
Augusta	937 Green Street, Augusta, GA 30910
Macon	787 Cherry Street, Macon, GA 31201
Powers Ferry	1732 Powers Ferry Road SE, Marietta, GA 30067
Rome	708 East First Street, Rome, GA 30161
Toco Hills	2204 La Vista Road NE, Atlanta, GA 30320
Floater	Outside BellSouth jurisdiction

One additional tester, located outside of the BellSouth jurisdiction , placed third party billing and collect calls from non-test phones to test phones and received test calls from testers in the BellSouth calling region.

The testers were given a spreadsheet containing the telephone numbers to be called and any special instructions needed to ensure that a wide variety of call types and call lengths were placed. Testers recorded actual call information on the spreadsheets.

Calls were grouped in five categories: Local, Toll, Long Distance, Operator Services and Other. 'Local' calls are defined as calls made to destinations within the local calling area, and are charged by standard measured service or a monthly flat fee. 'Toll' calls are calls made to destinations outside of the local calling region, but within the same Local Access Transport Area (LATA). Long Distance calls, including international calls, are made to destinations outside the LATA. Operator Services calls include credit calls, directory assistance calls, and special service calls. 'Other' calls consist of information provider calls and casual calls (10-10-XXX).

2.5 Evaluation Methods

Execution of the DUF Usage Functional Transaction Test required BellSouth to establish a test bed of accounts[5], against which test calls were placed. The test calls consisted of commonly placed incoming and outgoing call types that were generated over multiple switch types over a three-day period. The test included validation of expected usage results based on test calls placed by KCI, against DUF records received by the KCI CLEC. Throughout this report, usage of the acronym DUF includes both ODUF and ADUF.

Evaluation of the accuracy and completeness of the DUF files was based on a comparison of the call details logged by KCI when the test calls were placed, and the DUF records delivered to KCI by BellSouth.

During the process evaluation, the BellSouth internal procedures associated with the production and distribution of daily usage files were examined. The objective of the process evaluation was to examine the processes by which the Daily Usage Files (ODUF for local usage and ADUF for access usage) are produced and distributed in order to determine whether internal BellSouth procedures are sufficiently complete, robust and managed to ensure timely and correct distribution of usage.

ODUF/ADUF Usage Test

Test calls originated and terminated in five BellSouth central office locations using three switch types. Sixty incoming and outgoing commonly used call types were employed to create scripted test calls. Calls were made from within and outside of the BellSouth service area. The basis for this Functional Usage Evaluation was the call records compiled by the testers and the DUFs generated by BellSouth resulting from the placement of test calls.

The following methodology was employed for both the initial evaluation and the retest evaluation to evaluate the accuracy, completeness, and timeliness of DUFs:

1. The Testers placed scripted test calls across all 60 call categories.
2. Test log records for the completed test calls and DUF records received were compiled in a database. Each test call was examined to determine if the specific call should result in the generation of a DUF record.

   Individual call records on the DUF were matched against call details from the test call logs. All call types were reviewed for accuracy, validation of the date and time of placement, origination

[5] Test Bed requirements can be found in the Georgia OSS Evaluation *Master Test Plan*, Version 4.0, Appendix B.

and termination Telephone Numbers (TN), call duration, method of recording, rate class, indicators and message type. If a unique record could not be determined as a match to the call log, the expected DUF record was designated as missing. KCI also examined the database to identify any unexpected DUF records.

3. The record layout and content of DUF headers and trailers, as defined by Exchange Message Interface-Ordering and Billing Forum (EMI-OBF) guidelines[6], were examined to verify that the DUFs actually contained the number of records indicated in the header and trailer. DUFs were examined to verify that no empty files were transmitted, and that the volume of records contained in the DUFs were within BellSouth's published specifications.

4. The transmission date and time of DUFs were recorded, and the number of calendar days between the message creation date and the DUF transmission date was noted. This number was used in the determination of timeliness of usage data delivery. Although BellSouth offers a variety of DUF delivery methods to CLECs, this test involved only the CONNECT:Direct® delivery method. Therefore, all delivery time analysis was completed from files transmitted via CONNECT:Direct and over a 10-day period starting on August 1, 2000.

The timeliness of delivery of DUFs was evaluated based on the following message transmission timing factors as published by BellSouth, "Usage Processing, Timing of ADUF Messages."[7]

Table VI-2.5: BellSouth Schedule of Message Recording and Delivery to CLECs

Message Recorded	BiBs Sends (Processing Ctr. 1)[8]	MD03B01 Receives (Processing Ctr. 2)[9]	MD03B02 Consolidator in Mississippi Receives (BLS Processing Ctr. 3)[10]	CLEC Receives
Mon	Tues 1:00pm	Tues between 1:00pm and 12:00am	Wed 7:00am	Wed 9:00am
Tues	Wed 1:00pm	Wed between 1:00pm and 12:00am	Thurs 7:00am	Thurs 9:00am
Wed	Thurs 1:00pm	Thurs between 1:00pm and 12:00am	Fri 7:00am	Fri 9:00am
Thurs	Fri 1:00pm	Fri between 1:00pm	Mon 7:00am	Mon 9:00am

[6] Exchange Message Interface-Ordering and Billing Forum (EMI-OBF) EMI16r2.pdf Version 16r2, July 1999
[7] BellSouth ADUF document entitled Data Delivery HP24:25 Chapter 6 p.vi.6.1
[8] BellSouth Industrial Billing System (BiBs) processes and feeds ODUF and ADUF.
[9] MD03B01 processes Jobs in each of the Revenue Accounting Offices (RAO). Performs system edits and EMI conversion.
[10] MD03B02 Consolidator processes all files from RAO and packs data into Header and Trailer records.

Message Recorded	BiBs Sends (Processing Ctr. 1)[8]	MD03B01 Receives (Processing Ctr. 2)[9]	MD03B02 Consolidator in Mississippi Receives (BLS Processing Ctr. 3)[10]	CLEC Receives
		and 12:00am		
Fri	Mon 1:00pm	Mon between 1:00pm and 12:00am	Tues 7:00am	Tues 9:00am
Sat	Mon 1:00pm	Mon between 1:00pm and 12:00am	Tues 7:00am	Tues 9:00am
Sun	Mon 1:00pm	Mon between 1:00pm and 12:00am	Tues 7:00am	Tues 9:00am

DUF Processing Test

For the process evaluation component of the ODUF/ADUF Usage Functional Test (BLG-2), KCI conducted interviews with BellSouth subject matter experts, observed BellSouth work operations, and reviewed BellSouth documentation pertaining to the production and distribution of DUFs. Using the information gathered, KCI evaluated the processes in place which support the timely and accurate production and distribution of DUFs.

Processes evaluated included collection of usage data, creation of usage feeds and backups, and the delivery of the DUFs. KCI examined the collection of usage data for functionality. The creation of DUFs was also reviewed for accuracy, clarity of documentation and functionality. The processes associated with production of usage feed backups were evaluated for functionality. In addition, KCI reviewed DUF delivery for functionality and timeliness.

2.6 Analysis Methods

The ODUF/ADUF Usage Functional Test (BLG-2) included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth-Georgia OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided the framework of norms, standards, and guidelines for the ODUF/ADUF Usage Functional Test.

The data collected from transaction processing, inspections and interviews were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results listed below reflect the retest evaluation of calls placed by KCI from August 1-4, 2000, as well as any noteworthy items from both the initial evaluation of calls placed by KCI from November 18-20, 1999 and the retest evaluation conducted April 25-27, 2000. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VI-2.6: BLG-2 Evaluation Criteria and Results

Test Cross Reference	Evaluation Criteria	Result	Comments
BLG-2-1-1	For all scripted and completed test calls that should generate a DUF record, appropriate DUF records are contained in the electronically delivered Daily Usage Files.	Satisfied	During the period November 18-20, 1999 KCI completed 846 test calls for which DUF files were expected. BLS provided DUF records for these calls. After examining these DUF records, KCI determined that BLS provided the incorrect type of DUF records for certain test calls. As a result, KCI issued Exception 27. KCI conducted retesting during the period April 25-27, 2000. KCI determined that the issue identified in the original test was still outstanding. BLS updated ODUF documentation to clarify both the BLS policy and the resulting CLEC expectation regarding the generation and receipt of toll records. This update also solidifies the BLS position that all operator handling originating from a UNE switch port is subject to billing whether or not the action being attempted by the operator was successful. KCI reviewed the updated documentation and believes that the updated information provides adequate information regarding local vs. toll calls expected on the DUF. See Exception 27 for additional information on this issue. Exception 27 is closed.
BLG-2-1-2	For all scripted and completed test calls that should generate a DUF record, all expected DUF records are contained in the electronically delivered Daily Usage Files.	Satisfied	KCI completed 1,017 test calls during the initial ODUF / ADUF Functional Usage Evaluation. BLS failed to deliver DUF records for 46% of the test calls for which records were expected. KCI conducted retesting during the period April 25-27, 2000, and completed 1,821 test calls during the course of the retest. BLS failed

Test Cross Reference	Evaluation Criteria	Result	Comments
			to deliver DUF records for 27% of the test calls for which records were expected. KCI conducted additional retesting during the period August 1-4, 2000, and completed 1,434 test calls during the course of the retest. BLS failed to deliver DUF record for 6% of the test calls for which records were expected. BLS updated its billing documentation to state that service order errors or other processing issues may delay the updating of an account and, therefore, delay usage delivery and billing of same account. KCI understands that a CLEC will not be billed for any usage not delivered during this period of time. See Exception 28 for additional information on this issue. Exception 28 is closed.
BLG-2-1-3	For all scripted and completed test calls that should generate a DUF record, 95% are delivered within 6 calendar days.	Satisfied	For calls made during both the initial and retest evaluations, BLG delivered 99% of the DUF records within six calendar days.
BLG-2-1-4	DUF records transmitted to KCI Test CLEC contained billable information.	Satisified	All of the DUF file transmissions that BLS provided to KCI as a result of both the initial and retest evaluations contained billable information.

Test Cross Reference	Evaluation Criteria	Result	Comments
BLG-2-1-5	Scope and objectives of the DUF production and distribution services covers all key customer requirements.	Satisfied	The interview indicates that scope and objectives of BLS's activities address all key customer requirements, from usage collection through final distribution.
BLG-2-1-6	DUF production and distribution responsibilities and activities are clearly defined.	Satisfied	Responsibilities are vested in a number of different BLS organizations. Interviews with BLS personnel responsible for performing these functions revealed that responsiblities are clearly defined, but documentation for these responsibilities was not available.
BLG-2-1-7	Customer is provided sufficient understanding of the DUF production and processes.	Satisfied	KCI's DUF functional testing experience indicates that the customer is provided with adequate understanding of DUF production and distribution process to conduct its business, as such needs are minimal. Detail of the qualifications can be found in the BLG-7 ODUF / ADUF Documentation Evaluation test report.
BLG-2-1-8	Customer has ready and convenient access to assistance with DUF production and distribution problems.	Satisfied	Interviews indicate that customer access to needed assistance is provided, but characteristics of this support (such as scope and expected response intervals) are not well defined. See also the BLG-6 ODUF / ADUF Documentation Evaluation test report.
BLG-2-1-9	Internal change management procedures are in place to document and manage process changes (e.g., code, tables).	Satisfied	Interviews indicates that formal change management procedures for introducing system changes are in effect from initial requirements definition through introduction into production. Change management procedures are also in place for development and introduction of problem fixes.
BLG-2-1-10	Process includes procedures to ensure all relevant usage is received, validated and processed.	Satisfied	Interviews indicate that sufficient capacity and redundancy is in place to ensure that usage can be collected from network elements. Extensive data edits are performed

Test Cross Reference	Evaluation Criteria	Result	Comments
			and erred usage data is routed for investigation and correction. Automated run-to-run controls and statistical profiling have been implemented to ensure that all received usage records are accounted for, and that changes in usage patterns that may be indicative of errors or problems are detected. Control totals are also maintained and tracked by RAO and Operating Company Number (OCN). Final checks for duplicate records and correct record counts are made just prior to transmission. BLS updated its billing documentation to state that service order errors or other processing issues may delay the updating of an account and, therefore, delay usage delivery and billing of same account. KCI understands that a CLEC will not be billed for any usage not delivered during this period of time. See Exception 28 for additional information on this issue. KCI has recommended closure of Exception 28 to the GPSC.
BLG-2-1-11	Process includes procedures to ensure all usage is correctly routed.	Satisfied	Daily look-ups against the routing guide that allow detection of carrier changes (i.e., the end user moves to another reseller) are performed. In such cases, "killer" records voiding previously sent DUF records and new corrected DUF records can be created for the prior and current resellers, respectively. Actual forwarding of the DUF records is governed by the customer service subscription. The DUF transactional initial and retest evaluations identified that the guide was not properly routing DUF records in all cases. BLS implemented system changes to increase sensitivity to pending

Test Cross Reference	Evaluation Criteria	Result	Comments
			migration service orders. BLS has also updated billing documentation to state that service order errors or other processing issues may delay the guide updates and, therefore, delay the intended routing of the usage. KCI understands that a CLEC will not be billed for any usage not delivered during this period of time. See Exception 28 for additional information on this issue. KCI has recommended closure of Exception 28 to the GPSC.
BLG-2-1-12	Process includes adequate error detection procedures and reasonability checks to catch errors not susceptible to pre-determined balancing procedures.	Satisfied	Interviews indicate that error detection occurs on a number of levels, ranging from initial collection and edits of the Automatic Message Accounting (AMA) data through detection and tracking of errors during all processing stages to "back-end" monitoring of usage generated revenues. Error detection is highly automated, and addresses both usage record content (there are approximately 1300 possible error codes) and the controls to ensure that all usage records are correctly accounted for. Procedures exist to facilitate operational recovery and restart of the usage processing systems and to escalate operational problems as required. Error correction procedures are, for certain error types, highly automated. Error correction activities are monitored to ensure timely fixes. Errors are grouped and prioritized by "cases" to ensure timely and efficient resolution. "Referrals" may be initiated to enlist additional support for problem resolution.

Test Cross Reference	Evaluation Criteria	Result	Comments
BLG-2-1-13	Process includes procedures to ensure accurate preparation and timely delivery of DUF data.	Satisfied	Interviews indicate that in final processing stages, DUF records are consolidated, checked to ensure that no duplicates have been sent in the prior 35 days, "packed" by Revenue Accounting Office (RAO) and Operating Company Number (OCN), balanced by record count, formatted, and placed on the appropriate medium for transmission. CONNECT:Direct jobs are initiated. Delivery is monitored. Procedures, as defined, should be adequate to ensure timely and accurate transmission of DUF records. The procedures have been validated based on the results reported for BLG-2-1-3.
BLG-2-1-14	Process includes procedures for retaining, archiving and accessing prior period data.	Satisfied	Interviews indicates that at present, ODUF records can be re-created and sent for up to 90 days (CONNECT: Direct) and one year (dial-in). ADUF records are on indefinite retention. In general, retroactive creation of ODUF records is not supported after a certain timeframe. Operational procedures exist to support these policies.
BLG-2-1-15	Process includes complete and consistent procedures for status tracking, management reporting and management intervention.	Satisfied	The interview identified procedures for status tracking and process management. No documented problem escalation procedures were provided. However, this issue is not significant enough to affect the outcome of this criterion.
BLG-2-1-16	Process performance measures are defined, measured and reviewed.	Satisfied	Interviews indicate that the overall measures of accuracy and timeliness are defined and tracked. In addition to published Service Quality Measurements (SQMs), internal measures (e.g., revenue value of erred usage that was corrected and returned to processing, intervals to resolve erred usage) exist within individual

Test Cross Reference	Evaluation Criteria	Result	Comments
			BLS organizations that contribute to the accurate and timely production of the DUF. Performance measures are also associated with individual activities that contribute to overall DUF timeliness and accuracy.
BLG-2-1-17	Process improvement responsibilities are assigned and executed.	Satisfied	Performance improvement responsibilities lie within a number of BLS organizations and mechanisms to bring multi-disciplinary efforts to bear on performance issues exist. Prior to closure, "cases" that have been "referred" require root cause analysis to help resolve persistent or pervasive performance problems. There is, however, no apparent single point of overall "ownership" of DUF production performance and performance improvement efforts.

DUF Accuracy and Completeness Analysis

Table VI-2.7 illustrates timeliness results for the BellSouth DUF Usage test. DUF files received after six calendar days are considered to be untimely according to the interconnection agreement.

Table VI-2.7: DUF Timeliness

Timeliness Criterion	Percent Received	Cumulative Percent Received
% DUF in 1 calendar day	0	0
% DUF in 2 calendar days	16%	16%
% DUF in 3 calendar days	9%	25%
% DUF in 4 calendar days	43%	68%
% DUF in 5 calendar days	16%	84%
% DUF in 6 calendar days	15%	99%
% DUF in > 6 calendar days	1%	100%

Table VI-2.8 displays results by location from KCI's analysis of DUFs for accuracy and completeness.

Table VI-2.8: Results by Location

Note: Totals may not sum due to rounding

Evaluation Criteria	Augusta	Macon	Powers Ferry	Rome	Toco Hills	Floater	Total
1) Total number of test calls	0	360	358	358	358	0	1434
2) Number of Calls for which no DUF was Expected	0	65	117	111	79	0	372
3) Total number of calls for which a DUF record was expected	0	295	241	247	279	0	1062
4) Total number of calls for which an expected DUF record wasn't found	0	29	23	15	8	0	75
5) Percentage expected DUFs that were not found vs total number calls for which a DUF was expected(4/3)	0%	10%	10%	6%	3%	0%	7%
6) Total number of scripted test calls for which an unexpected DUF record was found	0	0	0	0	0	0	0
7) Percentage of total test calls for which an unexpected DUF record was found (6/1)	0%	0%	0%	0%	0%	0%	0%

Table VI-2.9 illustrates the results of analysis done to validate transmitted file completeness.

Table VI-2.9: DUF Transmission Completeness Validation[11]

Create Date	DUF File	File Count	Actual Count	Discrepancies
08/03/2000	dsodufga.zxc.113222.D20002 16.T091132.200008031200070 05	56	56	0
08/08/2000	dsodufga.zxc.501259.D20002 20.T075012.200008070900462 57	50	50	0
08/04/2000	dsodufga.zxc.282230.D20002 17.T122822.200008041500073 81	40	40	0
08/08/2000	dsodufga.zxc.594015.D20002 21.T075940.200008080900157 40	188	188	0
08/07/2000	dsodufga.zxc.501755.D20002 20.T075017.200008070901304 52	126	126	0
08/14/2000	dsodufga.zxc.281703.D20002 17.T122817.200008041500057 50	120	120	0
08/08/2000	dsodufga.zxc.593500.D20002 21.T075935.200008080900100 02	73	73	0
08/04/2000	dsodufga.zxc.283292.D20002 17.T122832.200008041500109 76	66	66	0
08/09/2000	dsodufga.zxc.055516.D20002 22.T080555.200008091200112 17	21	21	0
08/07/2000	dsodufga.zxc.501070.D20002 20.T075010.200008070900258 87	116	116	0
08/09/2000	dsodufga.zxc.054911.D20002 22.T080549.200008091200061 63	24	24	0
08/03/2000	dsodufga.zxc.112889.D20002 16.T091128.200008031200051 94	4	4	0

[11] The records in this table include some DUF records that are outside of the test dates, TNs that were not part of the test, and calls that were not part of the validation test.

Create Date	DUF File	File Count	Actual Count	Discrepancies
08/08/2000	dsodufga.zxc.593665.D000221.T075936.200008080900119000	11	11	0
08/04/2000	dsadufga.zxc.354427.D000217.T083544.20000804120008773	49	49	0
08/08/2000	dsadufga.zxc.222815.D000221.T082228.20000808120008354	78	78	0
08/09/2000	dsadufga.zxc.140703.D000222.T081407.20000809120015698	40	40	0
07/07/2000	dsadufga.zxc.173414.D000220.T081734.20000807120008393	73	73	0
08/09/2000	dsadufga.zxc.222456.D000221.T082224.20000808120005970	36	36	0
08/10/2000	dsadufga.zxc.155400.D000223.T081554.20000810120007614	24	24	0
08/04/2000	dsadufga.zxc.354239.D000217.T083542.20000804120006423	76	76	0
08/08/2000	dsadufga.zxc.222638.D000221.T082226.20000808120006308	70	70	0
08/10/2000	dsadufga.zxc.155184.D000223.T081551.20000810120005830	11	11	0
08/07/2000	dsadufga.zxc.173132.D000220.T081731.20000807120007316	18	18	0
08/07/2000	dsodufga.zxc.501574.D000220.T075015.20000807090108696	72	72	0
08/07/2000	dsodufga.zxc.500795.D000220.T075007.20000807090003957	97	97	0

Create Date	DUF File	File Count	Actual Count	Discrepancies
08/04/2000	dsodufga.zxc.282797.D000217.T122827.200008041500087 34	28	28	0
08/08/2000	dsodufga.zxc.593319.D000221.T075933.200008080900084 09	44	44	0
08/04/2000	dsodufga.zxc.281160.D000217.T122811.200008041500035 99	30	30	0
08/19/2000	dsadufga.zxc.140346.D000222.T081403.200008091200123 97	6	6	0
08/07/2000	dsadufga.zxc.172870.D000220.T081728.200008071200054 58	25	25	0
08/10/2000	dsadufga.zxc.154880.D000223.T081548.200008101200032 31	11	11	0
08/14/2000	dsadufga.zxc.354058.D000217.T083540.200008041200041 50	101	101	0
08/09/2000	dsodufga.zxc.054679.D000222.T080546.200008091200044 47	16	16	0
08/10/2000	dsodufga.zxc.560484.D000223.T075604.200008100900108 93	9	9	0
08/10/2000	dsodufga.zxc.555956.D000223.T075559.200008100900043 97	10	10	0
08/03/2000	dsodufga.zxc.113564.D000216.T091135.200008031200093 82	1	1	0

C. Test Results: Billing Systems Capacity Management Evaluation (BLG-3)

1.0 Description

The Billing Systems Capacity Management Evaluation entailed a comprehensive review of the methods and procedures in place to plan for and manage projected growth in the use of CRIS (Customer Records Information System), CABS (Carrier Access Billing System), ADUF (Access Daily Usage File), and ODUF (Optional Daily Usage File) applications for bill generation and invoicing.

The objective of this evaluation was to determine the extent to which procedures to accommodate increases in CRIS/CABS/ADUF/ODUF billing transaction volumes and users were being actively managed.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section VI, "Billing Overview" for a complete description of the billing systems.

CRIS/CABS/ADUF/ODUF billing systems operate in a mainframe environment. BellSouth has outsourced mainframe operations, application and database support. The Mainframe Operations Group manages the mainframe hardware, which includes Central Processing Unit (CPU), core memory, Direct Access Storage Device (DASD), and tape library systems. The Application Support Group manages the production software applications. The Database Administration Group manages the databases and assists the Application Support Group with system resource impact analysis. The BellSouth Transport Organization manages day-to-day operations for the network and collects data on network performance. The BellSouth Architecture & Standards (A&S) Group is responsible for network capacity planning.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was the billing systems capacity management process. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table VI–3.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Billing Systems Capacity Management	Data collection and reporting of business volumes, resource utilization, and performance monitoring	Adequacy and completeness of data collection and reporting	BLG-3-1-1, BLG-3-1-2, BLG-3-1-3, BLG-3-1-4, BLG-3-1-5, BLG-3-1-6
	Data verification and analysis of business volumes, resource utilization, and performance monitoring	Adequacy and completeness of data verification and analysis	BLG-3-1-7, BLG-3-1-8, BLG-3-1-9, BLG-3-1-10, BLG-3-1-11
	Systems and capacity planning	Adequacy and completeness of systems and capacity planning	BLG-3-1-12, BLG-3-1-13, BLG-3-1-14, BLG-3-1-15

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VI-3.2: Data Sources for Billing Systems Capacity Management Evaluation

Document	File Name	Location in Work Papers	Source
Section VI – Billing Process	Billing.ppt	BLG-3-A-1	BLS
EDS Memorandum (Correspondence #R10740G-MMK-11/09/99-01)	Corr-Joe Bains.doc	BLG-3-A-2	BLS
Mainframe Software Support Procedure Manual	ipsa5001.doc	BLG-3-A-3	BLS
BellSouth Mainframe CPU Configuration RAO's	hardware.txt RAO.ppt	BLG-3-A- 4	BLS
CABS Service Order Validation	No electronic copy	BLG-3-A-5	BLS
CABS Daily Job Flow	No electronic copy	BLG-3-A-6	BLS
Daily CRIS Cycle	No electronic copy	BLG-3-A-7	BLS
BIBS and UNE Cycle Flow	BIBSflow.ppt	BLG-3-A-8	BLS
Framework and column descriptions for Mainframe Performance Reporting	PT.xls	BLG-3-A-9	BLS

Document	File Name	Location in Work Papers	Source
Scratch Tape Statistics By Site, 10/01/99	SCRATCH TAPE STATISTICS BY SITE.doc	BLG-3-A-10	BLS
Active Tape Count By Site, 07/01/99-10/01/99	ACTT1099.doc	BLG-3-A-11	BLS
Strobe Performance Profile, 11/04/98	stbrtp.doc	BLG-3-A-12	BLS
StorageGUARD Pool Utilization	Stguard.doc	BLG-3-A-13	BLS
Concurrent Tape Drive Usage Report Card, September, 1999	CONC0999.XLS.xls	BLG-3-A-14	BLS
StorageGUARD Pool Summary History	History.doc	BLG-3-A-15	BLS
InTune Report	Snap.txt	BLG-3-A-16	BLS
CPU Measurement Reports	CPU.xls	BLG-3-A-17	BLS
Interview Summary – Mainframe Operations	Interview_summary2_111699.doc	BLG-3-A-18	KCI
Interview Summary – Billing test team	Interview_summary1_111699.doc	BLG-3-A-19	KCI
Interview Summary – Database administration	Interview Summary2_112999.doc	BLG-3-A-20	KCI
Interview Summary – Mainframe Performance & Tuning	Interview Summary1_112999.doc	BLG-3-A-21	KCI
Interview Summary – Mainframe Storage Management	Interview_summary3_112999.doc	BLG-3-A-22	KCI
Mainframe Resource Utilization--Top 10 (CPU, DASD, and Tape) Consumers	Top 10 Consumers Sept.xls	BLG-3-A-23	BLS
Billing Mailing Volume Report	No Electronic Copy	BLG-3-A-24	BLS
Billing Usage Volume Report	No Electronic Copy	BLG-3-A-25	BLS
Billing Service Order Volume and Error Report	No Electronic Copy	BLG-3-A-26	BLS
MIP Projections	MVS MIPS Projections.xls	BLG-3-A-27	BLS
Projected DASD Retirements for 2000	2000-DASD-Retirements.xls	BLG-3-A-28	BLS
B2SY-S2ST-G2SY Application Hours	Trend CPU_Corp.xls	BLG-3-A-29	BLS
A6SY Application Hours	Trend CPU-RAO.xls	BLG-3-A-30	BLS
Letter on Mainframe Asset Planning inputs	MF-capacity planning letter.doc	BLG-3-A-31	BLS
EDS Mainframe Requirements	EDS Mainframe	BLG-3-A-32	BLS

Document	File Name	Location in Work Papers	Source
	reqs.doc		
System Production Readiness Requirements	Readiness checklist.doc	BLG-3-A-33	BLS
Critical Application Availability (Andersen & EDS)	KCIdata.xls	BLG-3-A-34	BLS
Application Availability	GA2000SLAs.xls	BLG-3-A-35	BLS
Interview Summary – Wholesale Billing Manager	Interview_summary_04192000.doc	BLG-3-A-36	KCI
BellSouth Telecommunications Information Technology – Capacity Planning Methodology, Practices and Requirements – July, 1999	Cap_methodology.doc	PRE-6-A-1	BLS
Interview Summary – 12/15/1999	Interview_summary_121599.doc	PRE-6-A-2	BLS
BOSIP Network Diagrams	Atlntadc.ppt Bosipcor.ppt Brmghmdc.ppt Chrltdc.ppt Jcksondc.ppt Miamidc.ppt Nsvlledc.ppt	PRE-6-A-3	BLS
Birmingham BayNet Protocol Distribution	Bay1.gif	PRE-6-A-4	BLS
Monthly Average Utilization – Birmingham	FDDI1.gif	PRE-6-A-5	BLS
LAN Interface With In Utilization over 20%	LAN~1.htm	PRE-6-A-6	BLS
Average Latency Between RDC's Originating from Birmingham	Monthl~1.gif	PRE-6-A-7	BLS
Monthly Maximum IP Routes Known to Core	Monthl~2.gif	PRE-6-A-8	BLS
WAN Interface With In Utilization over 30%	SMDS1.gif	PRE-6-A-9	BLS
Daily Interface Performance Statistics for PNSCGS04 to JCVLBA19	Pnscgs04.gif	PRE-6-A-10	BLS
Total Traffic Across Core	WAN~1.htm	PRE-6-A-11	BLS
Server Utilization Report	Viewar~1.csv	PRE-6-A-12	BLS
Interview Summary – Transport Solutions	Interview_summary1_121099.doc	PRE-6-A-13	KCI
Interview Summary – Asset Planing	Interview_summary1_01202000.doc	PRE-6-A-14	KCI

Document	File Name	Location in Work Papers	Source
BSCN – DS3 Equivalent Capacity	Bscncap.ppt	PRE-6-A-15	BLS
BellSouth Official Communications Special Services Facility Forecast for 2000 – 2002 and Update to the 1999 Forecast (Cover Letter)	Ss99ltr.doc	PRE-6-A-16	BLS
BellSouth Telecommunications Official Communications Service Requirements And Special Service Forecast	Bscn1999.doc	PRE-6-A-17	BLS
Capacity Planning Metrics for BST Assets Managed by BCS	Capaci~1.doc	PRE-6-A-18	BLS
BellSouth Telecommunications Official Communications Service Requirements Mechanized Input Form	Bscnele.xls	PRE-6-A-19	BLS
Trunk Utilization Report	Rpdn_0110.doc	PRE-6-A-20	BLS
BellSouth Integrated Broadband Network Diagram	Ibtcp911.ppt	PRE-6-A-22	BLS
Transport Asset Planning – Infrastructures	Infraex.ppt	PRE-6-A-23	BLS
Interview Summary – Network Asset Planner	Interview_summary2_01202000.doc	PRE-6-A-24	KCI
Questionnaire designed to aid Capacity Planner and/or Technical Architect in characterizing an application workload	Config.xls	PRE-6-A-25	BLS
BOSIP Support Web Site Printouts – Homepage	No Electronic Copy	PRE-6-A-39	BLS
BOSIP Support Web Site Printouts – Shared BOSIP Network	No Electronic Copy	PRE-6-A-40	BLS
BOSIP Support Web Site Printouts – BCS Support	No Electronic Copy	PRE-6-A-41	BLS
BOSIP LAN and WAN Network Topology Overview	No Electronic Copy	PRE-6-A-42	BLS
TRENDview HTML Reports	No Electronic Copy	PRE-6-A-45	BLS
TRENDview HTML Reports – Overutilized/Underutilized WAN Interfaces	No Electronic Copy	PRE-6-A-46	BLS
TRENDview HTML Reports – WAN interface utilization graphed over time	No Electronic Copy	PRE-6-A-47	BLS

Document	File Name	Location in Work Papers	Source
Capacity Planning & Management Playbook (What we do & How we do it) Working Draft – Not Approved	No Electronic Copy	O&P-6-C-1	BLS
Capacity Management Analysis	Analysis of recent docs for Cap mgmt.doc	PRE-6-A-71	BLS
Attachment 4: Application Specific Forecast Processes	CapMgt.doc	PRE-6-A-72	BLS
Billing Tower Interim Procedures	Critic~11.doc	PRE-6-A-73	BLS
Capacity Planning and Management Standard Operating Procedures	F-1-5 Capacity Plan.doc	PRE-6-A-74	BLS

2.4.1 Data Generation/Volumes

This test relied on documentation reviews and interviews with BellSouth personnel.

2.5 Evaluation Methods

The Billing Systems Capacity Management Evaluation began with a review of systems documentation and process flows for billing. Interviews were conducted with key business process owners and system administration personnel responsible for the operation of CRIS/CABS/ADUF/ODUF billing systems. These interviews were supplemented with an analysis of BellSouth capacity management procedures as well as with collection of evidence of related activities such as periodic capacity management reviews, system reconfiguration/load balancing, load increase induced upgrades, resource utilization reporting, and performance management reporting.

2.6 Analysis Methods

The Billing Systems Capacity Management Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BLS - Georgia OSS Evaluation. These evaluation criteria provide the framework of norms, standards and guidelines for the test.

The data collected from inspections and interviews were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VI-3.3: BLG-3 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-3-1-1	There is an established process for capturing business and transaction volumes	Satisfied	Billing volumes are tracked and reported monthly. KCI was provided copies of sample reports for Bill Mailing Volumes, Billing Usage Volumes, and Billing Service Order and Error Volumes.
BLG-3-1-2	There is an established process for capturing resource utilization	Satisfied	The billing systems run on mainframe computers. The mainframe tower management group follows a simple monthly process for each mainframe box: 1) Collect monthly Central Processing Unit (CPU) utilization data and application hours divided into two categories, billable to BLS and non-billable overhead; and 2) Track total application hours consumed against known maximum thresholds for each mainframe. Network resource utilization data is reported on the BellSouth Open System Interconnect Protocol (BOSIP) home page. This Web site is available to and accessed by the resources responsible for monitoring network performance. The processes for capturing resource utilization were described during interviews with members of the groups responsible for these activities. In addition, KCI reviewed the Midrange Performance Monitoring Web site. Sample resource utilization reports collected during the review are referenced in section 2.4, Data Sources.
BLG-3-1-3	Resource utilization is monitored for system components and elements	Satisfied	The Performance and Tuning Group monitors Multiple Virtual Storage (MVS) mainframe components such as storage utilization (central storage), memory paging rates, batch jobs, Time Sharing Option

Test Cross-Reference	Evaluation Criteria	Result	Comments
			(TSO) sessions, Direct Access Storage Device (DASD) response times, tape drives allocated, CPU percentage busy, etc. Sample mainframe resource utilization reports were collected during the test. Resource utilization data are collected for the CPU, buffer and memory utilization for the routers, circuits utilization of the routers, Wide Area Network (WAN), Local Area Network (LAN) interfaces on routers, hubs, and the Fiber Distributed Data Interface (FDDI) rings. For the circuits and LAN interfaces, reports are generated for the devices with the highest utilization. The resource utilization data collection processes were described during interviews. KCI reviewed the BOSIP home page and collected sample reports.
BLG-3-1-4	Instrumentation and other tools are used to collect resource utilization data	Satisfied	InTune and Strobe are mainframe MVS tools used to provide information on where applications are spending CPU cycles, wait times, DASD volumes, tracks accessed, etc. These application-profiling tools operate on Information Management System (IMS) and DB2 databases. Storage Guard is an on-line system that takes a snapshot of DASD storage (each Volume Table of Contents [VTOC]) every 30 minutes. Through the on-line facility it is possible to view the capacity and utilization of each storage pool. Data Facility Storage Management Subsystem (DFSMS) is a hierarchical storage manager that checks for previous messages. Targets are set for storage utilization. If a device is over the utilization target, then the utility searches for old data (past period set for retention for all data types) that can be moved to a lower priority

Test Cross-Reference	Evaluation Criteria	Result	Comments
			stage. These tools were described during interviews with the Mainframe Operation Group and sample reports were provided to KCI. Tools running to collect network resource utilization data include TRENDsnmp (from DeskTalk), Spectrum Enterprise Manager, OpenView, Nerve Center for BOSIP (the router network), and Starkeeper (for the Datakit networks). These tools were described during interviews with the BOSIP Support manager and sample reports were provided to KCI.
BLG-3-1-5	Performance is monitored at all applicable levels (e.g. network, database server, application server, client, etc.)	Satisfied	The Performance and Tuning Group monitors system resources for mainframe computers (i.e., MVS mainframe components such as storage utilization [central storage], memory paging rates, batch jobs, TSO sessions, DASD response times, tape drives allocated, CPU percentage busy, etc.) The site manager ensures that DFSMS is running, checks for previous messages, and checks tape drive status. The BLS Transport Team is responsible for day-to-day operations of the networks (comprised of components such as routers, ATM switches, and hubs.). The team is comprised of three groups: Protocol Analysis and Communication Support (PACS), which provides support and problem resolution for escalated network performance issues; Proactive Performance Analysis, which looks at the networks to prevent problems; and the Tools Group, which collects the data on network performance. Homegrown scripts have been written to collect data such as latency and packet loss across the BOSIP core. These activities were described

Test Cross-Reference	Evaluation Criteria	Result	Comments
			during interviews with the Mainframe Operation Group and Network Support Team. Sample performance reports were collected and reviewed.
BLG-3-1-6	Instrumentation and other tools are used to monitor performance	Satisfied	The CMF tool looks at system logs to collect mainframe performance data. MainView (a graphical user interface for CMF) presents the performance data collected by CMF in a graphical format so that trending can be performed. TRENDsnmp (from DeskTalk), Spectrum Enterprise Manager, OpenView, Nerve Center for BOSIP (the router network), and Starkeeper (for the Datakit networks) are tools used to monitor network performance. Performance monitoring activities were described during interviews and sample reports were provided to KCI.
BLG-3-1-7	There is an established process for forecasting business volumes and transactions	Satisfied	During initial testing, no established, ongoing process for forecasting business and transaction volumes was observed for BLS's billing interfaces. See Exception 25 for additional information on this issue. BLS documented the business volume and transaction forecasting process for the mainframe billing systems in the Standard Operating Procedure (SOP) section of BLS's *Capacity Planning & Management Playbook*. The amended SOP documents the established process of using the LSR forecast to develop projections for mainframe impact. Applications targeted are CRIS and CABS. The SOP outlines the process steps that the Capacity Planner is to complete in order to develop the mainframe forecast that is delivered to mainframe operations for use in the quarterly capacity planning meetings. In addition, BLS developed an appendix to the Playbook, which describes the

Test Cross-Reference	Evaluation Criteria	Result	Comments
			transaction forecasting process for the mainframe billing systems. The new process has been completed once and a forecast was provided to the mainframe planners in November 2000. Exception 25 is closed.
BLG-3-1-8	The business volume tracking and forecasting data is at an appropriate level of detail to use for capacity management	Satisfied	During initial testing, no established, ongoing process for forecasting business and transaction volumes was observed for BLS's (mainframe) billing interfaces. See Exception 25 for additional information on this issue. Additional interviews and documentation reviews associated with retest activities for the exception confirmed that business volume tracking and forecasting data will be utilized in the mainframe capacity management process. The mainframe forecast worksheet tracks actual LSRs and forecast data through 12/2001 and transforms the LSR forecast into calculated CRIS region MIPS requirements. The calculated MIPS requirements are compared to MIPS installed and a percentage of Installed MIPS to LSR Impact is reported. The dedicated CRIS control region contains the CRIS, CABS, and pre-order mainframe applications. In addition, CPU utilization data is trended and future CPU utilization projections are compared to CPU capacity. If the trend line exceeds capacity, then load balancing is done or system capacity is added to remove the capacity constraint. Normal growth is planned for and additional capacity can be added within days for emergency situations. The CRIS Database Administration Group supports the application teams in projecting requirements for the next quarter. The database

Test Cross-Reference	Evaluation Criteria	Result	Comments
			administrators work with the application teams to estimate the impact of each work request or new process on CPU, DASD, or Tape. Any potential impact is reported to the appropriate parties via e-mails, TRIAD / Quarterly meetings, etc. For BLS's network, capacity planning is done annually as part of the budgeting process and also for each application release. Application development, system administration, and production support resources participate in the capacity planning process. The planning process takes as input the Network Carrier Services (NCS) Marketing Group forecast, current volumes, trend data, and anticipated volume changes that may result from new system functionality. This information is used to project future hardware and software needs. If additional capacity is needed, the request is brought to BLS (Delivery and Customer Service Managers) for approval, equipment purchase, and installation. Exception 25 is closed
BLG-3-1-9	There is an established process for reviewing the performance of the business and transaction volume forecasting process	Satisfied	During initial testing, no established, ongoing process for reviewing the performance of the mainframe or network business and transaction volume forecasting process was observed. See Exception 25 for additional information on this issue. BLS developed an appendix to the *Capacity Planning & Management Playbook* specifying that BTSI will track and compare actual LSR flow-through against forecast volumes. In addition, a copy of a recent comparison of actual to forecast LSRs was provided. Exception 25 is closed
BLG-3-1-10	There is an established process for verification and validation of	Satisfied	Mainframe hardware performance is monitored daily. Detected anomalies are reported,

Test Cross-Reference	Evaluation Criteria	Result	Comments
	performance data		investigated, and resolved. The performance monitoring, database administration, and application support groups participate in this process of verification and validation of performance data. Data from the system hardware resources is downloaded for personal computer access. This information is formatted into PC reports and is analyzed and/or reviewed periodically by the team members responsible for mainframe performance and tuning analysis. This data is retained for a minimum of one year. Network performance data are verified and validated by the Transport Group. Performance reports are reviewed regularly on the BOSIP home page and through on-line tools. The reports and tools define thresholds for utilization of network resources. Any values exceeding the established threshold are highlighted in the reports, investigated, and resolved. Performance monitoring activities were described during interviews. KCI reviewed and collected sample performance and resource utilization reports.
BLG-3-1-11	Performance monitoring results are compared to service level agreements and other metrics	Satisfied	Interviews with mainframe operations indicated that BLS and the vendor managing the systems operations have contracts in place governing system performance. These contracts define targets for BOCRIS and CABS system availability. KCI was provided with the targets for system availability and copies of reports on vendor performance, by system. Service Quality Measurements are defined for intervals for billing invoices (B-2. Mean Time to Deliver Invoices), for accuracy of data delivery (B-3. Usage Data Delivery Accuracy), for completeness of data

Test Cross-Reference	Evaluation Criteria	Result	Comments
			delivery (B-4. Usage Data Delivery completeness), timeliness of data delivery (B-5. Usage Data Delivery Timeliness) and for time to deliver data (B-6. Mean Time to Deliver Usage). (See *BellSouth Service Quality Measurement Plan* document dated 07/2000.) Performance results for these metrics are reported through the Performance Monitoring and Analysis Platform (PMAP). BLS monitors its own network performance results. Network availability (i.e., trunk and node availability) results are tracked against established performance targets/objectives. The Transport Group works with the BLS Architecture & Standards (A&S) Group to address any network performance issues. Network performance activities were described during interviews with the BOSIP Support Manager.
BLG-3-1-12	Capacity Management process is defined and documented	Satisfied	The processes that are executed for performance monitoring and capacity planning activities are defined and documented. The document, *BLS Telecommunications Information Technology Capacity Planning Methodology, Practices, and Requirements July 1999*, outlines a capacity planning process for the mainframe, midrange, and network environments. BLS's capacity planning process is part of the IT Engagement Process (ITEP). Process flows for the capacity planning process have been developed and are posted on the BLS IT Web site. These flows are also contained in a document entitled *Capacity Planning & Management Playbook.* The capacity planning process has been communicated within the Engineering & Design Group. The links within the Asset Management Group and the interfaces to other

Test Cross-Reference	Evaluation Criteria	Result	Comments
			organizations are defined in the process documentation. BLS is refining the definition of process links between the remaining functional groups. Documentation depicting the current mainframe performance monitoring process was provided to KCI. Midrange and network performance monitoring is addressed in the capacity planning and management documentation.
BLG-3-1-13	Resource usage and capacity is considered in the planning process for capacity management	Satisfied	On a monthly basis, the Mainframe Operations Management Group uses data collected for each mainframe box to 1) Fit a trend line through the monthly utilization data points; 2) Estimate, based on trends and rates of growth, when upgrades or new purchases must occur; and 3) Purchase additional capacity, as needed. If anomalies in CPU utilization, DASD, etc. occur, the Operations Group will contact the appropriate application support group to determine the root cause of the anomaly. In addition, TRIAD meetings are held every three months. TRIAD meetings include representatives from Hardware Procurement, mainframe performance monitoring, and customer representatives for the applications running in the mainframe environment with the largest DASD usage. Customer representatives provide input on changes to applications and how they may impact various components of system capacity. Resource utilization reports are examined on an ongoing basis and as part of the quarterly capacity planning process. LAN / WAN interface and FDDI utilization reports are examined on an ongoing basis as part of the network capacity planning processes.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			These capacity planning activities were described during interviews.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-3-1-14	Performance monitoring results are considered in the planning process for capacity management	Satisfied	Mainframe performance monitoring reports are examined on an ongoing basis and as part of the quarterly capacity planning process. The BLS Architecture & Standards (A&S) Group is responsible for network capacity planning. The BLS Transport Team analyzes network performance data and resolves capacity issues. If unable to resolve capacity issues, the Transport Team alerts the A&S Group, which purchases equipment or makes architecture changes in order to increase or adjust system capacity. These capacity planning activities were described during interviews.
BLG-3-1-15	Capacity Management procedures define performance metrics to trigger the addition of capacity, load re-balancing or system tuning	Satisfied	Mainframe application hours are tracked monthly. Historical growth trends of these hours are tracked against known thresholds and used to estimate future growth and determine when upgrades or new purchases must occur. Scratch tape counts and scratch tape thresholds are tracked monthly, by site. These counts and thresholds are used to assist in determining when additional tapes should be ordered. Active tape counts and corresponding Average Growth per Month are also tracked monthly. Thresholds have been set for resource utilization and performance measures in the mainframe environment. Values that exceed the established thresholds are flagged and investigated. In the network environment, WAN interface utilization is tracked to identify opportunities for load balancing. Procedures for performance monitoring were described during interviews. In addition, KCI viewed and collected sample reports.

D. Test Results: Billing Performance Measures Evaluation (BLG-4)

1.0 Description

The Billing Performance Measures Evaluation (BLG-4) involved (1) Calculation and Reporting Validation, and (2) Data Comparison for the billing-related Service Quality Measurements (SQMs) produced by BellSouth. The activities undertaken to execute Performance Measures Evaluations are described in Section III-F, "Performance Measures Evaluation Overview."

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

The process description for metrics data processing and reporting at BellSouth is contained in Section III-F, "Performance Measures Evaluation Overview."

2.2 Scenarios

Scenarios are not applicable to this test.

2.3 Test Targets & Measures

The test target for Calculation and Reporting Validation is the set of values reported by BellSouth for billing Service Quality Measurements (SQMs). The test target for Data Comparison is the raw data that BellSouth produces for SQM validation purposes. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross- Reference" indicates where the particular measures are addressed in Section 3.1 "Interim Results & Analysis."

Table VI-4.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Invoice Accuracy	Resale, UNE, and Interconnection	BLS reports are correctly disaggregated and complete.	BLG-4-1-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	BLG-4-1-2

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Mean Time to Deliver Invoices	Resale, UNE, and Interconnection	BLS reports are correctly disaggregated and complete.	BLG-4-2-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	BLG-4-2-2
		Test data collected by KCI agree with BLS raw data.	BLG-4-2-3
Usage Data Delivery Accuracy	Not Disaggregated	BLS reports are correctly disaggregated and complete.	BLG-4-3-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	BLG-4-3-2
Usage Data Delivery Completeness	Not Disaggregated	BLS reports are correctly disaggregated and complete.	BLG-4-4-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	BLG-4-4-2
		Test data collected by KCI agree with BLS raw data.	BLG-4-4-3
Usage Data Delivery Timeliness	Not Disaggregated	BLS reports are correctly disaggregated and complete.	BLG-4-5-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	BLG-4-5-2
		Test data collected by KCI agree with BLS raw data.	BLG-4-5-3
Mean Time to Deliver Usage	Not Disaggregated	BLS reports are correctly disaggregated and complete.	BLG-4-6-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	BLG-4-6-2
		Test data collected by KCI agree with BLS raw data.	BLG-4-6-3

2.4 Data Sources

The data collected for the Billing Performance Measures Evaluation are summarized in the table below.

Table VI-4.2: Data Sources for Billing Performance Measures Evaluation

Document	File Name	Location in Work Papers	Source
November 1999 Billing raw data – BLS Proprietary	E&YNOV~1.xls	BLG-4-A-3	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Billing raw data – BLS Proprietary	E&YDEC~1.xls	BLG-4-A-10	BLS – Interconnection Operations – CLEC Performance Measurements
January 2000 Billing raw data – BLS Proprietary	E&Y01-~1.XLS	BLG-4-A-17	BLS – Interconnection Operations – CLEC Performance Measurements
February 2000 Billing raw data – BLS Proprietary	E&Y02-~1.xls	BLG-4-A-24	BLS – Interconnection Operations – CLEC Performance Measurements
March 2000 Billing raw data– BLS Proprietary	E&Y03-~1.XLS	BLG-4-A-31	BLS – Interconnection Operations – CLEC Performance Measurements
April 2000 Billing raw data– BLS Proprietary	EY04-~1.XLS	BLG-4-A-38	BLS – Interconnection Operations – CLEC Performance Measurements
May 2000 Billing raw data– BLS Proprietary	EY05-~1.XLS	BLG-4-A-45	BLS – Interconnection Operations – CLEC Performance Measurements
June 2000 Billing raw data– BLS Proprietary	EY060~1.XLS	BLG-4-C-3	BLS – Interconnection Operations – CLEC Performance Measurements
July 2000 Billing raw data– BLS Proprietary	E&Y07-00.xls	BLG-4-C-10	BLS – Interconnection Operations – CLEC Performance Measurements
August 2000 Billing raw data– BLS Proprietary	EY080~1.xls	BLG-4-C-17	BLS – Interconnection Operations – CLEC Performance Measurements
September 2000 Billing raw data– BLS Proprietary	EY090~1.xls	BLG-4-C-24	BLS – Interconnection Operations – CLEC Performance Measurements

Document	File Name	Location in Work Papers	Source
October 2000 Billing raw data– BLS Proprietary	E&Y100~1.XLS	BLG-4-C-31	BLS – Interconnection Operations – CLEC Performance Measurements
November 2000 Billing raw data– BLS Proprietary	e&y1100revised_12-20-2000jl.xls	BLG-4-C-38	BLS – Interconnection Operations – CLEC Performance Measurements
December 2000 Billing raw data– BLS Proprietary	e&y1200jl.xls	BLG-4-C-45	BLS – Interconnection Operations – CLEC Performance Measurements
November 1999 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-A-1	BLS (Performance Measurement Analysis Platform "PMAP" Web site)
December 1999 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-A-8	BLS (PMAP Web site)
January 2000 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-A-15	BLS (PMAP Web site)
February 2000 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-A-22	BLS (PMAP Web site)
March 2000 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-A-29	BLS (PMAP Web site)
April 2000 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-A-36	BLS (PMAP Web site)
May 2000 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-A-43	BLS (PMAP Web site)
June 2000 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-C-1	BLS (PMAP Web site)
July 2000 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-C-8	BLS (PMAP Web site)
August 2000 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-C-15	BLS (PMAP Web site)
September 2000 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-C-22	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
October 2000 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-C-29	BLS (PMAP Web site)
November 2000 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-C-36	BLS (PMAP Web site)
December 2000 SQM report– BLS Proprietary	Invoice Accuracy CLEC (Region).txt	BLG-4-C-43	BLS (PMAP Web site)
November 1999 SQM report– BLS Proprietary	Mean Time to Deliver Invoice CLEC (Reg).txt	BLG-4-A-1	BLS (PMAP Web site)
December 1999 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-A-8	BLS (PMAP Web site)
January 2000 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-A-15	BLS (PMAP Web site)
February 2000 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-A-22	BLS (PMAP Web site)
March 2000 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-A-29	BLS (PMAP Web site)
April 2000 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-A-36	BLS (PMAP Web site)
May 2000 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-A-43	BLS (PMAP Web site)
June 2000 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-C-1	BLS (PMAP Web site)
July 2000 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-C-8	BLS (PMAP Web site)
August 2000 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-C-15	BLS (PMAP Web site)
September 2000 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-C-22	BLS (PMAP Web site)
October 2000 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-C-29	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
November 2000 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-C-36	BLS (PMAP Web site)
December 2000 SQM report– BLS Proprietary	Mean Time to Deliver Invoices CLEC (Reg).txt	BLG-4-C-43	BLS (PMAP Web site)
November 1999 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-A-1	BLS (PMAP Web site)
December 1999 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-A-8	BLS (PMAP Web site)
January 2000 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-A-15	BLS (PMAP Web site)
February 2000 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-A-22	BLS (PMAP Web site)
March 2000 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-A-29	BLS (PMAP Web site)
April 2000 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-A-36	BLS (PMAP Web site)
May 2000 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-A-43	BLS (PMAP Web site)
June 2000 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-C-1	BLS (PMAP Web site)
July 2000 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-C-8	BLS (PMAP Web site)
August 2000 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-C-15	BLS (PMAP Web site)
September 2000 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-C-22	BLS (PMAP Web site)
October 2000 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-C-29	BLS (PMAP Web site)
November 2000 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-C-36	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
December 2000 SQM report– BLS Proprietary	Usage Data Delivery Accuracy CLEC.txt	BLG-4-C-43	BLS (PMAP Web site)
November 1999 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-A-1	BLS (PMAP Web site)
December 1999 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-A-8	BLS (PMAP Web site)
January 2000 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-A-15	BLS (PMAP Web site)
February 2000 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-A-22	BLS (PMAP Web site)
March 2000 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-A-29	BLS (PMAP Web site)
April 2000 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-A-36	BLS (PMAP Web site)
May 2000 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-A-43	BLS (PMAP Web site)
June 2000 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-C-1	BLS (PMAP Web site)
July 2000 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-C-8	BLS (PMAP Web site)
August 2000 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-C-15	BLS (PMAP Web site)
September 2000 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-C-22	BLS (PMAP Web site)
October 2000 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-C-29	BLS (PMAP Web site)
November 2000 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-C-36	BLS (PMAP Web site)
December 2000 SQM report– BLS Proprietary	Usage Timeliness & Completeness CLEC.txt	BLG-4-C-43	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
Mapping of OCNs / ACNAs to CLECs– BLS Proprietary	RQ_COM~1.xls	BLG-4-A-2	BLS – Interconnection Operations – CLEC Performance Measurements
Billing Process Flow– BLS Proprietary	BILLIN~1.doc	BLG-4-A-2	BLS – Interconnection Operations – CLEC Performance Measurements
DUF access database– BLS Proprietary	GADUF_Test.mdb	BLG-4-B-1	KCI
Mean Time to Deliver Invoices Test Data– BLS Proprietary	Mean Time for Invoices Data.xls	BLG-4-B-2	KCI
Invoice Accuracy Test Data– BLS Proprietary	Billing Invoice Accuracy Data to Metrics.xls	BLG-4-B-3	KCI
ADUF Summary Test Data – BLS Proprietary	aduf000314.txt	BLG-4-B-4	KCI
ODUF Summary Test Data – BLS Proprietary	oduf000314.txt	BLG-4-B-5	KCI
Results of Billing Data Comparison– BLS Proprietary	No Electronic Copy	BLG-4-B-6	KCI
BellSouth E&Y Data With Account Numbers– BLS Proprietary	BDC_NO~1.XLS	BLG-4-B-7	BLS – Interconnection Operations – CLEC Performance Measurements
10 / 22 / 99 Georgia SQM documentation– BLS Proprietary	No Electronic Copy	PMR-A-9	BLS (PMAP Web site)
May 2000 Georgia SQM documentation– BLS Proprietary	No Electronic Copy	PMR-A-11	BLS (PMAP Web site)
KCI – Billing - Evaluation Criteria and Interim Results Table– BLS Proprietary	BLG4 – Table VI-4.3.doc	BLG-4-A-22	KCI
KCI – Billing - Evaluation Criteria and Interim Results Table – Sources– BLS Proprietary	BLG4 – Table VI-4.3_sources.doc	BLG-4-A-23	KCI

2.4.1 Data Generation/Volumes

This test relied on the raw data and SQMs reported for the KCI CLEC.

2.5 Evaluation Methods

The Evaluation Methods for the Performance Measures Evaluation are described in Section III-F, "Performance Measures Evaluation Overview."

2.6 Analysis Methods

The Billing Performance Measures Evaluation includes a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provide the framework of norms, standards, and guidelines for (1) Calculation and Reporting Validation, and (2) Data Comparison.

The data collected were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II**.**

Table VI-4.3: BLG-4 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Invoice Accuracy			
BLG-4-1-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation.
BLG-4-1-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM values calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Initially, KCI was unable to match all of the KCI-calculated SQM values to the BLS-reported values in the February and May 2000 reports. In the February report, the values did not match for UNE, Interconnection, and Total. In the May report, the values did not match for UNE and Total. BLS provided additional calculation instructions to KCI. These

Test Cross-Reference	Evaluation Criteria	Result	Comments
			instructions specified that the absolute value of each revenue item is to be used, and that the Adjustments variable is to be altered every time the corresponding revenue item is converted to a positive value. Using these new instructions, KCI matched the revised values for February. In addition to these revised instructions, KCI received corrected raw data and revised reports for May. Using these new instructions and revised data, KCI matched the revised values for May. KCI also performed this analysis for June 2000 through January 2001. KCI matched the BLS-provided values for June through December 2000. Initially, KCI was unable to match the BLS-provided values for January 2001. BLS informed KCI that the BLS-provided values were incorrect, because the relevant data provided to PMAP for calculation purposes were formatted such that negative numbers were presented in parentheses. (PMAP could not account for these entries accurately.) BLS has provided updated SQM values, which match the KCI-calculated values exactly. Additionally BLS will update PMAP so that it can accurately account for numbers in parentheses. In the meantime, BLS has manual checks in place to ensure this type of error does not reoccur. See Exceptions 62, 100, and 135, for additional information on this issue. Exceptions 62 and 100 are closed. KCI has recommended closure of Exception 135 to the GPSC.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Mean Time to Deliver Invoices			
BLG-4-2-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation. Initially, BLS did not report an SQM value for Interconnections in November 1999, December 1999, or January 2000. Subsequently, BLS provided revised SQM reports for these months that included these SQM values. See Exceptions 42 and 74 for additional information on this issue. Exceptions 42 and 74 are closed.
BLG-4-2-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM values calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Initially, BLS did not report values for the Interconnection level of disaggregation (see BLG-4-2-1 comments above). BLS subsequently provided revised data and SQM reports for November 1999 through March 2000. KCI then recalculated the SQM values given the new data. The revised KCI-calculated values matched the revised BLS-reported values. Additional issues were raised in Exception 104 regarding the accuracy of the BLS-provided raw data for February, March, and May 2000 (see BLG-4-2-3 below). BLS provided revised raw data and SQM reports for these months, and KCI recalculated its SQM values based upon these revised data. The revised KCI-calculated SQM values agree with the revised BLS-reported SQM values for February, March, and May 2000. The KCI-calculated SQM values also agree with the BLS-reported values for June 2000 through January 2001. See Exceptions 42, 74, and 104 for additional information on these issues. Exceptions 42, 74, and 104

Test Cross-Reference	Evaluation Criteria	Result	Comments
			are closed.
BLG-4-2-3	Test data collected by KCI agree with BLS raw data.	Satisfied	The test data collected by KCI agree with the raw data provided by BLS. Initially, KCI found that information on some billng account numbers was missing from the raw data. See Exceptions 42 and 43 for additional information on this issue. BLS subsequently provided additional information and KCI performed the data comparison test using this information. KCI was unable to match the "number of calendar days" for one CABS account in the period from November 1999 through August 2000. KCI perfomed a similar analysis for October 2000 and November 2000 and found that the KCI calculations matched the BLS-reported values for "number of calendar days" for all CABS accounts. Additionally KCI was unable to match the "number of business days" for six CRIS accounts, in the period from November 1999 throughAugust 2000. Further, KCI found that BLS was not reporting raw data on six KCI CLEC CABS billing accounts between February 1999 and May 2000. BLS explained that they corrected the raw data files to reflect the actual calculations of the "number of calendar days" for CABS accounts, and the "number of business days" for CRIS accounts. BLS further explained that they corrected the raw data files to include all the accounts for the test CLEC. For one of the accounts, BLS mentioned that all the circuits were removed starting March 2000. BLS provided KCI with the updated raw data files for February, March, and May 2000. The test data

Test Cross-Reference	Evaluation Criteria	Result	Comments
			collected by KCI agree with these updated raw data files. Additionally, KCI determined that the KCI-collected test data agree with the BLS-provided raw data for June through August 2000, and October and November 2000. See Exception 104 for additional information on this issue. Exceptions 42, 43, and 104 are closed.
Usage Data Delivery Accuracy			
BLG-4-3-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports a single aggregated value for the SQM, as specified in the May 2000 Georgia SQM documentation.
BLG-4-3-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM values calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values.
Usage Data Delivery Completeness			
BLG-4-4-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an aggregated value for the SQM, as specified in the May 2000 Georgia SQM documentation.
BLG-4-4-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-4-4-3	Test data collected by KCI agree with BLS raw data.	Satisfied	The test data collected by KCI agree with the raw data provided by BLS. For November 1999 through April 2000, June through September 2000, and November 2000, KCI used test data to generate the frequency distribution of DAYS_DELAYED, based on REC_VOL. The REC_VOL field gives the number of usage records in each of the class intervals defined by DAYS_DELAYED. DAYS_DELAYED is the difference, in calendar days, between the time a usage record was delivered by BLS and the time when the message was first recorded in the OSS. KCI matched the BLS-reported raw data with the KCI-collected data for these eleven months. However, initially KCI data did not match the reported raw data for April 2000. BLS explained that KCI was not able to match the BLS-reported data with KCI- collected data for April 2000 because of an error in one of the macros that generated the raw data file. BLS corrected the macro and provided KCI with an updated raw data file. KCI matched the KCI-collected data with the revised BLS-reported data. Further, KCI has matched the test data collected by KCI with the raw data provided by BLS for June through September 2000, and for November 2000. See Exception 101 for additional information on this issue. Exception 101 is closed.
Usage Data Delivery Timeliness			
BLG-4-5-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an aggregated value for the SQM, as specified in the May 2000 Georgia SQM documentation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-4-5-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values.
BLG-4-5-3	Test data collected by KCI agree with BLS raw data.	Satisfied	The test data collected by KCI agree with the raw data provided by BLS. KCI test data for REC_VOL matched BLS raw data for the months of November 1999 through April 2000, June through September 2000, and November 2000 (see BLG-4-4-3 comments above). However, initially KCI did not match the reported raw data for April, 2000. BLS explained that KCI was not able to match the BLS-reported data with KCI- collected data for April 2000 because of an error in one of the macros that generated the raw data file. BLS corrected the macro and provided KCI with an updated raw data file. KCI matched the KCI-collected data with the revised BLS-reported data. Further, KCI matched the test data collected by KCI with the raw data provided by BLS for June through September 2000, and November 2000. See Exception 101 for additional information on this issue. Exception 101 is closed.
Mean Time to Deliver Usage			
BLG-4-6-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reported a single aggregated value for the SQM, as specified in the May 2000 Georgia SQM documentation.
BLG-4-6-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM values calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Initially, KCI-calculated values did not match BLS-reported values for November and December 1999, and Exceptions 45 and 46 were issued.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			BLS then changed its computational procedure after discussions with KCI. As a result, the values calculated by KCI for January 2000 through January 2001 match the BLS-reported values. BLS also revised its November and December 1999 SQM reports. The values in these SQM reports match the KCI-calculated values. See Exceptions 45 and 46 for additional information on this issue. Exceptions 45 and 46 are closed.
BLG-4-6-3	Test data collected by KCI agree with BLS raw data.	Satisfied	The test data collected by KCI agree with the raw data provided by BLS. KCI test data for REC_VOL matched BLS raw data for the months of November 1999 through April 2000, June through September 2000, and November 2000. (KCI did not attempt to compare the May or October 2000 data.) See BLG-4-4-3 comments. KCI matched the BLS-reported raw data with the KCI-collected data for these eleven months. However, initially, KCI data did not match the reported raw data for April 2000. BLS explained that KCI was not able to match the BLS-reported data with KCI-collected data for April 2000 because of an error in one of the macros that generated the raw data file. BLS corrected the macro and provided KCI with an updated raw data file. KCI matched the KCI-collected data with the revised BLS-reported data. Further KCI matched the test data collected by KCI with the raw data provided by BLS for June through September 2000, and November 2000. See Exception 101 for additional information on this issue. Exception 101 is closed.

E. Test Results - CRIS/CABS Invoicing Documentation Test (BLG-5)

1.0 Description

The objective of the Customer Records Information System / Carrier Access Billing System (CRIS / CABS) Invoicing Documentation Test was to evaluate billing documentation provided by BellSouth for use by Competitive Local Exchange Carriers (CLECs).

Specifically, KCI evaluated whether the billing documentation provided by BellSouth adequately supports CLECs in receipt and validation of BellSouth wholesale bills, and in the subsequent billing of their own customers.

The CRIS / CABS Invoicing Documentation Test consisted of four sub-tests. The first sub-test evaluated individual BellSouth documents for structure and format as they affect usability by the CLEC customer.

The second sub-test evaluated BellSouth billing documentation for content. The review encompassed considerations of topical coverage, depth of coverage, and general usability of the documentation. As KCI conducted this review, CLECs were consulted for input on potential documentation issues. Topics considered included:

- Understanding Billing
- Receiving and Processing Bills
- Validating Bills
- Processing Credits and Adjustments
- Getting Help

Documents considered for the structure and content sub-tests are identified in "Table VI-5.2: Data Sources for BLG-5 CRIS / CABS Invoicing Documentation Test," as indicated by an asterisk (*).

The third sub-test examined the procedures used by BellSouth to produce and distribute the subject documentation.

The fourth sub-test evaluated the accuracy of the BellSouth documents by identifying errors (discrepancies between the billing documentation and BellSouth practice or between BellSouth billing related documents) that significantly impacted the bill validation and usage testing (BLG-1 and BLG-2). The bill validation and usage testing itself relied heavily on the accuracy of the BellSouth documentation.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

BellSouth wholesale customers receive and process their bills in order to validate the BellSouth charges and bill their own customers in turn. Receipt and processing of the BellSouth bills relies upon timely, accurate, and comprehensive billing information that is to be found in BellSouth-provided documentation. See Section VI, "Billing Overview" for a description of BellSouth's billing systems and usage data files that feed into wholesale customer bills.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was BellSouth-provided invoicing documentation. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table VI-5.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Billing Invoicing Documentation	Document Structure and Format	Existence of Structural Elements Completeness of Data	BLG-5-1-1 BLG-5-1-2 BLG-5-1-3
	Document Content	Clarity of Information Completeness of data	BLG-5-2-1 BLG-5-2-2 BLG-5-2-3 BLG-5-2-4 BLG-5-2-5
	Release Management	Existence and Adequacy of the Update Process Availability of Documentation Accuracy of Documentation	BLG-5-3-1 BLG-5-3-2 BLG-5-3-3 BLG-5-3-4 BLG-5-3-5 BLG-5-3-6 BLG-5-3-7 BLG-5-3-8 BLG-5-3-9 BLG-5-3-10 BLG-5-3-11
	Document Accuracy	Accuracy of Documents	BLG-5-4-1

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VI-5.2: Data Sources for CRIS/CABS Invoicing Documentation Test

Document[1]	File Name	Location in Work Papers	Source
Magnetic Tape Billing Plan Specifications *	No Electronic Copy	BLG-1-A	BLS
Product Information *	No Electronic Copy	BLG-1-B	BLS
General Subscriber Service Tariff *	No Electronic Copy	BLG-1-C	BLS
Facility Based Activation Requirements – Interconnection Services *	No Electronic Copy	BLG-1-D	BLS
CLEC Training Unbundled Network Elements *	No Electronic Copy	BLG-1-E	BLS
*Facility Based – CLEC Starter Kit**	http://www.interconnection.bellsouth.com/guides/guidepdf/stfb_is2.pdf Also in hardcopy.	BLG-1-F	BLS
*CLUB*EDI Customer Handbook* *	No Electronic Copy	BLG-1-G-1	BLS
Electronic Payment System Implementation Guidelines *	No Electronic Copy	BLG-1-G-2	BLS
Sample Customized Large User Bill (CLUB) *	No Electronic Copy	BLG-5-A-20	BLS
Beyond DAB *	No Electronic Copy	BLG-1-G-4	BLS
Diskette Analyzer Bill User's Guide *	No Electronic Copy	BLG-1-G-5	BLS
Batch File Processing with DAB *	No Electronic Copy	BLG-1-G-6	BLS
Customized Large User Bill *	No Electronic Copy	BLG-5-A-21	BLS
FTP Protocol *	No Electronic Copy	BLG-1-G-7	BLS
Diskette Billing System ASCII Data Exporting *	No Electronic Copy	BLG-1-G-8	BLS
How to Retrieve Data Files and Install/Activate Analyzer Software *	No Electronic Copy	BLG-1-G-9	BLS
Interconnect Agreement (as provided to KCI) *	No Electronic Copy	Project Management Office Work Papers	BLS
Copy of Form RF-602	No Electronic Copy	BLG-1-K-9	BLS
Interview Summary/Report: 7	No Electronic Copy	BLG-5-A-3	KCI

[1] An asterisk (*) indicates material that is generally available to CLECs, and that was used in the document structure, content, and accuracy sub-tests (BLG-5-1, BLG-5-2, and BLG-5-4).

Document[1]	File Name	Location in Work Papers	Source
BLS Response to Interview Summary / Report: 7	No Electronic Copy	BLG-5-A-4	BLS
Interview Summary / Report: 14	No Electronic Copy	BLG-5-A-5	KCI
BLS Response to Interview Summary / Report: 14	No Electronic Copy	BLG-5-A-6	BLS
BellSouth Billing Documentation Writer's Guide (How to Develop BBI Documentation)	No Electronic Copy	BLG-5-A-18	BLS
BellSouth CLEC Billing Guide	No Electronic Copy	BLG-5-A-22	BLS
Understanding Your Bill (7/28/00; Issue 1.0)	No Electronic Copy	BLG-5-A-19	BLS
Carrier Access Billing System (CABS) Billing Output Specifications	No Electronic Copy	BLG-1-L thru BLG-1-AD	Telcordia Technologies

2.4.1 Data Generation/Volumes

This test relied on the submission of orders to generate bills for validation, and on the generation of usage from test calling associated with the BLG-1 and BLG-2 tests, respectively.

2.5 Evaluation Methods

BellSouth billing document structure and format was evaluated based upon KCI's definition of three major structural considerations (see table VI-5.3) that determine usability of the documentation. The documents were evaluated for effective and consistent implementation of those considerations.

BellSouth billing document content was evaluated based upon KCI's definition of five key topical areas (see table VI-5.3) that must be addressed to effectively support the CLECs' receipt and processing of wholesale bills. KCI subject matter experts (SMEs) participating in the billing transaction-based testing evaluated each topical area for breadth and depth of topical coverage.

The evaluation of BellSouth release management procedures was based upon criteria developed by KCI prior to the start of the testing. Interviews with the responsible BellSouth parties and reviews of supporting internal documentation provided by BellSouth served as the basis for determining the extent to which the criteria were satisfied.

To evaluate documentation accuracy, KCI implemented procedures to log instances of documentation errors (defined as cases where documentation differed from actual BellSouth practice or where contradictory information was identified). Logging was limited to examples where the error resulted in significant impact to the conduct of the transaction-based testing. The transaction-based testing covered relevant aspects of BellSouth wholesale billing for Unbundled Network Elements (UNEs) and relied heavily on the availability of

accurate information.

2.6 Analysis Methods

The CRIS / CABS Invoicing Documentation Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the CRIS / CABS Invoicing Documentation Test.

The data collected from documentation reviews and interviews were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VI-5.3: BLG-5 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Document Structure and Format			
BLG-5-1-1	Organization and flow of the documents facilitate ready understanding and access to needed information.	Satisfied	Document reviews indicate that organization and flow of the subject documents support the reader in understanding and accessing the information content. The following qualifications were noted: • Redundant information is provided (e.g., information pertaining to Billing and Policies is duplicated in the *Facility Based – CLEC Starter Kit* and the *Facility Based Activation Requirements*). • Some documents do not include a table of contents. Qualifications regarding the organization and flow of BLS-provided documentation do not prevent CLECs from utilizing the documentation in an acceptably efficient manner.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-5-1-2	References are provided to facilitate efficient usage of the documentation.	Satisfied	Document reviews indicate that references generally facilitate usage of the subject documents. The following qualifications were noted: • There is no overview of how information is organized across the various documents. • Illustrations or attachments would assist in interpreting data (e.g., samples of the various bills that are provided). Use of illustrations and examples is inconsistent. BLS has published two documents, the *BellSouth CLEC Billing Guide* and *Understanding Your Bill* which provide extensive examples and illustrations that would assist a CLEC in interpreting their bills. • Examples or illustrations were noted without corresponding explanation. BLS has published two documents, the *BellSouth CLEC Billing Guide* and *Understanding Your Bill,* which provide corresponding explanations for examples and illustrations included in the documentation that would assist a CLEC in interpreting their bills. • Several documents do not include a glossary of terms, and, in cases where one is present, additional terms should be defined. • Screen prints were used in some documentation (e.g., Diskette Analyzer Bill – User's Guide); however, screen prints would have also been useful in other documents (e.g., *Facility Based – CLEC Starter Kit*). • Some of the documentation contains old dates, which may lead a reader to question the currentness of the information.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Qualifications regarding references in BLS-provided documentation do not prevent CLECs from utilizing the documentation in an acceptably efficient manner.
BLG-5-1-3	Style elements that facilitate document use are defined consistently and effectively implemented.	Satisfied	Document reviews indicate that style elements generally facilitate reader usage of the subject documents. The following qualifications were noted: • The writing style is variable, ranging from informal to highly technical. • The use of bulleted lists is confusing when outlining the steps of processes. Use of numeric lists instead would enhance useability. • The fonts are inconsistent between and within documents. • Some of the documentation is offered in the form of a high level PowerPoint presentation. As such the presentation is not sufficient as a stand-alone reference document because it lacks necessary depth. • Page numbers are missing from some documents. Qualifications regarding the style of BLS-provided documentation do not prevent CLECs from utilizing the documentation in an acceptably efficient manner.
Document Content			
BLG-5-2-1	The BLS-provided billing documentation provides CLECs with an adequate understanding of BLS billing policy and practice, and of billing alternatives.	Satisfied	Documentation provides sufficient information for CLECS to understand BLS Billing without significant recourse to additional BLS information sources. Documentation provides information on the basic purpose and types of bills needed for understanding Billing. However, the term “bill medium” (paper, tape, EDI) is sometimes confused

Test Cross-Reference	Evaluation Criteria	Result	Comments
			with "bill format" (CLUB, CABS). Information was not provided on how to request a change to the bill medium. This information was obtained from document reviews and input from KCI invoicing tests. Qualifications regarding document content do not prevent CLECs from utilizing the documentation in an acceptably efficient manner.
BLG-5-2-2	The BLS-provided billing documentation provides CLECs with an adequate understanding of how to receive and process wholesale bills.	Satisfied	Documentation provides sufficient information for CLECs to receive and process bills without significant recourse to additional BLS information sources. Information on how to request and process an address change is missing. Minimal information is provided on changing the selected options for bills, such as FTP or Direct Connect. This information was obtained from document reviews and input from KCI invoicing tests. Qualifications regarding document content do not prevent CLECs from utilizing the documentation in an acceptably efficient manner.
BLG-5-2-3	The BLS-provided billing documentation provides CLECs with an adequate understanding of steps necessary to validate wholesale bills.	Satisfied	Documentation provides sufficient information for CLECs to understand and validate their wholesale bills without significant recourse to additional BLS information sources. However, KCI's initial evaluation found that the documentation provided was insufficient to support a complete validation of BLS bills. KCI detailed these issues in Exception 73. KCI initially found that no information defining the various sections of an invoice was provided and limited bill samples were provided and explained. In addition, information on how to calculate a bill and how to interpret

Test Cross-Reference	Evaluation Criteria	Result	Comments
			a Customer Service Record (CSR) was missing. To address these issues, BLS published two documents, the *BellSouth CLEC Billing Guide* and *Understanding Your Bill,* which provide extensive examples, illustrations, and explanations of invoices that assist a CLEC in validating its bills. KCI found that these two documents addressed the issues identified by KCI. Exception 73 is closed. See Exception 73 for additional information. The information used to test this evaluation criterion was obtained from document reviews and input from KCI invoicing tests.
BLG-5-2-4	The BLS-provided billing documentation provides CLECs with an adequate understanding of how to request and follow-up on credit or adjustment requests for wholesale bills.	Satisfied	Documentation provides sufficient information for CLECs to process credits and adjustments without significant recourse to additional BLS information sources. Information was provided on the procedure used for requesting credits or adjustments; however, the documentation only briefly describes the procedure for tracking disputes. Documentation does not provide information on the dispute escalation protocol (e.g., contact names, phone numbers). This information was obtained from document reviews and input from KCI invoicing tests. Qualifications regarding document content do not prevent CLECs from utilizing the documentation in an acceptably efficient manner.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-5-2-5	The BLS-provided billing documentation provides CLECs with an adequate understanding of how to request and follow-up on BLS assistance with wholesale billing issues and questions.	Satisfied	Documentation provides sufficient contact information for CLECs to obtain additional assistance with Billing questions or issues, should a need arise. This information was obtained from document reviews and input from KCI invoicing tests.
Release Management Procedures			
BLG-5-3-1	Responsibilities and procedures for developing, updating, and correcting documentation are clearly defined.	Satisfied	Document management responsibilities were adequately described in the interviews, however, documentation of these responsibilities was not available. Responsibility for producing billing documentation rests with a number of BLS organizations, including Enhanced Billing Services, Information Technology, Network Carrier Services, and the External Response Team (ERT).
BLG-5-3-2	Responsibilities and procedures for maintaining distribution lists and distributing documentation are clearly defined.	Satisfied	Interviews indicate that the responsibilities and procedures for distributing BLS wholesale billing documentation reside in a variety of channels. Distribution is accomplished adequately via the Web site (notifications), through the Account Manager or CLEC Advisory Team, via the billing medium itself (e.g., Diskette Analyzer Bill [DAB], or through the Billing product managers (for Electronic Data Interchange [EDI] and magnetic tape billing). As responsibility for ensuring that the CLECs have the latest billing documentation is shared with the customer, no centralized lists of documentation users are maintained, and no formal procedures exist to ensure that all customers have actually received the documentation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-5-3-3	Distribution procedure allows latest document version to be made available to interested parties in electronic and paper versions in a timely manner.	Satisfied	Interviews indicate that the latest document versions are generally made available to users in a timely manner. BLS has chosen to document only certain billing information, such as CABS bill format and delivery options, in conjunction with issuance of the relevant CLEC bill (paper, or paper equivalent distribution only). While billing change notifications are posted on the BLS Interconnection Web site, no standard intervals between the notification posting and the implementation of the subject change were described.
BLG-5-3-4	Process includes procedures for accepting change requirements from all stakeholders.	Satisfied	Internal BLS review procedures, where in place, provide opportunity for creating a change requirement. The primary driver for CABS billing changes in particular is changes in the CABS Billing guidelines. The actual BLS implementation is then documented by BLS. Review of the *BellSouth Billing Documentation Writer's Guide* indicates that as part of the feedback from user training sessions, procedures exist to report billing documentation errors or discrepancies encountered.
BLG-5-3-5	The document development and production process includes procedures for change, version, and effective date management	Satisfied	Interviews and document reviews indicate that dates are applied to the documents, but not in a standardized manner. Although no single reference listing current versions or version dates of all documents exists, the latest version of any document can be retrieved from the BLS website. Flagging of changes between versions is not a requirement for issuing revised user documentation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-5-3-6	The process includes procedures to define documentation coverage (breadth and depth) requirements.	Satisfied	Review of the *BellSouth Billing Documentation Writer's Guide* indicates that the procedure provides for soliciting / gathering CLEC requirements for topics to be included in BLS documentation.
BLG-5-3-7	The process includes style (organization, format, etc.) guidance.	Satisfied	Interviews and document reviews indicate that for certain Web postings (Carrier Notifications), style requirements are determined by the External Response Team (ERT). Documents not controlled by the ERT are in general, stylistically consistent internally, although no explicit style guides applicable across all documents were provided.
BLG-5-3-8	The process provides for independent Quality Assurance (QA) of coverage and style.	Satisfied	Review of the *BellSouth Billing Documentation Writer's Guide* indicates that the process includes independent Quality Assurance (QA) of the topical content of billing documentation.
BLG-5-3-9	The process provides independent validation of correctness.	Satisfied	Interviews indicate that the ERT is responsible for ensuring that Carrier Notifications posted on the BLS Web site are reviewed by BLS subject matter experts. Guidelines for these reviews were not provided.
BLG-5-3-10	The procedure provides for independent evaluation of usability.	Satisfied	Review of the *BellSouth Billing Documentation Writer's Guide* indicates that the procedure provides for independent evaluation of usability by users.
BLG-5-3-11	Procedures are carried out in compliance with described responsibilities and available documentation.	Satisfied	The procedures, as described during the interviews, were generally followed, although documentation of the procedures was not available.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Document Accuracy			
BLG-5-4-1	BLS-provided billing documentation contains no errors that significantly impact a CLEC's ability to receive and process wholesale bills.	Satisfied	No billing documentation errors that seriously impacted KCI's billing transaction-based testing were encountered.

F. Test Results – ODUF/ADUF Documentation Evaluation (BLG-6)

1.0 Description

The Optional Daily Usage Feed / Access Daily Usage Feed (ODUF / ADUF) Documentation Evaluation evaluated Daily Usage Feed (DUF) documentation provided by BellSouth for use by the Competitive Local Exchange Carriers (CLECs).

The objective of this test was to determine whether the DUF documentation provided by BellSouth adequately supports CLECs in receipt and validation of BellSouth-provided local port (ODUF) and access (ADUF) usage records.

The ODUF / ADUF Documentation Evaluation consisted of four sub-tests. The first sub-test evaluated individual BellSouth documents for structure and format as they affect usability by the CLEC customer.

The second sub-test evaluated BellSouth billing documentation for content. The review encompassed considerations of topical coverage, depth of coverage, and general usability of the documentation. As KCI conducted this review, CLECs were consulted for guidance on perceived documentation problems and issues. Topics considered included:

- Understanding DUF
- Receiving and Processing DUF
- Set-up and Testing DUF
- Validating DUF
- Getting Help

Documents considered for the structure and content sub-tests are identified in "Table VI-6.1References," as indicated by an asterisk (*).

The third sub-test examined the procedures used by BellSouth to produce and distribute the subject documentation.

The fourth sub-test evaluated the accuracy of the BellSouth documents by identifying errors (discrepancies between the DUF documentation and BellSouth practice or between BellSouth DUF related documents) that significantly impacted the DUF transaction testing. The DUF transaction testing itself relied heavily on the accuracy of the BellSouth documentation.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

Daily usage file production and distribution begins with collection of usage data from the network. The usage is edited and a determination is made as to which CLEC customer the usage belongs. If the criteria for forwarding the usage records to the customer are met (generally that the usage record is the result of a billable event), the records are packaged and formatted according to industry standards. Usage is then transmitted to the customer. Customers may request that prior period usage be re-sent.

BellSouth wholesale customers receive and process the DUF in order to validate the BellSouth charges and bill their own customers in turn. Receipt and processing of the BellSouth DUF files relies upon timely, accurate and comprehensive billing information that is to be found in BellSouth-provided documentation.

Based upon changes in BellSouth DUF-related procedures, industry standards or perception of need for the provision of new or changed DUF-related information, BellSouth develops or revises DUF documentation and makes it available to affected CLEC customers.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was BellSouth-provided DUF documentation. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table VI-6.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Daily Usage File Documentation	Document Structure and Format	Existence of Structural Elements Completeness of Data	BLG-6-1-1 BLG-6-1-2 BLG-6-1-3
	Document Content	Clarity of Information Completeness of data	BLG-6-2-1 BLG-6-2-2 BLG-6-2-3 BLG-6-2-4 BLG-6-2-5

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Release Management	Existence and Adequacy of the Update Process Availability of Documentation Accuracy of Documentation	BLG-6-3-1 BLG-6-3-2 BLG-6-3-3 BLG-6-3-4 BLG-6-3-5 BLG-6-3-6 BLG-6-3-7 BLG-6-3-8 BLG-6-3-9 BLG-6-3-10 BLG-6-3-11
	Document Accuracy	Accuracy of Documents	BLG-6-4-1

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VI-6.2: Data Sources for ODUF/ADUF Documentation Evaluation

Document[1]	File Name	Location in Work Papers	Source
BellSouth Access Daily Usage File (ADUF) *	No Electronic Copy	BLG-6-A- 2	BLS
BellSouth Optional Daily Usage File (ODUF) *	No Electronic Copy	BLG-6-A- 3	BLS
BellSouth Optional Daily Usage File Document *	No Electronic Copy	BLG-6-A- 4	BLS
Data Delivery: ADUF Setup and Testing *	No Electronic Copy	BLG-6-A-5	BLS
Data Delivery: Overview of ADUF *	No Electronic Copy	BLG-6-A-6	BLS
Data Delivery: ADUF Problems / Issues *	No Electronic Copy	BLG-6-A-7	BLS
Data Delivery: Timing of ADUF Messages *	No Electronic Copy	BLG-6-A-8	BLS
Data Delivery: ADUF Recreations / Resends *	No Electronic Copy	BLG-6-A-9	BLS
Facility Based CLEC Starter Kit – Daily Usage File *	No Electronic Copy	BLG-6-A-10	BLS
Billing Format Options – Daily Usage File *	No Electronic Copy	BLG-6-A-11	BLS
Interview Summary / Report: 5 & 6	No Electronic Copy	BLG-6-A-13	BLS

[1] An asterisk (*) indicates material that is generally available to CLECs, and that was used in the document structure, content, and accuracy sub-tests (BLG-6-1, BLG-6-2, and BLG-6-4).

Document[1]	File Name	Location in Work Papers	Source
BLS Response to Interview Summary / Report: 5 & 6	No Electronic Copy	BLG-6-A-14	BLS
Interview Summary / Report: 5 & 6 Follow-On	No Electronic Copy	BLG-A-15	BLS
Interview Summary / Report: 14	No Electronic Copy	BLG-6-A-16	BLS
BLS Response to Interview Summary / Report: 14	No Electronic Copy	BLG-6-A-17	BLS

2.4.1 Data Generation/Volumes

This test did not rely on data generation or volume testing.

2.5 Evaluations Methods

BellSouth billing document structure and format was evaluated based upon KCI's definition of three major structural considerations (see table VI-6.3) that determine usability of the documentation. The documents were evaluated for effective and consistent implementation of those considerations.

BellSouth billing document content was evaluated based upon KCI's definition of five key topical areas (see table VI-6.3) that must be addressed to effectively support the CLECs' receipt and processing of wholesale bills. Each topical area was evaluated for breadth and depth of topical coverage by test manager subject matter experts (SMEs) participating in the billing transaction-based testing.

The evaluation of BellSouth release management procedures was based upon criteria developed by KCI prior to start of the testing. Interviews with the responsible BellSouth parties and reviews of supporting internal documentation provided by BellSouth were the basis for determining the extent to which the criteria were satisfied.

To evaluate documentation accuracy, KCI implemented procedures to log instances of documentation errors (defined as cases where documentation differed from actual BellSouth practice or where contradictory information was identified). Logging was limited to examples where the error resulted in significant impact to the conduct of the transaction-based testing. The transaction-based testing covered relevant aspects of BellSouth provided usage data for UNEs and relied heavily on the availability of accurate information.

2.6 Analysis Methods

The ODUF/ADUF Documentation Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided the framework of norms, standards, and guidelines for the ODUF/ADUF Documentation Evaluation.

The data collected from documentation reviews and interviews were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VI-6.3: BLG-6 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Document Structure and Format			
BLG-6-1-1	Organization and flow of the documents facilitate ready understanding and access to needed information.	Satisfied	Document reviews indicate that organization and flow of the subject documents support the reader in understanding and accessing the information content. The following qualifications were noted: • Redundant information is provided in several documents. • Documentation contains various tables that are not self-explanatory, as they lack headers that provide sufficient guidance. • Some documents are excerpted from other documents, with no reference to the original source. Qualifications regarding the organization and flow of BLS-provided documentation do not prevent CLECs from utilizing the documentation in an acceptably efficient manner.

Test Cross-Reference	Evaluation Criteria	Result	Comments
BLG-6-1-2	References are provided to facilitate efficient usage of the documentation.	Satisfied	Review of the *BLS ODUF/ADUF* documentation indicates that references, such as glossaries, indices, and internet links generally facilitate usage of the subject documents. The following qualifications were noted in the original documentation review: • Forms referenced in the documentation are not attached and their location is not provided. • Terms and acronyms used throughout the documents are not defined (e.g., ISC-AE, ITB-Andersen, BBI). • Tables of content, indices, and glossaries are missing. • CLEC documents are not located in a centralized repository. These qualifications were addressed in the 6/1/2000 reissue of the BLS ODUF/ADUF documentation per the guidelines contained in the BLS documentation writer's guide.
BLG-6-1-3	Style elements that facilitate document use are defined consistently and effectively implemented.	Satisfied	Document reviews indicate that style elements generally facilitate reader usage of the subject documents. The following qualifications were noted: • Documents contain word omissions and typographical errors. • Process flow diagrams are not generally provided. • Documentation includes tables with no explanations or table headers. • The writing style is informal. • The page designs (margins, tables, fonts, bolding, paragraph headings) are inconsistent among chapters. • Internal items are referenced without explanation (e.g., Open Mail – Id). • Examples are given without

Test Cross-Reference	Evaluation Criteria	Result	Comments
			explanation. Qualifications regarding the organization and flow of BLS-provided documentation do not prevent CLECs from utilizing the documentation in an acceptably efficient manner.
Document Content			
BLG-6-2-1	The BLS-provided billing documentation provides CLECs with an adequate understanding of BLS DUF policies, practices and customer options.	Satisfied	The BLS ODUF / ADUF documentation provides CLECs with an adequate understanding of BLS DUF policies, practices, and customer options. The following qualification was noted in the original documentation review, and has since been satisfied by the 6 / 1 / 2000 reissue of the BLS ODUF / ADUF Documentation per the guidelines contained in the BLS documentation writer's guide: • Information detailing the BLS conventions followed for producing usage files is missing. There is a general statement that the EMI industry standard is followed in the DUF production, but the BLS implementation considerations are not described (e.g., the BLS business rule governing the creation of a billable service record for an uncompleted operator assisted call). The following qualification remains: • Escalation procedures are not delineated in the ODUF and ADUF documentation or in the Standard General Agreement. This information was obtained from document reviews and input from KCI DUF tests. Qualifications regarding document content do not prevent CLECs from utilizing the documentation in an acceptably efficient manner.
BLG-6-2-2	The BLS-provided billing documentation	Satisfied	Initial document reviews indicated that the BLS ODUF / ADUF

Test Cross-Reference	Evaluation Criteria	Result	Comments
	provides CLECs with an adequate understanding of how to prepare and test for receipt of DUF files.		documentation was deficient in the following areas: Although various BLS departments are referenced in the DUF documentation for the set-up and testing participation of DUF receipt, the department names are abbrieviated and no explanation of the departmental responsibilities is provided. • A process flow that details the set-up process is not available. • Information is provided that states that test data can be requested through a generic file. However, information is not provided that includes instructions for obtaining the generic file. • There is no explanation regarding the CLECs need for the DUF generic test data or its intended purpose. • There is no mention of how the testing results are distributed and / or communicated back to the CLECs. • The "CLECPROB.DOC" form is referenced but not included. As a result of these deficiencies, KCI issued Exception 34. This exception was satisfied by the 6 / 1 / 2000 reissue of the BLS ODUF / ADUF Documentation per the guidelines contained in the BLS Billing, Inc. Documentation Writer's Guide with the following qualification: • Information concerning the estimated time required for DUF set-up from the initial request to test completion is not contained in the documentation. Set-up procedures are discussed with the CLEC during a conference call following the submission of the ODUF Test File Request Form. A conference call is arranged

Test Cross-Reference	Evaluation Criteria	Result	Comments
			between BLS and the CLEC. The documentation does not explain how the call is initiated or the estimated time interval between the receipt of the form and the scheduling of the call. This information was obtained from document reviews and input from KCI DUF tests. See Exception 34 for additional information on this issue. Exception 34 is closed.
BLG-6-2-3	The BLS-provided billing documentation provides CLECs with an adequate understanding of steps necessary to receive and process the DUF.	Satisfied	Initial document reviews indicated that the BLS ODUF / ADUF documentation was deficient in the following areas: • Information is provided that outlines that DUFs will be created on a daily basis, i.e., specifically Monday through Friday, except holidays. However, the observed holidays are not listed. • A delivery schedule and a time line detailing the time lapse between actual recording of usage and usage data delivery is not provided. • Although the timing of ADUF messages is detailed in a schedule, column headings are undefined and no reference exists to indicate exceptions to the schedule, such as holidays. • Information detailing the procedure to return incomplete, damaged, or unreadable usage records is not provided. • Data retention periods are missing. As a result of these deficiencies, KCI issued Exception 34. This exception has been addressed by the 6 / 1 / 2000 reissue of the BLS ODUF / ADUF Documentation per the guidelines contained in the BLS Billing Inc. documentation writer's

Test Cross-Reference	Evaluation Criteria	Result	Comments
			guide. This information was obtained from document reviews and input from KCI DUF tests. See Exception 34 for additional information on this issue. Exception 34 is closed.
BLG-6-2-4	The BLS-provided billing documentation provides CLECs with an adequate understanding of how to validate BLS provided DUF data.	Satisfied	Initial document reviews indicated that the BLS ODUF / ADUF documentation was deficient in the following areas: • The primary tool by which a CLEC can validate the DUF records is the Exchange Message Interface (EMI) standard, as published by the Alliance for Telecommunications Industry Solutions (ATIS). As its content is not maintained by BLS, CLECs are expected to obtain this directly from ATIS. • BLS documentation does occasionally "excerpt" the EMI documentation, which taken alone, is inadequate to support DUF validation. The reader cannot be sure what has been excerpted from relevant EMI documentation. • The DUF documentation provided by BLS does not adequately identify the DUF records actually produced for each type of telephone call, and is therefore insufficient to allow validation of the received DUF files. • Information detailing the types of calls and details that will be provided on the DUF for rated and / or unrated calls is missing. • Explanations for Alternate Billed Calls (ABC) are not provided. There are no definitions or explanations for ABC variables. As a result of these deficiencies, KCI issued Exception 34.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			This exception has been addressed by the 6/1/2000 reissue of the BLS ODUF/ADUF documentation per the guidelines contained in the BLS Documentation Writer's Guide. This information was obtained from document reviews and input from KCI DUF tests. See Exception 34 for additional information on this issue. Exception 34 is closed.
BLG-6-2-5	The BLS-provided billing documentation provides CLECs with an adequate understanding of how to request and follow-up on BLS assistance with DUF issues and questions.	Satisfied	Initial document reviews indicated that the BLS ODUF/ADUF Documentation was deficient in the following areas: • Account Executives or Account Teams are referenced for channeling questions. Individual contact names and telephone numbers are not consistently provided. • Data transmission schedules and data retention periods are not provided. • A form for requesting re-transmissions of ODUFs is provided, however no information is provided regarding the time intervals for the re-transmissions. No retention periods are listed to define cut-off periods for re-transmission requests. • Procedures for ADUF recreations/resends are not clear. • Information for placing trouble calls is missing. • Escalation procedures are missing. • A central point of contact for requesting help is not available. However, in most instances, the Account Executive is referenced as a source of assistance. • No information is provided to assist CLEC customers with requesting changes to distribution media, documentation, or with

Test Cross-Reference	Evaluation Criteria	Result	Comments
			filing a change of address notification. As a result of these deficiencies, KCI issued Exception 34. This exception has been satisfied by the 6/1/2000 reissue of the BLS ODUF/ADUF Documentation per the guidelines contained in the BLS Billing Inc. Documentation Writer's Guide. This information was obtained from document reviews and input from KCI DUF tests. See Exception 34 for additional information on this issue. Exception 34 is closed.
Release Management Procedures			
BLG-6-3-1	Responsibilities and procedures for developing, updating, and correcting documentation are clearly defined.	Satisfied	Interviews indicate that responsibilities are generally well defined, and rest with a limited set of BLS personnel, although documentation of these responsibilities was not available.
BLG-6-3-2	Responsibilities and procedures for maintaining distribution lists and distributing documentation are clearly defined.	Satisfied	Interviews indicate that distribution of DUF documentation is accomplished adequately and occurs in a variety of ways: at an initial meeting with a new CLEC, during which DUF alternatives and processing requirements are discussed; via posting to the Web site; and via distribution to Account Managers who, in turn, provide them to the CLEC customer. While these responsibilities were described during the interviews, documentation of specific procedures was not provided. As responsibility for ensuring that the CLECs have the latest DUF documentation is shared with the customer, no centralized lists of documentation users are maintained, and no formal procedures exist to ensure that all customers have actually received the documentation.
BLG-6-3-3	Distribution procedure	Satisfied	Interviews indicate that

Test Cross-Reference	Evaluation Criteria	Result	Comments
	allows latest document version to be made available to interested parties in electronic and paper versions in a timely manner.		documentation changes that affect how a customer receives and processes DUF files are posted on the Web (www.interconnection.bellsouth.com/notifications/carrier/index.html) 90 days prior to implementation.
BLG-6-3-4	Process includes procedures for accepting change requirements from all stakeholders.	Satisfied	Interviews indicate that the primary reasons for changes to DUF documentation are changes to EMI standards, and their corresponding BLS implementation. These change requirements are monitored and managed. Documentation reviews of the BLS documentation writer's guide indicate that the procedure provides for soliciting/gathering requirements from all stakeholders for topics to be included in BLS documentation.
BLG-6-3-5	The process includes procedures for change, version, and effective date management.	Satisfied	Document reviews and interviews indicate that dates are applied to the documents, but not in a standardized manner. Although no single reference listing current versions or version dates of all documents exists, the latest version of a document can be retrieved from the BLS Web site. Flagging of changes between versions is not a BLS requirement for issuing revised user documentation.
BLG-6-3-6	The process includes procedures to define documentation topical coverage (breadth and depth) requirements.	Satisfied	Documentation reviews indicate that the procedure provides for soliciting/gathering CLEC requirements for topics to be included in BLS documentation.
BLG-6-3-7	The process includes style (organization, format, etc.) guidance.	Satisfied	Interviews indicate that, although no explicit style guides are applicable across documents, BLS internal documents are stylistically consistent, while more rigorous requirements are used by the BLS External Response Team (ERT) for Web postings.
BLG-6-3-8	The process provides	Satisfied	Interviews indicate that for certain

Test Cross-Reference	Evaluation Criteria	Result	Comments
	for independent Quality Assurance (QA) of coverage and style.		Web postings (i.e., customer notifications), coverage and style are reviewed by the External Response Team (ERT). Furthermore, documentation reviews indicate that the process includes independent Quality Assurance (QA) of the topical content of billing documentation.
BLG-6-3-9	The process provides independent validation of correctness.	Satisfied	Interviews indicate that some of the documents provided to the CLEC customers are also used internally by BLS in creating and transmitting the DUF. In such cases, BLS clerks, utilizing the materials in both training and production, provide validation of correctness in a non-formal way. The ERT is responsible for ensuring that BLS subject matter experts have reviewed Carrier Notifications posted to the BLS Web site. Although scope and procedures for validation of correctness were not provided, no DUF documentation errors of sufficient severity to impede the transactional analysis of Daily Usage files were recorded.
BLG-6-3-10	The procedure provides for independent evaluation of usability.	Satisfied	Documentation reviews indicate that the procedure provides for independent evaluation of usability.
BLG-6-3-11	DUF document production and distribution procedures are carried out in compliance with described responsibilities and available documentation.	Satisfied	The procedures, as described during the interviews, were followed.
Document Accuracy			
BLG-6-4-1	BLS-provided DUF documentation contains no errors that significantly impact a CLEC's ability to receive and process	Satisfied	No billing documentation errors that seriously impacted KCI's DUF transaction-based testing were encountered.

Test Cross-Reference	Evaluation Criteria	Result	Comments
	daily usage files.		

Maintenance & Repair

VII. Maintenance and Repair (M&R) Domain Results and Analysis

1.0 Description

The purpose of this section is to present the specific tests, results, and analysis from KCI's evaluation of the systems, processes, and other operational elements associated with BellSouth's support for Wholesale Maintenance and Repair. Maintenance & Repair (M&R) includes the network information, diagnostic tools, personnel, and processes that allow Competitive Local Exchange Carriers (CLECs) to diagnose and solve customer trouble complaints or otherwise assist customers who experience service disruptions. The M&R tests assessed the functionality of repair systems and the adequacy and accuracy of operational processes and procedures, documentation, and performance metrics.

2.0 Methodology

The scope of the M&R tests in Georgia encompassed the review and analysis of BellSouth's processes, procedures, and systems for Wholesale trouble reporting and repair. This was accomplished by reviewing and assessing relevant documentation, testing the functionality of BellSouth's trouble reporting systems, testing the capability to increase system capacity, reviewing metrics reports, and evaluating the parity of trouble repair performance between BellSouth's retail and CLEC customers.

2.1 Business Process Description

Three methods exist for BellSouth CLEC customers to report and resolve troubles: Submission of trouble tickets through the Trouble Analysis Facilitation Interface (TAFI) or Electronic Communications Trouble Administration (ECTA) Gateway, and, by manually telephoning a trouble report to a BellSouth work center. These methods are described below.

TAFI

TAFI can be accessed using a Telnet protocol through a LAN-to-LAN or dial-up connection to BellSouth. It does not support a Graphical User Interface (GUI). Rather, it uses a non-traditional "window" format that is divided into three types: Main Menu, Sub Menus, and Pop-up Windows.

The TAFI application is a rules-based system that provides automated trouble receipt and screening functionality to both CLEC and BellSouth retail repair center users. Its design guides users through a series of questions and instructions in order to allow the initial point of contact to resolve or route telephone number-based, (TN) based, Plain Old Telephone Service (POTS) customer service problems. In essence, TAFI acts as a tool that collects data from the user and the various downstream applications in order to generate recommendations for resolving POTS problems. Reports leaving TAFI as a result of a trouble fall into one of three categories: resolved/closed, routed to the appropriate entity for resolution, or cancelled. While TAFI itself does not perform any

repair functions, it allows access to downstream systems that can repair some trouble types in "real time."

Both BellSouth and CLECs use the TAFI system for handling POTS trouble reports. BellSouth states that the version created for CLECs is similar to the BellSouth version for trouble processing functionality, with the following differences.

- The CLEC is restricted to accessing BellSouth records for its own customers.
- The TAFI Supervisor function is configured for a given CLEC user community.
- BellSouth processes their residential and business customers on different TAFI servers, while CLECs currently use one system for all of their customers.

In addition to these internal security measures, BellSouth has incorporated additional layers of security to restrict unauthorized usage. These layers include system user passwords that automatically expire, as well as SecurID tokens.

TAFI interacts with specific BellSouth downstream systems, the functions of which fall within two primary areas of activity:

- Trouble administration systems for POTS lines
- Test systems for fault identification.

The following table highlights each of the downstream systems and their functions as well as some reports accessed by TAFI. There are three different LMOS systems, 16 Predictor systems, and four March systems. Multiple systems exist for load balancing purposes, and provide identical functionality.

Table VII-A: BellSouth M&R Downstream Systems and Reports Accessed by TAFI

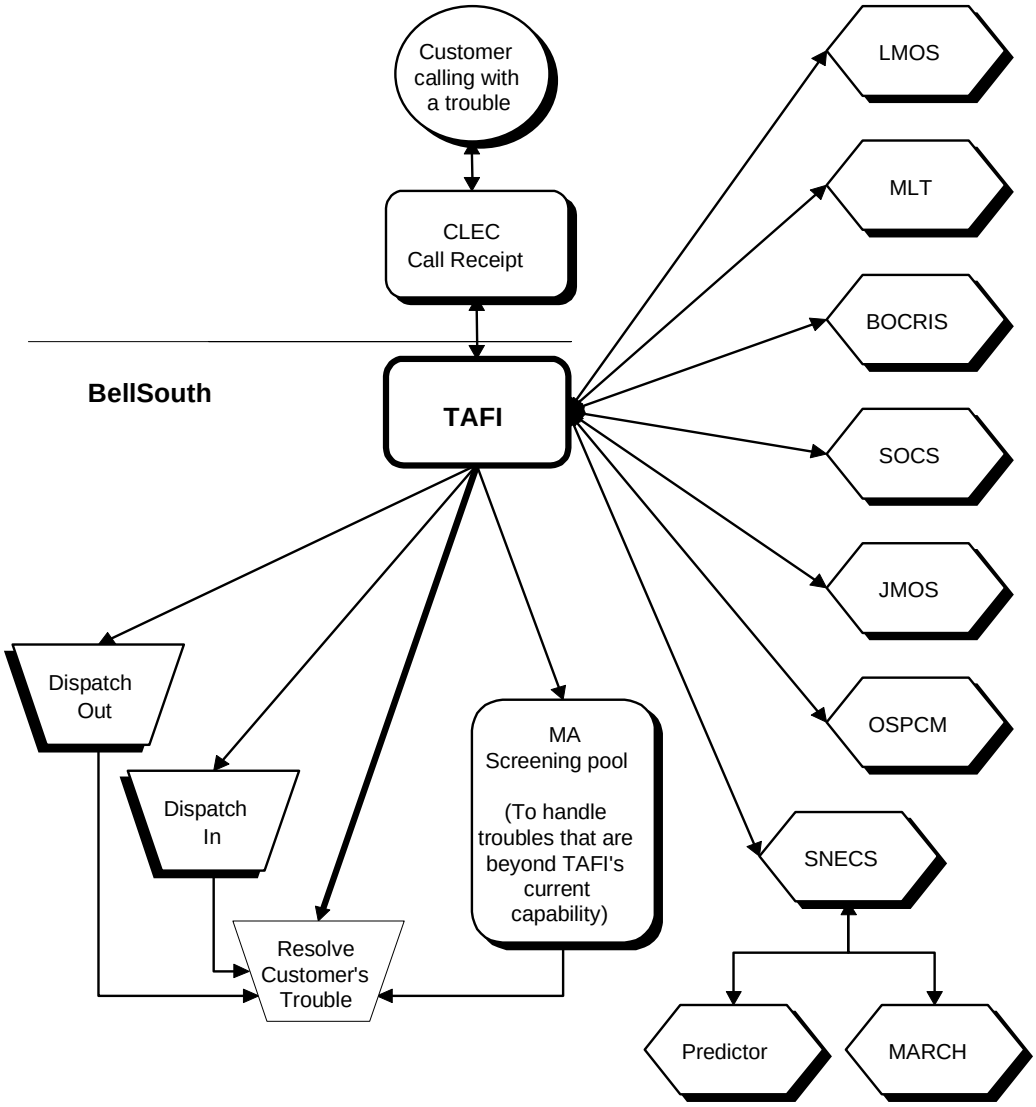
System	Description
BOCRIS: Business Office Customer Record Inventory System	Provides service order information including Name, Address, Class of Service, Maintenance Plan, Restrictions, Features, and Preferred Interexchange Carrier (PIC).
COSMOS: Computer System for Mainframe Operations	Provides frame data used in problem analysis.
JMOS: Job Management Operations System	Provides outside plant and construction workload scheduling and reporting. Used to track contractors performing buried service wire activity.
LFACS: Loop Facility Assignment and Control System	Provides facility data used in problem analysis.
LMOS: Loop Maintenance Operations System	Supplies trouble ticket processing and the following information: Name and Address verification, Working condition, Trouble History, Commitments, Failure information, Unit #, Pending Reports, Status, Category of Report, Pending Service Order information, and facilities

MARCH	Provides the mechanism to add or delete features to or from a line.
MLT: Mechanized Loop Testing	Provides loop testing on the customer's line number.
OSPCM: Outside Plant Construction Management System	The Navigator compatible replacement for JMOS.
PREDICTOR	Identifies and verifies line features present on the customer's line.
SNECS: Secured Network Element Contract Server	A peer to peer computer interface between TAFI and the Predictor and MARCH systems.
SOCS: Service Order Communication System	Issues a service order when adding a new feature to a customer's line, and verifies the status of an order.
DATH Trouble History	LMOS Display Abbreviated Trouble History - A trouble history report showing just the close out narrative on previous trouble reports.
DLETH Trouble History	LMOS Display Extended Trouble History - A trouble history report showing every line of status on previous trouble reports.
DLR	LMOS Display Line Record - Displays the customer's Line Record in LMOS.

If TAFI determines that one of its downstream systems will not resolve the problem, then it routes the trouble to either the Maintenance Assistant Screening Pool for further analysis, or directly to the Work Management Center (WMC) for dispatching of technicians to the Central Office (Dispatch In) or the customer site (Dispatch Out).

The following diagram illustrates the downstream systems and their relationship to TAFI.

Figure VII-A: BellSouth Trouble Administration Systems Used by CLECs



ECTA

The BellSouth Electronic Communications Trouble Administration (ECTA) Gateway is BellSouth's implementation of an American National Standards Institute (ANSI) T1M1 compliant electronically bonded trouble administration interface[1]. Competitive Local Exchange Carriers (CLECs) must possess an electronic interface to access BellSouth's ECTA Gateway. Currently, there are two options available for a CLEC that wants to

[1] The T1M1 standard is outlined in ANSI documents T1.227, T1.228 and T1.262 as well as the General Network Information Model of which these ANSI standards are an extension.

use ECTA for trouble management. Option one is the Electronic Communication-Common Presentation Manager (EC-CPM) interface made available by BellSouth. This interface does not offer the full complement of available ECTA functions. Option two is an interface that a CLEC builds itself, based on the ANSI T1.227, T1.228 and T1.262 standards for trouble administration. Currently, there are no CLECs using the EC-CPM interface to access ECTA. CLECs that are currently using the ECTA Gateway for trouble administration have programmed their own interfaces for access to the BellSouth system. Presently, there are only two CLECs that have programmed this interface, and the current trouble volume being processed is approximately 150 trouble tickets per month.

CLECs can use the ECTA Gateway to run Mechanized Loop Testing (MLT) evaluations on lines[2], enter and cancel trouble tickets, check the status of trouble tickets, and modify or add information to trouble tickets for both non-designed and designed services through an electronically bonded interface. When the user enters trouble tickets into the ECTA Gateway, they are routed to the appropriate downstream system, based on whether they are for designed or non-designed systems. Trouble tickets for designed systems are directed to the Work Force Administration (WFA) application and are processed manually.

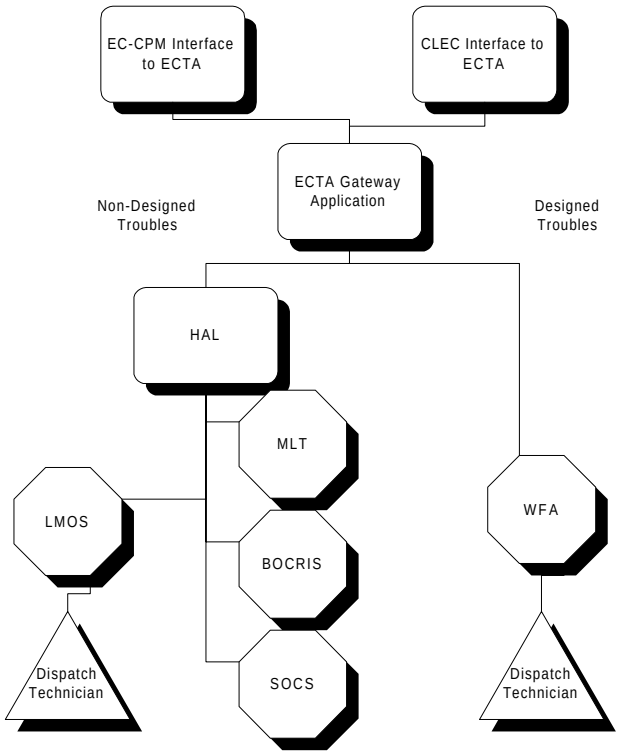
Trouble tickets for non-designed systems are forwarded to the "Hands-Off" Assignment Logic (HAL) system that further automates their processing. Upon receipt of a trouble ticket, the HAL system ensures data confidentiality by validating that telephone numbers for which trouble tickets are created belong to the CLEC submitting the ticket. HAL then initiates the correct Loop Maintenance Operations System (LMOS) transaction and processes the request. The HAL system has the capability to assess whether an MLT test is required and, if so, submits the request for an MLT evaluation. Once MLT results are returned, HAL has the capability to route trouble tickets to appropriate downstream systems based on those test results[3].

The relationship between the various systems is illustrated below:

[2] MLT is available only for POTS lines.

[3] See Table VII-B for a complete list of systems and their functions.

Figure VII-B: ECTA Systems Diagram



Downstream Systems

ECTA is connected to BellSouth's legacy systems via the HAL system. The specific systems accessible through HAL are:

Table VII-B: Systems Accessible through HAL

System	Function
LMOS: Loop Maintenance Operations System	Supplies trouble ticket processing and provides account and trouble processing information.
MLT: Mechanized Loop Testing	Provides loop testing on the customer's line number.
BOCRIS: Business Office Customer Record Inventory System	Provides service order information including name, address, class of service, maintenance plan, restrictions, features, and Preferred Interexchange Carrier (PIC).
SOCS: Service Order Communication System	Issues a service order when adding a new feature to a customer's line and verifies the status of an order.

Once a trouble ticket has been submitted to ECTA, any change in the status of that ticket made by a BellSouth maintenance administrator is communicated back to the CLEC via an electronic Attribute Value Change (AVC) within the ECTA system.

ECTA Alternatives

ECTA allows CLECs to enter trouble reports for either designed or non-designed circuits. Trouble reports for designed systems that are not entered into ECTA by a CLEC are telephoned to a BellSouth service center. BellSouth customer service representatives receiving these trouble reports enter the information directly into the WFA system and bypass the ECTA Gateway. This is the same process that occurs for BellSouth's own retail designed service trouble reports[4]. In addition to using ECTA, CLECs also have the option of entering non-designed trouble tickets into the BellSouth-provided Trouble Administration Facilitation Interface (TAFI) system. CLEC trouble tickets that are reported through ECTA can be electronically bonded between the Operating Support Systems (OSS) of BellSouth and those of the owning CLEC. Trouble reports that are telephoned to a BellSouth service center and trouble reports entered into TAFI can not be electronically bonded to the CLEC's OSS. For these non-ECTA trouble reports, the owning CLEC must re-key data into their own OSS to keep an electronic record of the trouble.

ECTA Interface Implementation Process

BellSouth does not produce any documentation available externally that outlines the full functionality of the ECTA Gateway. The only documentation produced by BellSouth concerning the ECTA Gateway is the CLEC-specific Joint Implementation Aggreement (JIA), which is not intended to be used by ECTA end-users. The JIA outlines points specific to an implementation of an ANSI T1.227-, T1.228- and T1.262-compliant CLEC interface to BellSouth's ECTA Gateway.

Each implementation of an ECTA interface by a CLEC is customized based upon a CLEC's request for functionality/system objects, and negotiations between BellSouth and the CLEC to define final functionality and object support.

Interface Used for ECTA Testing

As development of an ANSI-compliant interface for ECTA testing was not in the scope of the *Master Test Plan*, KCI performed functional and performance testing using a Test Interface developed by BellSouth that is not available for CLEC use. BellSouth uses this Test Interface for internal development testing. Use of this interface allowed KCI to overcome limitations that would have arisen had one of the interface options available to a real CLEC been used: 1) the EC-CPM interface does not offer the full complement of ECTA functions currently available to CLECs, and the system responses through the required dial-up EC-CPM connection were judged to be too slow to allow for adequate performance testing; and 2) use of a CLEC-developed interface could compromise the ability to accurately evaluate ECTA functionality by introducing performance aspects of the CLEC's interface into the evaluation.

[4] See M&R-10: M&R Process Evaluation for a description of BLS retail procedures.

Manual Telephone Call

A CLEC also has the option of telephoning a BellSouth work center directly to report a trouble. In the case of troubles for non-designed services and POTS, the CLEC would telephone the BellSouth Resale Maintenance Center (BRMC). In the case of troubles for designed services, the CLEC would telephone the BellSouth Unbundled Network Element Center (UNEC). After taking the information from the CLEC, the BellSouth Maintenance Administrator (MA) would then determine into which M&R system to enter the trouble report (i.e. TAFI, LMOS, or WFAC).

2.2 Scenarios

Various M&R-related scenarios were used to evaluate the M&R trouble repair process and systems. Specific details are provided in each of the individual M&R Test descriptions for specific.

2.3 Test Bed

The M&R test bed was designed to represent an appropriate mix of services (i.e., line types and feature types) that BellSouth offers its Wholesale customers. The following lists those included in the M&R test:

Line Types	**Feature Types**
Designed UNE Loop Service Level 2 (SL2)	3 way calling
Non-Designed UNE Loop Service Level 1 (SL1)	Call waiting
Plain Old Telephone Service (POTS)	Call forwarding
-UNE Loop	Call blocking
-UNE Loop / Port Combo	Area Calling Plan
-Resale	Caller ID
-UNE Port	Speed Calling
Integrated Service Digital Network (ISDN)	
UNE Loop Digital Signal Level 1 (DS1)	

A. Test Results: Trouble Analysis Facilitation Interface (TAFI) Functional Test (M&R-1)

1.0 Description

The objective of the TAFI Functional Test was to validate the existence of TAFI trouble reporting and screening functionality for telephone number (TN)-assigned unbundled network element (UNE) customers, in accordance with the *CLEC TAFI User Guide* (*User Guide*). This test cycle was executed in BellSouth's production environment by exercising a defined set of TAFI functions associated with trouble management activities against test bed accounts[1]. Scenarios designed to test these functions were executed via a LAN-to-LAN connection and via dial-up access in order to evaluate differences in system response times associated with the method of access.

The functional elements specifically targeted by this test include the entry and resolution of trouble reports, query and receipt of status reports, access to test capabilities, access to trouble history, and error conditions. TAFI functionality was evaluated in conjunction with the documentation provided addressing its use. In addition, TAFI usability was considered as part of this test.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section VII, "Overview" for a description of BellSouth's TAFI interface.

2.2 Scenarios

TAFI functionality was tested by manually processing Maintenance and Repair (M&R)-related scenarios in TAFI via both dial-up and LAN-to-LAN connections. The transactions used in this evaluation were chosen to test the applicable TAFI functions across the line types specified in Table VII-1.1 and were not intended to demonstrate statistical significance. The following table lists the scenarios used to test each of the functions included in the TAFI functionality test. Of the scenarios listed below, ten included timeliness components and were therefore tested using both connectivity methods. No timeliness components were included for scenarios 15 through 21; thus, these were tested using solely a LAN-to-LAN connection.

[1] See Section VII, "M&R Overview" for a description of the M&R test bed.

Table VII-1.1: TAFI Functional Scenarios

Scenario Number	Scenario Description	Dial-Up	LAN-to-LAN
1	Residential customer with loop / port plain old telephone service (POTS) line is having problems with a vertical feature.	√	√
2	Business customer with loop / port combination POTS line is having problems with a vertical feature.	√	√
3	Residential customers with a UNE port POTS line and a loop / port combination POTS line are having problems with a vertical feature.	√	√
4	Residential customers with a loop / port combination POTS line and a UNE port POTS line are having transmission problems.	√	√
5	Business customers with a loop / port combination POTS line and a UNE port POTS line are having transmission problems.	√	√
6	Residential customer with UNE port POTS line has a problem with the area-calling plan.	√	√
7	Business customer with a UNE port POTS line is having problems with outgoing calls.	√	√
8	Residential customer with loop / port combination POTS line has a problem with incoming calls.	√	√
9	Residential customer with loop / port POTS line is having problems with a vertical feature.	√	√
10	Residential customer with loop / port combination POTS line is experiencing physical trouble with the line.	√	√
11	Business customer with UNE loop integrated services digital network (ISDN-BRI) line has a dial tone problem.	√[2]	
12	Business customer with UNE loop ISDN BRI line is having problems making outgoing calls.	√[2]	
13	Residential customer with a UNE loop ISDN BRI line is having problems with long distance.	√[2]	
14	Business customer with UNE loop ISDN BRI line is having problems making outgoing calls.	√[2]	
15	Residential customer with two UNE port POTS lines has a dial tone problem on both lines.	Not Tested	√
16	Business customer with multiple loop / port combination lines is having problems with incoming calls on two lines.	Not Tested	√

[2] The information collected by KCI for test planning indicated that a TAFI user can select an override feature to submit a trouble ticket for an ISDN line. However, KCI's functional testing indicated that a trouble ticket could not be entered for an ISDN line provisioned as a UNE loop. Thus, scenarios 11-14 were not fully executed. See Exception 14 for additional information on this issue.

Scenario Number	Scenario Description	Dial-Up	LAN-to-LAN
17	Business customer with multiple loop / port combination lines is experiencing transmission problems on two lines.	Not Tested	√
18	Business customer with multiple loop / port combination lines is experiencing troubles making outgoing calls on two lines.	Not Tested	√
19	Business customer with multiple loop / port combination lines is experiencing physical problems with two lines.	Not Tested	√
20	Business customer with multiple loop / port combination lines is experiencing dial tone problems with two lines.	Not Tested	√
21	Business customer with multiple loop / port combination lines is having problems with incoming calls on two lines.	Not Tested	√

2.3 Test Targets & Measures

The test targets were TAFI, the *CLEC TAFI End-User Training and User Guide* (Issue 6, September 1998 version), and the *CLEC TAFI User Guide* (Issue 2, April 2000 version). The *CLEC TAFI User Guide* is provided to CLEC employees attending BellSouth's CLEC TAFI training class. It is also available online at the BellSouth Interconnection site at http://www.interconnection.bellsouth.com/guides/guides_p.html. This manual is both a training tool and a reference tool. The TAFI training provided to the CLECs is a two-day course with a standard charge for each participant.

Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column, "Test Cross-Reference," indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

Table VII-1.2: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Trouble reports	Create trouble report	Presence of Functionality Accuracy of Response TAFI Usability	M&R-1-1-1 M&R-1-1-1 M&R-1-3-1
	Modify trouble report	Presence of Functionality Accuracy of Response TAFI Usability	M&R-1-1-2 M&R-1-1-2 M&R-1-3-2
	Create repeat report	Presence of Functionality Accuracy of Response TAFI Usability	M&R-1-1-3 M&R-1-1-3 M&R-1-3-3

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Create subsequent report	Presence of Functionality Accuracy of Response TAFI Usability	M&R-1-1-4 M&R-1-1-4 M&R-1-3-4
	Enter Multiple Trouble Reports (MTRs)	Presence of Functionality Accuracy of Response TAFI Usability	M&R-1-1-5 M&R-1-1-5 M&R-1-3-5
	Enter and Retrieve Trouble Reports from Queues	Presence of Functionality Accuracy of Response Timeliness of Response TAFI Usability	M&R-1-1-6 M&R-1-1-6 M&R-1-2-1 M&R-1-3-6
	Execute Supervisor Functions	Presence of Functionality Accuracy of Response Timeliness of Response TAFI Usability	M&R-1-1-7 M&R-1-1-7 M&R-1-2-2 M&R-1-3-7
	Close Trouble Report	Presence of Functionality Accuracy of Response TAFI Usability	M&R-1-1-8 M&R-1-1-8 M&R-1-3-8
	Cancel Trouble Report	Presence of Functionality Accuracy of Response TAFI Usability	M&R-1-1-9 M&R-1-1-9 M&R-1-3-9
Access to test capability	Initiate port and loop-port test	Presence of Functionality Accuracy of Response Timeliness of Response TAFI Usability	M&R-1-1-10 M&R-1-1-10 M&R-1-2-3 M&R-1-3-10
	View port and loop-port test results	Presence of Functionality Accuracy of Response Timeliness of Response TAFI Usability	M&R-1-1-11 M&R-1-1-11 M&R-1-2-3 M&R-1-3-11
Downstream System Reports	Retrieve LMOS recent status report	Presence of Functionality Accuracy of Response Timeliness of Response TAFI Usability	M&R-1-1-12 M&R-1-1-12 M&R-1-2-4 M&R-1-3-12

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Obtain customer line record (BOCRIS)	Presence of Functionality Accuracy of Response Timeliness of Response TAFI Usability	M&R-1-1-13 M&R-1-1-13 M&R-1-2-5 M&R-1-3-13
	Obtain Predictor results	Presence of Functionality Accuracy of Response Timeliness of Response TAFI Usability	M&R-1-1-14 M&R-1-1-14 M&R-1-2-6 M&R-1-3-14
	View DLR (Display Line Record)	Presence of Functionality Accuracy of Response Timeliness of Response TAFI Usability	M&R-1-1-15 M&R-1-1-15 M&R-1-2-7 M&R-1-3-15
	View SOCS pending order.	Presence of Functionality Accuracy of Response Timeliness of Response TAFI Usability	M&R-1-1-16 M&R-1-1-16 M&R-1-2-8 M&R-1-3-16
Access error reports	Host request errors	Presence of Functionality Accuracy of Response TAFI Usability	M&R-1-1-17 M&R-1-1-17 M&R-1-3-17
Trouble history	Retrieve Trouble History	Presence of Functionality Accuracy of Response Timeliness of Response TAFI Usability	M&R-1-1-18 M&R-1-1-18 M&R-1-2-9 M&R-1-3-18
General	TAFI Usability	TAFI Usability	M&R-1-3-19

2.4 Data Sources

The data for Trouble Analysis Facilitation Interface Functional Test were collected during participation in a TAFI training course, through interviews with BellSouth personnel, and through reviews of BellSouth documentation. The data collected are summarized in the table below.

TableVII-1.3: Data Sources for TAFI Functional Test

Document	File Name	Location in Work Papers	Source
CLEC TAFI End-User Training and User Guide (Issue 6)	No Electronic Copy	M&R-8-B	BLS
BellSouth Residential Repair Center Interview Summaries and Approvals	No Electronic Copy	M&R-1-A-2	BLS / KCI
BellSouth Business Repair Center Interview Summaries and Approvals	No Electronic Copy	M&R-1-A-3	BLS / KCI
TAFI Online Help	No Electronic Copy	M&R-1-A-4	BLS
Excerpts of TAFI Architecture from the CLEC TAFI Specifications document	No Electronic Copy	M&R-1-A-5	BLS
Functional Test Approach Statements	No Electronic Copy	M&R-1-A-6	KCI
Functional Test Logs: LAN-to-LAN	No Electronic Copy	M&R-1-A-7	KCI
Functional Test Logs: Dial-Up	No Electronic Copy	M&R-1-A-8	KCI
Screen Prints: LAN-to-LAN	No Electronic Copy	M&R-1-A-9	KCI
Screen Prints: Dial-Up	No Electronic Copy	M&R-1-A-10	KCI
Screen Prints: Other	No Electronic Copy	M&R-1-A-11	KCI
Screen Prints: Multiple Trouble Reports	No Electronic Copy	M&R-1-A-12	KCI
Incident Report (Access Database)	No Electronic Copy	M&R-1-A-13	KCI
Legacy Access Times for CLEC TAFI and BLS TAFI Report	No Electronic Copy	M&R-1-A-14	BLS
CLEC TAFI User Guide (Issue 2)	clec_trn.pdf	M&R-8-A-16	BLS
CLEC TAFI User Guide (Issue 3)	Gtaff001.pdf	M&R-8-A-16	BLS

2.4.1 Data Generation/Volumes

This test relied on the submission of trouble-related transactions through the TAFI interface and the results expected as a result of the examination of the *User Guide.* This test did not rely on volume testing.

2.5 Evaluation Methods

In preparation for functional testing, interviews with BellSouth Customer Service Associates (CSAs), Maintenance Administrators (MAs), and management personnel from the Residential Repair Center (RRC) and Business Repair Center (BRC) were conducted. Interview Guides focusing on functionality in terms of usability and documentation served as the basis for initial questioning. Follow-up questions designed to expand the scope of some responses were also included.

This test cycle was executed by exercising a defined set of TAFI functions associated with trouble management activities against test bed accounts[1]. The *User Guide* and M&R test bed data were used to manually process 17 of the 21 M&R test scenarios, using TAFI, as documented in Section 2.2. Four of the 21 scenarios were not executed, as they were designed for processing troubles on ISDN lines[2]. During testing, other functionality such as edit rules, and designed errors such as invalid entries, cancels, and repeat troubles were checked. These 17 scenarios comprised the input used to test the 19 functions outlined in Table VII-1.1 on either loop / port combination POTS lines or UNE port POTS lines.

The following steps outline the test approach.

1. The *User Guide* was reviewed to determine how to process each of the functional tests associated with the 17 M&R scenarios defined in Section 2.2.
2. Paper-based Functional Test Approach Statements including expected results for each scenario were completed using the *User Guide.* As part of this process, KCI considered the usability of the *User Guide*, commenting on attributes such as ease of use and clarity. As each M&R scenario was used to test multiple functions, multiple Approach Statements were created for each scenario.
3. The statements created in Step 2 were used to provide the key data entered in the TAFI system during test execution. However, due to the decision tree logic embedded in TAFI, the exact data required to perform some of the functions could not be predetermined for the Functional Test Approach Statements by referencing the user manual. Therefore, the user manual was actively utilized in conjunction with the data from the paper forms during test execution.

4. In order to prevent technicians from being unnecessarily dispatched and inappropriately interrupting BellSouth operations, KCI, with BellSouth's concurrence, took the following steps for each trouble report created:
   - The phrase *TST TCKT DN DISP / PLS IGNR* was placed in the narrative section of each trouble report.
   - The commitment time was set at a date one month out.
   - The CLEC contact number posted on each report was 404-979-2250, a working number that connected to KCI's testing room. This line was equipped with a voice mail system and recorded message directing the technician to leave the TN and his/her contact number, and to consider the ticket closed.
5. During test execution, Functional Test Logs were utilized to document steps taken by KCI, and system responses. Four categories of evaluation criteria were considered as these system responses and comments were recorded.
6. As part of the data entry process in Step (3), TAFI fields were validated to ensure that invalid data were flagged, and that required fields were populated.

2.6 Analysis Methods

The M&R-1 TAFI Functional Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the TAFI Functional Test.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VII-1.4: M&R-1 Evaluation Criteria and Results - Presence of Functionality

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-1-1-1	The user is able to enter a trouble report using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to create 33 trouble tickets and responded as expected 33 times.
M&R-1-1-2	The user is able to modify a trouble report using TAFI and receive a satisfactory response.	Satisfied	"Modify" is not a formal function available in TAFI. Rather, modifications to a trouble ticket are performed through the creation of a subsequent report or through edit functions in the trouble report screen during initial trouble report creation. Edit rules, in terms of required fields, were specifically tested in eight scenarios and eight satisfactory responses were received. In order to test this function, KCI entered data into fields incorrectly. In these instances, TAFI automatically flagged the field tested with the cursor and provided an instructive comment in the status field. Similarly, KCI left some required fields blank in order to test TAFI. As described above, TAFI flagged the required field with the cursor and provided instructive commentary in the status field. In all instances where modifications were made, TAFI responded as expected.
M&R-1-1-3	The user is able to create a repeat report using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to create 14 repeat reports and responded as expected in 12 instances. In two instances, slight discrepancies relative to the expected results were noted due to special circumstances. According to the TAFI *CLEC Training and End-User Guide*, TAFI automatically denotes a report as a repeat if there has been another trouble reported on the line within the last 30 days. However, in both instances, a trouble was entered and closed, yet

Test Cross-Reference	Evaluation Criteria	Result	Comments
			in follow-up entries of the same telephone number (TN), the reports were not recognized as repeat reports. This occurred because the tickets had been closed by the user, as prompted by TAFI, prior to trouble report creation. As an actual trouble ticket was never created in the LMOS system, no record of a prior trouble existed to denote the 'new' reports as repeat reports.
M&R-1-1-4	The user is able to create a subsequent report using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to create 11 subsequent reports and responded as expected 11 times.
M&R-1-1-5	The user is able to enter multiple trouble reports (MTRs) using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to enter seven multiple trouble reports for accounts experiencing problems on multiple lines. Six of the seven multiple trouble reports were submitted successfully. One of the six successful reports was created using the method described in the *CLEC TAFI End-User Training and User Guide* (Issue 6, September 1998). This method has since been revised. A new method, detailed in the *CLEC TAFI User Guide* (Issue 2, April 2000) was used to create six additional MTRs. Five of the six MTRs were successfully created. For the MTR that was unsuccessful, KCI was able to create the ”parent” ticket but unable to link the ”child” report to the parent. LMOS errors and other messaging indicating that no links existed were received. As a result, KCI issued Exception 50. In response to this exception, BLS included additional information in Issue 3 of the *CLEC TAFI User Guide*, dated May 1, 2000. A review of the *CLEC TAFI User Guide* (Issue 3, May 2000) revealed that additional language explaining these points to the TAFI user has been incorporated as indicated by

Test Cross-Reference	Evaluation Criteria	Result	Comments
			BLS. See Exception 50 for additional information on this issue. This exception is closed.
M&R-1-1-6	The user is able to enter and retrieve trouble reports from the queue in TAFI and receive a satisfactory response.	Satisfied	TAFI was used to enter eight trouble reports into the queue, seven manually and one automatically. Eight reports were successfully removed from the queue, seven manually and one automatically.
M&R-1-1-7	The user is able to execute supervisor functions within TAFI and receive a satisfactory response.	Satisfied	TAFI was used to execute supervisor functions such as reviewing and reassigning queued reports on six lines and responded as expected for each line.
M&R-1-1-8	The user is able to close a trouble report using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to close 27 trouble tickets and responded as expected 22 times. Of the five unexpected responses, three were related to the closure of subsequent reports and two were related to subsequent reports resulting from the creation of multiple trouble reports. Based on the five unexpected results, KCI issued Exception 10. In response to the exception, BLS explained that TAFI would not allow a subsequent report that was in a dispatched status to be closed. Instead, a user can update the existing report by providing additional narrative info (i.e., OK now) for the field technician to see. BLS stated that the next version of the TAFI user guide would discuss this capability. Additionally, the MTRs could not be closed or cancelled through TAFI as the downstream system LMOS had been reconfigured in a manner that would not properly recognize the MTRs for closure. KCI reevaluated the three subsequent report transactions and noted that each transaction had indeed been in a dispatched status. KCI resubmitted five MTRs, which contained two trouble reports each, using the current MTR method. All

Test Cross-Reference	Evaluation Criteria	Result	Comments
			transactions were closed / cancelled successfully. Additionally, a review of the *CLEC TAFI User Guide* (Issue 3, May 2000) revealed new verbiage regarding a user's inability to cancel a subsequent report that was in "dispatch" status. This language is sufficiently descriptive to enable a TAFI user to understand when this situation will occur and how to address it. See Exception 10 for additional information on this issue. This exception is closed.
M&R-1-1-9	The user is able to cancel a trouble report using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to cancel 39 trouble tickets and responded as expected 34 times. Of the five unexpected responses, three were related to the cancellation of subsequent reports and two were related to subsequent reports resulting from the creation of multiple trouble reports. A description of the unexpected responses and the subsequent actions is provided under M&R-1-1-8.
M&R-1-1-10	The user is able to conduct a port and loop-port test (Mechanized Loop Tests (MLT)) using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to conduct five Mechanized Loop Tests (MLT) and responded as expected five times. During testing, there were some lines that had been queued for which TAFI did not deliver MLT results. For these lines, KCI re-entered the TN in order to re-run the MLT to process the trouble report. MLTs are not run for subsequent reports. This is not stated in the *User Guide*.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-1-1-11	The user is able to view port and loop-port test (MLT) results using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to view four MLT test results and responded as expected four times.
M&R-1-1-12	The user is able to retrieve a LMOS recent status report and receive a satisfactory response.	Satisfied	TAFI was used to retrieve eight LMOS recent status reports and retrieved eight reports as expected.
M&R-1-1-13	The user is able to obtain customer line record information (BOCRIS CSR) using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to view 12 BOCRIS CSR reports and responded as expected 12 times.
M&R-1-1-14	The user is able to obtain Predictor results using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to obtain Predictor results for seven lines and responded as expected seven times. Predictor is not run for subsequent reports. This is not stated in the *User Guide*.
M&R-1-1-15	The user is able to view Display Line Record (DLR) information using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to view six DLR reports and responded as expected six times.
M&R-1-1-16	The user is able to view SOCS pending order information using TAFI and receive a satisfactory response.	Satisfied	Initially, the retrieval of SOCS pending service order information using TAFI produced inconsistent results. As a result of these inconsistencies, KCI issued Exception 36. BLS provided a variety of responses addressing each anomaly. KCI was unable to validate the BLS responses because the pending service orders used for KCI's initial testing were completed, and, thus, were no longer available for viewing. Because all orders for UNE lines had been completed, KCI used resale lines for retest activities.[3] KCI was able to successfully view 18 SOCS

[3] TAFI does not differentiate between UNE Loop / Port combination lines and resale lines in trouble report processing functionality

Test Cross-Reference	Evaluation Criteria	Result	Comments
			pending service orders during retest transactions. See Exception 36 for additional information on this issue. This exception is closed.
M&R-1-1-17	The user is able to view and resend transactions that incurred host request errors using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to resend three transactions that had incurred host request errors and received three satisfactory responses. While processing these three transactions using the instructions in the *User Guide* (Issue 6), KCI received error messages and was automatically returned to the initial trouble report screen each time after receiving the error message. Based on these events, KCI issued Exception 11. BLS's response to the exception stated that additional information on the resolution of this issue would be included in subsequent versions of the documentation. A review of the *CLEC TAFI User Guide* (Issue 2, April 2000) showed that a more complete explanation surrounding host request errors, along with user options for resolving them, is now provided. See Exception 11 for additional information on this issue. This exception is closed.
M&R-1-1-18	The user is able to retrieve trouble history using TAFI and receive a satisfactory response.	Satisfied	TAFI was used to retrieve the trouble history on nine lines and responded as expected nine times.

Table VII-1.5: M&R-1 Evaluation Criteria and Results - Timeliness Evaluation[4]

Test Cross Reference	Evaluation Criteria	Result		Comments
		LAN-to-LAN	Dial-Up	
M&R-1-2-1	The user receives timely responses when entering and retrieving trouble reports from the queue in TAFI.	Satis-fied	Satis-fied	Trouble reports were placed in queue virtually instantaneously. Trouble reports were removed from queue virtually instantaneously. There was no material time difference between a LAN-to-LAN and dial-up connection.
M&R-1-2-2	The user receives timely responses when executing TAFI supervisor functions.	Satis-fied	Satis-fied	The supervisor was able to reassign trouble reports from the queue virtually instantaneously. Trouble reports were transferred to the new user in 38-60 seconds. There was no material time difference between a LAN-to-LAN and dial-up connection.
M&R-1-2-3	The user receives timely responses from the MLT test.	Satis-fied	Satis-fied	MLT results were received in a period ranging from 51 seconds to 1:17 for LAN-to-LAN access, and from 52 seconds to 1:15 for Dial-Up access. There was no material time difference between a LAN-to-LAN and dial-up connection. MLT results were received in less than the 2-3 minutes stated in the *User Guide*.

[4] BellSouth does not report standard service quality measurements (SQMs) that are applicable to the functions evaluated. However, although BellSouth does not report a standard SQM for any of the functions listed above, they do monitor legacy access times for both CLEC and BellSouth Retail TAFI users on a monthly basis. KCI compared the response times recorded during functional testing for DLETH, DLR, Predictor, CRIS, LMOS, and SOCS to the November and December 1999 Legacy Access Times Reports provided by BellSouth in order to provide a baseline. KCI did not, however, validate the BellSouth retail numbers provided. KCI's response times experienced for these specific functions were consistent with the BLS reported timeliness responses recorded for both CLEC and BellSouth Retail TAFI users for November and December 1999, which is the time period during which TAFI functional testing took place. BellSouth does state in the *CLEC TAFI End-User Training and User Guide* that an MLT test will take two to three minutes. This statement was used as a benchmark for timeliness assessment of MLTs.

Test Cross Reference	Evaluation Criteria	Result		Comments
		LAN-to-LAN	Dial-Up	
M&R-1-2-4	The user receives timely responses when retrieving a LMOS recent status report using TAFI.	Satis-fied	Satis-fied	LMOS recent status reports were retrieved almost instantaneously. There was no material time difference between a LAN-to-LAN and dial-up connection.
M&R-1-2-5	The user receives timely responses when obtaining customer line record information using TAFI.	Satis-fied	Satis-fied	BOCRIS customer line information was retrieved almost instantaneously. There was no material time difference between a LAN-to-LAN and dial-up connection.
M&R-1-2-6	The user receives timely responses when obtaining Predictor results using TAFI.	Satis-fied	Satis-fied	Predictor results were available in a time period ranging from 28 seconds to 2:20 for LAN-to-LAN access, and within 38 seconds for dial-up access. Because it is not necessary for a customer to remain on the phone while Predictor is being run, the results above are not considered productivity impacting.
M&R-1-2-7	The user receives timely responses when retrieving DLR information using TAFI.	Satis-fied	Satis-fied	DLR information was retrieved within 16 seconds. There was no material time difference between a LAN-to-LAN and dial-up connection.
M&R-1-2-8	The user receives timely responses when retrieving SOCS pending order information using TAFI.	Satis-fied	Satis-fied	SOCS pending service order information was retrieved almost instantaneously. There was no material time difference between a LAN-to-LAN and dial-up connection.
M&R-1-2-9	The user receives timely responses when retrieving trouble history using TAFI.	Satis-fied	Satis-fied	DATH trouble history reports were retrieved virtually instantaneously. DLETH trouble history reports were retrieved within 12 seconds. There was no material time difference between a LAN-to-LAN and dial-up connection.

Table VII-1.6: M&R-1 Evaluation Criteria and Results - Usability

Test Cross Reference	Evaluation Criteria	Result	Comments
M&R-1-3-1	TAFI is a user-friendly system for creating trouble reports.	Satisfied	Overall, TAFI is an easy-to-use system for creating trouble reports. TAFI has a pick and choose design using a logical, guided menu referred to as "flows." In addition, TAFI will not allow a trouble report to be submitted until all required fields are completed. However, KCI noted minor issues that impact TAFI's usability in trouble report creation. These include the lack of a "miscellaneous" flow to follow for unusual calls and inconsistent communication of prompts during the creation of some trouble reports, Also, while entering some trouble reports, the user is unable to access the Access and Commitments window using F9 until the end of the flow, when TAFI presents a message stating, "Advise customer to hang-up." Without the ability to access F9 at the logical time, there is a high likelihood of trouble call completion before key information is obtained.
M&R-1-3-2	TAFI is a user-friendly system for modifying trouble reports.	Satisfied	Modifying a trouble report in TAFI is relatively straightforward. However, the edit rules for modifying fields are inconsistent. For example, the Commitment field requires the user to first delete the contents in order to replace a character, while the narrative field allows the user to overwrite the contents or insert text.
M&R-1-3-3	TAFI is a user-friendly system for creating repeat reports.	Satisfied	TAFI automatically creates a repeat trouble report if a trouble ticket is entered for a TN for which a trouble report has been created and closed within the last 30 days.

Test Cross Reference	Evaluation Criteria	Result	Comments
M&R-1-3-4	TAFI is a user-friendly system for creating subsequent reports.	Satisfied	TAFI automatically creates a subsequent trouble report when the TAFI user enters a TN for which a pending trouble ticket exists.
M&R-1-3-5	TAFI is a user-friendly system for entering multiple trouble reports (MTR).	Satisfied	The method for entering a MTR consists of entering a Parent (P) or Child (C) in the MTR field of the Access and Commitments window and a TN in the link field of the trouble report screen. With the use of instructions provided in the *CLEC TAFI User Guide* (Issue 2, April 2000), the process is logical and straightforward to perform.
M&R-1-3-6	TAFI is a user-friendly system for entering and retrieving trouble reports from the queue.	Satisfied	Trouble reports are queued using the F8 function key, and are retrieved by highlighting and selecting the report in the user's queue. While the instructions to retrieve items from the queue are available as a prompt on the TAFI screen, the system provides no information regarding how to queue the report. This information is, however, clearly provided in the *User Guide*, and the function is easy to perform.
M&R-1-3-7	TAFI is a user-friendly system for executing supervisor functions.	Satisfied	Supervisor functions are executed through the use of function keys. Details regarding the function keys and their associated tasks are provided on the TAFI screen, as well as in the *User Guide*. During testing, the supervisor attempted to reassign queued reports to another user. TAFI responded with an unfiltered list of all in-session TAFI users from whom to select, rather than with a filtered list of internal CLEC users. As a result, KCI issued Exception 37. BLS responded that this was the result of a system error, and would be addressed in TAFI R2000.3, which was scheduled for release on June 1, 2000. Retest activities conducted in TAFI R2000.3.1.1 in July of 2000 indicated

Test Cross Reference	Evaluation Criteria	Result	Comments
			that this issue has been successfully addressed. See Exception 37 for additional information on this issue. This exception is closed.
M&R-1-3-8	TAFI is a user-friendly system for closing trouble reports.	Satisfied	Trouble reports are closed using a Front End Close Out option or an override option, both accessed via the F12 key. In addition, because TAFI is a logic-driven system, it can automatically offer a close recommendation, which the user can easily accept.
M&R-1-3-9	TAFI is a user-friendly system for canceling trouble reports.	Satisfied	Trouble reports can be cancelled by using the F12 key override option.
M&R-1-3-10	TAFI is a user-friendly system for initiating port and loop-port (MLT) tests.	Satisfied	TAFI automatically initiates MLT tests when appropriate.
M&R-1-3-11	TAFI is a user-friendly system for viewing port and loop-port (MLT) test results.	Satisfied	MLT test results are available using the F11 key.
M&R-1-3-12	TAFI is a user-friendly system for retrieving a LMOS recent status report.	Satisfied	The report is available using the F11 key.
M&R-1-3-13	TAFI is a user-friendly system for obtaining customer line record information.	Satisfied	BOCRIS information is available using the F11 key.
M&R-1-3-14	TAFI is a user-friendly system for obtaining Predictor results.	Satisfied	Predictor test results are available using the F11 key.
M&R-1-3-15	TAFI is a user-friendly system for viewing DLR information.	Satisfied	DLR information is available using the F11 key.
M&R-1-3-16	TAFI is a user-friendly system for viewing SOCS pending order information.	Satisfied	SOCS pending order information is available using the F11 key.
M&R-1-3-17	TAFI is a user-friendly system for viewing and resending trouble reports that incurred host request errors.	Satisfied	Trouble reports are viewed and resent using function keys. Prompts describing the tasks associated with relevant function keys are available on the TAFI screen.

Test Cross Reference	Evaluation Criteria	Result	Comments
M&R-1-3-18	TAFI is a user-friendly system for retrieving trouble history.	Satisfied	Trouble history reports are available using the F11 key.
M&R-1-3-19	TAFI is a user-friendly system for handling non-designed UNE M&R issues.	Satisfied	TAFI is a logical interface for administering trouble reports for non-designed UNEs. It also acts as a central repository of useful information for users, such as status reports, test results, and trouble history. TAFI provides hot keys and utilizes function keys in order to provide information with a minimal number of keystrokes. However, TAFI contains numerous undocumented messages as well as BellSouth specific messages. These messages can cause a CLEC to misdirect its customer or report a trouble incorrectly. Based on these messages, KCI issued Exception 13, which focused on six specific messages. In response to the exception, BLS committed to modify TAFI to address some of these issues in the 2000.2 and 2000.3 TAFI releases, which were scheduled for April 15, 2000 and September 2000 respectively. In addition, BLS stated that the CPNI messaging errors had been fixed in TAFI 2000.1, released in January 2000. KCI's retesting activities revealed that while only one of the two CPNI messages has been addressed, an explanation of the other message is provided in the *CLEC TAFI User Guide* (Issue 2, April 2000.) Retesting activities have also shown that the remaining four message errors have been addressed. See Exception 13 for additional information on this issue. This exception is closed.

B. Test Results: Electronic Communications Trouble Administration (ECTA) Functional Test (M&R-2)

1.0 Description

The ECTA Functional Test evaluated the functionality of BellSouth's ECTA Gateway for Maintenance and Repair trouble report processing. The objectives of the test were to evaluate ECTA Gateway functionality and to measure ECTA Gateway response times. This test was conducted by submitting trouble administration transactions against test bed accounts to the ECTA Gateway and analyzing ECTA Gateway responses to these transactions[1].

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section VII, "Maintenance & Repair Overview" for a description of BellSouth's maintenance and repair processes, the ECTA Gateway[2], and CLEC interface options.

2.2 Scenarios

The following table outlines the scenarios and functional elements used in this test. Each "X" represents a test of a function within a particular scenario. An "X + Error" denotes tests that, in addition to a valid transaction, included intentionally erroneous transactions designed to test the error handling capabilities of the ECTA Gateway. Finally, an "X + X" denotes two valid transactions. The transactions used in this evaluation were chosen to test the applicable ECTA functions across line types specified in Table VII-2.1 below and were not intended to demonstrate statistical significance.

Table VII-2.1: Test Scenarios

	Line Description	Trouble	Enter Trouble Ticket	Request Trouble Ticket Status	Add Trouble Infor-mation	Modify Trouble Admin-istration Infor-mation	Cancel Trouble Report	Verify Repair Com-pletio n	Perfor m MLT
1	Residential ISDN BRI Unbundled	Can't Call Out	X	X		X			

[1] See Section VII, "M&R Overview" for details on the Maintenance and Repair test bed.

[2] In parallel with KCI's on-going test activities, BellSouth implemented a new release of ECTA in May 2000 that enhanced the middleware that captures data from WFA for complex trouble tickets. Re-testing activities that occurred subsequent to the release showed that it had no effect on evaluation results.

	Line Description	Trouble	Enter Trouble Ticket	Request Trouble Ticket Status	Add Trouble Infor-mation	Modify Trouble Admin-istration Infor-mation	Cancel Trouble Report	Verify Repair Com-pletio n	Perfor m MLT
	Network Element (UNE) Loop[3]								
2	Business ISDN BRI UNE Loop	Data[4]	X + Error		X		X		
3	Business POTS Loop / Port Combo	No Dial Tone	X + Error	X		X			X + X
4	Residential POTS Loop / Port Combo	Noise	X + Error		X		X		X + X
5	Residential POTS UNE Port	Vertical Service	X	X					
6	Business SL1 UNE Loop[5]	No Dial Tone	X + Error	X	X		X		
7	Business SL2 UNE Loop[6]	Level	X	X		X		X	
8	Residential SL2 UNE Loop	Can't Be Called	X + Error		X		X		
9	Residential SL2 UNE Loop DS1[7]	Can't Be Heard	X	X	X	X		X + Error	

2.3 Test Targets & Measures

The test target was the maintenance and repair functionality for UNEs as provided via the ECTA Gateway. Sub-processes, functions, and evaluation criteria, are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

[3] Integrated Services Digital Network Basic Rate Interface

[4] Problems related to data transfer such as "cannot send data" or "delay."

[5] Unbundled Voice Loop – Service Level 1 (UVL-SL1) is a non-designed circuit that can only be provided on two-wire circuits with loop start signaling. No Design Layout Record is included and there are no test access points. No remote testing for trouble reports can be performed on an SL1 loop.

[6] Unbundled Voice Loop – Service Level 2 (UVL-SL2) is a designed circuit that can be configured as a two-Wire or four-Wire facility. It includes a Design Layout Record (DLR) and a test point for remote testing when trouble is reported.

[7] Unbundled Voice Loop – Service Level 2 – Digital Signal, Level 1

Table VII-2.2: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Trouble Reports	Create trouble report	Presence of Functionality	M&R-2-1-1
		Timeliness of Response	M&R-2-2-1
	Request trouble ticket status	Presence of Functionality	M&R-2-1-2
		Timeliness of Response	M&R-2-2-2
	Add trouble information	Presence of Functionality	M&R-2-1-3
		Timeliness of Response	M&R-2-2-3
	Modify trouble report	Presence of Functionality	M&R-2-1-4
		Timeliness of Response	M&R-2-2-4
	Cancel trouble report	Presence of Functionality	M&R-2-1-5
		Timeliness of Response	M&R-2-2-5
	Verify repair completion	Presence of Functionality	M&R-2-1-6
		Timeliness of Response	M&R-2-2-6
Access to Test Capabilities	Conduct Mechanized Line Test	Presence of Functionality	M&R-2-1-7
		Timeliness of Response	M&R-2-2-7

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VII-2.3: Data Sources for ECTA Functional Test

Document	File Name	Location in Work Papers	Source
Joint Implementation Agreement for Electronic Communications Trouble Administration (ECTA) Gateway for Local Service Version 10/07/98[8]	CLEC_JIA.doc	M&R-2-A-1	BLS
American National Standard for Telecommunications – Operations, Administration, Maintenance and Provisioning (OAM&P) – Extension to Generic Network Information	ANSI+T1[1].227-1995.pdf	M&R-2-A-2	American National Standards Institute

[8] This document outlines points specific to the implementation of an ANSI T1.227-, T1.228- and T1.262-compliant CLEC interface to BellSouth's ECTA Gateway. BLS provided KCI with a generic version of this document for use in the M&R-2, M&R-3 and M&R-4 evaluations. In addition, this document was evaluated, along with JIAs actually enacted with CLECs, in M&R-9: ECTA Documentation Evaluation.

Document	File Name	Location in Work Papers	Source
Model for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration) (ANSI T1.227-1995)			
American National Standard for Telecommunications – Operations, Administration, Maintenance and Provisioning (OAM&P) – Services for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration) (ANSI T1.228-1995)	ANSI+T1[1].228-1995+(R1999).pdf	M&R-2-A-3	American National Standards Institute
American National Standard for Telecommunications – Operations, Administration, Maintenance and Provisioning (OAM&P) – Extension to Generic Network Model for Interfaces across Jurisdictional Boundaries to Support the Service Test Function (ANSI T1.262-1998)	ANSI+T1[1].262-1998.pdf	M&R-2-A-4	American National Standards Institute
E-Mail Communication Re: ECTA Functionality	No Electronic Copy	M&R-2-A-5	BLS
Functional Test Logs	No Electronic Copy	M&R-2-A-6	KCI

2.4.1 Data Generation/Volumes

ECTA system responses were captured for M&R scenarios processed using the Test Interface to the ECTA Gateway. No volume testing was required for this evaluation.

2.5 Evaluation Methods

The ECTA Functional Test evaluated the functional elements of the trouble reporting and screening process for both telephone number-assigned and circuit identified UNEs, as delivered to CLECs via the ECTA system. The objective of the ECTA Functional Test was to validate the existence and timeliness of ECTA trouble reporting and screening functionality for both telephone number-assigned and circuit identified UNE customers, in accordance with BellSouth's

specifications and the American National Standards Institute (ANSI) T1.227, T1.228 and T1.262 standards for trouble administration.

This test cycle was executed by exercising a defined set of ECTA functions associated with trouble management activities against test bed accounts[9]. The functional elements targeted by this test included access to test capabilities, trouble report entry, query and receipt of trouble report status information, modification and addition of information to trouble reports, and cancellation/closure of trouble reports. In addition, error conditions were included to assess the ECTA Gateway's response to incorrect information. The ECTA Functional Test was conducted against BellSouth's production environment system.

The functional evaluation tested each of the ECTA functional processes against two criteria: presence of functionality and timeliness of system responses.

The following steps outline the test approach:

1. A list of test scenarios was developed to exercise the functionality of the ECTA Gateway across all available UNE line types (see Table VII-2.1). To obtain an exhaustive list of available ECTA Gateway functionality, KCI simulated the normal process followed by a CLEC in implementing an interface to the BellSouth ECTA Gateway. The normal process involves a CLEC requesting that BellSouth support certain functionality/system objects in the ECTA Gateway, and negotiations between BellSouth and the CLEC to define final functionality and object support. KCI replicated this request/negotiation process by presenting BellSouth ECTA managers and developers with a list of T1M1 compliant functions[10] and asking BellSouth to cull from that list an exhaustive set of available ECTA Gateway functions.
2. A Test Scenario Portfolio was developed for each scenario. These portfolios included:
    - Data Entry Files for each ECTA function within a scenario that requires data to be entered into the Test Interface[11].
    - System steps to be submitted to the Test Interface.
    - BellSouth Maintenance Administrator steps for functions that required responses from back-end systems.
    - Expected results for each function.

[9] See Section VII, "M & R Overview" for a description of the M&R test bed.
[10] The ANSI T1.228 standard lists 18 functions that can be included in a T1M1 compliant gateway. In addition, ANSI T1.262 adds the POTS line testing function (MLT) to the original 18.

[11] See Section VII, "M & R Overview" for details on the BellSouth ECTA Test Interface.

Data entry was based on information obtained from the *Joint Implementation Agreement (JIA) for Electronic Communications Trouble Administration (ECTA) Gateway for Local Service* version 10/07/98, and information provided by BellSouth Maintenance and Systems Development personnel on use of the BellSouth Test Interface.

3. Data Entry Files from Step 2 were uploaded into the BellSouth Test Interface system.

4. Using the Test Scenario Portfolios, the test scenarios were executed by:

    - Using the Test Interface to access and submit Data Entry Files to the ECTA Gateway.
    - Using the Test Interface to submit transactions directly to the ECTA Gateway.
    - Prompting a BellSouth Maintenance Administrator to submit responses to the ECTA Gateway from a back-end system.

5. The ECTA Gateway system agent log[12] and response messages to the ECTA Test Interface were analyzed to evaluate responses and determine response times from the ECTA Gateway. System responses were documented in a test log and errors were categorized by the following underlying causes:

    - ECTA functional deficiency
    - User error (transactions containing user errors were corrected and resubmitted)

6. Data from Step 5 were compiled and mapped against the individual assessment criteria.

2.6 Analysis Methods

The ECTA Functional Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards and guidelines for the ECTA Functional Test.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

[12] A sample of agent log transactions was audited to validate the veracity of the information contained therein.

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VII-2.4: M&R-2 Evaluation Criteria and Results – Presence of Functionality

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-2-1-1	The user is able to enter a trouble report into ECTA and receive a satisfactory response.	Satisfied	ECTA was used to enter 14 trouble reports. Satisfactory responses were received for 13 of the 14 reports. One test transaction failed when attempting to create a trouble ticket for an SL1 UNE loop. KCI issued Exception 7 on this issue. BLS corrected the problem by creating a new format for entering SL1 UNE loop troubles in ECTA. KCI retesting verified that the exception has been addressed. Exception 7 is closed. See Exception 7 for additional information on this issue.
M&R-2-1-2	The user is able to request trouble report status from ECTA and receive a satisfactory response.	Satisfied	ECTA was used to check the status of six trouble tickets. Satisfactory responses were received for all six.
M&R-2-1-3	The user is able to add trouble information to an ECTA trouble report and receive a satisfactory response.	Satisfied	ECTA was used to add information to five trouble tickets. Satisfactory responses were received for all five.
M&R-2-1-4	The user is able to modify trouble administration information on an ECTA trouble report and receive a satisfactory response.	Satisfied	ECTA was used to modify information on four trouble tickets. Satisfactory responses were received for all four.
M&R-2-1-5	The user is able to cancel a trouble report in ECTA and receive a satisfactory response.	Satisfied	ECTA was used to cancel four trouble tickets. Satisfactory responses were received for all four.
M&R-2-1-6	The user is able to respond to trouble repair completion	Satisfied	When KCI first tested this function, BLS was unable to initiate this transaction because the functionality

Test Cross-Reference	Evaluation Criteria	Result	Comments
	notifications and receive a satisfactory response.		had not been properly created for the General Access Customer Advocacy Center (ACAC). KCI issued Exception 20 and BLS made modifications to their systems to correct the issue. During retesting, BLS was able to initiate three transactions, indicating that Exception 20 had been addressed. Exception 20 is closed. See Exception 20 for additional information on this issue. ECTA was used to verify repair completion on three trouble tickets. Satisfactory responses were received for two of the three. In one instance, KCI intentionally sent invalid data and the ECTA Gateway did not indicate the receipt of this invalid data. As a result of this error, KCI issued Exception 12. BLS added programing to the ECTA Gateway to correct this problem and retesting verified that the exception has been addressed. Exception 12 is closed. See Exception 12 for additional information on this issue.
M&R-2-1-7	The user is able to conduct a Mechanized Line Test and receive a satisfactory response.	Satisfied	ECTA was used to conduct four MLTs. Satisfactory results were received for all four.

Table VII-2.5: M&R-2 Evaluation Criteria and Results -- Timeliness of Response

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-2-2-1	The user receives a timely response when entering a trouble report using ECTA[13].	Satisfied	All responses to trouble ticket creates were received within seven to 16 seconds. Responses for invalid create transactions were received

[13] BellSouth's *Joint Implementation Agreement (JIA) for Electronic Communications Trouble Administration (ECTA) Gateway for Local Service* Version 10/07/98 states "The end-to-end protocol target response time will be 30 seconds or less for 90% of the requests while handling 40 messages per minute. End to End [sic] maximum response time will not exceed 180 seconds." This benchmark was used for criteria M&R-2-2-1 through

Test Cross-Reference	Evaluation Criteria	Result	Comments
	report using ECTA[13].		within one second.
M&R-2-2-2	The user receives a timely response when requesting trouble report status using ECTA[13].	Satisfied	All responses to status requests were received within one second.
M&R-2-2-3	The user receives a timely response when adding trouble information using ECTA[13].	Satisfied	All responses when adding trouble information were received within six to 14 seconds.
M&R-2-2-4	The user receives a timely response when modifying trouble report administration information using ECTA[13].	Satisfied	All responses when modifying trouble administration information were received within six to 14 seconds.
M&R-2-2-5	The user receives timely response when canceling a trouble report using ECTA[13].	Satisfied	All responses when canceling a trouble ticket were received within six to eight seconds.
M&R-2-2-6	The user recieves a timely response when responding to a verify repair completion[13].	Satisfied	All responses when responding to a verify completion request were received within eight to 10 seconds.
M&R-2-2-7	The user receives a timely response when conducting an Mechanized Line Test using ECTA.	Satisfied	All responses when conducting an MLT were received within 66 to 73 seconds. The benchmark used for M&R-2-2-7 was two to three minutes as outlined for MLT test response time in the *CLEC TAFI End-User Training and User Guide*, Issue 6.

M&R-2-2-6. Due to the low level of ECTA usage, actual messages per minute during functional testing were well below 40.

C. Test Results: Electronic Communications Trouble Administration (ECTA) Normal Volume Performance Test (M&R-3)

1.0 Description

The ECTA Normal Volume Performance test evaluated the current release of BellSouth's ECTA Gateway for Maintenance and Repair trouble report processing under projected year-end 2001 (YE01) normal load conditions. The objectives of the test were to determine the effect of YE01 load conditions on the viability of functionality in the current version of the ECTA Gateway and this gateway's response times. This test was conducted by submitting the projected volume of ECTA transactions against resale and UNE test bed accounts and analyzing ECTA Gateway responses to these transactions[1].

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section VII, "Maintenance & Repair Overview" for a description of BellSouth's ECTA Gateway[2] and CLEC interface options.

2.2 Scenarios

The breakdown of the ECTA transactions submitted for this test is shown below in Table VII-3.5. These transactions were submitted against a test bed comprised of 20 UNE lines and nine resale lines.

2.3 Test Targets & Measures

The test target was the maintenance and repair process for resale and UNEs via the ECTA Gateway under normal load conditions. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

[1] See Section VII, "M & R Overview" for details on the Maintenance and Repair test bed.

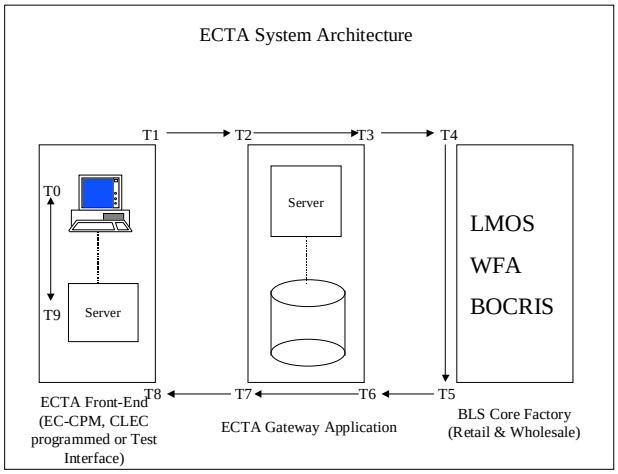
[2] A new release of BellSouth's ECTA was implemented in May 2000 that enhanced the middleware that captures data from WFA for complex trouble tickets. Based on KCI's understanding of the changes implemented, obtained through documentation review, it is KCI's opinion that these changes to the interface would not affect the results of this evaluation.

Table VII-3.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Trouble Reports	Create trouble report	Correctness of Response Timeliness of Response	M&R-3-1-1 M&R-3-2-1
	Request trouble ticket status	Correctness of Response Timeliness of Response	M&R-3-1-2 M&R-3-2-2
	Add trouble information	Correctness of Response Timeliness of Response	M&R-3-1-3 M&R-3-2-3
	Modify trouble report	Correctness of Response Timeliness of Response	M&R-3-1-4 M&R-3-2-4
	Cancel trouble report	Correctness of Response Timeliness of Response	M&R-3-1-5 M&R-3-2-5

Figure VII-3.1 below shows KCI's representation of the discrete time intervals associated with processing a transaction through the ECTA Gateway.

Figure VII-3.1: Time Intervals Associated with Transaction Processing



Time T1T8 is a function of the combined responsiveness of all Maintenance and Repair (M&R) systems (CLEC interface to the ECTA Gateway, ECTA Gateway, and BellSouth Core Factory) and the connectivity between them. The purpose of M&R-3 is to test only the ECTA Gateway; therefore, performance time for this test has been defined as time T2T7, the interval from receipt of an instruction by the ECTA Gateway to the issuance of a response from ECTA, and not T1T8. Time T9T0 was not included as a part of this evaluation because this time depends on the connectivity option and the interface selected by BellSouth's CLEC customers. CLECs can use various methods to connect to the BellSouth

gateway. In addition, the choice of interface – EC-CPM or CLEC-developed – will also affect transaction timing[3].

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VII-3.2: Data Sources for ECTA Normal Volume Performance Test

Document	File Name	Location in Work Papers	Source
Joint Implementation Agreement for Electronic Communications Trouble Administration (ECTA) Gateway for Local Service Version 10/07/98	CLEC_JIA.doc	M&R-2-A- 1	BLS
American National Standard for Telecommunications – Operations, Administration, Maintenance and Provisioning (OAM&P) – Extension to Generic Network Information Model for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration) (ANSI T1.227-1995)	ANSI+T1[1].227-1995.pdf	M&R-2-A-2	American National Standards Institute
American National Standard for Telecommunications – Operations, Administration, Maintenance and Provisioning (OAM&P) – Services for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration) (ANSI T1.228-1995)	ANSI+T1[1].228-1995+(R1999).pdf	M&R-2-A-3	American National Standards Institute
E-Mail Communication Re: BLS Volume Forecast	No Electronic Copy	M&R-3/4-A-1	BLS
Volume Results Files	volume results.zip	M&R-3/4-A-3	KCI

[3] See Section VII, "M & R Overview" for a description of the ECTA interface options available to CLECs.

Document	File Name	Location in Work Papers	Source
Volume Transaction Sequence File	volume transaction sequence.zip	M&R-3 /4-A-4	KCI

2.4.1 Data Generation/Volumes

The following section summarizes the methodology used to derive the volumes for this evaluation.

BellSouth projects that by year-end 2001, CLECs will have 5.42 million BellSouth circuits in use[4]. The projected growth pattern of these circuits is shown below[5]:

Table VII-3.3: BellSouth Circuit Growth Forecast[6] (Thousands of Circuits at Year-End)

Product Type	1998	1999	2000	2001
Full CLEC (LNP)	149	329	811	1,137
Resale	609	1,057	1,424	1,692
Unbundling	136	217	272	425
UNE Loop & Port	899	1,375	1,777	2,162
Total[7]	1,791	2,978	4,285	5,417

For each of these circuit types, BellSouth has used the methodology depicted below to project troubles to be entered into the ECTA Gateway:

[4] KCI attempted to reconcile BellSouth's forecast numbers against those submitted by BellSouth to KCI for Pre-Order and Order volume test. The forecast submitted for the ECTA evaluation was significantly higher. In addition, KCI requested forecast data from a CLEC user for in validation of the forecast. This CLEC did not provide KCI with a forecast of ECTA usage. Therefore, KCI has not independently verified these projections. However, it is highly unlikely that these volume projections will be reached or exceeded before the next release of ECTA.

[5] The number of actual BellSouth CLEC LSRs in 1997 and 1998 totaled 1.89 million.

[6] BellSouth ECTA volume forecast received by KCI on 10/20/99.

[7] Totals may not add due to rounding.

Table VII-3.4: BellSouth Trouble Calculations

Line Type	Calculation	December '01 Troubles
Full CLEC (LNP)	$LIS_{Full\ CLEC\ (LNP)} * TPL * LNP * TAF * ECT$	128
Resale	$LIS_{Resale} * TPL * TAF * ECT$	1,269
Unbundling	$LIS_{Unbundling} * TPL * (LNP + UNE) * TAF * ECT$	207
UNE Loop & Port	$LIS_{UNE\ Loop\ \&\ Port} * TPL * TAF * ECT$	1,622
Total		3,226

Where:

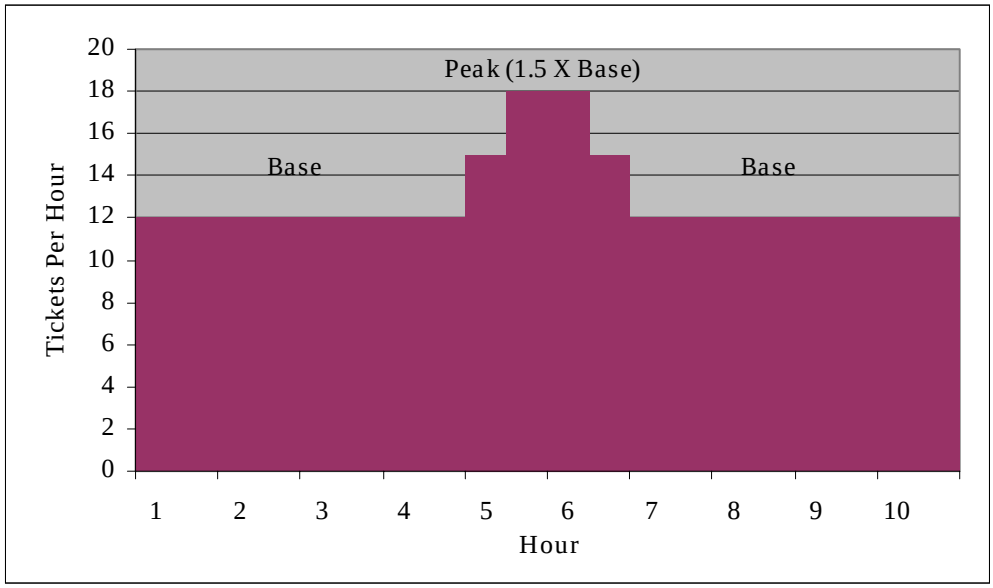
LIS_X Total Lines in Service (where subscript "X" denotes Line Type)
TPL Percent of Lines with a Trouble Per Month (3%)
LNP Percent of Troubles Relating to LNP (15%)
UNE Percent of Troubles Relating to UNE Loops (50%)
TAF Percent of POTS Reports through TAFI (50%)
ECT Percent of Customers Owned by ECTA Users (5%)

These calculations are based on BellSouth's assumption that ECTA users will lease 5% of the number of lines that TAFI users lease. Therefore, the calculations first project TAFI volumes and then derive ECTA volumes from those.

Using the data provided by BellSouth, KCI assumed that 90% of trouble reports would occur on the 22 weekdays during an average month. Applying this logic, the 3,226 troubles projected for December '01 will translate to 132 troubles per weekday (3,226 * 0.90 ÷ 22). Assuming that a given weekday can be divided into nine non-peak hours and one peak hour (where the peak hour volume is 1.5 times the non-peak hour volume), and that volumes build up and ramp down during the period surrounding the daily peak, the projected non-peak, hourly volume would be 12 (132 ÷ 10.75) trouble tickets[8]. Figure VII-3.2 below shows the projected distribution of trouble reports over a day.

[8] The projected daily load (represented graphically in Figure VII-3.2) is equal to the sum the following time segments and their corresponding time multiples: 4 hours of average non-peak volume, 0.5 hours of average non-peak volume multiplied by 1.25, 1 hour of average non-peak volume multiplied by 1.5, 0.5 hours of average non-peak volume multiplied by 1.25, and 4 hours of average non-peak volume. This can be expressed mathematically by the equation "132 = 4X + (0.5)(1.25) X + 1.5X + (0.5)(1.25) X + 4X" where X is the average non-peak hour volume of trouble reports and 132 is the total number of trouble reports in a day. Solving for X, produces "X = 132 • 10.75" or "X=12". As BellSouth does not keep statistics on ECTA transactions, KCI used this methodology to simulate a day containing both normal and peak periods.

Figure VII-3.2: Distribution of Trouble Reports[9]



For each trouble report submitted to ECTA, several ECTA transactions, such as 'modify information,' 'view status,' 'status response,' and 'attribute value change notification' will occur. BellSouth estimates that each 'trouble ticket create' transaction will engender six to seven additional transactions on average[10]. These transactions could be CLEC-initiated, they could be responses to CLEC transactions, or they could be transactions initiated by BellSouth systems or personnel. Of these six to seven additional transactions, BellSouth estimates that 2.25 transactions will be initiated by CLECs (such as 'modify information,' 'add information,' or 'request status'), and the remaining transactions will be ECTA Gateway responses or BellSouth-initiated transactions[11]. Table VII-3.5 shows the transaction distribution projected for a non-peak hour based on the BLS estimates above.

[9] Testing took place between 2:00 P.M. and 12:00 A.M. on the first day of testing and between 9:00 A.M. and 7:00 P.M. on the second day.

[10] Each trouble ticket will involve a 'trouble ticket create' and a 'trouble ticket cancel' or 'attribute value change' involved with a clear and a close. In addition, most will also involve an 'attribute value change' from a screening notification from the agent. As BellSouth does not keep statistics on usage of the ECTA Gateway, KCI could not independently verify these estimates.

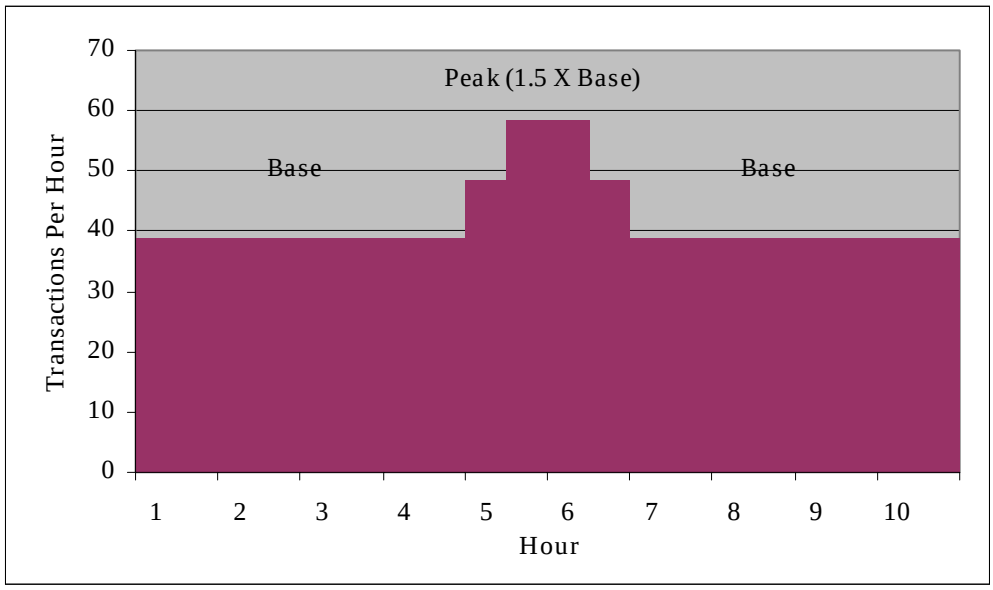
[11] As BellSouth does not keep statistics on usage of the ECTA Gateway, KCI could not independently verify these estimates.

Table VII-3.5: Transactions Per Hour

Transaction Type	Transactions / Create	Transactions / Hour
Enter Trouble Report	1.00	12
Request Trouble Report Status	0.42	5
Add Trouble Information	0.42	5
Modify Trouble Administration Information	0.42	5
Cancel Trouble Report	1.00	12
Total	3.26	39

Figure VII-3.3 below shows how the test was conducted across time:

Figure VII-3.3: Transactions Per Hour[12]



During the initial normal volume test trial, the BellSouth Test Interface used by KCI to simulate a CLEC interface failed to consistently submit transactions to the ECTA Gateway. KCI and BellSouth Applied Technologies personnel investigated these errors and discovered that they were not caused by limitations or faults in the ECTA Gateway itself. Diagnostic testing showed that the Test Interface failed on 13% of ECTA transactions. To compensate, test volumes were increased by 15%. In the actual tests, Test Interface error levels did not exceed 13% and therefore did not compromise the planned volume of test

[12] Testing took place between 2:00 P.M. and 12:00 A.M. on the first day of testing and between 9:00 A.M. and 7:00 P.M. on the second day.

transactions. See Section VII, "M&R Overview" for a description of the Test Interface employed by KCI in this evaluation.

2.5 Evaluation Methods

The ECTA Normal Volume Performance Test evaluated the behavior and performance of the ECTA Gateway under "normal[13]" YE01 projected transaction load conditions. The test cycle was executed using UNIX test scripts capable of submitting large volumes of resale services and UNE trouble test cases in a manner consistent with ECTA's forecasted daily usage patterns and transaction mix, including error conditions. The test was executed during two 10-hour periods by modeling expected, normal daily usage. Trouble transaction loads were distributed geographically across multiple Georgia Central Offices (COs) to reflect a realistic operating environment. The test bed utilized for this analysis included both UNE and resale lines.

The ECTA Normal Volume Performance Test evaluated each of the ECTA functional processes against two criteria: correctness of system responses and timeliness of system responses. The evaluation consisted of the following steps:

1. A Load Profile was developed outlining the timing between transactions as per BellSouth's volume projections for YE01 (see section 2.4.1 for a detailed description).
2. The order and timing of each test transaction was outlined in two test sequence files, one for each 10-hour period. Each line in these files included the following:
    - Data to be entered into the ECTA Test Interface.
    - A line of UNIX test code to submit a transaction to the ECTA Test Interface.
3. Data input files and UNIX test scripts were developed from the test sequence files and uploaded to the BellSouth Test Interface system.
4. Each test script was executed to submit transactions to the ECTA Test Interface.
5. The ECTA Gateway system agent log and response messages to the ECTA Test Interface were analyzed to log transaction times and to verify expected system responses[14]. Any exceptions or mismatched responses were flagged and investigated.

[13] Normal is defined as the average projected volume for a given time period.

[14] The ECTA Gateway automatically produces entries into the agent log as transactions occur. KCI monitored the agent log during testing and downloaded the test log for analysis directly from the ECTA server. The integrity of the ECTA agent log was verified in M&R-2: ECTA Functional Test.

6. Data from Step 5 were compiled and mapped against the individual evaluation criteria.

2.6 Analysis Methods

The ECTA Normal Volume Performance Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided the framework of norms, standards and guidelines for the ECTA Normal Volume Performance Test.

The data collected were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VII-3.6: M&R-3 Evaluation Criteria and Results -- Presence of Functionality

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-3-1-1	The user receives the correct response when entering a trouble ticket into ECTA.	Satisfied	The correct response was received on 304 of 309 transactions. On four transactions, an error was received indicating that the Loop Maintenance Operations System (LMOS) had assigned a trouble ticket ID that already existed in the ECTA Gateway database. These tickets, once created, were not accessible through the ECTA Gateway and had to be manually cancelled by BLS personnel. As a result of these errors, KCI issued Exception 15. BLS responded to this exception by changing system maintenance parameters to more frequently purge old trouble report IDs from the ECTA Gateway database. KCI retesting verified that BLS had indeed changed the purge parameter. Given this, KCI concluded that the likelihood of similar problems occurring in the

Test Cross-Reference	Evaluation Criteria	Result	Comments
			future had been reduced to acceptable levels. Exception 15 is closed. See Exception 15 for additional information on this issue. One other transaction was incomplete as the result of an internal error in the ECTA Gateway. This item is under investigation by BellSouth.
M&R-3-1-2	The user receives the correct response when requesting the status of a trouble ticket using ECTA.	Satisfied	The correct response was received for 120 out of 120 request status transactions.
M&R-3-1-3	The user receives the correct response when adding trouble information to a trouble ticket using ECTA.	Satisfied	The correct response was received on 120 out of 120 add transactions.
M&R-3-1-4	The user receives the correct response when modifying trouble administration information using ECTA.	Satisfied	The correct response was received for 120 out of 120 modify transactions. 48 of the 120 transactions contained intentional errors. Correct error responses were received for these transactions as well.
M&R-3-1-5	The user receives the correct response when canceling a trouble ticket using ECTA.	Satisfied	The correct response was received for 272 of 273 cancel transactions. One transaction failed because the ECTA Gateway incorrectly identified a ticket as canceled, and therefore could not process the true cancel request. This item is under investigation by BLS.

Table VII-3.7: M&R-3 Evaluation Criteria and Results -- Timeliness of Response

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-3-2-1	The response when entering a trouble report using ECTA is within published specifications[15].	Satisfied	The MTTR[16] for 304 create requests was 16 seconds. Five responses were received in excess of 30 seconds. All responses were received within 180 seconds.
M&R-3-2-2	The response when requesting trouble report status using ECTA is within BLS published specifications[15].	Satisfied	The MTTR for 120 status requests was less than 0.5 seconds. All responses were received within 30 seconds.
M&R-3-2-3	The response when adding trouble information using ECTA is within BLS published specifications[15].	Satisfied	The MTTR for 120 add requests was seven seconds. All responses were received within 30 seconds.
M&R-3-2-4	The response when modifying trouble report administration information using ECTA is within BLS published specifications[15].	Satisfied	The MTTR for 72 modify requests was seven seconds. The MTTR for 48 modify requests with intentional errors was less than 0.5 seconds. One response was received in excess of 30 seconds. All responses were received within 180 seconds.
M&R-3-2-5	The user receives the correct response when canceling a trouble ticket using ECTA[15].	Satisfied	The MTTR for 272 cancel requests was seven seconds. All responses were received within 30 seconds.

[15] BellSouth's *Joint Implementation Agreement (JIA) for Electronic Communications Trouble Administration (ECTA) Gateway for Local Service between CLEC and BellSouth*, Version 10/07/98 states "The end-to-end protocol target response time will be 30 seconds or less for 90% of the requests while handling 40 messages per minute. End to End [sic] maximum response time will not exceed 180 seconds." During this test, the maximum number of KCI messages per minute for any hour in the test was 12.3. KCI observed that there was no discernable difference in ECTA performance during the periods of highest message volume.

[16] Mean Time To Response (MTTR) measures the average response time for all valid transactions. Individual response times are calculated as the difference between the time that the transaction is entered (time T2 in Figure VII-3.1) and the response comes back from the ECTA Gateway (time T7 in Figure VII-3.1).

D. Test Results: Electronic Communications Trouble Administration (ECTA) Peak Volume Performance Test (M&R-4)

1.0 Description

The ECTA Peak Volume Performance test evaluated the current release of BellSouth's ECTA Gateway for Maintenance and Repair trouble report processing under projected year-end 2001 (YE01) peak load conditions. The objectives of the test were to determine the effect of YE01 peak load conditions on the viability of functionality in the current version of the ECTA Gateway and this gateway's response times. This test was conducted by submitting the projected peak volume of ECTA transactions against resale and UNE test bed accounts and analyzing ECTA Gateway responses to these transactions[1].

Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section VII, "Maintenance & Repair Overview" for a description of BellSouth's ECTA Gateway[2] and CLEC interface options.

2.2 Scenarios

The breakdown of ECTA transactions submitted for this test is shown below in Table VII-4.3. These transactions were submitted against a test bed comprised of 20 UNE lines and 9 resale lines.

2.3 Test Targets & Measures

The test target was the maintenance and repair process for resale and UNE services via the ECTA Gateway under peak load conditions. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column 'Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

[1] See Section VII, "M & R Overview" for details on the Maintenance and Repair test bed.

[2] A new release of BellSouth's ECTA was implemented in May 2000 that enhanced the middleware that captures data from WFA for complex trouble tickets. Based on KCI's understanding of the changes implemented, obtained through documentation review, it is KCI's opinion that these changes to the interface would not affect the results of this evaluation.

Table VII-4.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Trouble Reports	Create trouble report	Correctness of Response	M&R-4-1-1
		Timeliness of Response	M&R-4-2-1
	Request trouble ticket status	Correctness of Response	M&R-4-1-2
		Timeliness of Response	M&R-4-2-2
	Add trouble information	Correctness of Response	M&R-4-1-3
		Timeliness of Response	M&R-4-2-3
	Modify trouble report	Correctness of Response	M&R-4-1-4
		Timeliness of Response	M&R-4-2-4
	Cancel trouble report	Correctness of Response	M&R-4-1-5
		Timeliness of Response	M&R-4-2-5

See M&R-3: ECTA Normal Volume Performance test for a description of the time intervals targeted for this test.

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VII-4.2: Data Sources for ECTA Peak Volume Performance Test

Document	File Name	Location in Work Papers	Source
Joint Implementation Agreement for Electronic Communications Trouble Administration (ECTA) Gateway for Local Service Version 10/07/98	CLEC_JIA.doc	M&R-2-A-1	BLS
American National Standard for Telecommunications – Operations, Administration, Maintenance and Provisioning (OAM&P) – Extension to Generic Network Information Model for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration) (ANSI T1.227-1995)	ANSI+T1[1].227-1995.pdf	M&R-2-A-2	American National Standards Institute

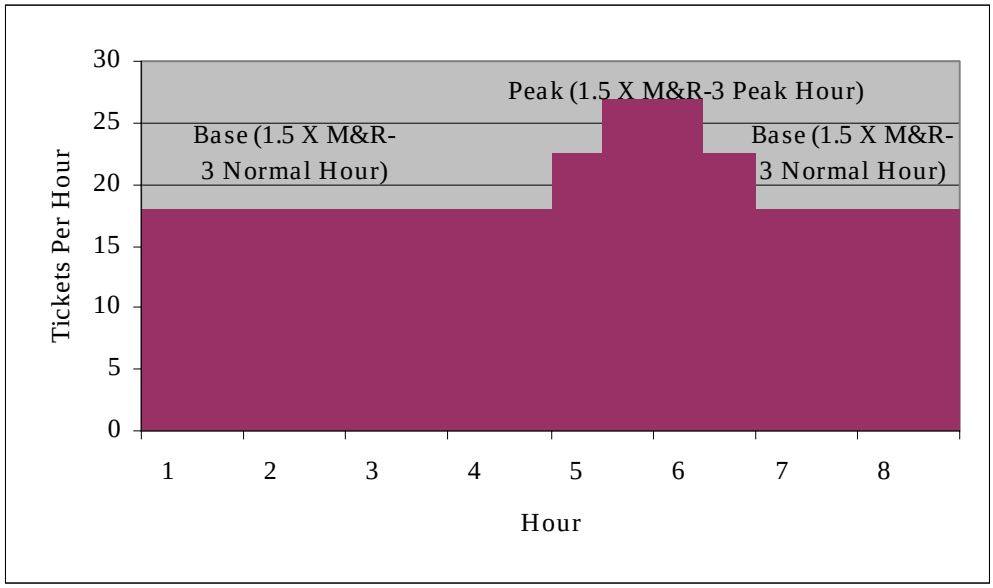
Document	File Name	Location in Work Papers	Source
American National Standard for Telecommunications – Operations, Administration, Maintenance and Provisioning (OAM&P) – Services for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration) (ANSI T1.228-1995)	ANSI+T1[1].228-1995+(R1999).pdf	M&R-2-A-3	American National Standards Institute
E-Mail Communication Re: BLS Volume Forecast	No Electronic Copy	M&R-3-4-A-1	BLS
Volume Results Files	volume results.zip	M&R-3-4-A-3	KCI
Volume Transaction Sequence File	volume transaction sequence.zip	M&R-3-4-A-4	KCI

2.4.1 Data Generation/Volumes

See section 2.4.1 of M&R-3: ECTA Normal Volume Performance Test for a derivation of the YE01 normal expected transaction volumes.

For M&R-4, the normal hour for a peak day was calculated as a multiple of the normal day baseline load from M&R-3: ECTA Normal Volume Performance Test, using 1.5 as the multiple factor. The resulting profile of 'trouble ticket creates' per hour is shown in Figure VII-4.1 below.

Figure VII-4.1: Distribution of Trouble Reports[3]



Using the same methodology described in M&R-3: ECTA Normal Volume Performance Test, the total number of transactions for a base hour were calculated off of the peak baseline number of trouble tickets per hour. The resulting transaction distribution is shown in Table VII-4.3.

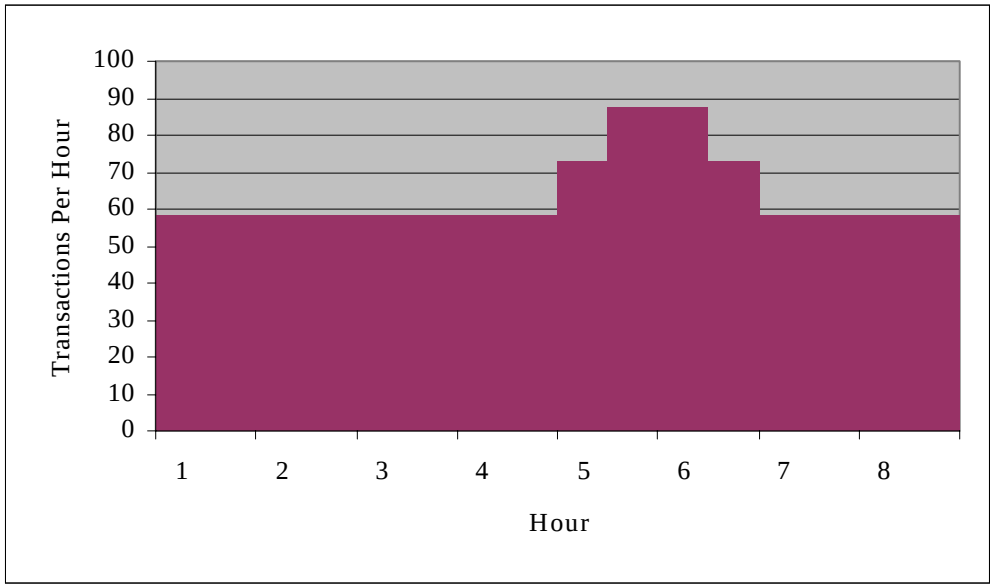
TableVII-4.3: Transactions Per Hour[4]

Transaction Type	Transactions / Create	Transactions / Hour
Enter Trouble Report	1.00	18
Request Trouble Report Status	0.42	8
Add Trouble Information	0.42	8
Modify Trouble Administration Information	0.42	8
Cancel Trouble Report	1.00	18
Total	3.25	60

Figure VII-4.2 below shows the total transaction distribution across time:

[3] Testing took place between 8:30 A.M. and 4:30 P.M. on the first day of testing and between 9:30 A.M. and 5:30 P.M. on the second day.
[4] See M&R-3: ECTA Normal Volume Performance Test for a description of the data in this table.

Figure VII-4.2: Transactions Per Hour[5]



As with M&R-3, transaction volumes were boosted by 15% to compensate for transaction failures caused by the BLS Test Interface. In the actual tests, Test Interface error levels did not exceed 13% and therefore did not compromise the planned volume of test transactions. See Section VII, "M&R Overview" for a description of the Test Interface employed by KCI in this evaluation.

2.5 Evaluation Methods

The ECTA Peak Volume Performance Test evaluated the behavior and performance of the ECTA interface under "peak[6]," YE01 projected transaction load conditions. The test cycle was executed using UNIX test scripts capable of submitting large volumes of resale services and UNE trouble test cases in a manner consistent with ECTA's forecasted daily usage patterns and transaction mix, including error conditions. The test was executed during two, eight-hour periods by modeling expected, normal daily usage. The peak volume forecast was a multiple applied to the non-peak hourly load calculated in M&R-3: ECTA Normal Volume Evaluation. Trouble transaction loads were distributed geographically across multiple Georgia Central Offices (COs) to reflect a realistic operating environment.

[5] Testing took place between 8:30 A.M. and 4:30 P.M. on the first day of testing and between 9:30 A.M. and 5:30 P.M. on the second day.

[6] For the purposes of this evaluation, peak volumes are a multiple applied to the average expected volume as defined in M&R-3: ECTA Normal Volume Evaluation.

The ECTA Peak Volume Performance Test evaluated each of the ECTA functional processes against two criteria: correctness of system responses and timeliness of system responses. The evaluation consisted of the following steps:

1. A Load Profile was developed outlining the timing between transactions per BellSouth's volume projections for YE01 (see section 2.4.1 for a detailed description).
2. The order and timing of each test transaction was outlined in two test sequence files, one for each eight-hour period. Each line in these files included the following:
   - Data to be entered into the ECTA Test Tool.
   - A line of UNIX test code to submit a transaction to the ECTA Test Tool.
3. Data input files and UNIX test scripts were developed from the test sequence files and uploaded to the BellSouth Test Tool system.
4. Each test script was executed to submit transactions to the ECTA Test Tool.
5. The ECTA Gateway system agent log and response messages to the ECTA Test Tool were analyzed to log transaction times and to verify expected system responses[7]. Exceptions or mismatched responses were flagged and investigated.
6. Data from Step 5 were compiled and mapped against the individual evaluation criteria.

2.6 Analysis Methods

The ECTA Peak Volume Performance Test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provide the framework of norms, standards, and guidelines for the ECTA Peak Volume Performance Test.

The data collected from transaction processing were analyzed employing the evaluation criteria referenced above.

[7] The ECTA Gateway automatically produces entries into the agent log as transactions occur. KCI monitored the agent log during testing and downloaded the test log for analysis directly from the ECTA server. The integrity of the ECTA agent log was verified in M&R-2: ECTA Functional Test.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VII-4.4: M&R-4 Evaluation Criteria and Results -- Presence of Functionality

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-4-1-1	The user receives the correct response when entering a trouble ticket into ECTA.	Satisfied	The correct response was received on 392 of 397 create request transactions. On five transactions, an error was received indicating that the LMOS system had assigned a trouble ticket ID that already existed in the ECTA Gateway database. These tickets, once created, were not accessible through the ECTA Gateway and had to be manually cancelled by BLS personnel. KCI issued Exception 15 to describe this defect. BLS responded by changing system maintenance parameters to purge old trouble report IDs from the ECTA Gateway database more frequently. KCI testing verified that BLS had indeed changed the purge parameter. Given this, KCI concluded that the likelihood of similar problems occurring in the future had been reduced to acceptable levels. Exception 15 is closed. See Exception 15 for additional information on this issue.
M&R-4-1-2	The user receives the correct response when requesting the status of a trouble ticket using ECTA.	Satisfied	The correct response was received for 144 out of 144 request status transactions.
M&R-4-1-3	The user receives the correct response when adding trouble information to a trouble ticket using ECTA.	Satisfied	The correct response was received for 160 out of 160 add transactions.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-4-1-4	The user receives the correct response when modifying trouble administration information using ECTA.	Satisfied	The correct response was received for 143 out of 143 modify transactions. 57 of the 143 transactions contained intentional errors. Correct error responses were received for these transactions.
M&R-4-1-5	The user receives the correct response when canceling a trouble ticket using ECTA.	Satisfied	The correct response was received for 319 of 319 cancel transactions.

Table VII-4.5: M&R-4 Evaluation Criteria and Results -- Timeliness of Response

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-4-2-1	The response when entering a trouble report using ECTA is within BLS published specifications[8].	Satisfied	The MTTR[9] for 392 create requests was 16 seconds. Four responses were received in excess of 30 seconds. All responses were received within 180 seconds.
M&R-4-2-2	The response when requesting trouble report status using ECTA is within BLS published specifications[8].	Satisfied	The MTTR for 144 status requests was less than 0.5 seconds. All responses were received within 30 seconds.
M&R-4-2-3	The response when adding trouble information using ECTA is within BLS published specifications[8].	Satisfied	The MTTR for 160 add requests was seven seconds. All responses were received within 30 seconds.

[8] BellSouth's *Joint Implementation Agreement (JIA) for Electronic Communications Trouble Administration (ECTA) Gateway for Local Service between CLEC and BellSouth*, Version 10/07/98 states "The end-to-end protocol target response time will be 30 seconds or less for 90% of the requests while handling 40 messages per minute. End to End [sic] maximum response time will not exceed 180 seconds." During this test, the maximum number of KCI messages per minute for any hour in the test was 22.9. KCI observed that there was no discernable difference in ECTA performance during the periods of highest message volume.

[9] Mean Time To Response (MTTR) measures the average response time for all valid transactions. Individual response times are calculated as the difference between the time that the transaction is entered (time T2 in Figure VII-3.1) and the time that the response comes back from the ECTA Gateway (time T7 in Figure VII-3.1).

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-4-2-4	The response when modifying trouble report administration information using ECTA is within BLS published specifications[8].	Satisfied	The MTTR for 86 modify requests was seven seconds. The MTTR for 57 modify requests with intentional errors was less than 0.5 seconds. All responses were received within 30 seconds.
M&R-4-2-5	The user receives the correct response when canceling a trouble ticket using ECTA[8].	Satisfied	The MTTR for 319 cancel requests was seven seconds. Two responses were received in excess of 30 seconds. All responses were received within 180 seconds.

E. Test Results: Trouble Analysis Facilitation Interface (TAFI) Capacity Management Evaluation (M&R-5)

1.0 Description

The Trouble Analysis Facilitation Interface (TAFI) Capacity Management Evaluation entailed a detailed review of BellSouth's methods and procedures in place to plan for and manage projected growth in the use of the TAFI interface. The objective of this evaluation was to determine the extent to which BellSouth methods and procedures to accommodate future increases in TAFI system transaction volumes and users are being actively managed.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section VII, "Maintenance & Repair Overview" for a complete description of the TAFI environment and the downstream systems accessed by TAFI.

TAFI systems operate in a midrange computing environment. BellSouth has outsourced midrange operations and application support. The Midrange Operations Group manages the hardware consisting of a cluster of midrange servers for the Residential Retail Maintenance Center (RRMC), Business Retail Maintenance Center (BRMC), and the Competitive Local Exchange Carrier (CLEC) users. A project manager is assigned responsibility for TAFI software and system interfaces. The BellSouth Transport Organization manages the day-to-day operations for the networks and collects data on network performance. The BellSouth Architecture & Standards group is responsible for network capacity planning.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was the systems capacity management process for TAFI. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table VII-5.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
TAFI Capacity Management	Data collection and reporting of business volumes, resource utilization, and performance monitoring	Adequacy and completeness of data collection and reporting	M&R-5-1-1 M&R-5-1-2 M&R-5-1-3 M&R-5-1-4 M&R-5-1-5 M&R-5-1-6
	Data verification and analysis of business volumes, resource utilization, and performance monitoring	Adequacy and completeness of data verification and analysis	M&R-5-1-7 M&R-5-1-8 M&R-5-1-9 M&R-5-1-10 M&R-5-1-11
	Systems and capacity planning	Adequacy and completeness of systems and capacity planning	M&R-5-1-12 M&R-5-1-13 M&R-5-1-14 M&R-5-1-15

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VII-5.2: Data Sources for TAFI Capacity Management Evaluation

Document	File Name	Location in Work Papers	Source
Competitive Local Exchange Carrier (CLEC) Trouble Analysis Facilitation Interface (TAFI) Specifications	TAFIspec.zip	M&R-5-A-1	BLS
NCR/SUN Platform TAFI Configuration	TAFI_cap.xls	M&R-5-A-2	BLS
CLEC TAFI Usage (1999)	USE_1999.xls	M&R-5-A-3	BLS
Cumulative Legacy Access Times for CLEC TAFI and BST TAFI	No Electronic Copy	M&R-5-A-4	BLS
CLEC TAFI Trouble Forecast	Forecast.xls	M&R-5-A-5	BLS
Interview Summary, November 3, 1999	Interview Summary_110399.doc	M&R-5-A-6	KCI
Server Usage Report, Application: TAFI	TAFI Usage.xls	M&R-5-A-7	BLS
CLEC TAFI Usage (2000)	USE_2000.xls	M&R-5-A-8	BLS
BellSouth Telecommunications Information Technology – Capacity Planning Methodology, Practices and Requirements – July, 1999	Cap_methodology.doc	PRE-6-A-1	BLS

Document	File Name	Location in Work Papers	Source
Interview Summary – BCS Transport	Interview_summary_ 121599.doc	PRE-6-A-2	KCI
BOSIP Network Diagrams	Atlntadc.ppt Bosipcor.ppt Brmghmdc.ppt Chrltdc.ppt Jcksondc.ppt Miamidc.ppt Nsvlledc.ppt	PRE-6-A-3	BLS
Birmingham BayNet Protocol Distribution	Bay1.gif	PRE-6-A-4	BLS
Monthly Average Utilization – Birmingham	FDDI1.gif	PRE-6-A-5	BLS
LAN Interface With In Utilization over 20%	LAN~1.htm	PRE-6-A-6	BLS
Average Latency Between RDC's Originating from Birmingham	Monthl~1.gif	PRE-6-A-7	BLS
Monthly Maximum IP Routes Known to Core	Monthl~2.gif	PRE-6-A-8	BLS
WAN Interface With In Utilization over 30%	SMDS1.gif	PRE-6-A-9	BLS
Daily Interface Performance Statistics for PNSCGS04 to JCVLBA19	Pnscgs04.gif	PRE-6-A-10	BLS
Total Traffic Across Core	WAN~1.htm	PRE-6-A-11	BLS
Server Utilization Report	Viewar~1.csv	PRE-6-A-12	BLS
Interview Summary – Transport Solutions	Interview_summary1 _121099.doc	PRE-6-A-13	KCI
Interview Summary – Asset Planing	Interview_summary1 _ 01202000.doc	PRE-6-A-14	KCI
BSCN – DS3 Equivalent Capacity	Bscncap.ppt	PRE-6-A-15	BLS
BellSouth Official Communications Special Services Facility Forecast for 2000 – 2002 and Update to the 1999 Forecast (Cover Letter)	Ss99ltr.doc	PRE-6-A-16	BLS
BellSouth Telecommunications Official Communications Service Requirements And Special Service Forecast	Bscn1999.doc	PRE-6-A-17	BLS
Capacity Planning Metrics for BST Assets Managed by BCS	Capaci~1.doc	PRE-6-A-18	BLS

Document	File Name	Location in Work Papers	Source
BellSouth Telecommunications Official Communications Service Requirements Mechanized Input Form	Bscnele.xls	PRE-6-A-19	BLS
Trunk Utilization Report	Rpdn_0110.doc	PRE-6-A-20	BLS
BellSouth Integrated Broadband Network Diagram	Ibtcp911.ppt	PRE-6-A-22	BLS
Transport Asset Planning – Infrastructures	Infraex.ppt	PRE-6-A-23	BLS
Interview Summary – Network Asset Planner	Interview_summary2_01202000.doc	PRE-6-A-24	BLS
Questionnaire designed to aid Capacity Planner and/or Technical Architect in characterizing an application workload	Config.xls	PRE-6-A-25	BLS
Interview Summary – Midrange Performance Monitoring	Interview_summary_01252000.doc	PRE-6-A-26	BLS
Printouts from Midrange Performance Data Warehouse	No Electronic Copy	PRE-6-A-27	BLS
BGSCOLL Problem Resolution Guide for Collection of Nodes	Probres.doc	PRE-6-A-28	BLS
Data Collected 11/19/99 – (Status Report, by project, of Midrange data collection tool installation)	Perforn1.doc	PRE-6-A-29	BLS
Interview Summary – Capacity Planner	Interview_summary_01272000.doc	PRE-6-A-30	KCI
TAFI Usage Report	TAFI Usage.xls	PRE-6-A-34	BLS
BOSIP Support Web Site Printouts – Homepage	No Electronic Copy	PRE-6-A-39	BLS
BOSIP Support Web Site Printouts – Shared BOSIP Network	No Electronic Copy	PRE-6-A-40	BLS
BOSIP Support Web Site Printouts – BCS Support	No Electronic Copy	PRE-6-A-41	BLS
BOSIP LAN and WAN Network Topology Overview	No Electronic Copy	PRE-6-A-42	BLS
Datakit Support Homepage and affiliated web pages	No Electronic Copy	PRE-6-A-43	BLS
TRENDview HTML Reports	No Electronic Copy	PRE-6-A-45	BLS

Document	File Name	Location in Work Papers	Source
TRENDview HTML Reports – Overutilized / Underutilized WAN Interfaces	No Electronic Copy	PRE-6-A-46	BLS
TRENDview HTML Reports – WAN interface utilization graphed over time	No Electronic Copy	PRE-6-A-47	BLS
Printouts from EDS Midrange Performance Data Warehouse Web Site	No Electronic Copy	PRE-6-A-48	BLS
Project List	No Electronic Copy	PRE-6-A-49	BLS
MLT Performance Data	No Electronic Copy	PRE-6-A-58	BLS
TAFI Performance Data	No Electronic Copy	PRE-6-A-59	BLS
Capacity Planning & Management Playbook (What we do & How we do it) Working Draft – Not Approved	No Electronic Copy	O&P-6-C-1	BLS
Critical Application Availability (Andersen & EDS)	KCIdata.xls	BLG-3-A-34	BLS
Application Availability	GA2000SLAs.xls	BLG-3-A-35	BLS
Interview Summary – Capacity Planner	Interview_summary2 _ 03292000.doc	O&P-6-A-12	BLS
Interview Summary2 – Product Manager	Interview_summary_ 04132000.doc	O&P-6-A-13	BLS
Interview Summary3 – Second Capacity Planner	Interview_summary2 _ 03292000.doc	O&P-6-A-14	KCI
Interview Summary – Product Support Manager	Interview_summary2 _04132000.doc	O&P-6-A-15	KCI
Interview Summary – Capacity Planning Project Manager	Interview_summary2 _04182000.doc	O&P-6-A-17	KCI
Interview Summary2 – Capacity Planning Manager	Interview_summary_ 04182000.doc	O&P-6-A-18	KCI
Memorandum to EDS Centralized System Administrators re: BTSI Capacity Planning	CSA Performance Letter.doc	PRE-6-C-20	BLS

Document	File Name	Location in Work Papers	Source
BTSI Capacity Upgrade Request / EDS Performance Analysis Workflow	BTSI Performance Process.doc	PRE-6-C-21	BLS
Project Charter: Encore SLA Performance	ProjCharter063000.doc	PRE-6-C-22	BLS
Memo to Capacity Planners re: CLEC SQM Performance information availability via the PMAP website	CapPlanmemo0700.doc	PRE-6-C-23	BLS
Capacity Management Analysis	Analysis of recent docs for Cap mgmt.doc	PRE-6-A-71	BLS
Billing Tower Interim Procedures	Critic~11.doc	PRE-6-A-72	BLS
Capacity Planning and Management Standard Operating Procedures	F-1-5 Capacity Plan.doc	PRE-6-A-74	BLS

2.4.1 Data Generation/Volumes

This test relied on documentation reviews and interviews with BellSouth personnel.

2.5 Evaluation Methods

The TAFI Capacity Management Evaluation began with a review of systems documentation and process flows for maintenance and repair activities. Interviews were conducted with key system administration personnel responsible for the operation of the TAFI systems. These interviews were supplemented with an analysis of BellSouth's documented capacity management procedures as well as an evaluation of related activities such as periodic capacity management reviews, system reconfiguration / load balancing, and load increase induced upgrades.

2.6 Analysis Methods

The TAFI Capacity Management Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the TAFI Capacity Management Evaluation.

The data collected from documentation reviews and interviews were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VII-5.3: M&R-5 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-5-1-1	There is an established process for capturing business and transaction volumes	Satisfied	TAFI transactions are tracked and reported monthly with breakouts by BRMC, RRMC, CLEC aggregate, and individual CLEC. The tracking process was described during the TAFI project manager interview. KCI was provided copies of CLEC TAFI Usage reports.
M&R-5-1-2	There is an established process for capturing resource utilization	Satisfied	TAFI runs on midrange processors. The Midrange Operations Group produces monthly reports on system resource utilization. The data collected to produce system resource utilization reports are maintained on their respective hardware platforms and are also downloaded to a personal computer system for further analysis. Tools and utilities run in the midrange environment to track and report resource utilization. BLS manages the network infrastructure and uses tools to collect and report utilization of network resources. Resource utilization data is reported on the BellSouth Open System Interconnect Protocol (BOSIP) home page and the Midrange Performance Monitoring Web site. These Web sites are available to and accessed by the personnel responsible for monitoring the performance of systems and networks. The processes for capturing resource utilization were described during interviews with members of the

Test Cross-Reference	Evaluation Criteria	Result	Comments
			groups responsible for these activities. In addition, KCI reviewed the BOSIP home page and the Midrange Performance Monitoring Web site. Sample resource utilization reports were collected and reviewed.
M&R-5-1-3	Resource utilization is monitored for system components and elements	Satisfied	For midrange systems, resource utilization is tracked and reported for CPU utilization, Memory utilization, Disk Input/Output (I/O), Network I/O, and file system utilization as evidenced by sample reports collected during a review of the Midrange Performance Monitoring Web site Resource utilization data are collected for the CPU, buffer and memory utilization for the routers, circuits utilization of the routers, Wide Area Network (WAN), Local Area Network (LAN) interfaces on routers, hubs, and the Fiber Distributed Data Interface (FDDI) rings. For the circuits and LAN interfaces, reports are generated for the devices with the highest utilization. The network resource utilization data collection process was described during interviews and verified through a review of the BOSIP home page and through the collection of sample reports.
M&R-5-1-4	Instrumentation and other tools are used to collect resource utilization data	Satisfied	The data used to produce system resource utilization reports are gathered through a variety of tools and utilities including Best/1, BGSCOLL, GlancePlus, System Activity Recorder (SAR), Unicenter TNG, and Tivoli. Reports from these tools are posted on the Midrange Performance Monitoring Web site. Tools running to collect network resource utilization data include TRENDsnmp (from DeskTalk), Spectrum Enterprise Manager,

Test Cross-Reference	Evaluation Criteria	Result	Comments
			OpenView, Nerve Center for BOSIP (the router network), and Starkeeper (for the Datakit networks). The tools used to collect resource utilization data were described during interviews with the TAFI project manager, Midrange Operations Group, and Network Support Team.
M&R-5-1-5	Performance is monitored at all applicable levels (e.g. network, database server, application server, client, etc.)	Satisfied	The Midrange Operations Groups monitor the performance of the application servers. In addition, the number of concurrent TAFI users is tracked by manually determining the total number of simultaneous users during peak times. The BLS Transport Team is responsible for day-to-day operations of the networks (comprised of components such as routers, ATM switches, and hubs). The Team is comprised of three groups: Protocol Analysis and Communication Support (PACS), which provides support and problem resolution for escalated network performance issues; Proactive Performance Analysis, which looks at the networks to prevent problems; and the Tools Group. The Team collects the data on network performance. BLS has also written scripts to collect data such as latency and packet loss across the BOSIP core. These activities were described during interviews with the TAFI project manager, Midrange Operations Group, and Network Support Team. In addition, sample performance reports were collected.
M&R-5-1-6	Instrumentation and other tools are used to monitor performance	Satisfied	The BOSIP home page and the Midrange Performance Monitoring Web sites are available to and accessed by the personnel responsible for monitoring the performance of systems and networks.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Best / 1, GlancePlus, SAR, Unicenter TNG, and Tivoli are tools used to monitor midrange performance. TRENDsnmp (from DeskTalk), Spectrum Enterprise Manager, OpenView, Nerve Center for BOSIP (the router network), and Starkeeper (for the Datakit networks) are tools used to monitor network performance. Performance monitoring activities were described during interviews and sample reports were provided to KCI.
M&R-5-1-7	There is an established process for forecasting business volumes and transactions	Satisfied	KCI conducted interviews with the TAFI project manager, midrange systems operations personnel, network operations manager, and capacity planning resources. During initial testing, KCI found that the process for forecasting TAFI business transaction volume consisted of a 1997 one-time exercise using information provided by BLS product managers, and forecast assumptions based on experience with BLS TAFI usage. Forecasting did not appear to be done on a regular basis. See Exception 25 for additional information on this issue. BLS developed an appendix to the *Capacity Planning & Management Playbook that* describes an ongoing transaction forecasting process for TAFI. The TAFI forecast is derived from the LSR forecast. Exception 25 is closed.
M&R-5-1-8	The business volume tracking and forecasting data is at an appropriate level of detail to use for capacity management	Satisfied	The 1997 CLEC TAFI Trouble Forecast projected five years out by month with yearly totals. It includes breakdowns by LNP, Resale, Unbundling, and Loop / Port products. The report projects CLEC TAFI transactions and estimates the numbers of Trouble Reports generated. KCI was provided with a copy of the CLEC TAFI Trouble Forecast.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			For BLS's network, capacity planning is done annually as part of the budgeting process and is also done for each application release. The planning process takes as input the Network Carrier Services (NCS) Marketing Group forecast, current volumes, trend data, and anticipated volume changes that may result from new system functionality. Capacity planning activities were described during interviews and KCI was provided with sample copies of the tools used internally to collect the data for the network forecast.
M&R-5-1-9	There is an established process for reviewing the performance of the business and transaction volume forecasting process	Satisfied	During initial testing, KCI found that actual business transaction volumes are monitored on a monthly basis to determine level of fit with forecasts. However, no established, ongoing process for reviewing the performance of the business forecasting process was observed for BLS's TAFI system. See Exception 25 for additional information on this issue. BLS developed an appendix to the *Capacity Planning & Management Playbook* specifying that BTSI will track and compare actual TAFI transaction volume against the forecast volume. In addition, a copy of a recent comparison of actual to forecast LSRs was provided. Exception 25 is closed.
M&R-5-1-10	There is an established process for verification and validation of performance data	Satisfied	Performance data are verified and validated by System Administrators and the Transport Group. Performance reports are reviewed regularly on the Midrange Performance Monitoring Web site, the BOSIP home page, and through on-line tools. The reports and tools define thresholds for utilization of system and network resources. Any values exceeding the established threshold are highlighted in the reports, investigated, and resolved.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Performance monitoring activities were described during interviews. KCI reviewed and collected sample performance and resource utilization reports.
M&R-5-1-11	Performance monitoring results are compared to service level agreements and other metrics	Satisfied	BLS and the third party managing the systems operations have contracts in place governing midrange system performance. These contracts define targets for the availability of TAFI. KCI was provided with the targets for system availability and copies of reports on vendor performance. Service Quality Measurements are defined for availability of CLEC TAFI (OSS-3. Interface Availability [Maintenance & Repair]) and for CLEC transaction intervals (OSS-4. Response Interval [Maintenance & Repair]). (See *BellSouth Service Quality Measurements Plan* document dated 07/2000). Performance results for these metrics are reported through the Performance Monitoring and Analysis Platform (PMAP). BLS's capacity planning process identifies PMAP data as an input for the midrange capacity planning process. BLS monitors its own network performance results. Network availability (i.e., trunk and node availability) results are tracked against established performance targets/objectives. The Transport Group works with the BLS Architecture & Standards (A&S) Group to address any network performance issues. Network performance activities were described during interviews with the BOSIP Support Manager.
M&R-5-1-12	The Capacity Management process is defined and documented	Satisfied	The processes that are executed for performance monitoring and capacity planning activities are defined and documented. The document, *BLS Telecommunications*

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Information Technology Capacity Planning Methodology, Practices, and Requirements July 1999, outlines a capacity planning process for the mainframe, midrange, and network environments. BLS's capacity planning process is part of the IT Engagement Process (ITEP). Process flows for the capacity planning process have been developed and are posted on the BLS IT Web site. These flows are also contained in a document entitled *Capacity Planning & Management Playbook.* The capacity planning process has been communicated within the Engineering & Design Group. The links within the Asset Management Group and the interfaces to other organizations are defined in the process documentation. BLS is refining the definition of process links between the remaining functional groups. Documentation depicting the current mainframe performance monitoring process was provided to KCI. Midrange and network performance monitoring is addressed in the capacity planning and management documentation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-5-1-13	Resource usage and capacity is considered in the planning process for capacity management	Satisfied	Midrange server utilization reports are examined on an ongoing basis and as part of the quarterly capacity planning process. The resource utilization data is aggregated and analyzed by RRMC, BRMC, and CLEC users on a monthly basis. Resource utilization is trended and compared to known system limits to determine when the addition of capacity is warranted. LAN / WAN interface and FDDI utilization reports are examined on an ongoing basis as part of the network capacity planning process. These capacity planning activities were described during interviews.
M&R-5-1-14	Performance monitoring results are considered in the planning process for capacity management	Satisfied	The number of concurrent users is tracked and trended against the known theoretical concurrent user limits for each TAFI system. Midrange performance monitoring reports are examined on an ongoing basis and as part of the quarterly capacity planning process. Application development, system administration, and production support resources participate in the capacity planning process. The BLS Architecture & Standards (A&S) Group is responsible for network capacity planning. The BLS Transport Team analyzes network performance data and resolves capacity issues. If unable to resolve capacity issues, the Transport Team alerts the A&S Group which purchases equipment or makes architecture changes in order to increase or adjust system capacity. These capacity planning activities were described during interviews.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-5-1-15	Capacity Management procedures define performance metrics to trigger the addition of capacity, load rebalancing or system tuning	Satisfied	Thresholds have been set for resource utilization and performance measures. Values that exceed the established thresholds are flagged and investigated. Systems and capacity planning for TAFI is formally conducted during quarterly user group meetings. CLEC representatives provide feedback to assist BellSouth in understanding business volume impacts, response rates, etc. The outcomes from these meetings include recommendations to re-balance / re-allocate system components, purchase additional hardware, and / or upgrade existing hardware. TAFI was recently upgraded and moved to a new computer. Procedures for performance management were described during interviews. In addition, KCI viewed and collected sample reports from the Midrange Performance Monitoring Web site and the BOSIP home page.

F. Test Results: Electronic Communications Trouble Administration Capacity Management Evaluation (M&R-6)

1.0 Description

The Electronic Communications Trouble Administration (ECTA) Capacity Management Evaluation entailed a detailed review of the methods and procedures in place to plan for and manage projected growth in the use of the ECTA interface. The objective of this evaluation was to determine the extent to which methods and procedures to accommodate future increases in ECTA system transaction volumes and users are being actively managed.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section VII, "Maintenance & Repair Overview" for a complete description of the ECTA environment and the downstream systems accessed by ECTA.

ECTA systems operate in a midrange environment. BellSouth has outsourced midrange operations and application support. The Midrange Operations Group manages the hardware, and the Application Support Team manages the software for ECTA. The BellSouth Transport Organization manages the day-to-day operations of the networks and collects data on network performance.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was the systems capacity management process for ECTA. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table VII-6.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
ECTA Capacity Management	Data collection and reporting of business volumes, resource utilization, and performance monitoring	Adequacy and completeness of data collection and reporting	M&R-6-1-1 M&R-6-1-2 M&R-6-1-3 M&R-6-1-4 M&R-6-1-5 M&R-6-1-6

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
	Data verification and analysis of business volumes, resource utilization, and performance monitoring	Adequacy and completeness of data verification and analysis	M&R-6-1-7 M&R-6-1-8 M&R-6-1-9 M&R-6-1-10 M&R-6-1-11
	Systems and capacity planning	Adequacy and completeness of systems and capacity planning	M&R-6-1-12 M&R-6-1-13 M&R-6-1-14 M&R-6-1-15

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VII-6.2: Data Sources for ECTA Capacity Management Evaluation

Document	File Name	Location in Work Papers	Source
Electronic Communications Trouble Administration (ECTA) Release 5.0 Requirements Specifications	No electronic copy	M&R-6-A-1	BLS
ECTA Usage Report	Usage~1.xls	M&R-6-A-2	BLS
Interview Summary, November 3, 1999	Interview Summary_110399.doc	M&R-5-A-6	KCI
Joint Implementation Agreement (JIA) for Electronic Communications Trouble Administration (ECTA) Gateway for Local Service between CLEC and BellSouth **Draft**	Clec_jia.zip	M&R-6-A-3	BLS
BellSouth Telecommunications Information Technology – Capacity Planning Methodology, Practices and Requirements – July, 1999	Cap_methodology.doc	PRE-6-A-1	BLS
Interview Summary – BCS Transport	Interview_summary_121599.doc	PRE-6-A-2	KCI
BOSIP Network Diagrams	Atlntadc.ppt Bosipcor.ppt Brmghmdc.ppt Chrltdc.ppt Jcksondc.ppt Miamidc.ppt Nsvlledc.ppt	PRE6-A-3	BLS
Birmingham BayNet Protocol Distribution	Bay1.gif	PRE-6-A-4	BLS
Monthly Average Utilization - Birmingham	FDDI1.gif	PRE-6-A-5	BLS

Document	File Name	Location in Work Papers	Source
LAN Interface With In Utilization over 20%	LAN~1.htm	PRE-6-A-6	BLS
Average Latency Between RDC's Originating from Birmingham	Monthl~1.gif	PRE-6-A-7	BLS
Monthly Maximum IP Routes Known to Core	Monthl~2.gif	PRE-6-A-8	BLS
WAN Interface With In Utilization over 30%	SMDS1.gif	PRE-6-A-9	BLS
Daily Interface Performance Statistics for PNSCGS04 to JCVLBA19	Pnscgs04.gif	PRE-6-A-10	BLS
Total Traffic Across Core	WAN~1.htm	PRE-6-A-11	BLS
Server Utilization Report	Viewar~1.csv	PRE-6-A-12	BLS
Interview Summary – Transport Solutions	Interview_summary1_ 121099.doc	PRE-6-A-13	KCI
Interview Summary – Asset Planing	Interview_summary1_ 01202000.doc	PRE-6-A-14	KCI
BSCN – DS3 Equivalent Capacity	Bscncap.ppt	PRE-6-A-15	BLS
BellSouth Official Communications Special Services Facility Forecast for 2000 – 2002 and Update to the 1999 Forecast (Cover Letter)	Ss99ltr.doc	PRE-6-A-16	BLS
BellSouth Telecommunications Official Communications Service Requirements And Special Service Forecast	Bscn1999.doc	PRE-6-A-17	BLS
Capacity Planning Metrics for BST Assets Managed by BCS	Capaci~1.doc	PRE-6-A-18	BLS
BellSouth Telecommunications Official Communications Service Requirements Mechanized Input Form	Bscnele.xls	PRE-6-A-19	BLS
Trunk Utilization Report	Rpdn_0110.doc	PRE-6-A-20	BLS
BellSouth Integrated Broadband Network Diagram	Ibtcp911.ppt	PRE-6-A-22	BLS
Transport Asset Planning – Infrastructures	Infraex.ppt	PRE-6-A-23	BLS
Interview Summary – Network Asset Planner	Interview_summary2_ 01202000.doc	PRE-6-A-24	BLS
Questionnaire designed to aid Capacity Planner and / or Technical Architect in characterizing an application workload	Config.xls	PRE-6-A-25	BLS

Document	File Name	Location in Work Papers	Source
Interview Summary – Midrange Performance Monitoring	Interview_summary_01252000.doc	PRE-6-A-26	BLS
Data Collected 11/19/99 – (Status Report, by project, of Midrange data collection tool installation)	Perforn1.doc	PRE-6-A-29	BLS
Printouts from Midrange Performance Data Warehouse	No Electronic Copy	PRE-6-A-27	BLS
BGSCOLL Problem Resolution Guide for Collection of Nodes	Probres.doc	PRE-6-A-28	BLS
Interview Summary – Capacity Planner	Interview_summary_01272000.doc	PRE-6-A-30	KCI
BOSIP Support Web Site Printouts – Homepage	No Electronic Copy	PRE-6-A-39	BLS
BOSIP Support Web Site Printouts – Shared BOSIP Network	No Electronic Copy	PRE-6-A-40	BLS
BOSIP Support Web Site Printouts – BCS Support	No Electronic Copy	PRE-6-A-41	BLS
BOSIP LAN and WAN Network Topology Overview	No Electronic Copy	PRE-6-A-42	BLS
Datakit Support Homepage and affiliated web pages	No Electronic Copy	PRE-6-A-43	BLS
TRENDview HTML Reports	No Electronic Copy	PRE-6-A-45	BLS
TRENDview HTML Reports – Overutilized/Underutilized WAN Interfaces	No Electronic Copy	PRE-6-A-46	BLS
TRENDview HTML Reports – WAN interface utilization graphed over time	No Electronic Copy	PRE-6-A-47	BLS
Printouts from EDS Midrange Performance Data Warehouse Web Site	No Electronic Copy	PRE-6-A-48	BLS
Project List	No Electronic Copy	PRE-6-A-49	BLS
ELBO Performance Data	No Electronic Copy	PRE-6-A-50	BLS
LMOS Performance Data	No Electronic Copy	PRE-6-A-53	BLS
Capacity Planning & Management Playbook (What we do & How we do it) Working Draft – Not Approved	No Electronic Copy	O&P-6-C-1	BLS
Critical Application Availability (Andersen & EDS)	KCIdata.xls	BLG-3-A-34	BLS
Application Availability	GA2000SLAs.xls	BLG-3-A-35	BLS

Document	File Name	Location in Work Papers	Source
Memorandum to EDS Centralized System Administrators re: BTSI Capacity Planning	CSA Performance Letter.doc	PRE-6-C-20	BLS
BTSI Capacity Upgrade Request / EDS Performance Analysis Workflow	BTSI Performance Process.doc	PRE-6-C-21	BLS
Project Charter: Encore SLA Performance	ProjCharter063000.doc	PRE-6-C-22	BLS
Memo to Capacity Planners re: CLEC SQM Performance information availability via the PMAP website	CapPlanmemo0700.doc	PRE-6-C-23	BLS
Capacity Management Analysis	Analysis of recent docs for Cap mgmt.doc	PRE-6-A-71	BLS
Billing Tower Interim Procedures	Critic~11.doc	PRE-6-A-72	BLS
Capacity Planning and Management Standard Operating Procedures	F-1-5 Capacity Plan.doc	PRE-6-A-74	BLS

2.4.1 Data Generation/Volumes

This test relied on documentation reviews and interviews with BellSouth personnel.

2.5 Evaluation Methods

The ECTA Capacity Management Evaluation began with a review of systems documentation and process flows for maintenance and repair activities. Interviews were conducted with key system administration personnel responsible for the operation of the ECTA system. These interviews were supplemented with an analysis of BellSouth's documented capacity management procedures as well as with collection of evidence of related activities such as periodic capacity management reviews, system reconfiguration / load balancing, and load increase induced upgrades.

2.6 Analysis Methods

The ECTA Capacity Management Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the ECTA Capacity Management Evaluation.

The data collected from documentation reviews and interviews were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VII-6.3: M&R6 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-6-1-1	There is an established process for capturing business and transaction volumes	Satisfied	ECTA transactions are tracked daily and reported year-to-date. The ECTA hardware platform is monitored for transaction volume. ECTA reports are produced and monitored monthly. The ECTA system is currently used by only one CLEC and generates approximately 300 transactions per month. The tracking process was described during the ECTA project manager interview. KCI was provided a copy of the ECTA Usage report.
M&R-6-1-2	There is an established process for capturing resource utilization	Satisfied	ECTA runs on midrange processors. The Midrange Operations Group produces monthly reports on system resource utilization. The data collected to produce system resource utilization reports are maintained on their respective hardware platforms and are also downloaded to a personal computer system for further analysis. Tools and utilities run in the midrange environment to track and report resource utilization. BLS manages the network infrastructure and uses tools to collect and report utilization of network resources. Resource utilization data is reported on the BellSouth Open System Interconnect Protocol (BOSIP) home page and the Midrange Performance Monitoring Web site. These Web sites are available to, and accessed by, the personnel responsible for

Test Cross-Reference	Evaluation Criteria	Result	Comments
			monitoring the performance of systems and networks. The processes for capturing resource utilization were described during interviews with members of the groups responsible for these activities. In addition, KCI reviewed the BOSIP home page and the Midrange Performance Monitoring Web site. Sample resource utilization reports were collected and reviewed.
M&R-6-1-3	Resource utilization is monitored for system components and elements	Satisfied	For midrange systems, resource utilization is tracked and reported for CPU utilization, Memory utilization, Disk Input/Output (I/O), Network I/O, and file system utilization as evidenced by sample reports collected during a review of the Midrange Performance Monitoring Web site. Resource utilization data is collected for the CPU, buffer and memory utilization for the routers, circuits utilization of the routers, Wide Area Network(WAN), Local Area Network (LAN) interfaces on routers, hubs and the Fiber Distributed Data Interface (FDDI) rings. For the circuits and LAN interfaces, reports are generated for the devices with the highest utilization. The network resource utilization data collection process was described during interviews and verified through a review of the BOSIP home page and through the collection of sample reports.
M&R-6-1-4	Instrumentation and other tools are used to collect resource utilization data	Satisfied	The data used to produce system resource utilization reports are gathered through a variety of tools and utilities including Best/1, BGSCOLL, GlancePlus, System Activity Recorder (SAR), Unicenter TNG, and Tivoli. Reports from these tools are posted on the Midrange Performance Monitoring Web site.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Tools running to collect network resource utilization data include TRENDsnmp (from DeskTalk), Spectrum Enterprise Manager, OpenView, Nerve Center for BOSIP (the router network), and Starkeeper (for the Datakit networks). The tools used to collect resource utilization data were described during interviews with the ECTA project manager, Midrange Operations Group, and Network Support Team.
M&R-6-1-5	Performance is monitored at all applicable levels (e.g. network, database server, application server, client, etc.)	Satisfied	The Midrange Operations Group monitors the performance of the application servers. The BLS Transport Team is responsible for day-to-day operations of the networks (comprised of components such as routers, ATM switches, and hubs.). The team is comprised of three groups: Protocol Analysis and Communication Support (PACS), which provides support and problem resolution for escalated network performance issues; Proactive Performance Analysis, which looks at the networks to prevent problems; and the Tools Group. This team collects the data on network performance. BLS has also written scripts to collect data such as latency and packet loss across the BOSIP core. These activities were described during interviews with the ECTA project manager, Midrange Operations Group, and the Network Support Team. In addition, sample performance reports were collected.
M&R-6-1-6	Instrumentation and other tools are used to monitor performance	Satisfied	The BOSIP home page and the Midrange Performance Monitoring Web sites are available to and accessed by the personnel responsible for monitoring the performance of systems and networks.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			Best/1, GlancePlus, SAR, Unicenter TNG, and Tivoli are tools used to monitor midrange performance. TRENDsnmp (from DeskTalk), Spectrum Enterprise Manager, OpenView, Nerve Center for BOSIP (the router network), and Starkeeper (for the Datakit networks) are tools used to monitor network performance. Performance monitoring activities were described during interviews and sample reports were provided to KCI.
M&R-6-1-7	There is an established process for forecasting business volumes and transactions	Satisfied	During initial testing, no established, ongoing process for forecasting business volumes and transactions was observed for BLS's ECTA system. See Exception 25 for additional information on this issue. Retest activities revealed that the ECTA Joint Implementation Agreement (JIA) requests from the CLEC a forecast for the number of POTS and WFA Basic and Complex trouble reports per year. KCI found no evidence of a process for regularly collecting CLEC forecasting data; this exercise appears to be limited to the initial JIA. However, BLS has indicated that current ECTA transaction volume continues to be well below engineered system capacity, processes are established to monitor system performance, and triggers are in place to initiate capacity planning activities if system resource utilization increases. In addition, BLS developed an appendix to the *Capacity Planning & Management Playbook*, which describes an ongoing, annual forecasting process for ECTA. Exception 25 is closed.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-6-1-8	The business volume tracking and forecasting data is at an appropriate level of detail to use for capacity management	Satisfied	During initial testing, no established, ongoing process for forecasting business volumes and transactions was observed for BLS's ECTA system. See Exception 25 for additional information on this issue. Retest activities revealed that the ECTA JIA requests a CLEC forecast of POTS and WFA Basic and Complex trouble reports per year. This data could be used to predict future ECTA workload and should be adequate for capacity planning. Exception 25 is closed.
M&R-6-1-9	There is an established process for reviewing the performance of the business and transaction volume forecasting process	Satisfied	During initial testing, no established, ongoing process for forecasting business volumes and transactions was observed for BLS's ECTA system. See Exception 25 for additional information on this issue. BLS developed an appendix to the *Capacity Planning & Management Playbook* specifying that BTSI will track and compare actual ECTA transaction volume against the forecast volume. Current monthly ECTA transaction volume continues to be well below engineered system capacity, processes are established to monitor system performance, and triggers are in place to initiate capacity planning activities if system resource utilization increases. Exception 25 is closed.
M&R-6-1-10	There is an established process for verification and validation of performance data	Satisfied	Performance data are verified and validated by System Administrators and the Transport Group. Performance reports are reviewed regularly on the Midrange Performance Monitoring Web site, the BOSIP home page, and through on-line tools. The reports and tools define thresholds for utilization of system and network resources. Any values exceeding the established threshold are highlighted in the reports, investigated, and resolved. Performance monitoring activities

Test Cross-Reference	Evaluation Criteria	Result	Comments
			were described during interviews. KCI reviewed and collected sample performance and resource utilization reports.
M&R-6-1-11	Performance monitoring results are compared to service level agreements and other metrics	Satisfied	BLS and the third party managing the systems operations have contracts in place governing midrange system performance. These contracts define targets for system availability for ECTA. KCI was provided with the targets for system availability and copies of reports on vendor performance. Performance metrics for individual CLECs are defined in the Joint Implementation Agreements for ECTA, however, KCI did not have access to these contracts and cannot evaluate whether or not these measures are currently being fulfilled. Service Quality Measurements (SQM) are defined for availability of ECTA (OSS-3. Interface Availability [Maintenance & Repair]) and for transaction intervals (OSS-4. Response Interval [Maintenance & Repair]). Performance results for these metrics are reported through the Performance Monitoring and Analysis Platform (PMAP). (See *BellSouth Service Quality Measurements Plan* document dated 07/2000.) BLS's capacity planning process identifies PMAP data as input for the midrange capacity planning process. BLS monitors its own network performance results. Network availability (i.e., trunk and node availability) results are tracked against established performance targets/objectives. The Transport Group works with the BLS Architecture & Standards (A&S) Group to address any network performance issues. Network performance activities were described during interviews with

Test Cross-Reference	Evaluation Criteria	Result	Comments
			the BOSIP Support Manager.
M&R-6-1-12	Capacity Management process is defined and documented	Satisfied	The processes that are executed for performance monitoring and capacity planning activities are defined and documented. The document, *BLS Telecommunications Information Technology Capacity Planning Methodology, Practices, and Requirements July 1999*, outlines a capacity planning process for the mainframe, midrange, and network environments. BLS's capacity planning process is part of the IT Engagement Process (ITEP). Process flows for the capacity planning process have been developed and are posted on the BLS IT Web site. These flows are also contained in a document entitled *Capacity Planning & Management Playbook.* The capacity planning process has been communicated within the Engineering & Design Group. The links within the Asset Management Group and the interfaces to other organizations are defined in the process documentation. BLS is refining the definition of process links between the remaining functional groups. Documentation depicting the current mainframe performance monitoring process was provided to KCI. Midrange and network performance monitoring is addressed in the capacity planning and management documentation.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-6-1-13	Resource usage and capacity is considered in the planning process for capacity management	Satisfied	Midrange server utilization reports are examined on an ongoing basis and as part of the quarterly capacity planning process. LAN / WAN interface and FDDI utilization reports are examined on an ongoing basis as part of the network capacity planning process. These capacity planning activities were described during interviews.
M&R-6-1-14	Performance monitoring results are considered in the planning process for capacity management	Satisfied	Midrange performance monitoring reports are examined on an ongoing basis and as part of the quarterly capacity planning process. The BLS Architecture & Standards (A&S) Group is responsible for network capacity planning. The BLS Transport Team analyzes network performance data and resolves capacity issues. If unable to resolve capacity issues, the Transport Team alerts the A&S Group, which purchases equipment or makes architecture changes in order to increase or adjust system capacity. These capacity planning activities were described during interviews.
M&R-6-1-15	Capacity Management procedures define performance metrics to trigger the addition of capacity, load rebalancing or system tuning	Satisfied	Thresholds have been set for resource utilization and performance measures. Values that exceed the established thresholds are flagged and investigated. Procedures for performance management were described during interviews. In addition, KCI viewed and collected sample reports from the Midrange Performance Monitoring Web site and the BOSIP home page.

G. Test Results: Maintenance and Repair Performance Measures Evaluation (M&R - 7)

1.0 Description

The Maintenance and Repair Performance Measures Evaluation (M&R-7) involved both (1) Calculation and Reporting Validation, and (2) Data Comparison for the maintenance and repair-related Service Quality Measurements (SQMs) produced by BellSouth. The activities undertaken to execute Performance Measures Evaluations are described in Section III-F, "Performance Measures Evaluation Overview."

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

The process description for metrics data processing and reporting at BellSouth is contained in Section III-F, "Performance Measures Evaluation Overview."

2.2 *Scenarios*

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target for Calculation and Reporting Validation is the set of values reported by BellSouth for maintenance and repair Service Quality Measurements (SQMs). The test target for Data Comparison is the raw data that BellSouth produces for SQM validation purposes. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in Section 3.1 " Results & Analysis."

Table VII-7.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Missed Repair Appointments	POTS – Residence, Business Design PBX, CENTREX, and ISDN UNE 2 Wire Loop (Design and Non-Design) UNE Loop Other (Design and Non-Design) UNE Other (Design and Non-Design) Dispatch / No Dispatch	BLS reports are correctly disaggregated and complete.	M&R-7-1-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	M&R-7-1-2
		Test data collected by KCI agree with BLS raw data.	M&R-7-1-3
Customer Trouble Report Rate	POTS – Residence, Business Design PBX, CENTREX, and ISDN UNE 2 Wire Loop (Design and Non-Design) UNE Loop Other (Design and Non-Design) UNE Other (Design and Non-Design) Dispatch / No Dispatch	BLS reports are correctly disaggregated and complete.	M&R-7-2-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	M&R-7-2-2
		Test data collected by KCI agree with BLS raw data.	M&R-7-2-3
Maintenance Average Duration	POTS – Residence, Business Design PBX, CENTREX, and ISDN UNE 2 Wire Loop (Design and Non-Design) UNE Loop Other (Design and Non-Design) UNE Other (Design and Non-Design) Dispatch / No Dispatch	BLS reports are correctly disaggregated and complete.	M&R-7-3-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	M&R-7-3-2
		Test data collected by KCI agree with BLS raw data.	M&R-7-3-3

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Percent Repeat Troubles within 30 days	POTS – Residence, Business Design PBX, CENTREX, and ISDN UNE 2 Wire Loop (Design and Non-Design) UNE Loop Other (Design and Non-Design) UNE Other (Design and Non-Design) Dispatch / No Dispatch	BLS reports are correctly disaggregated and complete.	M&R-7-4-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	M&R-7-4-2
		Test data collected by KCI agree with BLS raw data.	M&R-7-4-3
Out of Service > 24 hours	POTS – Residence, Business Design PBX, CENTREX, and ISDN UNE 2 Wire Loop (Design and Non-Design) UNE Loop Other (Design and Non-Design) UNE Other (Design and Non-Design) Dispatch / No Dispatch	BLS reports are correctly disaggregated and complete.	M&R-7-5-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	M&R-7-5-2
		Test data collected by KCI agree with BLS raw data.	M&R-7-5-3
OSS Interface Availability[1]	Not Disaggregated	BLS reports are correctly disaggregated and complete.	M&R-7-6-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	M&R-7-6-2
OSS Response Interval and Percentages[1]	Not Disaggregated	BLS reports are correctly disaggregated and complete.	M&R-7-7-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	M&R-7-7-2

[1] This SQM is reported only for the CLEC aggregate and is not specific to the KCI test CLEC.

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Average Answer Time – Repair Centers[1]	Not Disaggregated	BLS reports are correctly disaggregated and complete.	M&R-7-8-1
		KCI-calculated SQM values agree with BLS-reported SQM values.	M&R-7-8-2

2.4 Data Sources

The data collected for the Maintenance & Repair Performance Measures Evaluation are summarized in the table below.

Table VII-7.2: Data Sources for Maintenance & Repair Performance Measures Evaluation

Document	File Name	Location in Work Papers	Source
November 1999 Raw Data – Missed Repair Appointments – BLS Proprietary	maint_missrepapp_ KPMG_november_ rawdata.txt	M&R-7-A-3	BLS (Performance Measurement Analysis Platform "PMAP" Web site)
December 1999 Raw Data – Missed Repair Appointments – BLS Proprietary	M&R Missed Repair Appointments.txt	M&R-7-B-3	BLS (PMAP Web site)
January 2000 Raw Data – Missed Repair Appointments – BLS Proprietary	M&R Missed Repair Appointments.txt	M&R-7-C-3	BLS (PMAP Web site)
February 2000 Raw Data – Missed Repair Appointments – BLS Proprietary	Maintenance Missed Repair Appointments.txt	M&R-7-E-3	BLS (PMAP Web site)
March 2000 Raw Data – Missed Repair Appointments – BLS Proprietary	Maintenance Missed Repair Appointments.txt	M&R-7-F-3	BLS (PMAP Web site)
April 2000 Raw Data – Missed Repair Appointments – BLS Proprietary	Maintenance Missed Repair Appointments.txt	M&R-7-G-3	BLS (PMAP Web site)
May 2000 Raw Data – Missed Repair Appointments – BLS Proprietary	Maintenance Missed Repair Appointments.txt	M&R-7-H-3	BLS (PMAP Web site)
June 2000 Raw Data – Missed Repair Appointments – BLS Proprietary	Maintenance Missed Repair Appointments.txt	M&R-7-I-3	BLS (PMAP Web site)
July 2000 Raw Data – Missed Repair Appointments – BLS Proprietary	Maintenance Missed Repair Appointments.txt	M&R-7-J-3	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
August 2000 Raw Data – Missed Repair Appointments – BLS Proprietary	Maintenance Missed Repair Appointments.txt	M&R-7-J-38	BLS (PMAP Web site)
September 2000 Raw Data – Missed Repair Appointments – BLS Proprietary	Maintenance Missed Repair Appointments.txt	M&R-7-K-3	BLS (PMAP Web site)
October 2000 Raw Data – Missed Repair Appointments – BLS Proprietary	Maintenance Missed Repair Appointments.txt	M&R-7-K-38	BLS (PMAP Web site)
November 2000 Raw Data – Missed Repair Appointments – BLS Proprietary	Maintenance Missed Repair Appointments.txt	M&R-7-L-3	BLS (PMAP Web site)
December 2000 Raw Data – Missed Repair Appointments – BLS Proprietary	Maintenance Missed Repair Appointments.txt	M&R-7-L-38	BLS (PMAP Web site)
November 1999 Raw Data – Customer Trouble Report Rate – BLS Proprietary	maint_custroubrep rate_KPMG_novem ber_rawdata.txt	M&R-7-A-10	BLS (PMAP Web site)
November 1999 Raw Data – Lines in Service – BLS Proprietary	maint_linesinserv_ KPMG_november_ rawdata.txt	M&R-7-A-10	BLS (PMAP Web site)
December 1999 Raw Data – Customer Trouble Report Rate – BLS Proprietary	M&R_Cust_Trbl_R pt_Rate.txt	M&R-7-B-10	BLS (PMAP Web site)
December 1999 Raw Data – Lines in Service – BLS Proprietary	M&R_Lines_in_Ser vice.txt	M&R-7-B-10	BLS (PMAP Web site)
January 2000 Raw Data – Customer Trouble Report Rate – BLS Proprietary	M&R Cust Trbl Rpt Rate.txt	M&R-7-C-10	BLS (PMAP Web site)
January 2000 Raw Data – Lines in Service – BLS Proprietary	M&R Lines in Service.txt	M&R-7-C-10	BLS (PMAP Web site)
February 2000 Raw Data – Customer Trouble Report Rate – BLS Proprietary	Maintenance Customer Trouble Report Rate.txt	M&R-7-E-10	BLS (PMAP Web site)
February 2000 Raw Data – Lines in Service – BLS Proprietary	Maintenance Lines in Service.txt	M&R-7-E-10	BLS (PMAP Web site)
March 2000 Raw Data – Customer Trouble Report Rate – BLS Proprietary	Maintenance Customer Trouble Report Rate.txt	M&R-7-F-10	BLS (PMAP Web site)
March 2000 Raw Data – Lines in Service – BLS Proprietary	Maintenance Lines in Service.txt	M&R-7-F-10	BLS (PMAP Web site)
April 2000 Raw Data – Customer Trouble Report Rate – BLS Proprietary	Maintenance Customer Trouble Report Rate.txt	M&R-7-G-10	BLS (PMAP Web site)
April 2000 Raw Data – Lines in Service – BLS Proprietary	Maintenance Lines in Service.txt	M&R-7-G-10	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
May 2000 Raw Data – Customer Trouble Report Rate – BLS Proprietary	Maintenance Customer Trouble Report Rate.txt	M&R-7-H-10	BLS (PMAP Web site)
May 2000 Raw Data – Lines in Service – BLS Proprietary	Maintenance Lines in Service.txt	M&R-7-H-10	BLS (PMAP Web site)
June 2000 Raw Data – Customer Trouble Report Rate – BLS Proprietary	Maintenance Customer Trouble Report Rate.txt	M&R-7-I-10	BLS (PMAP Web site)
June 2000 Raw Data – Lines in Service – BLS Proprietary	Maintenance Lines in Service.txt	M&R-7-I-10	BLS (PMAP Web site)
July 2000 Raw Data – Customer Trouble Report Rate – BLS Proprietary	Maintenance Customer Trouble Report Rate.txt	M&R-7-J-10	BLS (PMAP Web site)
July 2000 Raw Data – Lines in Service – BLS Proprietary	Maintenance Lines in Service.txt	M&R-7-J-10	BLS (PMAP Web site)
August 2000 Raw Data – Customer Trouble Report Rate – BLS Proprietary	Maintenance Customer Trouble Report Rate.txt	M&R-7-J-45	BLS (PMAP Web site)
August 2000 Raw Data – Lines in Service – BLS Proprietary	Maintenance Lines in Service.txt	M&R-7-J-45	BLS (PMAP Web site)
September 2000 Raw Data – Customer Trouble Report Rate – BLS Proprietary	Maintenance Customer Trouble Report Rate.txt	M&R-7-K-10	BLS (PMAP Web site)
September 2000 Raw Data – Lines in Service – BLS Proprietary	Maintenance Lines in Service.txt	M&R-7-K-10	BLS (PMAP Web site)
October 2000 Raw Data – Customer Trouble Report Rate – BLS Proprietary	Maintenance Customer Trouble Report Rate.txt	M&R-7-K-45	BLS (PMAP Web site)
October 2000 Raw Data – Lines in Service – BLS Proprietary	Maintenance Lines in Service.txt	M&R-7-K-45	BLS (PMAP Web site)
November 2000 Raw Data – Customer Trouble Report Rate – BLS Proprietary	Maintenance Customer Trouble Report Rate.txt	M&R-7-L-10	BLS (PMAP Web site)
November 2000 Raw Data – Lines in Service – BLS Proprietary	Maintenance Lines in Service.txt	M&R-7-L-10	BLS (PMAP Web site)
December 2000 Raw Data – Customer Trouble Report Rate – BLS Proprietary	Maintenance Customer Trouble Report Rate.txt	M&R-7-L-45	BLS (PMAP Web site)
December 2000 Raw Data – Lines in Service – BLS Proprietary	Maintenance Lines in Service.txt	M&R-7-L-45	BLS (PMAP Web site)
November 1999 Raw Data – Maintenance Average Duration – BLS Proprietary	maint_avedur_KPMG_november_rawdata.txt	M&R-7-A-17	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
December 1999 Raw Data – Maintenance Average Duration – BLS Proprietary	M&R Avg Duration.txt	M&R-7-B-17	BLS (PMAP Web site)
January 2000 Raw Data – Maintenance Average Duration – BLS Proprietary	M&R Avg Duration.txt	M&R-7-C-17	BLS (PMAP Web site)
February 2000 Raw Data – Maintenance Average Duration – BLS Proprietary	Maintenance Average Duration.txt	M&R-7-E-17	BLS (PMAP Web site)
March 2000 Raw Data – Maintenance Average Duration – BLS Proprietary	Maintenance Average Duration.txt	M&R-7-F-17	BLS (PMAP Web site)
April 2000 Raw Data – Maintenance Average Duration – BLS Proprietary	Maintenance Average Duration.txt	M&R-7-G-17	BLS (PMAP Web site)
May 2000 Raw Data – Maintenance Average Duration – BLS Proprietary	Maintenance Average Duration.txt	M&R-7-H-17	BLS (PMAP Web site)
June 2000 Raw Data – Maintenance Average Duration – BLS Proprietary	Maintenance Average Duration.txt	M&R-7-I-17	BLS (PMAP Web site)
July 2000 Raw Data – Maintenance Average Duration – BLS Proprietary	Maintenance Average Duration.txt	M&R-7-J-17	BLS (PMAP Web site)
August 2000 Raw Data – Maintenance Average Duration – BLS Proprietary	Maintenance Average Duration.txt	M&R-7-J-52	BLS (PMAP Web site)
September 2000 Raw Data – Maintenance Average Duration – BLS Proprietary	Maintenance Average Duration.txt	M&R-7-K-17	BLS (PMAP Web site)
October 2000 Raw Data – Maintenance Average Duration – BLS Proprietary	Maintenance Average Duration.txt	M&R-7-K-52	BLS (PMAP Web site)
November 2000 Raw Data – Maintenance Average Duration – BLS Proprietary	Maintenance Average Duration.txt	M&R-7-L-17	BLS (PMAP Web site)
December 2000 Raw Data – Maintenance Average Duration – BLS Proprietary	Maintenance Average Duration.txt	M&R-7-L-52	BLS (PMAP Web site)
November 1999 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	maint_%reptroubwithin30_KPMG_november_rawdata.txt	M&R-7-A-24	BLS (PMAP Web site)
December 1999 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	M&R % Rpt Trbls within 30 Days.txt	M&R-7-B-24	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
January 2000 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	M&R % Rpt Trbls within 30 Days.txt	M&R-7-C-24	BLS (PMAP Web site)
February 2000 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	Maintenance Percent Repeat Troubles within 30 Days.txt	M&R-7-E-24	BLS (PMAP Web site)
March 2000 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	Maintenance Percent Repeat Troubles within 30 Days.txt	M&R-7-F-24	BLS (PMAP Web site)
April 2000 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	Maintenance Percent Repeat Troubles within 30 Days.txt	M&R-7-G-24	BLS (PMAP Web site)
May 2000 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	Maintenance Percent Repeat Troubles within 30 Days.txt	M&R-7-H-24	BLS (PMAP Web site)
June 2000 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	Maintenance Percent Repeat Troubles within 30 Days.txt	M&R-7-I-24	BLS (PMAP Web site)
July 2000 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	Maintenance Percent Repeat Troubles within 30 Days.txt	M&R-7-J-24	BLS (PMAP Web site)
August 2000 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	Maintenance Percent Repeat Troubles within 30 Days.txt	M&R-7-J-59	BLS (PMAP Web site)
September 2000 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	Maintenance Percent Repeat Troubles within 30 Days.txt	M&R-7-K-24	BLS (PMAP Web site)
October 2000 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	Maintenance Percent Repeat Troubles within 30 Days.txt	M&R-7-K-59	BLS (PMAP Web site)
November 2000 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	Maintenance Percent Repeat Troubles within 30 Days.txt	M&R-7-L-24	BLS (PMAP Web site)
December 2000 Raw Data – % Repeat Troubles within 30 Days – BLS Proprietary	Maintenance Percent Repeat Troubles within 30 Days.txt	M&R-7-L-59	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
November 1999 Raw Data – Out of Service > 24 Hours – BLS Proprietary	maint_oos24_KPMG_november_rawdata.txt	M&R-7-A-31	BLS (PMAP Web site)
December 1999 Raw Data – Out of Service > 24 Hours – BLS Proprietary	M&R Out of Service greater than 24 Hrs.txt	M&R-7-B-31	BLS (PMAP Web site)
January 2000 Raw Data – Out of Service > 24 Hours – BLS Proprietary	M&R Out of Service greater than 24 Hrs.txt	M&R-7-C-31	BLS (PMAP Web site)
February 2000 Raw Data – Out of Service > 24 Hours – BLS Proprietary	Maintenance Out of Service 24 Hours.txt	M&R-7-E-31	BLS (PMAP Web site)
March 2000 Raw Data – Out of Service > 24 Hours – BLS Proprietary	Maintenance Out of Service 24 Hours.txt	M&R-7-F-31	BLS (PMAP Web site)
April 2000 Raw Data – Out of Service > 24 Hours – BLS Proprietary	Maintenance Out of Service GT 24 Hours.txt	M&R-7-G-31	BLS (PMAP Web site)
May 2000 Raw Data – Out of Service > 24 Hours – BLS Proprietary	Maintenance Out of Service 24 Hours.txt	M&R-7-H-31	BLS (PMAP Web site)
June 2000 Raw Data – Out of Service > 24 Hours – BLS Proprietary	Maintenance Out of Service 24 Hours.txt	M&R-7-I-31	BLS (PMAP Web site)
July 2000 Raw Data – Out of Service > 24 Hours – BLS Proprietary	Maintenance Out of Service 24 Hours.txt	M&R-7-J-31	BLS (PMAP Web site)
August 2000 Raw Data – Out of Service > 24 Hours – BLS Proprietary	Maintenance Out of Service 24 Hours.txt	M&R-7-J-66	BLS (PMAP Web site)
September 2000 Raw Data – Out of Service > 24 Hours – BLS Proprietary	Maintenance Out of Service 24 Hours.txt	M&R-7-K-31	BLS (PMAP Web site)
October 2000 Raw Data – Out of Service > 24 Hours – BLS Proprietary	Maintenance Out of Service 24 Hours.txt	M&R-7-K-66	BLS (PMAP Web site)
November 2000 Raw Data – Out of Service > 24 Hours – BLS Proprietary	Maintenance Out of Service 24 Hours.txt	M&R-7-L-31	BLS (PMAP Web site)
December 2000 Raw Data – Out of Service > 24 Hours – BLS Proprietary	Maintenance Out of Service 24 Hours.txt	M&R-7-L-66	BLS (PMAP Web site)
November 1999 Raw Data – OSS Response Interval – BLS and CLEC Proprietary	1199brc	M&R-7-C-38	BLS – Interconnection Operations – CLEC Performance Measurements

Document	File Name	Location in Work Papers	Source
November 1999 Raw Data – OSS Response Interval– BLS and CLEC Proprietary	1199clec	M&R-7-C-38	BLS – Interconnection Operations – CLEC Performance Measurements
November 1999 Raw Data – OSS Response Interval– BLS and CLEC Proprietary	1199rrc	M&R-7-C-38	BLS – Interconnection Operations – CLEC Performance Measurements
December 1999 Raw Data – OSS Interface Availability– BLS and CLEC Proprietary	KPMG1_18.xls	M&R-7-C-45	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Average Answer Time– BLS and CLEC Proprietary	ASAOCT.xls	M&R-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Average Answer Time– BLS and CLEC Proprietary	No Electronic Copy	M&R-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
November 1999 Raw Data – Average Answer Time– BLS and CLEC Proprietary	Brmc.unl.gz (Resale)	M&R-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
October 1999 Raw Data – Average Answer Time– BLS and CLEC Proprietary	Une.unl.gz (UNE)	M&R-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
June 2000 Raw Data – Average Answer Time (BRMC)– BLS and CLEC Proprietary	No Electronic Copy	M&R-7-C-52	BLS – Interconnection Operations – CLEC Performance Measurements
November 1999 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-A-1	BLS (PMAP Web site)
November 1999 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-A-1	BLS (PMAP Web site)
November 1999 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-A-1	BLS (PMAP Web site)
December 1999 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-B-1	BLS (PMAP Web site)
December 1999 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-B-1	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
December 1999 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-B-1	BLS (PMAP Web site)
January 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-C-1	BLS (PMAP Web site)
January 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-C-1	BLS (PMAP Web site)
January 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-C-1	BLS (PMAP Web site)
February 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-E-1	BLS (PMAP Web site)
February 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-E-1	BLS (PMAP Web site)
February 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-E-1	BLS (PMAP Web site)
March 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-F-1	BLS (PMAP Web site)
March 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-F-1	BLS (PMAP Web site)
March 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-F-1	BLS (PMAP Web site)
April 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-G-1	BLS (PMAP Web site)
April 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-G-1	BLS (PMAP Web site)
April 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-G-1	BLS (PMAP Web site)
May 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-H-1	BLS (PMAP Web site)
May 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-H-1	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
May 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-H-1	BLS (PMAP Web site)
June 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-I-1	BLS (PMAP Web site)
June 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-I-1	BLS (PMAP Web site)
June 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-I-1	BLS (PMAP Web site)
July 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-J-1	BLS (PMAP Web site)
July 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-J-1	BLS (PMAP Web site)
July 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-J-1	BLS (PMAP Web site)
August 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-J-36	BLS (PMAP Web site)
August 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-J-36	BLS (PMAP Web site)
August 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-J-36	BLS (PMAP Web site)
September 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-K-1	BLS (PMAP Web site)
September 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-K-1	BLS (PMAP Web site)
September 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-K-1	BLS (PMAP Web site)
October 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-K-36	BLS (PMAP Web site)
October 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-K-36	BLS (PMAP Web site)
October 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-K-36	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
November 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-L-1	BLS (PMAP Web site)
November 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-L-1	BLS (PMAP Web site)
November 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-L-1	BLS (PMAP Web site)
December 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC.txt	M&R-7-L-36	BLS (PMAP Web site)
December 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC (R&B).txt	M&R-7-L-36	BLS (PMAP Web site)
December 2000 Report – Missed Repair Appointments– BLS Proprietary	Missed Repair Appmts CLEC Sum R+B.txt	M&R-7-L-36	BLS (PMAP Web site)
November 1999 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-A-8	BLS (PMAP Web site)
November 1999 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-A-8	BLS (PMAP Web site)
November 1999 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Rprt Rate CLEC Sum R+B.txt	M&R-7-A-8	BLS (PMAP Web site)
December 1999 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-B-8	BLS (PMAP Web site)
December 1999 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-B-8	BLS (PMAP Web site)
December 1999 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Rprt Rate CLEC Sum R+B.txt	M&R-7-B-8	BLS (PMAP Web site)
January 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-C-8	BLS (PMAP Web site)
January 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-C-8	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
January 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Rprt Rate CLEC Sum R+B.txt	M&R-7-C-8	BLS (PMAP Web site)
February 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-E-8	BLS (PMAP Web site)
February 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-E-8	BLS (PMAP Web site)
February 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Rprt Rate CLEC Sum R+B.txt	M&R-7-E-8	BLS (PMAP Web site)
March 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-F-8	BLS (PMAP Web site)
March 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-F-8	BLS (PMAP Web site)
March 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC Sum R+B.txt	M&R-7-F-8	BLS (PMAP Web site)
April 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-G-8	BLS (PMAP Web site)
April 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-G-8	BLS (PMAP Web site)
April 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Rprt Rate CLEC Sum R+B.txt	M&R-7-G-8	BLS (PMAP Web site)
May 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-H-8	BLS (PMAP Web site)
May 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-H-8	BLS (PMAP Web site)
May 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC Sum R+B.txt	M&R-7-H-8	BLS (PMAP Web site)
June 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-I-8	BLS (PMAP Web site)
June 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-I-8	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
June 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Rprt Rate CLEC Sum R+B.txt	M&R-7-I-8	BLS (PMAP Web site)
July 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-J-8	BLS (PMAP Web site)
July 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-J-8	BLS (PMAP Web site)
July 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Rprt Rate CLEC Sum R+B.txt	M&R-7-J-8	BLS (PMAP Web site)
August 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-J-43	BLS (PMAP Web site)
August 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-J-43	BLS (PMAP Web site)
August 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Rprt Rate CLEC Sum R+B.txt	M&R-7-J-43	BLS (PMAP Web site)
September 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-K-8	BLS (PMAP Web site)
September 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-K-8	BLS (PMAP Web site)
September 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Rprt Rate CLEC Sum R+B.txt	M&R-7-K-8	BLS (PMAP Web site)
October 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-K-43	BLS (PMAP Web site)
October 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-K-43	BLS (PMAP Web site)
October 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Rprt Rate CLEC Sum R+B.txt	M&R-7-K-43	BLS (PMAP Web site)
November 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-L-8	BLS (PMAP Web site)
November 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-L-8	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
November 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Rprt Rate CLEC Sum R+B.txt	M&R-7-L-8	BLS (PMAP Web site)
December 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC.txt	M&R-7-L-43	BLS (PMAP Web site)
December 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Report Rate CLEC (R&B).txt	M&R-7-L-43	BLS (PMAP Web site)
December 2000 Report – Customer Trouble Report Rate– BLS Proprietary	Customer Trbl Rprt Rate CLEC Sum R+B.txt	M&R-7-L-43	BLS (PMAP Web site)
November 1999 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-A-15	BLS (PMAP Web site)
November 1999 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-A-15	BLS (PMAP Web site)
November 1999 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-A-15	BLS (PMAP Web site)
December 1999 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-B-15	BLS (PMAP Web site)
December 1999 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-B-15	BLS (PMAP Web site)
December 1999 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-B-15	BLS (PMAP Web site)
January 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-C-15	BLS (PMAP Web site)
January 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-C-15	BLS (PMAP Web site)
January 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-C-15	BLS (PMAP Web site)
February 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-E-15	BLS (PMAP Web site)
February 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-E-15	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
February 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-E-15	BLS (PMAP Web site)
March 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-F-15	BLS (PMAP Web site)
March 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-F-15	BLS (PMAP Web site)
March 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-F-15	BLS (PMAP Web site)
April 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-G-15	BLS (PMAP Web site)
April 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-G-15	BLS (PMAP Web site)
April 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-G-15	BLS (PMAP Web site)
May 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-H-15	BLS (PMAP Web site)
May 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-H-15	BLS (PMAP Web site)
May 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-H-15	BLS (PMAP Web site)
June 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-I-15	BLS (PMAP Web site)
June 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-I-15	BLS (PMAP Web site)
June 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-I-15	BLS (PMAP Web site)
July 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-J-15	BLS (PMAP Web site)
July 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-J-15	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
July 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-J-15	BLS (PMAP Web site)
August 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-J-50	BLS (PMAP Web site)
August 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-J-50	BLS (PMAP Web site)
August 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-J-50	BLS (PMAP Web site)
September 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-K-15	BLS (PMAP Web site)
September 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-K-15	BLS (PMAP Web site)
September 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-K-15	BLS (PMAP Web site)
October 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-K-50	BLS (PMAP Web site)
October 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-K-50	BLS (PMAP Web site)
October 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-K-50	BLS (PMAP Web site)
November 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-L-15	BLS (PMAP Web site)
November 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-L-15	BLS (PMAP Web site)
November 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-L-15	BLS (PMAP Web site)
December 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC.txt	M&R-7-L-50	BLS (PMAP Web site)
December 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC (R&B).txt	M&R-7-L-50	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
December 2000 Report – Maintenance Average Duration– BLS Proprietary	Maintenance Avg Duration CLEC Sum R+B.txt	M&R-7-L-50	BLS (PMAP Web site)
November 1999 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls win 30 days CLEC.txt	M&R-7-A-22	BLS (PMAP Web site)
November 1999 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls win 30 days CLEC (RB).txt	M&R-7-A-22	BLS (PMAP Web site)
November 1999 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Rpt Trbls win 30 days CLEC Sum R+B.txt	M&R-7-A-22	BLS (PMAP Web site)
December 1999 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls win 30 days CLEC.txt	M&R-7-B-22	BLS (PMAP Web site)
December 1999 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls win 30 days CLEC (RB).txt	M&R-7-B-22	BLS (PMAP Web site)
December 1999 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Rpt Trbls win 30 days CLEC Sum R+B.txt	M&R-7-B-22	BLS (PMAP Web site)
January 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls win 30 days CLEC.txt	M&R-7-C-22	BLS (PMAP Web site)
January 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls win 30 days CLEC (RB).txt	M&R-7-C-22	BLS (PMAP Web site)
January 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Rpt Trbls win 30 days CLEC Sum R+B.txt	M&R-7-C-22	BLS (PMAP Web site)
February 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls win 30 days CLEC.txt	M&R-7-E-22	BLS (PMAP Web site)
February 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls win 30 days CLEC (R&B).txt	M&R-7-E-22	BLS (PMAP Web site)
February 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Rpt Trbls win 30 days CLEC Sum R+B.txt	M&R-7-E-22	BLS (PMAP Web site)
March 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls wi 30 days CLEC.txt	M&R-7-F-22	BLS (PMAP Web site)
March 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls wi 30 days CLEC (R&B).txt	M&R-7-F-22	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
March 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls wi 30 days CLEC Sum R+B.txt	M&R-7-F-22	BLS (PMAP Web site)
April 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls win 30 days CLEC.txt	M&R-7-G-22	BLS (PMAP Web site)
April 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls win 30 days CLEC (R&B).txt	M&R-7-G-22	BLS (PMAP Web site)
April 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Rpt Trbls win 30 days CLEC Sum R+B.txt	M&R-7-G-22	BLS (PMAP Web site)
May 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls wi 30 days CLEC.txt	M&R-7-H-22	BLS (PMAP Web site)
May 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls wi 30 days CLEC (R&B).txt	M&R-7-H-22	BLS (PMAP Web site)
May 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls wi 30 days CLEC Sum R+B.txt	M&R-7-H-22	BLS (PMAP Web site)
June 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC.txt	M&R-7-I-22	BLS (PMAP Web site)
June 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC (R&B).txt	M&R-7-I-22	BLS (PMAP Web site)
June 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Rpt Trbls w-in 30 days CLEC Sum R+B.txt	M&R-7-I-22	BLS (PMAP Web site)
July 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC.txt	M&R-7-J-22	BLS (PMAP Web site)
July 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC (R&B).txt	M&R-7-J-22	BLS (PMAP Web site)
July 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Rpt Trbls w-in 30 days CLEC Sum R+B.txt	M&R-7-J-22	BLS (PMAP Web site)
August 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC.txt	M&R-7-J-57	BLS (PMAP Web site)
August 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC (R&B).txt	M&R-7-J-57	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
August 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Rpt Trbls w-in 30 days CLEC Sum R+B.txt	M&R-7-J-57	BLS (PMAP Web site)
September 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC.txt	M&R-7-K-22	BLS (PMAP Web site)
September 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC (R&B).txt	M&R-7-K-22	BLS (PMAP Web site)
September 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Rpt Trbls w-in 30 days CLEC Sum R+B.txt	M&R-7-K-22	BLS (PMAP Web site)
October 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC.txt	M&R-7-K-57	BLS (PMAP Web site)
October 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC (R&B).txt	M&R-7-K-57	BLS (PMAP Web site)
October 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Rpt Trbls w-in 30 days CLEC Sum R+B.txt	M&R-7-K-57	BLS (PMAP Web site)
November 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC.txt	M&R-7-L-22	BLS (PMAP Web site)
November 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC (R&B).txt	M&R-7-L-22	BLS (PMAP Web site)
November 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Rpt Trbls w-in 30 days CLEC Sum R+B.txt	M&R-7-L-22	BLS (PMAP Web site)
December 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC.txt	M&R-7-L-57	BLS (PMAP Web site)
December 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Repeat Trbls w-in 30 days CLEC (R&B).txt	M&R-7-L-57	BLS (PMAP Web site)
December 2000 Report – Percent Repeat Troubles within 30 days– BLS Proprietary	% Rpt Trbls w-in 30 days CLEC Sum R+B.txt	M&R-7-L-57	BLS (PMAP Web site)
November 1999 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-A-29	BLS (PMAP Web site)
November 1999 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-A-29	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
November 1999 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-A-29	BLS (PMAP Web site)
December 1999 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-B-29	BLS (PMAP Web site)
December 1999 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-B-29	BLS (PMAP Web site)
December 1999 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-B-29	BLS (PMAP Web site)
January 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-C-29	BLS (PMAP Web site)
January 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-C-29	BLS (PMAP Web site)
January 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-C-29	BLS (PMAP Web site)
February 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-E-29	BLS (PMAP Web site)
February 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-E-29	BLS (PMAP Web site)
February 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-E-29	BLS (PMAP Web site)
March 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-F-29	BLS (PMAP Web site)
March 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-F-29	BLS (PMAP Web site)
March 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-F-29	BLS (PMAP Web site)
April 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-G-29	BLS (PMAP Web site)
April 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-G-29	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
April 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-G-29	BLS (PMAP Web site)
May 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-H-29	BLS (PMAP Web site)
May 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-H-29	BLS (PMAP Web site)
May 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-H-29	BLS (PMAP Web site)
June 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-I-29	BLS (PMAP Web site)
June 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-I-29	BLS (PMAP Web site)
June 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-I-29	BLS (PMAP Web site)
July 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-J-29	BLS (PMAP Web site)
July 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-J-29	BLS (PMAP Web site)
July 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-J-29	BLS (PMAP Web site)
August 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-J-64	BLS (PMAP Web site)
August 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-J-64	BLS (PMAP Web site)
August 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-J-64	BLS (PMAP Web site)
September 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-K-29	BLS (PMAP Web site)
September 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-K-29	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
September 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-K-29	BLS (PMAP Web site)
October 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-K-64	BLS (PMAP Web site)
October 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-K-64	BLS (PMAP Web site)
October 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-K-64	BLS (PMAP Web site)
November 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-L-29	BLS (PMAP Web site)
November 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-L-29	BLS (PMAP Web site)
November 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-L-29	BLS (PMAP Web site)
December 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC.txt	M&R-7-L-64	BLS (PMAP Web site)
December 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC (R&B).txt	M&R-7-L-64	BLS (PMAP Web site)
December 2000 Report – Out of Service more than 24 hours– BLS Proprietary	Out of Service 24 Hrs CLEC Sum R+B.txt	M&R-7-L-64	BLS (PMAP Web site)
November 1999 Report – OSS Response Interval– BLS and CLEC Proprietary	OSS Response Interval SQM (M&R).txt	M&R-7-C-36	BLS (PMAP Web site)
December 1999 Report – OSS Interface Availability– BLS and CLEC Proprietary	OSS Interface Availability (M&R).txt	M&R-7-C-43	BLS (PMAP Web site)
October 1999 Report – Average Answer Time– BLS and CLEC Proprietary	101999~1.xls	M&R-7-C-50	BLS – Interconnection Operations – CLEC Performance Measurements
November 1999 Report – Average Answer Time– BLS and CLEC Proprietary	Answer Time – Repair Center SQM.xls	M&R-7-C-50	BLS (PMAP Web site)
June 2000 Report – Average Answer Time– BLS and CLEC Proprietary	Answer Time - Repair Center SQM.txt	M&R-7-C-50	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
PMAP Raw Data User Manual – Version 2.0 – December 15, 1999 – BLS Proprietary	Raw Data Documentation v2_0 - December 15.doc	PMR-A-2	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.04 – February 15, 2000 – BLS Proprietary	Raw Data Documentation v2.0.4 - Feb 15 2000.doc	PMR-A-3	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.04 – April 15, 2000 – BLS Proprietary	Raw Data Documentation v2.0.4 - April 15 2000.doc	PMR-A-4	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.04 – May 15, 2000 – BLS Proprietary	Raw Data Documentation 05152000.doc	PMR-A-5	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.07 – July 15, 2000 – BLS Proprietary	Raw Data Documentation v2.0.7 - July 26 2000.doc	PMR-A-6	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.0.8 – August 31, 2000 – BLS Proprietary	Raw Data Documentation v2.0.8 - Aug 31 2000.doc	PMR-A-7	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.0.10 – October 11, 2000 – BLS Proprietary	Raw_Data_Documentation_v2.0.10 - Oct11 2000.doc	PMR-A-8	BLS (PMAP Web site)
PMAP Raw Data User Manual – Version 2.0.12 – December 15, 2000 – BLS Proprietary	RDUM v2.0.12 - Dec15 2000 posted.doc	PMR-A-10	BLS (PMAP Web site)
Final KCI M&R-10 Test Cases – BLS Proprietary	Final_MR10_Test_Cases.xls	M&R-7-D-1	KCI
KCI M&R-10 Test Cases Results – BLS Proprietary	Metrics MR 10_4.xls	M&R-7-D-2	KCI
KCI M&R-10 Master Test Bed – BLS Proprietary	MRMASTR1.xls	M&R-7-D-3	KCI
KCI Full Volume Test – BLS Proprietary	Full volume results.xls	M&R-7-D-4	KCI
BLS LMOS and WFA Data – BLS Proprietary	LMOS&W~2.XLS	M&R-7-D-5	BLS – Interconnection Operations – CLEC Performance Measurements
10/22/99 Georgia SQM documentation – BLS Proprietary	No Electronic copy	PMR-A-9	BLS (PMAP Web site)
May 2000 SQM documentation	No Electronic copy	PMR-A-11	BLS (PMAP Web site)

Document	File Name	Location in Work Papers	Source
KCI – Maintenance and Repair - Evaluation Criteria and Results Table – BLS Proprietary	M&R-7-Table VII-7.3.doc	M&R-7-C-57	KCI
KCI – Maintenance and Repair - Evaluation Criteria and Results Table – Sources – BLS Proprietary	M&R-7-Table VII-7.3.wp.doc	M&R-7-C-58	KCI

2.4.1 Data Generation/Volumes

The data for this test are the Maintenance & Repair SQM values reported by BellSouth for the KCI test CLEC or, if applicable, the CLEC aggregate.

2.5 Evaluation Methods

The Evaluation Methods for the Performance Measures Evaluation tests are described in Section III-F, "Performance Measures Evaluation Overview."

2.6 Analysis Methods

The Maintenance & Repair Performance Measures Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the test.

The data collected were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VII-7.3: M&R-7 Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
Missed Repair Appointments			
M&R-7-1-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation. Initially, KCI determined that BLS did not provide report values for the following levels of disaggregation, as required by the 10/22/99 Georgia SQM documentation: PBX, CENTREX and ISDN, UNE 2 Wire Loop, UNE Loop Other, and UNE Other. BLS informed KCI that the 10/22/99 SQM documentation was not specific to Georgia – that is, it is a BLS region-wide document. BLS suggested that KCI use the May 2000 SQM documentation that specifies which levels of disaggregation apply to Georgia and which do not. KCI reviewed the May 2000 documentation, and determined that BLS reported all of the values at every required disaggregation level that the document indicated was appropriate for Georgia reporting. Exception 74 is closed. See Exception 74 for additional information on this issue.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-7-1-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, KCI determined that BLS did not provide report values for certain levels of disaggregation (see M&R-7-1-1 comments above.) Exception 74 is closed. See Exception 74 for additional information on this issue.
M&R-7-1-3	Test data collected by KCI agree with BLS raw data.	Satisfied	To test this criterion, KCI compared data obtained from the BLS LMOS/WFA systems to the PMAP raw data.[2] KCI matched the following LMOS fields to the PMAP raw data fields: Missed appointment flag, OOS_24 flag, Out_of_Svc, Rec2clear_dur, and Category. KCI also matched the following WFA fields to the PMAP raw data: Resp_dur, Repo_type, and OOS24_flag. The LMOS/WFA data were matched by ticket ID and telephone number. All BLS-provided LMOS/WFA data matched the PMAP raw data, exactly.
Customer Trouble Report Rate			
M&R-7-2-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation. Initially, KCI determined that BLS did not provide report values for the following levels of disaggregation, as required by the 10/22/99 Georgia SQM documentation: PBX, CENTREX and ISDN, UNE 2 Wire Loop, UNE Loop Other, and UNE Other. BLS informed KCI that the 10/22/99 SQM documentation was not specific to Georgia – that is, it is a BLS region-wide document. BLS suggested that KCI use the May 2000 SQM documentation that specifies which

[2] The LMOS/WFA data were provided to KCI by BellSouth.

Test Cross-Reference	Evaluation Criteria	Result	Comments
			levels of disaggregation apply to Georgia and which do not. KCI reviewed the May 2000 documentation, and determined that BLS reported all of the values at every required disaggregation level that the document indicated was appropriate for Georgia reporting. Exception 74 is closed. See Exception 74 for additional information on this issue.
M&R-7-2-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, KCI determined that BLS did not provide report values for certain levels of disaggregation (see M&R-7-2-1 comments above). Exception 74 is closed. See Exception 74 for additional information on this issue.
M&R-7-2-3	Test data collected by KCI agree with BLS raw data.	Satisfied	To test this criterion, KCI compared data obtained from the BLS LMOS/WFA systems to the PMAP raw data.[3] KCI matched the following LMOS fields to the PMAP raw data fields: Missed appointment flag, OOS_24 flag, Out_of_Svc, Rec2clear_dur, and Category. KCI also matched the following WFA fields to the PMAP raw data: Resp_dur, Repo_type, and OOS24_flag. The LMOS/WFA data were matched by ticket ID and telephone number. All BLS-provided LMOS/WFA data matched the PMAP raw data, exactly.

[3] The LMOS/WFA data were provided to KCI by BellSouth.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Maintenance Average Duration			
M&R-7-3-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation. The values are reported at every required level of disaggregation. Initially, KCI determined that BLS did not provide report values for the following levels of disaggregation, as required by the 10/22/99 Georgia SQM documentation: PBX, CENTREX and ISDN, UNE 2 Wire Loop, UNE Loop Other, and UNE Other. BLS informed KCI that the 10/22/99 SQM documentation was not specific to Georgia – that is, it is a BLS region-wide document. BLS suggested that KCI use the May 2000 SQM documentation that specifies which levels of disaggregation apply to Georgia and which do not. KCI reviewed the May 2000 documentation, and determined that BLS reported all of the values at every required disaggregation level that the document indicated was appropriate for Georgia reporting. Exception 74 is closed. See Exception 74 for additional information on this issue.
M&R-7-3-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, KCI determined that BLS did not provide report values for certain levels of disaggregation (see M&R-7-3-1 comments above). Exception 74 is closed. See Exception 74 for additional information on this issue.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-7-3-3	Test data collected by KCI agree with BLS raw data.	Satisfied	To test this criterion, KCI compared data obtained from the BLS LMOS/WFA systems to the PMAP raw data. KCI matched the following LMOS fields to the PMAP raw data fields: Missed appointment flag, OOS_24 flag, Out_of_Svc, Rec2clear_dur, and Category. KCI also matched the following WFA fields to the PMAP raw data: Resp_dur, Repo_type, and OOS24_flag. The LMOS/WFA data were matched by ticket ID and telephone number. Initially, five trouble tickets raised in December and reported in the KCI master test bed could not be found in the December PMAP raw data. BLS informed KCI that the telephone lines were provisioned as Design, in accordance with BLS policy that all UNE Ports lines are provisioned as Design. As a result, they were appropriately excluded from the raw data. As a result, all BLS-provided LMOS/WFA data matched the PMAP raw data, exactly. Exception 56 is closed. See Exception 56 for additional information on this issue.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Percent Repeat Troubles within 30 days			
M&R-7-4-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation. The values are reported at every required level of disaggregation. Initially, KCI determined that BLS did not provide report values for the following levels of disaggregation, as required by the 10/22/99 Georgia SQM documentation: PBX, CENTREX and ISDN, UNE 2 Wire Loop, UNE Loop Other, and UNE Other. BLS informed KCI that the 10/22/99 SQM documentation was not specific to Georgia – that is, it is a BLS region-wide document. BLS suggested that KCI use the May 2000 SQM documentation that specifies which levels of disaggregation apply to Georgia and which do not. KCI reviewed the May 2000 documentation, and determined that BLS reported all of the values at every required disaggregation level that the document indicated was appropriate for Georgia reporting. Exception 74 is closed. See Exception 74 for additional information on this issue.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-7-4-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, KCI determined that BLS did not provide report values for certain levels of disaggregation (see M&R-7-4-1 comments above). Exception 74 is closed. See Exception 74 for additional information on this issue.
M&R-7-4-3	Test data collected by KCI agree with BLS raw data.	Satisfied	To test this criterion, KCI compared data obtained from the BLS LMOS/WFA systems to the PMAP raw data.[4] KCI matched the following LMOS fields to the PMAP raw data fields: Missed appointment flag, OOS_24 flag, Out_of_Svc, Rec2clear_dur, and Category. KCI also matched the following WFA fields to the PMAP raw data: Resp_dur, Repo_type, and OOS24_flag. The LMOS/WFA data were matched by ticket ID and telephone number. All BLS-provided LMOS/WFA data matched the PMAP raw data, exactly.

[4] The LMOS/WFA data were provided to KCI by BellSouth.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Out of Service > 24 hours			
M&R-7-5-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation. Initially, KCI determined that BLS did not provide report values for the following levels of disaggregation, as required by the 10/22/99 Georgia SQM documentation: PBX, CENTREX and ISDN, UNE 2 Wire Loop, UNE Loop Other, and UNE Other. BLS informed KCI that the 10/22/99 SQM documentation was not specific to Georgia – that is, it is a BLS region-wide document. BLS suggested that KCI use the May 2000 SQM documentation that specifies which levels of disaggregation apply to Georgia and which do not. KCI reviewed the May 2000 documentation, and determined that BLS reported all of the values at every required disaggregation level that the document indicated was appropriate for Georgia reporting. Exception 74 is closed. See Exception 74 for additional information on this issue.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-7-5-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values. Initially, BLS did not provide report values for certain levels of disaggregation (see M&R-7-5-1 comments above). Exception 74 is closed. See Exception 74 for additional information on this issue.
M&R-7-5-3	Test data collected by KCI agree with BLS raw data.	Satisfied	To test this criterion, KCI compared data obtained from the BLS LMOS/WFA systems to the PMAP raw data.[5] KCI matched the following LMOS fields to the PMAP raw data fields: Missed appointment flag, OOS_24 flag, Out_of_Svc, Rec2clear_dur, and Category. KCI also matched the following WFA fields to the PMAP raw data: Resp_dur, Repo_type, and OOS24_flag. The LMOS/WFA data were matched by ticket ID and telephone number. All BLS-provided LMOS/WFA data matched the PMAP raw data, exactly.
OSS Interface Availability			
M&R-7-6-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation.
M&R-7-6-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values.

[5] The LMOS/WFA data were provided to KCI by BellSouth.

Test Cross-Reference	Evaluation Criteria	Result	Comments
OSS Response Interval and Percentages			
M&R-7-7-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation. For this SQM, the levels of disaggregation correspond to the following system interfaces: CRIS, DLETH, DLR, LMOS, LMOSupd, LNP, MARCH, OSPCM, Predictor, and SOCS.
M&R-7-7-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Hence, KCI confirmed that BLS accurately calculated and reported these SQM values.
Average Answer Time – Repair Centers			
M&R-7-8-1	BLS reports are correctly disaggregated and complete.	Satisfied	BLS reports an SQM value for every level of disaggregation specified in the May 2000 Georgia SQM documentation. For this SQM, the levels of disaggregation correspond to maintenance and repair centers.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-7-8-2	KCI-calculated SQM values agree with BLS-reported SQM values.	Satisfied	The SQM value calculated by KCI at each level of disaggregation matched exactly the corresponding value reported by BLS. Initially, KCI was unable to match the KCI-calculated SQM value to the BLS-reported value for the BLS Resale Maintenance Center (BRMC). The calculated values did match the reported values for Residence, Business, and UNE. BLS then provided additional computation instructions to KCI. Upon applying these additional instructions, the new KCI-calculated SQM values agreed with the BLS-reported SQM values. KCI also was provided with an additional month of data and reports for the BRMC . For this month (June 2000), the SQM value calculated by KCI matched the corresponding value reported by BLS. Exception 23 is closed. See Exception 23 for additional information on this issue.

H. Test Results: Trouble Analysis Facilitation Interface (TAFI) Documentation Evaluation (M&R-8)

1.0 Description

The objective of the Trouble Analysis Facilitation Interface (TAFI) Documentation Evaluation was to assess whether documentation provided by BellSouth adequately assists Competitive Local Exchange Carriers (CLECs) in understanding how to utilize the TAFI functions available to them.

KCI reviewed and analyzed BellSouth-provided documentation that CLECs use to interface and interact with the TAFI system for maintenance and repair activities. This evaluation assessed the structure, accuracy, completeness, availability, and ease-of-use of BellSouth's TAFI-related maintenance and repair documentation using a variety of operational analysis techniques. The test utilized records of observations from the M&R-1: TAFI Functional Test, TAFI documentation, and information collected during interviews with various CLEC and BellSouth users.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

The TAFI application is a rules-based system that provides automated trouble receipt and screening functionality to both CLEC and BellSouth repair center users. TAFI serves as an interface to the various BellSouth maintenance and repair downstream systems (see Section VII, "M&R Overview" for a complete description of the downstream systems accessed by TAFI). The TAFI documentation evaluated in this test encompasses end-user training, reference, setup, and ongoing maintenance information.

Specific documents evaluated during KCI's initial review include the *CLEC TAFI End-User Training and User Guide,* which was used as an initial training guide as well as a reference tool, and the TAFI On-Line Help feature, which provides reference information to be used as a job aid.

During KCI's evaluation, BellSouth issued two new documents to replace the *CLEC TAFI End-User Training and User Guide, (*Issue 6, September 1998). These two documents are the *CLEC TAFI User Guide* ("*User Guide"*), (Issue 1, March 2000) and the *CLEC TAFI End-User Training Manual* ("*Training Manual"*), (Issue 1, March 2000). While the *User Guide* serves as both an initial training guide and as a reference tool, the *Training Manual* is a collection of training exercises intended for use in conjunction with the *User Guide* to provide new CLEC TAFI users with practical training. Following the March release, BellSouth published

three updated versions of the *User Guide* (Issue 2, April 2000, Issue 3, May 2000 and Issue 4, June 2000).

The test also evaluated the *Facility Based Activation Requirements Guide* (TAFI-related sections) that includes basic information regarding necessary hardware and software for TAFI's use.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was the documentation available to CLECs that is used to establish connectivity with, and exercise the functionality of, the TAFI system.

Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table VII-8.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
M&R Documentation	Document Structure and Format	Existence of structural elements Completeness of data	M&R-8-1-1 to M&R-8-1-5 M&R-8-2-1 to M&R-8-2-3 M&R-8-3-1 to M&R-8-3-2
	Document Content	Clarity of Information Completeness of data	M&R-8-1-6 to M&R-8-1-16 M&R-8-2-4 to M&R-8-2-6 M&R-8-3-3 to M&R-8-3-5
	Release Management	Existence and adequacy of the update process Availability of documentation Accuracy of documentation	M&R-8-1-34 to M&R-8-1-36 M&R-8-2-7 M&R-8-3-6
TAFI Interface	Trouble Reporting	Accuracy of documentation	M&R 8-1-1-17 to M&R 8-1-1-25
	Access to Test Capability	Accuracy of documentation	M&R 8-1-1-26
	Access to Downstream System Reports	Accuracy of documentation	M&R 8-1-1-27 to M&R 8-1-1-31
	Error Reports	Accuracy of documentation	M&R 8-1-1-32
	Trouble History	Accuracy of documentation	M&R 8-1-1-33

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VII-8.2: Data Sources for TAFI Documentation Evaluation

Document	File Name	Location in Work Papers	Source
CLEC TAFI End User Training and User Guide (Issue 6)	No Electronic Copy	M&R-8-B	BLS
TAFI On-Line Help	No Electronic Copy	M&R-8-A-2	BLS
Carrier Notifications (TAFI related)	No Electronic Copy	M&R-8-A-3	BLS
Facility Based Activation Requirements Guide	No Electronic Copy	PMO-1-1	BLS
Evaluation Checklists	No Electronic Copy	M&R-8-A-5	KCI
Interview Summary of BLS Customer Service Associate	No Electronic Copy	M&R-8-A-6	KCI/BLS
Interview Summary of BLS Customer Service Associate	No Electronic Copy	M&R-8-A-7	KCI/BLS
Interview Summary of BLS Maintenance Administrator	No Electronic Copy	M&R-8-A-8	KCI/BLS
Interview Summary of BLS Maintenance Administrator	No Electronic Copy	M&R-8-A-9	KCI/BLS
Interview Summary of BLS Coach	No Electronic Copy	M&R-8-A-10	KCI/BLS
Interview Summary of BLS Manager	No Electronic Copy	M&R-8-A-11	KCI/BLS
Interview Summary of CLEC	No Electronic Copy	M&R-8-A-12	KCI
Interview Summary of CLEC	No Electronic Copy	M&R-8-A-13	KCI
Call Stats for On-Line Help	No Electronic Copy	M&R-8-A-14	KCI
Incident Report (Access Database)	No Electronic Copy	M&R-8-A-15	KCI
CLEC TAFI User Guide (Issue 1)	Clec101g.pdf	M&R-8-A-16	BLS
CLEC TAFI User Guide (Issue 2)	Clec_trn.pdf	M&R-8-A-16	BLS
CLEC TAFI User Guide (Issue 3)	Gtaff001.pdf	M&R-8-A-16	BLS
CLEC TAFI End-User Training Manual (Issue 1)	Manual.pdf	M&R-8-A-16	BLS

2.4.1 Data Generation/Volumes

This test did not rely on data generation or volume testing.

2.5 Evaluation Methods

KCI collected online and hard copies of the documents defined above, as available. Each of these documents was reviewed by KCI and tested against the evaluation criteria shown in Tables VII-8.3 – 8.5. Document reviews were performed with the aid of evaluation guides in order to identify and record any deficiencies. Similarly, relevant M&R documentation management processes were assessed against defined criteria. The content evaluation was based on information obtained during the M&R-1: TAFI Functional Test.

In addition to the TAFI documentation review, KCI conducted interviews with CLEC and BellSouth subject matter experts in order to provide additional input for this test.

2.6 Analysis Methods

The TAFI Documentation Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth-Georgia OSS Evaluation. These evaluation criteria provide the framework of norms, standards, and guidelines for the TAFI Documentation Evaluation.

The data collected from the documentation reviews, CLEC and BellSouth interviews, and the M&R-1: TAFI Functional Test, were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the three tables below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VII-8.3: Evaluation Criteria and Results – CLEC TAFI User Guide and CLEC TAFI End-User Training Manual [1]

Test Cross-Reference	Evaluation Criteria	Result	Comments
Document Structure and Format			
M&R-8-1-1	The document version is indicated within each document and is clear throughout the document.	Satisfied	In both the *User Guide* and the *Training Manual*, the version number is noted on the cover page, as well as in the footer of each page.
M&R-8-1-2	The document provides cross-references and annotations within the document.	Satisfied	Cross-references and annotations are contained throughout the *User Guide*. Examples can be seen on pages 56, 60, 87, 88, 101, 104, 107, 109, and 117. While these cross-references and annotations are present, four instances exist where references are made to information that will be covered "later" within the document. These references do not, however, provide the location of this information. Examples of this can be found on pages 85, 87, 98 and 100 of the *User Guide*. This deficiency does not significantly impede use of the document. The *Training Manual* provides cross-references to relevant sections of the *User Guide* as well as the On-Line Help.
M&R-8-1-3	The document indicates document scope and purpose.	Satisfied	A statement of purpose is located in the Introduction of both the *User Guide* and the *Training Manual* on page 2, Section 2.1. The scope for both documents is defined on page 2, Section 2.3 as covering “only the mechanics” of the TAFI application.

[1] The analysis presented in Table VII-8.3: Evaluation Criteria and Results - *CLEC TAFI User Guide* and *CLEC TAFI End-User Training Manual* is based upon versions EP- Issue 3 May 2000 and EP-Issue 1 March 2000 respectively.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-8-1-4	The document is logically organized (e.g., clear page numbering and section labeling, table of contents, glossary of terms, explanation of acronyms, etc.) and contains a statement of organization.	Satisfied	The *User Guide* and the *Training Manual* each include a table of contents and a statement of organization. The *User Guide* also includes a glossary of terms and an explanation of acronyms. While the *User Guide* and the *Training Manual* both contain clearly labeled pages and sections, the *Training Manual* has inconsistent page numbering and header information. Neither document contains an index. The organization of the *User Guide* makes it difficult, in some circumstances, to locate all relevant information pertaining to particular functions in TAFI. For example, information for taking trouble reports is scattered throughout the manual. This deficiency does not significantly impede use of the document.
M&R-8-1-5	The organization of the document is consistent with its intended use.	Satisfied	The organization of both the *User Guide* and the *Training Manual* is consistent with their intended purposes. The *User Guide* is a support tool for end-user training and a reference guide for day-to-day operations. It contains screen prints, explanations, and examples as training support. The document contains a statement of organization, instructions on how to use it, a table of figures, and defined assumptions. However, the guide could contain elements, such as an index, that would assist the user in finding specific answers to questions. Although the document does not contain an index, the table of contents is sufficiently descriptive to facilitate end-user operation. The *Training Manual* is the "primary training vehicle to acquaint the CLEC user " with TAFI, and is "used in conjunction with the *User Guide* to assist in performing 'hands on' exercises using the training database." It contains a variety of exercises and explanations that are organized in a

Test Cross-Reference	Evaluation Criteria	Result	Comments
			manner that corresponds with the *User Guide.* It also contains sections that describe how to read it, how it is organized, and what assumptions are made.
Document Content			
M&R-8-1-6	The document describes user access of TAFI system(s).	Satisfied	High-level instructions for accessing TAFI using LAN-to-LAN or Dial-Up connections are provided in Section 4, pages 22-27 of the *User Guide*. Detailed access instructions from the point where TAFI prompts the user for their UserID and password are provided in the same section. While this access information is described, detailed Dial-Up connectivity path information is not provided in the document. However, a process flowchart on page 207 describes the process for establishing initial CLEC TAFI access.
M&R-8-1-7	The document has clear and accurate citations directing readers to relevant sources of additional information.	Satisfied	Section 3.3, *Support Contacts*, of the *User Guide* contains toll-free contact numbers for the various BLS centers. Contact numbers are provided for the BellSouth Resale Maintenance Center (BRMC), the Digital Communications Service Center (DCSC), and the Unbundled Network Element (UNE) Center. The *User Guide* includes descriptive information and screen shots of the reference information provided in the TAFI On-Line Help. Additionally, the *User Guide* references the Call Guide pages in the BLS directory, which can be used as an additional resource for information on the feature usage. The *User Guide* does not, however, provide the phone number for the TAFI Help Desk. The *Training Manual* does include the toll free number for the BellSouth Resale Maintenance Center (BRMC) on page V. However, this document is not intended to be used after initial training.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-8-1-8	The *CLEC TAFI User Guide* clearly defines how to navigate the system(s).	Satisfied	The *User Guide* provides sufficient information to assist user navigation of the TAFI application. Instructions are provided for the use of the following navigational tools: "more information" symbols, keystrokes needed to view the additional information, and function keys. Additionally, a chart of the function keys and their respective uses is provided. The *User Guide* provides an explanation of the different window types a user will encounter in the TAFI application, and the availability of hot keys and keyboard methods for selecting trouble categories.
M&R-8-1-9	The *CLEC TAFI User Guide* defines data entry fields for creating, checking status of, modifying, managing, canceling, and closing trouble reports.	Satisfied	The *User Guide* contains information on creating, checking status of, managing, canceling and closing reports. Modifying a trouble report is covered only at a cursory level and is embedded within other segments. Screen prints are provided.
M&R-8-1-10	The *CLEC TAFI User Guide* explains acceptable formats for data fields.	Satisfied	The *User Guide* explains acceptable formats for most data fields. For example, the TN field format is defined on page 32, the New Commitment field format is defined on page 85, and the MTR field format is defined on page 90. Screen prints are provided for illustrative purposes.
M&R-8-1-11	The *CLEC TAFI User Guide* distinguishes between required and optional fields.	Satisfied	The *User Guide* defines those fields that are required on a screen-by-screen basis. Fields that are not indicated as required within the document are implied to be optional.
M&R-8-1-12	The *CLEC TAFI User Guide* defines possible options after data entry (i.e., save, send, cancel).	Satisfied	The *User Guide* describes possible options after data entry, including sending, canceling, backing up, and closing. No options were discussed for "save," as this is not an available function in TAFI.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-8-1-13	The *CLEC TAFI User Guide* describes expected system responses / outputs and response times.	Satisfied	The *User Guide* provides data on expected system responses / outputs via narrative, illustrative examples and screen prints. Appropriate system response times are provided, at an approximate level, only for diagnostic testing and for the processing of trouble reports.
M&R-8-1-14	The *CLEC TAFI User Guide* provides descriptions of error messages and possible steps for resolution.	Satisfied	A list of error and status messages is provided on pages 173-174 of the *User Guide*. For the error / status messages that are listed in the manual, definitions and steps for resolution are provided, with one exception ("No LMOS"). While the list is not comprehensive, it is extensive and contains the most commonly viewed messages. In addition, the text contained in most error messages provided by TAFI is sufficiently descriptive to allow for processing of trouble reports.
M&R-8-1-15	The *CLEC TAFI User Guide* describes the escalation process and provides contact information for out of the ordinary occurrences.	Satisfied	The *User Guide* contains information describing the trouble ticket escalation procedure in TAFI. The *User Guide* also provides a variety of options for out of the ordinary occurrences. For example, a message on page 147 instructs the user to contact a subject matter expert (SME) to initiate a report to BLS for BOCRIS CSR data discrepancies. Pages 18 and 168 provide specific instructions for using TAFI to report troubles that are outside the scope of TAFI's capabilities. Page 195 describes an escalation sub-menu. Additionally, throughout the document, the user is reminded that the option exists to contact BLS to manually report troubles that are unable to be entered via TAFI. Users are provided with the description of the process for reporting system troubles in an attachment in Section 14.5 of the document. The *User Guide* does not, however,

Test Cross-Reference	Evaluation Criteria	Result	Comments
			describe the handling of the trouble report once it has been "escalated." In addition, the document consistently advises TAFI users to call their SMEs (CLEC personnel who have attended one two-day training session) for all TAFI-related questions.
M&R-8-1-16	The document contains information that is relevant to its intended audience.	Satisfied	The information contained in both the *User Guide* and the *Training Manual* is directed toward a CLEC audience, as indicated in Section 2.2, "Intended Audience." Both documents address the CLEC in the explanations throughout. Additionally, the content in both documents is relevant to a CLEC with a few exceptions. The *User Guide,* in some places, contains descriptions of options that are used only by BLS TAFI users. These instructions are then followed by text boxes that provide corrections or clarifications intended for the CLEC user. In these cases, a description of the non-relevant options is provided in order to ensure completeness of the document. For example, page 92 of the document describes an employee-originated report. Following this description, a text box appears stating that this option is not relevant to a CLEC. While this information may be inconvenient for CLEC users, it does not impede their ability to properly execute the functions described in TAFI.
Document Accuracy			
M&R-8-1-17	*The CLEC TAFI User Guide* accurately explains how to create a trouble report using TAFI.	Satisfied	Accurate information pertaining to creating a trouble report is available, however, it is disseminated throughout the manual. For example, when the user searches the document table of contents for instructions on creating a trouble report, the listing that appears appropriate is "Taking Trouble Reports" starting on page 60. Initial instructions for this activity are instead found in the section titled "The TAFI Screen" on page 30, which

Test Cross-Reference	Evaluation Criteria	Result	Comments
			is not an intuitive location. In addition, the document does not provide easy start-to-finish steps for taking trouble reports. The discussion of the Initial Trouble Entry window is separated from the discussion of the Access and Commitments (A/C) window by 50 pages. The location of this information, however, does not impede the TAFI user's ability to accurately enter a trouble report.
M&R-8-1-18	*The CLEC TAFI User Guide* accurately explains how to modify a trouble report using TAFI.	Satisfied	Because "modify" is not a discrete function available in TAFI, formal instructions for modifying a trouble report are not clearly stated in a separate section. However, accurate instructions can be found in the Subsequent Report section of the *User Guide*. To modify a trouble report, a user needs to re-enter the TN into TAFI, thereby creating a subsequent report to incorporate any modifications. Edit rules used for modifying a trouble report in TAFI, however, differ from field to field and are not consistently described.
M&R-8-1-19	*The CLEC TAFI User Guide* accurately explains how to create a repeat trouble report using TAFI.	Satisfied	The *User Guide* implies, but does not specifically state, that TAFI creates a repeat trouble report by default if a trouble ticket is entered for a TN for which a trouble report has been created and closed in the last 30 days. A user is able to adequately infer this information.
M&R-8-1-20	*The CLEC TAFI User Guide* accurately explains how to create a subsequent trouble report using TAFI.	Satisfied	The *User Guide* states that TAFI creates a subsequent trouble report by default when a TAFI user enters a TN for which a pending trouble ticket exists. The *User Guide* contains accurate screen prints and instructions on how to process a subsequent report.
M&R-8-1-21	*The CLEC TAFI User Guide* accurately explains how to enter multiple trouble reports (MTR)s.	Satisfied	The information contained in the document accurately explains how to enter an MTR. However, the instructions provided are disorganized and lack complete, explicit, start-to-finish steps. Instead,

Test Cross-Reference	Evaluation Criteria	Result	Comments
			the document begins with a broad description of the MTR steps and then simply lists a series of "Rules." It is from this list that a user can infer that when creating a Parent, the link field should contain the Parent TN. A summary of the key points is provided at the end, and it is from this summary that a user will actually learn for the first time that the Parent TN should occupy the Link field in the initial trouble report screen for all associated trouble reports. While the instructions are less than adequate, and read independently, the prompts and informational messages provided by the TAFI application enrich the instructions and enable the user to enter the MTR appropriately.
M&R-8-1-22	*The CLEC TAFI User Guide* accurately explains how to enter and retrieve trouble reports from the queue in TAFI.	Satisfied	Accurate instructions for entering and retrieving trouble reports from the queue exist in Section 8 of the *User Guide*. Automatic and manual placement methods, as well as the steps required for retrieving reports from the queue, are described.
M&R-8-1-23	*The CLEC TAFI User Guide* accurately explains how to execute supervisor functions within TAFI.	Satisfied	Accurate step-by-step instructions to execute supervisor functions are provided in Section 13 of the *User Guide*. These include reviewing the queue and reassigning queued reports. The "finding orphans" and "reset user" supervisor sub-functions are, according to BLS, no longer applicable sub-functions in TAFI. They are, however, both still present within the TAFI queued reports display window. An explanation for each of these sub-functions, and why each is no longer relevant, is provided in the *User Guide* on page 201.
M&R-8-1-24	*The CLEC TAFI User Guide* accurately explains how to close a trouble report using TAFI.	Satisfied	The *User Guide* gives step-by-step instructions for closing a trouble report using the Front-End Close Out (FECO) option, as well as the override option. It also states that because TAFI is a logic-driven system, TAFI will often automatically give a close

Test Cross-Reference	Evaluation Criteria	Result	Comments
			recommendation, in response to which a user simply presses "enter" to accept.
M&R-8-1-25	*The CLEC TAFI User Guide* accurately explains how to cancel a trouble report using TAFI.	Satisfied	The *User Guide* gives step-by-step instructions for canceling a trouble report using the override option. It also provides examples to illustrate each of the cancel reasons listed.
M&R-8-1-26	*The CLEC TAFI User Guide* accurately explains how to view port and loop-port test (MLT) results using TAFI.	Satisfied	The *User Guide* provides clear, accurate instructions on obtaining the MLT test results. In addition, it provides navigational aid and an example of a response.
M&R-8-1-27	*The CLEC TAFI User Guide* accurately explains how to retrieve a LMOS recent status report using TAFI.	Satisfied	The *User Guide* provides clear, accurate instructions for checking the status of a trouble and provides a written explanation of the response.
M&R-8-1-28	*The CLEC TAFI User Guide* accurately explains how to obtain BOCRIS customer line record information using TAFI.	Satisfied	The *User Guide* provides clear, accurate instructions for obtaining customer line information, and provides an example of a response.
M&R-8-1-29	*The CLEC TAFI User Guide* accurately explains how to obtain Predictor results using TAFI.	Satisfied	The *User Guide* provides clear, accurate instructions for obtaining Predictor results and provides an example of a response.
M&R-8-1-30	*The CLEC TAFI User Guide* accurately explains how to view Display Line Record (DLR) information using TAFI.	Satisfied	The *User Guide* provides clear, accurate instructions for obtaining the DLR information and provides an example of a response.
M&R-8-1-31	*The CLEC TAFI User Guide* accurately explains how to view Service Order Communications System (SOCS) pending order information using TAFI.	Satisfied	The method for retrieving SOCS pending order information is the same as that for retrieving any report located in the "additional data" window. This method, while not specifically detailed for retrieving SOCS pending order information, is clearly described in the *User Guide* for other features located in this section. A detailed explanation regarding the circumstances under which a pending

Test Cross-Reference	Evaluation Criteria	Result	Comments
			order can be viewed, however, is not provided in the SOCS pending order section. Instead, limited information pertaining to this is provided in Section 4.2.4, *User Validation*, although no cross-reference is provided. Thus, while the *User Guide* does not specifically provide clear instructions for obtaining the SOCS pending order information, the user can deduce how to obtain the information.
M&R-8-1-32	*The CLEC TAFI User Guide* accurately explains how to view and re-send transactions that incurred host request errors using TAFI.	Satisfied	Pages 155-156 of the *User Guide* provide accurate instructions for viewing and re-sending transactions that incurred host request errors. During initial testing, while re-sending the transactions according to the directions in the prior *User Guides* (page 238 of Issue 6 and page 150 of Issue 1), a message appeared stating that the host could not be reset. KCI was returned to the trouble report screen with no evidence that a transaction had occurred. In all cases, KCI was able to press the 'enter' key and the reports were processed. It was unclear as to whether this was a functionality issue or a documentation issue. As a result, KCI issued Exception 11. BLS responded that, "If the error was due to some transient communications problem, the user may see a failure to re-send and then TAFI operates properly on the next attempt." Evaluation of this explanation in comparison to the test results showed that this description is consistent with KCI's experience. Retest activities showed that a more complete explanation surrounding host request errors is now provided in Issue 3 of the *User Guide*. In addition to an explanation regarding the potential for unusual results, options are provided to users should they continue to receive host request errors. See Exception 11 for additional

Test Cross-Reference	Evaluation Criteria	Result	Comments
			information on this issue. This exception is closed.
M&R-8-1-33	*The CLEC TAFI User Guide* accurately explains how to retrieve trouble history using TAFI.	Satisfied	The *User Guide* provides clear, accurate instructions for retrieving trouble history and provides an example of a response.
Release Management			
M&R-8-1-34	Procedures exist for the distribution of TAFI, the *CLEC TAFI User Guide*, and the *CLEC TAFI End-User Training Manual.*	Satisfied	Both documents are to be provided to CLECs at the time that they attend TAFI training. They are also posted on the interconnection Web site at http://www.interconnection.bellsouth.com/guides/guides_p.html, which can be accessed by all CLECs.
M&R-8-1-35	Procedures exist for the distribution of updates for the *CLEC TAFI User Guide* and the *CLEC TAFI End-User Training Manual.*	Satisfied	Adequate procedures exist for the distribution of updates for the *User Guide* and the *Training Manual.* Additionally, formal procedures exist to distribute TAFI software release documentation updates to CLECs. KCI's initial review of the procedures for distributing updates revealed that a difference existed in the availability of TAFI software release documentation updates for CLECs, as compared to those provided for BLS's own retail operations. TAFI software release change packets, describing modifications in functionality, were made available for internal BLS use only. These same updates did not appear in the CLEC *TAFI End-User Training and User Guide* (Issue 6). As a result of this, KCI issued Exception 6. Exception resolution discussions with BLS have resulted in a commitment stating that for all future major TAFI releases, an updated version of the *User Guide* will be provided on the interconnection Web site. A Carrier Notification will precede the new release by 30 days, outlining the software changes that are CLEC impacting. In addition, all release changes will be detailed in the TAFI On-Line Help. For minor release

Test Cross-Reference	Evaluation Criteria	Result	Comments
			changes, details will be provided to CLECs via Carrier Notifications as well as within the On-Line Help. Re-testing activities have shown that: • A carrier notification was posted on 3/13/00 describing the system changes being made to TAFI R2000.2 and announcing the release date of R2000.2 as 3/26/00. In the future, BLS has stated that there will be a 30-day notification as detailed in the change control process. In addition, user notes describing the changes made to TAFI for all versions from R99.1-R2000.2.0.1 were included within the TAFI application (R2000.2) in the TAFI On-Line Help (User Note section). • The *CLEC TAFI User Guide* (Issue 1, March 2000 and Issue 2, April 2000) has been updated to reflect the functions and features of TAFI software version R2000.1. The function or feature changes between R2000.1 (March) and R2000.2 (April) that would require specific editing of the *CLEC TAFI User Guide* are few and quite minor (three additional sub-menu options that have been added). These changes are detailed in the User Notes section available in the On-Line Help. Thus, the information contained in the *CLEC TAFI User Guide* (Issue 2, April 2000), supplemented by the User Notes, is appropriate. A second issue involves the consistency of the *User Guide* across media formats as updates are made. During initial testing KCI found that although both the CLEC *TAFI End-User Training and User Guide* and the guide available online were marked as Issue Six, September 1998, discrepancies existed between the two documents. Specifically, formatting

Test Cross-Reference	Evaluation Criteria	Result	Comments
			changes had been made throughout the online version, including differences in section numbering, the "Setting Up Dials" section has been removed, and typographical errors had been introduced into the online version. BLS responded that they would ensure that " page references, page formats, section numbering, revision history, etc. are consistent between the on-line and hard copy documents." Further discussions with BLS revealed that in the past, the *User Guide* was provided to the Webmaster in Microsoft Word for publication. Edits were made to the document by the Webmaster, resulting in the inconsistencies noted above. Retest activities have shown that BLS has published a new user guide titled *CLEC TAFI User Guide* (Issue 3, May 2000). This user guide was published using a PDF format provided to the Webmaster by the *User Guide* creator. BLS has stated that PDF files will be the standard over Word from this point forward. See Exception 6 for additional information on this issue. Exception 6 is closed.
M&R-8-1-36	Responsibilities and procedures for developing, updating, and correcting the *CLEC TAFI User Guide* are clearly defined.	Satisfied	A formal, documented process has been defined for the maintenance of the *CLEC TAFI User Guide*. This process includes a series of steps such as an internal update by the SME, a comparison of the document against a detailed quality control checklist, and a review by an external SME (the instructors of the CLEC TAFI training course). The external SME is scheduled to review the documentation for errors and general feedback prior to its posting on the Web site. BLS has also stated that the Release Notes (which are now provided in the On-Line TAFI Help section) will be

Test Cross-Reference	Evaluation Criteria	Result	Comments
			the primary source for documentation updates. These Release Notes will serve as the detail for all minor TAFI releases while for all future major TAFI releases, an updated *User Guide* will be provided. Additionally, screen prints within the manual will be updated only if new user information is provided on the given screen (other than changes in the release level label).

Table VII-8.4: Evaluation Criteria and Results – TAFI On-line Help

Test Cross-Reference	Evaluation Criteria	Result	Comments
Document Structure and Format			
M&R-8-2-1	TAFI On-Line Help is logically and consistently organized.	Satisfied	Most lists contained in the Phone List and Features sections of the On-Line Help are organized alphabetically, geographically, and/or numerically. The Maintenance Plan section is organized alphabetically. However, within the maintenance plans, the information provided is unclear and difficult to follow. The section labeled 'TAFI Help' does not provide help with the use of the TAFI application. It contains a collection of miscellaneous information. These qualifications do not significantly impede the use of TAFI Help.
M&R-8-2-2	The organization of the TAFI On-Line Help is consistent with its intended use as described by the CLEC *TAFI End-User Training and User Guide*.	Satisfied	The TAFI On-Line Help is intended to be used as a reference tool. Adequate reference information under specific titles such as phone lists, feature aids, and maintenance plans is provided. However, while the TAFI Help section does contain job aid information, the data listed under this heading is not logically mapped to the title.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-8-2-3	TAFI On-Line Help text is presented in a clearly understandable manner.	Satisfied	Typographical and grammatical errors were found throughout the On-Line Help. In two sections, the text extends beyond the boundaries of the window and cannot be read in its entirety. These issues do not, however, substantively impede a CLEC TAFI user's ability to operate the tool.
Document Content			
M&R-8-2-4	TAFI On-Line Help provides the information required to navigate / utilize the TAFI interface.	Satisfied	A navigational aid for the TAFI application is provided within the On-Line Help section.
M&R-8-2-5	The content of the TAFI On-Line Help is consistent with its intended use as described by the *CLEC TAFI End-User Training and User Guide.*	Satisfied	The TAFI On-Line Help is intended to be used as a reference tool. However, while this document is described in detail in the *CLEC TAFI End-User Training and User Guide*, the content has not been developed with CLEC users in mind. The information provided under the Phone List heading contains additional reference information for a customer service representative. The information provided under the Features heading contains reference information. The Application Overview contains a description of the application but no job aid information. The Maintenance Plans section contains plan information, labor charges, and relevant technical definitions. The TAFI Help section contains miscellaneous job aids. Some information contained in this section is BLS-specific but is not labeled as such. Specifically, the Backtalk Section is relevant only to BLS employees. It is a mechanized "load scrubbing" system that draws only BLS customer trouble tickets. These issues do not significantly impede the use of TAFI Help.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-8-2-6	The components of the TAFI On-Line Help contain accurate information.	Satisfied	There are five components of TAFI On-Line Help: Phone Lists, TAFI Overview, Maintenance Plans, Features, and TAFI Help. Upon initial examination, KCI identified a number of issues across these components. Phone Lists: 143 numbers contained in these lists were examined. Of the 143, 27% were incorrect. While many of the phone numbers contained in the On-Line Help are incorrect, this does not negatively affect the CLEC community, as the majority of the listings are for internal BLS use and are thus rarely used by CLECs. TAFI Overview: This information is accurate. Features: This information is accurate. TAFI Help: • Backtalk- This information is from 1995 and is BLS-specific as it deals with the internal call routing process to Customer Service Associates (CSAs) and to an automated response system. • Password- This section outlines the process for changing the password in three different LMOS systems (to which a CLEC has no access), in IMS Security, and in TAFI. While this process is accurate for BLS employees, CLECs' passwords are only changed in TAFI production and backup. KCI identified these deficiencies to BLS. BLS responded that all of the TAFI Help text files were to be reviewed for errors and corrected in Release 2000.4. KCI reviewed Release 2000.4 and determined that the significant issues have been addressed by BLS, including: • Each of BLS's reference telephone number providers has reviewed its current contribution and

Test Cross-Reference	Evaluation Criteria	Result	Comments
			provided updated information in order to rectify the inaccurate information. BLS also removed the 900 Number Lookup Table from TAFI On-Line Help since, after consultation, it was discovered that it is no longer required by the CLEC community. • TAFI Help Backtalk and Password language additions make the documents more clear to CLECs.
Release Management			
M&R-8-2-7	Responsibilities and procedures for developing, updating, and correcting the TAFI On-Line Help are clearly defined.	Satisfied	Ownership of the On-Line Help is formally assigned to the Network Systems Support organization, which is responsible for correcting and updating existing files as well as evaluating and maintaining all future submissions for format and content. Additionally, for each major TAFI release, this group will audit existing On-Line Help content for relevance and accuracy and delete or update as appropriate.

Table VII-8.5: Evaluation Criteria and Results – Facility Based Activation Requirements

Test Cross-Reference	Evaluation Criteria	Result	Comments
Document Structure and Format			
M&R-8-3-1	The *Facility Based Activation Requirements Guide* is logically organized (e.g., clear page numbering and section labeling, table of contents, glossary of terms, explanation of acronyms, etc.) and contains a statement of organization.	Satisfied	The document is logically organized with clear page numbering and section labeling, a table of contents, a glossary of terms and an explanation of acronyms. It does not contain an index or a statement of organization.
M&R-8-3-2	*The Facility Based Activation Requirements Guide* clearly describes document purpose.	Satisfied	The document purpose is stated on page xiii.

Test Cross-Reference	Evaluation Criteria	Result	Comments
Document Content			
M&R-8-3-3	The *Facility Based Activation Requirements Guide* has clear and accurate citations directing readers to relevant sources of additional information.	Satisfied	The numbers provided in the Resources and Contact Information Section are accurate. Numbers are provided for the BLS CLEC Line, BLS CLEC Registration Office, LCSC, DCSC, RMC, and for Provisioning and Maintenance in Birmingham and Atlanta.
M&R-8-3-4	The TAFI information contained within the *Facility Based Activation Requirements Guide* is correct.	Satisfied	The *Facility Based Activation Requirements Guide* contains basic hardware and software requirements for TAFI activation. KCI compared this information, provided on pages 26 and 30, against the hardware and software used by KCI to establish connectivity to TAFI, and verified it to be accurate.
M&R-8-3-5	The TAFI information contained within the *Facility Based Activation Requirements Guide* is in line with the document purpose.	Satisfied	The purpose of the *Facility Based Activation Requirements Guide* is to "provide potential or new Competitive Local Exchange Carriers (CLECs) a comprehensive tour of the requirements involved for activation with BLS as a CLEC." This document provides the basic hardware and software requirements for TAFI activation, which is in line with the above stated purpose.
Document Availability			
M&R-8-3-6	The *Facility Based Activation Requirements Guide* is made readily available.	Satisfied	This document is available online at the BLS interconnection site at http://www.interconnection.bellsouth.com/guides/guides_p.html.

I. Test Results: Electronic Communications Trouble Administration (ECTA) Documentation Evaluation (M&R-9)

1.0 Description

The ECTA Documentation Evaluation was a review of the documentation provided by BellSouth for the set-up and use of an interface to BellSouth's ECTA Gateway for Maintenance and Repair trouble report processing. The objectives of this test were to evaluate the accuracy of the information contained in BellSouth's ECTA documentation, the conformance of BellSouth's ECTA documentation to industry standards, and the organization and ease of use of the documentation. The information used for this evaluation was taken from reviews of BellSouth's ECTA documentation and records of observations from M&R-2: ECTA Functional Test.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

See Section VII, "M&R Overview" for a description of BellSouth's ECTA Gateway and CLEC interface options.

CLECs have two options to access BellSouth's ECTA Gateway to perform trouble administration activities. These options, to build their own interface or to use the BellSouth-supplied EC-CPM interface, are discussed in more detail in Section VII[1].

If a CLEC elects to build its own interface to the ECTA Gateway, the CLEC will use the information contained in the publicly available American National Standards Institute (ANSI) T1.227, T1.228 and T1.262 standards as well as the General Network Information Model of which the ANSI standards are an extension[2]. Any CLEC endeavoring to build an interface to the ECTA Gateway would need to be familiar with this documentation.

As a supplement to the standards documentation discussed above, BellSouth negotiates the development of a Joint Implementation Agreement (JIA) with each CLEC intending to build an interface to ECTA. This JIA is intended to confirm points about a specific CLEC's implementation of an interface to the ECTA Gateway and is not intended to be an exclusive guide to allow CLECs to build an interface. Each JIA is therefore unique to a given CLEC's situation.

[1] The EC-CPM interface is not currently used by any CLEC. The scope of the *MTP* does not include an evaluation of EC-CPM or its documentation.

[2] These standards collectively are known as T1M1.

BellSouth provides CLECs with no other documentation outside of the JIA relating to the implementation or usage of an interface to the ECTA Gateway. As CLECs are responsible for creating their own interface to the BellSouth ECTA Gateway, it is incumbent upon any CLECs that are programming an ECTA interface to create their own end-user functionality guides.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was the documentation provided by BellSouth for the ECTA Gateway. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in Section 3.1 "Results & Analysis."

Table VII-9.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
M&R Documentation	*Joint Implementation Agreement for Electronic Communications Trouble Administration (ECTA) Gateway for Local Service (JIA)*	Accuracy of Document	M&R-9-1-1
		Ease of Use of Document	M&R-9-1-2
		Conformance of Document to ANSI Standards	M&R-9-1-3

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VII-9.2: Data Sources for M&R-9

Document	File Name	Location in Work Papers	Source
Joint Implementation Agreement for Electronic Communications Trouble Administration (ECTA) Gateway for Local Service Version 10/07/98[3]	CLEC_JIA.doc	M&R-2-A-1	BLS
Joint Implementation Agreement for Electronic Communications Trouble Administration (ECTA) Gateway for Local Service	No Electronic Copy	M&R-9-A-1	CLEC A

[3] BLS provided KCI with a generic version of this document for use in the M&R-2, M&R-3 and M&R-4 evaluations as well as for evaluation in this test.

Document	File Name	Location in Work Papers	Source
Gateway for Local Service between CLEC A and BellSouth[4]			
Joint Implementation Agreement for Electronic Communications Trouble Administration (ECTA) Gateway for Local Service between CLEC B and BellSouth[5]	No Electronic Copy	M&R-9-A-2	CLEC B
American National Standard for Telecommunications – Operations, Administration, Maintenance and Provisioning (OAM&P) – Services for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration) (ANSI T1.228-1995)	ANSI+T1[1].228-1995+(R1999).pdf	M&R-2-A-3	American National Standards Institute
E-Mail Communication from KCI to Georgia Public Services Commission re: M&R-9 Content	No Electronic Copy	M&R-9-A-3	KCI

2.4.1 Data Generation/Volumes

This test did not rely on data generation or volume testing.

2.5 Evaluation Methods

KCI tested ECTA functionality using a BellSouth Test Interface[6] and did not develop an interface to the ECTA Gateway. In structuring the ECTA Documentation Evaluation, KCI, based on discussions with the GPSC, determined that the test was never intended to assess the documentation provided by BellSouth to guide a CLEC's creation of an OSS interface, but was intended to assess the adequacy of end-user functional documentation. However, as CLECs are responsible for creating their own interface to the

[4] Each instance of an interface to the BellSouth ECTA Gateway is different making each JIA specific to a given implementation. KCI contacted CLECs that have implemented ECTA interfaces to obtain copies of their JIA. KCI received two JIAs from CLECs. To maintain the confidentiality of the information contained in these documents, this report will refer to these CLECs as CLEC A and CLEC B. These documents were consistent across versions with differences being attributable to the functionality available and requested at the time the agreements were drafted.

[5] See footnote 4.

[6] See Section VII, "M&R Overview" for a description of the BellSouth ECTA Test Interface.

BellSouth ECTA Gateway, it would be incumbent upon any CLEC programming an interface to ECTA to create their own end-user functionality guides. The BellSouth-provided ECTA JIA is intended for use as a supplement to the development of an interface to ECTA, not as a guide to end-user functionality. BellSouth should be held responsible for providing information (e.g. a combination of BellSouth created documents, negotiated agreements and references to standards) that describes the critical functionality necessary for maintenance and repair trouble ticket administration through the ECTA Gateway. BellSouth represents that the JIA is intended to satisfy this requirement. However, as KCI did not create an ECTA interface, our ability to fully evaluate the adequacy of the JIA is limited.

As a result, the ECTA Documentation Evaluation is limited to commentary on:

1. The accuracy of information that KCI is able to confirm or test through the feature / function testing of the ECTA Gateway;
2. Conformance of ECTA documentation to ANSI documentation requirements; and
3. Documentation organization and ease of use.

This test used records from direct experience of ECTA JIAs and observations of the ECTA JIAs made during the M&R-2: ECTA Functional Test. The steps taken in this analysis are listed below:

1. JIAs were collected from BellSouth and CLEC test participants.
2. The JIAs collected in Step 1 were used to design test scenarios and ECTA data inputs for the M&R-2: ECTA Functional Test. Discrepancies between the functionality as described in the JIAs and the actual functionality of the ECTA Gateway were noted.
3. Using the ANSI documents, a comparison was made between the documentation requirements outlined in the ANSI standards[7] and the JIAs.
4. The JIAs were reviewed in order to determine their overall usability.
5. Data from Steps 2-4 were mapped against individual evaluation criteria.

2.6 Analysis Methods

The ECTA Documentation Evaluation included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided

[7] The conformance requirements for the ANSI T1M1 standards are listed in Section 10 of the *American National Standard for Telecommunications – Operations, Administration, Maintenance and Provisioning (OAM&P) – Services for Interfaces between Operations Systems across Jurisdictional Boundaries to Support Fault Management (Trouble Administration)* (ANSI T1.228-1995).

the framework of norms, standards, and guidelines for the ECTA Documentation Evaluation.

Due to the limitations inherent in this evaluation, discussed in Section 2.5 Evaluation Methods, the evaluation criteria are not rated. Comments on aspects of the JIAs as described in the evaluation criteria are provided.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VII-9.3: M&R-9 Evaluation Criteria and Results[8]

Test Cross-Reference	Evaluation Criteria	Result[9]	Comments
M&R-9-1-1	BellSouth ECTA documentation accurately describes the functionality of the ECTA Gateway.	N / A	The information assessed in the ECTA JIAs was accurate except as noted below. The documentation does contain errors related to the fact that the JIAs have not been updated to reflect additions to ECTA Gateway functionality. Specific incidences include: 1. Documentation inaccurately states that the close-out verification function is not applicable to any non-designed circuit problems[10]. Appendix B[11] of the ECTA JIA states that this function is not available for non-designed trouble reports . However, BellSouth representatives have reported that this functionality is available for non-designed trouble tickets. 2. Documentation inaccurately states that

[8] These criteria are evaluated based on analysis of all three of the JIAs received by KCI. There are some issues in the older documents that have been corrected in later versions. These issues are not addressed here.

[9] N / A = Not Applicable. See Section 2.6 Analysis Methods for an explanation of the exclusion of test results from this evaluation.

[10] The closeout verification function allows CLEC ECTA users to confirm a trouble has been satisfactorily addressed before trouble ticket closure.

[11] BellSouth Trbl. Admin. Attribute Information for CLECs

Test Cross-Reference	Evaluation Criteria	Result[9]	Comments
			ECTA does not return Mechanized Loop Testing (MLT) results[12]. The ECTA JIA has not been modified to reflect the update of the ECTA Gateway that allows CLECs to request and view MLT results. This functionality was confirmed by KCI during functional testing. 3. Documentation inaccurately states that trouble reporting on non-designed UNE loops is not supported through ECTA[13]. The ECTA JIA states "Non-designed UNE loops are provisioned via LMOS and the BellSouth ECTA interface currently does not support trouble reports on these elements." KCI functional testing demonstrated that trouble reporting on non-designed UNE loops is a function of the ECTA Gateway. 4. Documentation does not describe the proper format for entering an SL1 circuitID into an ECTA trouble ticket, and states that the successful format, discovered during functional testing, is invalid[14]. Appendix G[15] of the ECTA JIA defines the proper formats for entering information into the circuitID object.

[12] MLT results allow CLECs to assess the physical status of a line before issuing a trouble report to BellSouth.

[13] Non-designed UNE loops, designated Unbundled Voice Loop – Service Level 1 (UVL-SL1) by BellSouth are non-designed circuits that can only be provided on two-wire circuits with loop start signaling. No Design Layout Records are included and there are no test access points. No remote testing for trouble reports can be performed on an SL1 loop.

[14] The circuitID object identifies the circuit on which a trouble report is to be entered in to the ECTA Gateway.

[15] Managed Object Instance (MOI or CIRCUITID) BellSouth Formats

[16] The troubleReportStatusWindow object specifies the interval within which trouble ticket progress updates must be provided by the BellSouth ECTA Gateway to the CLEC managing system.

[17] Trouble Report Format Definitions

[18] The CommitmentTimeRequest object specifies a CLEC's request for a clearance or on-site time by BellSouth maintenance personnel.

[19] The TroubleType object allows the CLEC to indicate what kind of trouble the customer is reporting on their line.

[20] The TroubleDetectionTime object allows the manager to specify the time that a trouble was detected.

Test Cross-Reference	Evaluation Criteria	Result[9]	Comments
			Appendix G does not cover the proper format for entering an SL1 circuit into the circuitID field. In addition, Appendix G states that the successful format for entering an SL1 circuit into the circuitID, discovered by KCI during functional testing, is invalid. In addition, the documentation contains the following ommissions, inaccuracies, and contradictions: 1. Documentation inaccurately states that the troubleReportStatusWindow object is optional in the creation of a trouble ticket[16]. Appendix F[17] of the ECTA JIA states that this attribute is optional at the creation of a trouble ticket. During functional testing, KCI found that submitting a trouble ticket without the troubleReportStatusWindow object causes an error response and prevents a ticket from being created. 2. Documentation inaccurately states that the committmentTimeRequest object is optional in the creation of a trouble ticket[18]. Appendix F of the ECTA JIA states that this attribute is optional at the creation of a trouble ticket. Functional testing showed that attempting to create trouble tickets without this object causes an error which prevents a trouble ticket from being created. 3. Documentation is contradictory regarding updates to the troubleType object by the managing system[19]. Appendix F of the ECTA JIA states that this object is updateable (through a set request) by the managing system. Appendix B of the same document specifies that the troubleType object is not updateable. KCI functional testing supported the assertion of Appendix B. 4. Documentation is contradictory regarding support of the troubleDetectionTime attribute by the ECTA Gateway[20]. Appendix F of the ECTA JIA lists this object and specifies that it is updateable by the manager. Appendix B of the same document

Test Cross-Reference	Evaluation Criteria	Result[9]	Comments
			specifies that the troubleDetectionTime object is not supported by the ECTA Gateway. KCI functional testing confirmed the information in Appendix B. KCI has communicated all of the issues listed above to BellSouth. BellSouth has revised the generic JIA to correct these issues. As well, BellSouth has committed to negotiate updates to the JIAs currently in effect with CLECs.
M&R-9-1-2	BellSouth ECTA documentation is easy to use.	N / A	ECTA documentation has a logical organization appropriate to its purpose. It contains a comprehensive table of contents with references to clearly displayed page numbering and includes useful cross references between sections. However, the documentation does have redundant and sometimes contradictory information (see evaluation criterion M&R-9-1-1 points 8 and 9 for contradictions) in Appendices B and F. Both appendices list the data objects used by the ECTA Gateway and outline the parties allowed to initiate and update the data objects. Appendix B adds more information on data definition and usage while Appendix F notes whether or not the data objects are optional or required. The documentation does not explicitly list the data objects that are necessary for various types of ECTA functional transactions[21].

[21] The current release of the ECTA Gateway allows for the following CLEC-initiated transactions: create a trouble ticket, request trouble ticket status, add information to a trouble ticket, modify information in a trouble ticket, verify repair completion on a trouble ticket, cancel a trouble ticket, and request MLT results on a line. These functions were verified in M&R-2: ECTA Functional Test.

Test Cross-Reference	Evaluation Criteria	Result[9]	Comments
M&R-9-1-3	BellSouth ECTA documentation conforms to ANSI documentation requirements.	N / A	The ECTA documentation lists the individual objects supported in BLS's implementation of a T1M1 compliant gateway in Appendices B and F[22]. An exception to this is noted in the comment for evaluation criterion M&R-9-1-1.

[22] Section 10 of ANSI T1.228-1995 states "As part of a system conformance statement, implementations shall state the object classes supported across the trouble administration interface."

J. Test Results: M&R Process Evaluation (M&R-10)

1.0 Description

The Maintenance and Repair (M&R) Process Evaluation examined the equivalence of BellSouth's (BLS) end-to-end processes and procedures for Retail (Business and Residential services) and Wholesale (Business and Residential services for both Resale and Unbundled Network Elements [UNEs]) trouble reporting and repair. The end-to-end process covered all activities from the moment a trouble ticket is captured in BellSouth's systems until the same trouble is closed and the customer is notified of the resolution.

The test for the M&R process evaluation was subdivided into two sub-tests.

Sub-Test 1 evaluated the consistency of processes and documentation used by BellSouth for retail and wholesale customers.

Sub-Test 2 involved the execution and observation of selected M&R test scenarios, and evaluated BellSouth's performance in making repairs under the conditions of various wholesale maintenance scenarios.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

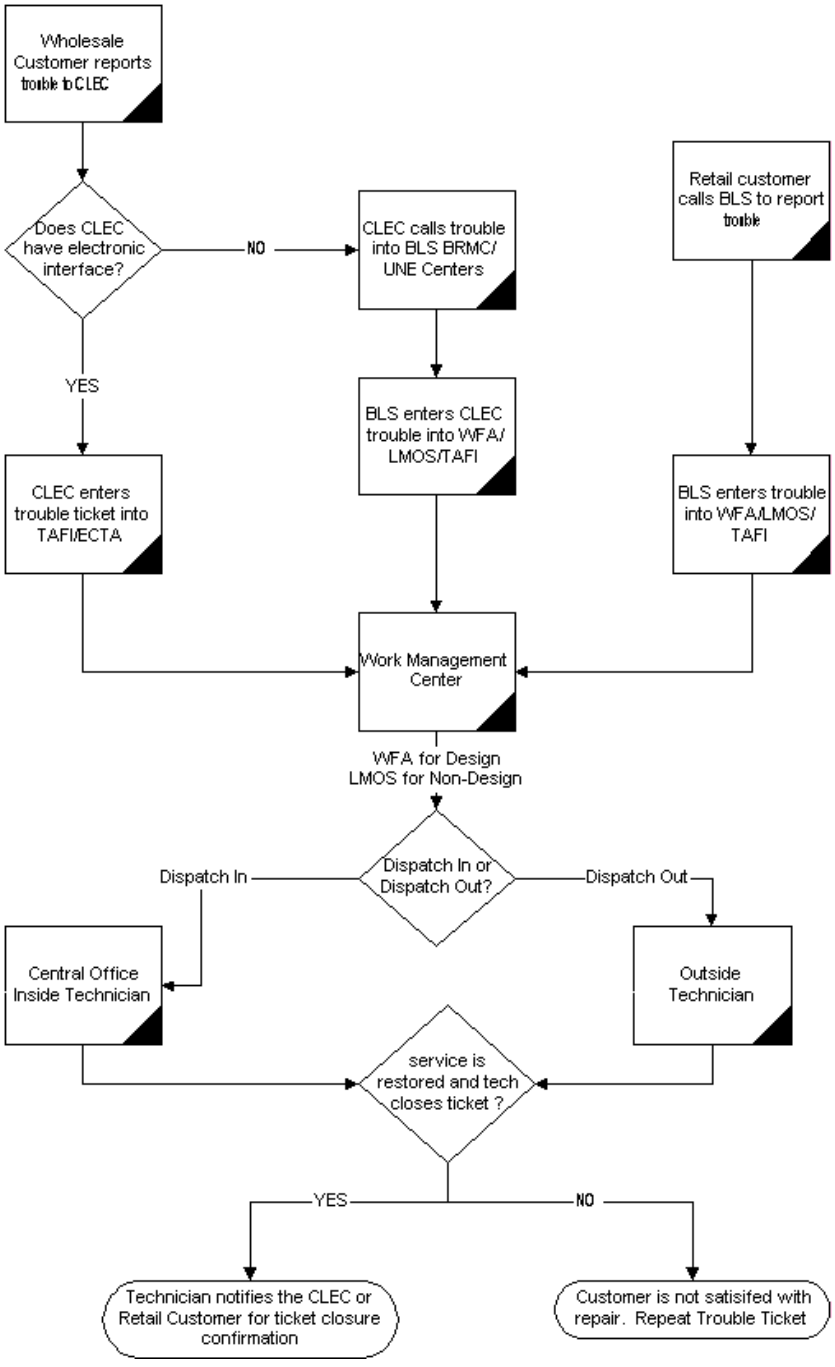
BellSouth's M&R administration and trouble repair process flows are described at a high level below and are documented in Figure VII-10.1. See Section VII, "M&R Overview" for a detailed description of the BellSouth M&R processes.

The Trouble Analysis Facilitation Interface (TAFI) is used to capture resale trouble tickets for Plain Old Telephone Service (POTS). TAFI also manages information related to trouble tickets passed to outside technicians for non-designed services (SL1) with a 10-digit telephone number. The Electronic Communications Trouble Administration (ECTA) Gateway is used to capture trouble tickets for designed (SL2) and non-designed (SL1) circuits. The Loop Maintenance Operation System (LMOS) is used to capture trouble tickets for non-designed services having telephone lines with more than 10-characters. The Work Force Administration (WFA) system captures the trouble ticket data for designed circuits (SL2) utilizing circuit IDs. Staff at the Work Management Center (WMC) schedule technicians and allocate outstanding trouble tickets to a Dispatch In (DI) or Dispatch Out (DO) status. The same technician workforce addresses troubles and repairs for BellSouth Retail and Wholesale customers.

The test concentrated on the BellSouth procedures, as well as the consistent application of those procedures, for wholesale services involved in the M&R process.

Figure VII-10.1 illustrates the BellSouth M&R process flow.

Figure VII-10.1: M&R-10 Business Process Flow



2.2 Scenarios

Multiple M&R scenarios were used to evaluate the M&R trouble repair performance process. Table VII-10.1 summarizes the scenarios used for the end-to-end test in Sub-Test 2.

Table VII-10.1: M&R Trouble Repair Performance Process Scenarios

Scenario No.	Scenario Title and Description
1	CLEC reports UNE SL2 analog loop trouble to BLS on behalf of CLEC residential customer who cannot originate or receive calls.
2	CLEC reports SL2 UNE analog loop trouble to BLS on behalf of CLEC business customer who cannot originate calls.
3	CLEC submits trouble report on an SL2 UNE analog loop to BLS on behalf of CLEC residential customer who cannot receive calls.
4, 4a	CLEC submits trouble report on UNE SL2 analog loop to BLS in response to CLEC residential customer's complaints of crosstalk.
6, 6a	CLEC reports trouble on SL1 UNE digital loop to BLS in regard to CLEC business customer complaint that they cannot originate calls.
7, 7a	CLEC reports trouble on SL2 UNE DS1 digital loop to BLS on behalf of residential customer who cannot originate calls.
16	CLEC queries BLS maintenance & repair systems to obtain trouble history report for small CLEC business customer served by BLS-provided unbundled analog loop port combination.
18	CLEC reports customer cannot originate call on one SL2 UNE DS1 digital loop to BLS.
19	CLEC reports trouble on UNE ISDN BRI loop to BLS on behalf of CLEC residential customer who cannot make or receive calls.
20b, 20c	CLEC submits trouble No Dial Tone (NDT) on UNE ISDN BRI loop to BLS in response to CLEC residential customer's report. Trouble report merits Emergency Commitment.
21	CLEC reports trouble on three UNE ISDN BRI loop to BLS on behalf of CLEC residential customer who cannot originate calls.
22a	CLEC reports trouble on ISDN BRI UNE loop in response to customer who cannot receive calls.
25a	CLEC reports trouble with UNE port to BLS in response to CLEC business customer complaint that calls cannot be originated on any line.
28	CLEC reports to BLS that features for CLEC business customer are not working properly due to UNE analog port.
30a	CLEC queries BLS maintenance and repair system to validate calling rate plan for CLEC residential customer served by BLS provided UNE analog port.
33a	CLEC reports SL2 UNE analog loop trouble to BLS on behalf of CLEC business customer who cannot receive or originate calls.

Scenario No.	Scenario Title and Description
34a	CLEC reports SL2 UNE DS1 digital loop trouble to BLS in regard to CLEC residential customer complaint that they cannot originate calls.
35	CLEC reports UNE SL2 analog loop trouble to BLS in response to CLEC business customer complaint that they cannot originate calls.
39, 39a	CLEC reports no dial tone on SL1 UNE analog loop to BLS in response to CLEC business customer complaint.
41	CLEC reports vertical feature trouble on UNE ISDN-BRI port to BLS for CLEC residentail line.
46	CLEC reports trouble on resale POTS line on behalf of CLEC business customer unable to receive calls.
46a, 46b, 46d	CLEC reports trouble on resale POTS line on behalf of CLEC business customer unable to receive calls.
47, 47a, 47b, 47c, 47d	CLEC reports trouble on resale POTS line on behalf of CLEC residential customer unable to receive calls.

2.3 Test Targets & Measures

The test target was the Wholesale (Resale/UNE) Maintenance and Repair end-to-end processes, procedures, and performance. KCI did not test BellSouth's retail circuits, analyze BellSouth-published metrics, or validate their accuracy in this test. Sub-processes, functions, and evaluation criteria are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table VII-10.2: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
End-to-end M&R Process	Process Flow Documentation	Completeness Wholesale and Retail Comparison	M&R-10-1-1 M&R-10-1-2 M&R-10-1-3 M&R-10-1-4
	Process evaluation	Wholesale and Retail Comparison	M&R-10-1-5 M&R-10-1-6 M&R-10-1-7 M&R-10-1-8 M&R-10-1-9 M&R-10-1-10 M&R-10-1-11 M&R-10-1-12
End-to-end Trouble Report Processing	M&R Test Situations	Timeliness Wholesale Performance	M&R-10-1-13 M&R-10-1-14 M&R-10-1-15

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VII-10.3: Data Sources for M&R Process Evaluation

Document	File Name	Location in Work Papers	Source
CLEC TAFI End User Training and User Guide EP – Issue 6, September 1998	No Electronic Copy	M&R-10-A-1	BLS
BLS *Overview – Maintenance & Repair Process*	No Electronic Copy	M&R-10-A-2	BLS
BLS Resale Maintenance Center (BRMC) Interview Summaries and Approvals, November 4, 1999	Printed Copy Interview_BRMC_Returned.doc	M&R-10-A-3	BLS / KCI
BLS Unbundled Network Center (UNEC) Interview Summaries and Approvals, November 5, 1999	Printed Copy Interview_UNE_Center_Returned.doc	M&R-10-A-4	BLS / KCI
BLS Business Repair Center (BRC) Interview Summaries and Approvals November 11, 1999	Printed Copy Interview_BRC_Returned.doc	M&R-10-A-5	BLS / KCI
BLS Residential Repair Center (RRC) Interview Summaries and Approvals November 9, 1999	Printed Copy Interview_RRC_Macon_Returned.doc	M&R-10-A-6	BLS / KCI
BLS Work Management Center (WMC) Interview Summaries and Approval November 10, 1999	Printed Copy Interview_WMC_Returned.doc	M&R-10-A-7	BLS / KCI
BLS Outside Technician Interview Summaries and Approval December 20, 1999 December 21, 1999 January 6, 2000	Printed Copy Interview_Macon_Tech_Returned.doc Interview_Augusta_Tech_Returned.doc Interview_PowerFerry_Tech_Return.doc	M&R-10-A-8	BLS / KCI
Electronic BLS messages.	No Electronic Copies	M&R-10-A-9	BLS / KCI
1999 GA RRC Report Card RRC Performance Evaluation	No Electronic Copy	M&R-10-A-10	BLS
Business Repair Center (BRC) *Control Office Administration for Special Services Trouble Report*. (BSP 660-225-102BT Issue G, June, 1994) BRC Performance Evaluation	Printed Copy BRC_M&P.txt	M&R-10-B-1	BLS

Document	File Name	Location in Work Papers	Source
Methods and Procedures from the BLS Resale Maintenance Center and Unbundled Network Center (Multiple Sections with indivdual version numbers and issue dates)	No Electronic Copies	M&R-10-B-2	BLS
Example of a LMOS Trouble Ticket History Report.	No Electronic Copy	M&R-10-B-3	BLS
Example of a WFA Trouble Ticket History Report.	No Electronic Copy	M&R-10-B-4	BLS
KCI internal document evaluating the 7 discounted M&R-10 ISDN line types	Printed Copy MR10ISDN.doc	M&R-10-C-1	KCI
Internal M&P's from the BRMC (Produced during follow-up interview)	No Electronic Copy	M&R-10-C-2	BLS
Internal M&Ps from the UNE Center (Produced during follow-up Interview)	No Electronic Copy	M&R-10-C-3	BLS
Test bed performance measurement	No Electronic Copy	M&R-10-C-4	BLS / KCI
M&R-10 Master Test Bed	Printed Copy MRMASTR.xls	M&R-10-C-5	KCI
KCI ISDN Test Cases	No Electronic Copies	M&R-10-C-6	KCI
KCI POTS Test Cases	No Electronic Copies	M&R-10-C-7	KCI
KCI SL1 / SL2 Test Cases	No Electronic Copies	M&R-10-C-8	KCI
KCI DS1 Observed trouble reports	No Electronic Copies	M&R-10-C-9	KCI
Customer Service Requests (CSRs)	No Electronic Copies	M&R-10-D-1	BLS
Work Management Center Methods & Procedures (Mulitple sections with individual version numbers and issue dates)	No Electronic Copies	M&R-10-E-1	BLS

2.4.1 Data Generation/Volumes

Trouble tickets were created on KCI test bed[1] accounts and tracked using the TAFI and Electronic Communications Trouble Administration (ECTA) interfaces. Calls were placed to the UNE Center and the BellSouth Resale Maintenance Center following the trouble repair process. No volume testing was required for this evaluation.

[1] See Section VII, "M&R Overview" for a description of the M&R test bed.

2.5 Evaluation Methods

Sub-Test 1 activities were developed based on KCI's understanding of BellSouth's Retail and Wholesale M&R end-to-end processes. In addition, interviews were conducted at BellSouth Retail and Resale / UNE work centers to evaluate the working knowledge of existing processes and procedures, specifically relating to the trouble ticket process, tracking system process, back-end analysis performance, use of test systems, and repair technicians utilization for both Retail and Resale customers.

M&R documentation and information was gathered and interviews were conducted at the following BellSouth work centers:

- The BellSouth Unbundled Network Element Center (UNEC) center provides a single point of contact and accountability for the provisioning and maintenance of UNEs and interconnection trunk services for all registered facility-based CLECs. The UNEC is responsible for responding to all CLEC informational inquiries. The center also controls, tests, coordinates, and analyzes the installation of UNEs, and provides control, testing, analysis, and fault isolation functions for all CLEC UNE trouble reports.
- The BellSouth Resale Maintenance Center (BRMC) provides a single point of contact and accountability for the maintenance of Non-Complex Resale Services and provisioning and maintenance of Complex Resale Services for all registered Resale-based CLECs. The BRMC is divided into "Complex Services," which includes Special Service circuits, and "Non-Complex Services" known as Plain Old Telephone Service (POTS). For Complex Resale Services, the center provides control, testing, coordination, and analysis of installation. For both Complex Services and Non-Complex Services, the center provides control, testing, analysis, and isolation of trouble reports on installed services.
- The Residential Repair Center (RRC) provides a single point of contact and accountability for all BellSouth retail residential customers. Trouble reports are entered into TAFI, after which the Customer Service Administrator (CSA) attempts to resolve the trouble. If resolution is not possible, the ticket is then passed to a Maintenance Administrator (MA) who works the ticket. Any unresolved tickets requiring dispatch of a technician are passed to the WMC for technician assignment and dispatch.
- The Business Repair Center (BRC) provides a single point of contact and accountability for all BellSouth retail business customers. The BRC is responsible for responding to all BellSouth retail business information inquiries. The BRC also controls, tests, coordinates, and analyzes the installation of non-design and designed service, and provides control, testing, analysis, and fault isolation functions for all BRC trouble reports. The Maintenance Administrator (MA) enters trouble tickets for non-designed

services (TN-based) into TAFI. Any trouble tickets that cannot be resolved are passed to screeners who perform further analysis on them. Designed services are circuit ID-based, which TAFI cannot process, and are, therefore, entered into the WFA system. These tickets are assigned to Testing Technicians (TT) for resolution utilizing the Integrated Test System (ITS). Any unresolved designed trouble tickets are passed to the WMC, using a link from the Work Force Administration – Control system to either the WFA-Dispatch Out (DO) or WFA-Dispatch In (DI) system.

- The Work Management Center (WMC) provides a pool of technicians who are assigned trouble tickets that require a DI or DO. Trouble tickets entered into TAFI are sent to the WMC and placed in LMOS, which enters a date and time stamp. Technicians are given assignments based on their geographical area. The workload is further allocated based on distance to job, distance to residence, and time commitment.

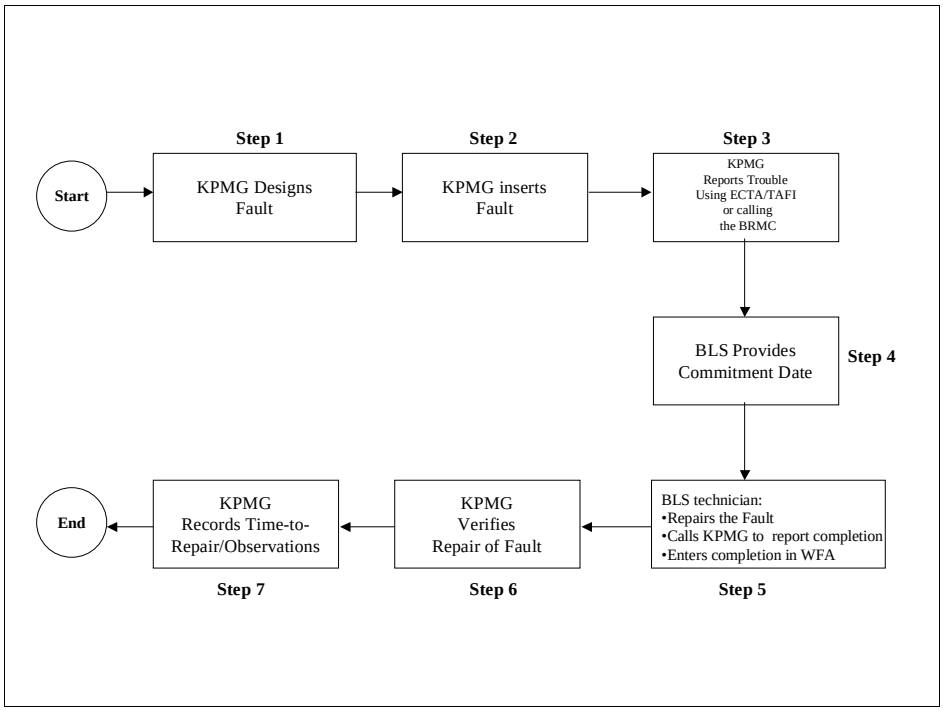
The Sub-Test 2 evaluation measured BellSouth's performance in isolating and repairing faults inserted in a working test bed of provisioned telephone lines. The fault insertions were placed in several BellSouth Central Offices (COs). KCI conducted this test during the first two weeks of December 1999 and the third week of February 2000.

KCI used the following methods to inform BellSouth of these CLEC troubles:

- Entered troubles into TAFI
- Entered troubles into ECTA
- Telephoned troubles into the BRMC
- Telephoned troubles into the UNE Center
- After BellSouth repaired a trouble, they called the KCI CLEC to report that the service had been restored, and to provide ticket closure confirmation. KCI then physically verified that each trouble was repaired within each of the COs. For each trouble ticket that was restored to service by a BellSouth technician, KCI obtained test-specific LMOS and WFA reports to document each test result.

FigureVII-10.2 depicts the test approach used by KCI for each test performed in Sub-Test 2.

FigureVII-10.2: Sub-Test 2 Approach



The following steps were followed in executing Sub-Test 2:

- Step 1: KCI designed faults to be inserted based on the *Master Test Plan* requirements
- Step 2: KCI inserted faults at designated COs and Hewlett Packard (HP) locations[2].
- Step 3: KCI reported troubles using ECTA, TAFI, or by calling the BRMC/UNEC
- Step 4: BellSouth provided commitment date and time for repair activities
- Step 5: BellSouth technician repaired the fault and called the KCI CLEC
- Step 6: KCI verified repair of the fault
- Step 7: KCI documented the time to repair and observation of repair activities.

[2] Specified test bed accounts were physically provisioned to HP locations in the Atlanta region.

Sub-Test 2 consisted of 56 individual tests included in Appendix B5 of the *Master Test Plan*. KCI inserted faults in 49 test bed lines for the M&R performance test. Included in the test were:

- 18 Designed Service Level 2 (SL2) lines, of which six required repeat calls
- 2 Non-Designed Service Level 1 (SL1) lines
- 19 Plain Old Telephone Service (POTS) lines
- 10 Integrated Service Digital Network (ISDN) lines
- 7 Digital Signal Level 1 (DS1) Lines[3]

KCI did not use seven of the ISDN line types initially included in the test bed[4]. In addition, KCI visited the UNEC to observe and examine DS1 trouble logs. During the visit seven DS1 trouble tickets were randomly selected and included in the KCI test bed for use in the evaluation.

2.6 Analysis Methods

The M&R-10 test included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria, detailed in the *Master Test Plan*, provided the framework of norms, standards, and guidelines for the M&R-10 test. The data collected were analyzed employing the evaluation criteria reference above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table shown below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

[3] Seven DS1 troubles were observed at BellSouth's UNE Center.

[4] There were a total of 10 ISDN line types designated in the test bed for the M&R performance test. Seven were not usable due to incomplete circuit layouts and were excluded from the M&R end-to-end test. These lines had been terminated at the Central Office (CO) backboard without a Network Termination (NT1) or Customer Premise Equipment (CPE) included. Without the NT1 and CPE, the circuit Service Profile Identifier (SPID) could not be programmed to allow sync (dial tone) between the CPE and CO office equipment (OE).

Table VII-10.4: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
End-to-End M&R Process			
M&R-10-1-1	BellSouth M&R process flows are complete	Satisfied	The BLS *Overview – Maintenance & Repair Process* document provides a clear and complete description of trouble ticket flows for wholesale and retail problem management.
M&R-10-1-2	BellSouth M&R process flows are accurate	Satisfied	The process flows described in the BLS *Overview – Maintenance & Repair Process* document are accurate. KCI interviewed BLS employees involved in fulfilling trouble management functions, and verified that their descriptions of the actual processes mapped to those documented in the BLS *Overview – Maintenance & Repair Process.* Interviews were conducted with representatives from the BRMC, UNE, BRC, RRC, WMC and outside technicians.
M&R-10-1-3	Parity exists between Retail and Resale M&R Process	Satisfied	Both CLEC and retail trouble tickets that are electronically entered into BLS systems follow a common process. This process, as detailed in Figure VII-10.1, is well documented in the BLS *Overview of Maintenance & Repair Process.*
M&R-10-1-4	Methods & Procedures (M&Ps) reflect the complete M&R process	Satisfied	Based on KCI's review of documentation from the Corporate Document Information Access (CDIA) system, BLS Electronic Library Services (BELS) system, internal M&P documents, and interviews with BLS personnel, BLS M&Ps encompass the complete M&R process for both Retail and Wholesale Customers.
M&R-10-1-5	M&Ps provide for a quality improvement process	Satisfied	Internal BLS documents provided by Resale / UNE and Retail centers describe the quality improvement procedures that are employed in the respective centers.

Test Cross-Reference	Evaluation Criteria	Result	Comments
M&R-10-1-6	The M&Ps provide for an escalation process	Satisfied	BLS has a documented escalation process for the BRC, as observed in document reviews and confirmed in interviews. The RRC's escalation process is documented within the CSA Handbook, Volume 1, and includes a clear and accurate escalation process. BLS's Mechanized Escalation procedures / Policy / Job Aids (JA-MEES-001 Issue 1b, December, 1999) describes an escalation process for the WMC, BRC, UNEC, and the BRMC.
M&R-10-1-7	The M&Ps document roles and responsibilities for the M&R escalation process	Satisfied	The BLS M&Ps provided to KCI define the roles and responsibilities for the M&R escalation process. BLS's Mechanized Escalation procedures / Policy / Job Aids (JA-MEES-001 Issue 1b, December, 1999) describe the roles and responsibilities for the escalation process within the WMC, BRC, UNEC, and the BRMC.
M&R-10-1-8	The M&Ps include a procedure for severity coding of trouble tickets	Satisfied	During the initial creation of a non-designed CLEC trouble ticket a commitment field is created in TAFI based on the problem type. Three types of commitments, Affected service (AS), Out of Service (OS), and Emergency, exist. All of these conditions drive the committed response time automatically to the work management centers. If the trouble condition seriously affects life or property, such as poles or cables blocking a street, or in cases of illness, death, doctors on call or a handicapped customer call, an emergency commitment is generated. Once a ticket is identified as emergency, the time to repair commitment is defined as <3 hours. For designed circuits the customer information record created during provisioning contains customer type information used for severity coding

Test Cross-Reference	Evaluation Criteria	Result	Comments
			in WFA. The *CLEC TAFI End User Training and User Guide* provides documentation for severity coding of a trouble ticket.
M&R-10-1-9	The M&R process includes performance monitoring	Satisfied	The RRC, BRC, BRMC, and UNE work centers produce monthly scorecards which provide internal metrics and performance data. These reports include Maintenance Average Duration, Out of Service > 24 hours, Percent of Repeat Troubles, and Missed Repair Appointments.
M&R-10-1-10	Trouble ticket performance is tracked and reported	Satisfied	The BLS *Overview – Maintenance & Repair Process* document indicates that non-designed trouble tickets are tracked and reported by the LMOS history log report (OSSLOG). Designed trouble tickets are tracked and reported by the WFAC report (OSSTRE). Each BLS work center produces a monthly report from LMOS & WFA data showing ticket performance such as Average Time to Repair, Missed Commitments, and Out of Service > 24 Hours. This also was confirmed during conversation with work center management.
M&R-10-1-11	The M&Ps include procedures for documenting of unresolved trouble tickets	Satisfied	BLS has a policy for the BRC to document unresolved trouble tickets. This information is found under the Chronic Investigation Guideline section of the BRMC *Control Office Administration for Special Services Trouble Report.* The RRC provided a response in an electronic format stating that unresolved trouble tickets are escalated to the necessary level to achieve resolution.
M&R-10-1-12	Problem status of trouble tickets is tracked and is readily accessible	Satisfied	Non-Designed trouble tickets can be tracked by the LMOS log report and a designed trouble ticket can be tracked by the WFA log report. These reports are readily accessible to BLS staff handling the trouble ticket, as well as to the CLEC upon request to the BRMC or UNE center.

Test Cross-Reference	Evaluation Criteria	Result	Comments
End-to-End Trouble Report Processing			
M&R-10-1-13	BLS accurately closes trouble tickets as defined in M&R test bed circuits	Satisfied	The BLS technician pool accurately closed all 49 KCI trouble tickets. However, 8% of the time no call back notification, indicating that the trouble had been repaired, was given to the KCI CLEC.
M&R-10-1-14	BLS provides commitment date and times for test bed circuits	Satisfied	Trouble tickets that were telephoned to the BRMC or UNE Center were given a commitment date and time by the receiving BLS technician. The entry of trouble tickets into TAFI and ECTA generated commitment dates and times from the online system. The Joint Implementation Agreement (JIA) for ECTA Gateway for Local Service includes a description of the commitment date and time stamp for ECTA located in Appendix B, No. 13. The *CLEC TAFI End User Training and User Guide* provides documentation for commitment dates and times, found in section 7.4, Access and Commitment Window.
M&R-10-1-15	BLS's M&R systems accurately capture and track the relevant data used in performance tracking and the measurement of trouble tickets for test bed circuits	Satisfied	BLS M&R systems accurately captured and tracked KCI's 49 fault insertion scenarios and the relevant data used in performance and measurement of trouble tickets. KCI trouble tickets were created using various methods that included TAFI to capture resale trouble tickets for POTS, ECTA for one SL2 UNE Loop, calling the BRMC for non-design circuits, and calling the UNE Center for all design circuit troubles. LMOS captured relevant data for KCI's POTS and non-designed circuits (SL1) such as start time, stop time, type of circuit, reported trouble, escalations, irate calls, resolution of trouble, and BLS technician callback. WFA performed the same function such as capturing start time, stop time, circuit type, reported problem, escalations, irate calls, resolution of

Test Cross-Reference	Evaluation Criteria	Result	Comments
			trouble, and BLS technician callback for designed circuit types (SL2). These systems generate history logs that act as inputs to BLS reporting systems. The date/time stamps from these reports were compared to each LMOS or WFA report to measure performance, and to ensure accurate tracking of each trouble ticket. The date/time performance measures were used to evaluate maintenance duration time, missed repair appointments, and out of service >24 hours.

Change Management

VIII. Change Management (CM) Domain Results and Analysis Section

1.0 Description

The purpose of this section is to present the specific tests, results, and analysis from our evaluation of the processes and other operational elements associated with BellSouth's Change Management practices. The Change Management Practices Review (CM) evaluated overall policies and practices for managing changes to the procedures and Operational Support Systems (OSS) necessary for establishing and maintaining effective operations between BellSouth and Competitive Local Exchange Carriers (CLECs). This test also focused on the reasonableness of change intervals and tracking mechanisms.

2.0 Methodology

The scope of the CM Test in Georgia included the evaluation of the processes and procedures of BellSouth's Change Control Process. BellSouth's change event notifications and documentation were reviewed. Interviews were conducted with BellSouth personnel and change control meetings were observed.

2.1 Business Process Description

BellSouth's change management process is currently in a transitional state. The *Electronic Interface Change Control Process* (EICCP), implemented by BellSouth in April 1998, is being replaced by a revised process. This shift to a new change control process remains under discussion between BellSouth and the CLEC community. The existing BellSouth change control process requires CLEC consensus and adoption for finalization and implementation of the revised interim process. The interim process establishes the procedures to manage and communicate changes to selected interfaces, associated manual processes, and supporting documentation between BellSouth and CLECs.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Bed

Test beds were not applicable to this test.

A. Test Results: Change Management Practices Review (CM-1)

1.0 Description

The objective of the Change Management Practices Review (CM-1) was to evaluate the overall policies and practices for managing changes to the procedures and Operational Support Systems (OSS) necessary for establishing and maintaining effective operations between BellSouth and Competitive Local Exchange Carriers (CLECs). The test also focused on the reasonableness of change intervals and tracking mechanisms. Interviews, reviews of BellSouth's change event notifications, and documentation reviews were conducted, along with observations of change control meetings, to evaluate the change management process.

2.0 Methodology

This section summarizes the test methodology.

2.1 Business Process Description

During the course of this evaluation, BellSouth's change management process underwent multiple changes. A former process for managing change, the *Electronic Interface Change Control Process (EICCP)*[1], was replaced by a revised process, *the Interim Change Control Process* (interim process). BellSouth, with the agreement of some CLECs, formally implemented this interim process on April 17, 2000 for a three-month trial, subject to further modification following the trial period. On August 23, 2000, a majority of CLECs participating in that month's change control status meeting voted to remove this process' "interim" status, thereby changing its title to the *Change Control Process* (CCP)[2].

On October 17, 2000, BellSouth initiated a series of five full- or half-day CCP "process improvement" meetings with interested CLECs, the last of which was held on February 21, 2001. The purpose of these meetings was to allow BellSouth and CLECs the opportunity to address, through discussion and negotiation, a number of CLEC concerns with the August 23, 2000 baseline CCP. KCI attended each of the five face-to-face meetings as an observer. As of the date of this report, the outcome of these sessions resulted in BellSouth's publishing one formal update to the C*hange Control Process* (version 2.1, February 9, 2001), with another version to be issued following CLEC voting on revisions proposed at the final February 21, 2000 meeting.

[1] Published August 14, 1998 and in effect at the outset of this evaluation.

[2] During the August 2000 BellSouth / CLEC monthly status meeting, BellSouth called for a vote to remove the 'interim' status from the operating change control process. Six of nine CLECs participating on the call voted in favor of the measure, with one later rescinding its favorable vote.

The *Change Control Process* establishes a framework to manage and communicate changes to selected electronic interfaces, associated manual processes, and supporting documentation among BellSouth and CLECs. The *Change Control Process* delineates changes into six types:

- Type 1 - System Outage
- Type 2 - Regulatory Change
- Type 3 - Industry Standard Change
- Type 4 - BellSouth-Initiated Change
- Type 5 - CLEC-Initiated Change
- Type 6 - CLEC Impacting Defects.

Either BellSouth or a CLEC can initiate the change management process by submitting an appropriate change request (CR), classified as one of the six types listed above. Type 1 change requests are used when a system is totally unusable or when existing functionality degrades to the point of disruption of a CLEC's ability to conduct business with BellSouth. Type 2 changes are required to comply with newly passed legislation, regulatory requirements, or court rulings. Type 3 changes are required to bring OSS used between BellSouth and the CLEC community into compliance with new industry standards. Type 4 changes are any that affect the interfaces between CLECs' and BellSouth's OSS, which BellSouth desires to implement on its own accord. Type 5 changes are those that are initiated by a CLEC through the submission of a formal change request to BellSouth. Type 6 changes are defects reported in a production environment that affect CLEC operations, causing deviation from the baseline system parameters, and may require workarounds or clarification. Another classification, Expedited Feature, represents 1) a Type 6 change request that is not validated to be a defect, which is then re-classified as a feature; or 2) a Type 2-5 change request that the CLEC and BellSouth determine should be expedited due to its business impact.

The Change Control Process employs four process flows to differentiate among Type 1, Types 2-5, Type 6, and Expedited Feature change requests. Each process flow features distinct cycle times, accountability, sub-process activities, and inputs/outputs for each step in the process. An escalation process is also in place for each process flow type. BellSouth uses a change request log to track CRs through their life cycle, and as a measurement tool for adherence to prescribed intervals and cycle times. The BellSouth Change Control Manager and staff coordinate all activities within the change control process. Prioritization of candidate change requests for implementation is determined during the Change Review Meetings among BellSouth and CLECs.

Intervals are defined in the Change Control Process for change events including software releases, documentation changes, and documentation updates. Notifications are issued via postings on BellSouth's Interconnection Web site and via email.

2.2 Scenarios

Scenarios were not applicable to this test.

2.3 Test Targets & Measures

The test target was BellSouth's Change Management Process. Sub-processes, functions, evaluation criteria, and associated test cross-reference numbers are summarized in the following table. The last column "Test Cross-Reference" indicates where the particular measures are addressed in section 3.1 "Results & Analysis."

Table VIII-1.1: Test Target Cross-Reference

Sub-Process	Function	Evaluation Criteria	Test Cross-Reference
Change Management	Developing Change Proposals	Completeness and consistency of change development process	CM-1-1-1 CM-1-1-2
	Evaluating Change Proposals	Completeness and consistency of change evaluation process	CM-1-1-3 CM-1-1-4 CM-1-1-7
	Implementing Change	Completeness and consistency of change implementation process	CM-1-1-7
	Intervals	Reasonableness of change interval	CM-1-1-5
	Documentation	Timeliness of documentation updates	CM-1-1-6
	Tracking Change Proposals	Adequacy and completeness of change management tracking process	CM-1-1-7 CM-1-1-8

2.4 Data Sources

The data collected for the test are summarized in the table below.

Table VIII-1.2: Data Sources for Change Management Practices Review

Document	File Name	Location in Work Papers	Source
BellSouth Electronic Interface Change Control Process	No Electronic Copy	CM-1-A-2	BLS
BLS Release Manager Interview Report	No Electronic Copy	CM-1-A-3	KCI
BLS Customer Support Interview Report	No Electronic Copy	CM-1-A-4	KCI
BLS Change Control Manager Interview Report	No Electronic Copy	CM-1-A-5	KCI
BLS Documentation Owners Interview Report	No Electronic Copy	CM-1-A-6	KCI
BLS Systems Architect Interview Report	No Electronic Copy	CM-1-A-7	KCI
BLS External Response Team Interview Report	No Electronic Copy	CM-1-A-8	KCI
BLS Internal Change Process Interview Report	No Electronic Copy	CM-1-A-9	KCI
Change Control Staff Interview Report	No Electronic Copy	CM-1-A-10	KCI
ENCORE Electronic Interface Management Process	No Electronic Copy	CM-1-A-11	BLS
ENCORE Electronic Interface Ordering Procedure	No Electronic Copy	CM-1-A-12	BLS
Feature/Defects Process and States	No Electronic Copy	CM-1-A-13	BLS
Defect Change Management Status	No Electronic Copy	CM-1-A-14	BLS
Feature/Defect Definition	No Electronic Copy	CM-1-A-15	BLS
Electronic Interface Change Control Calendar	No Electronic Copy	CM-1-A-16	BLS
Change Request Log	No Electronic Copy	CM-1-A-17	BLS
Preliminary Priority List 9/28/1999	No Electronic Copy	CM-1-A-18	BLS
EICCP Steering Committee Meeting Minutes 9/14/1999	No Electronic Copy	CM-1-A-19	BLS
EICCP Steering Committee Meeting Minutes 9/28/2000	No Electronic Copy	CM-1-A-20	BLS
EICCP Steering Committee Meeting Minutes 11/30/1999	No Electronic Copy	CM-1-A-21	BLS

Document	File Name	Location in Work Papers	Source
EICCP Steering Committee Meeting Minutes 1/26/2000	No Electronic Copy	CM-1-A-22	BLS
EICCP Steering Committee Meeting Minutes 2/29/2000	No Electronic Copy	CM-1-A-23	BLS
Steering Committee Re-schedule Email Notice 3/21/2000	No Electronic Copy	CM-1-A-24	BLS
Meeting Email Notice For Developing Requirements Related To Ordering xDSL Loops	No Electronic Copy	CM-1-A-25	BLS
RPM Meeting Re-schedule Email Notice For 11/16/1999	No Electronic Copy	CM-1-B-1	BLS
EICCP Meeting Email Notice For 10/21/1999 and 12/9/1999	No Electronic Copy	CM-1-B-2	BLS
Steering Committee Member List	No Electronic Copy	CM-1-B-3	BLS
Enhancement Review Meeting Notice and Agenda For 9/28/1999	No Electronic Copy	CM-1-B-4	BLS
EICCP Steering Committee Meeting Notice and Agenda For 1/26/2000	No Electronic Copy	CM-1-B-5	BLS
BLS/CLEC Conference Call Email Notice For Upcoming Changes	No Electronic Copy	CM-1-B-6	BLS
Defect Email Notice Update	No Electronic Copy	CM-1-B-7	BLS
Carrier Notification Letters 1999	No Electronic Copy	CM-1-B-8	KCI
Carrier Notification Letters 2000	No Electronic Copy	CM-1-B-9	KCI
Carrier Notification Interval Table	No Electronic Copy	CM-1-B-10	KCI
Customer Guide Interval Table	No Electronic Copy	CM-1-B-11	KCI
TAG Guide Interval Table	No Electronic Copy	CM-1-B-12	KCI
Change Control Log (March 2000)	No Electronic Copy	CM-1-B-13	BLS
Change Control Log (April 2000)	No Electronic Copy	CM-1-B-14	BLS

Document	File Name	Location in Work Papers	Source
Interim Change Control Process, Version 1.5, April 26, 2000	No Electronic Copy	CM-1-B-15	BLS
Interview Report: BellSouth Change Control Manager: May 17, 2000	No Electronic Copy	CM-1-B-16	KCI
Change Control Process Monthly Status Meeting Minutes: April 26, 2000	No Electronic Copy	CM-1-B-17	BLS
Change Control Process Monthly Status Meeting Minutes: May 24, 2000	No Electronic Copy	CM-1-B-18	BLS
Change Request Log (May 2000)	No Electronic Copy	CM-1-B-19	BLS
Draft: *Expedited Feature Process*: 5/30/00	No Electronic Copy	CM-1-B-20	BLS
BLS Documentation Process and *Documentation Quality Control Checklist*	No Electronic Copy	CM-1-B-21	BLS
Change Request Log (June 2000)	No Electronic Copy	CM-1-B-22	BLS
Interview Report: BellSouth Documentation Process: June 21, 2000	No Electronic Copy	CM-1-B-23	KCI
Change Control Process Monthly Status Meeting Minutes: June 26, 2000	No Electronic Copy	CM-1-B-24	BLS
June 28, 2000 Change Review Meeting Agenda	No Electronic Copy	CM-1-B-25	BLS
June 28, 2000 Change Review Meeting Minutes	No Electronic Copy	CM-1-C-1	BLS
Notification of and materials for Conference Call on Expedited Feature Process	No Eletronic Copy	CM-1-C-2	BLS
Monthly Status Meeting Agenda: July 26, 2000	No Electronic Copy	CM-1-C-3	BLS
Change Request Log (July 2000)	No Electronic Copy	CM-1-C-4	BLS
Interim Change Control Process and appendices showing BLS-proposed changes. July 20, 2000 version 1.6	No Electronic Copy	CM-1-C-5	BLS
Monthly Status Meeting Agenda: August 23, 2000	No Electronic Copy	CM-1-C-6	BLS

Document	File Name	Location in Work Papers	Source
Monthly Status Meeting Minutes: July 26, 2000	No Electronic Copy	CM-1-C-7	BLS
Tentative Change Control 2000 Release Schedule	No Electronic Copy	CM-1-C-8	BLS
September 27, 2000 Tentative Change Review Meeting Agenda	No Electronic Copy	CM-1-C-9	BLS
Materials Related to Exception 2	No Electronic Copy	CM-1-C-10	KCI
Materials Related to Exception 17	No Electronic Copy	CM-1-C-11	KCI
Materials Related to Exception 30	No Electronic Copy	CM-1-C-12	KCI
Materials Related to Observation 64	No Electronic Copy	CM-1-C-13	KCI
Change Request Log (August 2000)	No Electronic Copy	CM-1-C-14	BLS
Draft: Defect/Expedite Notification Process	No Electronic Copy	CM-1-C-15	BLS
Monthly Status Meeting Minutes: August 23, 2000	No Electronic Copy	CM-1-C-16	BLS
Notice of Reduction in Interval for High Impact Defects	No Electronic Copy	CM-1-C-17	BLS
Notice from Sprint on August 23, 2000 vote	No Electronic Copy	CM-1-C-18	KCI
Notice from Rhythms and BLS response on August 23, 2000 vote	No Electronic Copy	CM-1-C-19	KCI
Notice from MCI WorldCom on August 23, 2000 vote	No Electronic Copy	CM-1-C-20	KCI
Materials from BLS to GPSC related to August 23, 2000 vote	No Electronic Copy	CM-1-C-21	BLS
Notice of change in 2nd Level Escalations within BLS	No Electronic Copy	CM-1-C-22	BLS
Change Control Process, Version 2.0, August 23, 2000	No Electronic Copy	CM-1-C-23	BLS
Notification of conference call for Proposed Release 8.0 and 8.1 scope	No Electronic Copy	CM-1-C-24	BLS

Document	File Name	Location in Work Papers	Source
Meeting Minutes: Release 8.0 Package Meeting: September 18, 2000	No Electronic Copy	CM-1-C-25	BLS
Notice from AT&T regarding BLS's issuance of BellSouth Business Rules for Local Ordering, Issue 9G; includes BLS's response	No Electronic Copy	CM-1-D-1	KCI
Notification of conference call and Targeted Releases 8.0, 8.1, 9.0, and 10.0 scope	No Electronic Copy	CM-1-D-2	BLS
September 27, 2000 Change Review Meeting agenda and Release Management Status documents	No Electronic Copy	CM-1-D-3	BLS
Change Request Log (September 2000)	No Electronic Copy	CM-1-D-4	BLS
Revised 9/27/00 Change Review Meeting Pending Change Requests to be Prioritized	No Electronic Copy	CM-1-D-5	BLS
Conference Call Minutes: Release 8.0: September 22, 2000	No Electronic Copy	CM-1-D-6	BLS
BLS notice of proposed meeting to address Change Control Process improvements	No Electronic Copy	CM-1-D-7	BLS
Meeting Minutes: September 27, 2000 Change Review Meeting	No Electronic Copy	CM-1-D-8	BLS
BLS Notice of CCP Process Improvement Meeting: October 17, 2000; and major topics for discussion	No Electronic Copy	CM-1-D-9	BLS
BLS notice of Release 8.0 User Requirements conference call	No Electronic Copy	CM-1-D-10	BLS
CCP Process Improvement Meeting Agenda: October 17, 2000; and AT&T's suggested changes to the *Change Control Process* document	No Electronic Copy	CM-1-D-11	BLS
BLS notice of change to scope of Release 8.0	No Electronic Copy	CM-1-D-12	BLS

Document	File Name	Location in Work Papers	Source
Meeting Minutes: Release 8.0 Requirements Review: October 12, 2000	No Electronic Copy	CM-1-D-13	BLS
Monthly Status Meeting agenda: October 25, 2000	No Electronic Copy	CM-1-D-14	BLS
BLS Release Management Status document	No Electronic Copy	CM-1-D-15	BLS
Change Request Log (October 2000)	No Electronic Copy	CM-1-D-16	KCI
Meeting Minutes: CCP Monthly Status Meeting: October 25, 2000	No Electronic Copy	CM-1-D-17	BLS
BLS notice of CLEC Test Environment conference call and corresponding Overview	No Electronic Copy	CM-1-D-18	BLS
BLS notice of second CCP Process Improvement Meeting: November 1, 2000; and agenda	No Electronic Copy	CM-1-D-19	BLS
Materials related to Observation 88	No Electronic Copy	CM-1-D-20	KCI
Meeting Minutes: CLEC Test Environment: October 31, 2000	No Electronic Copy	CM-1-D-21	BLS
Meeting Minutes: CCP Process Improvement Meeting: November 1, 2000	No Electronic Copy	CM-1-D-22	BLS
"Matrix" documentation format example from Telcordia	No Electronic Copy	CM-1-D-23	BLS
Meeting Minutes: Change Control Process Review Meeting (CLEC organized) and AT&T's revised suggested changes to the *Change Control Process* document	No Electronic Copy	CM-1-D-24	BLS
CLEC Test Environment – Timeline and dialogue from Albion Connect, Inc.	No Electronic Copy	CM-1-D-25	BLS
BLS notice of Release 9.0 User Requirements conference call: November 13, 2000	No Electronic Copy	CM-1-E-1	BLS

Document	File Name	Location in Work Papers	Source
Monthly Status Meeting agenda: November 15, 2000	No Electronic Copy	CM-1-E-2	BLS
BLS notice regarding expedited CR#EDI020900_001 to be included in Release 8.0	No Electronic Copy	CM-1-E-3	BLS
BLS notice regarding implementation date change for CLEC test environment	No Electronic Copy	CM-1-E-4	BLS
Revised agenda and materials for Monthly Status Meeting: November 15, 2000	No Electronic Copy	CM-1-E-5	BLS
Change Request Log (November 2000)	No Electronic Copy	CM-1-E-6	BLS
BLS notice of third CCP Process Improvement Meeting: December 7, 2000; and tentative agenda	No Electronic Copy	CM-1-E-7	BLS
Meeting Minutes: November 13, 2000 Release 9.0 User Requirements	No Electronic Copy	CM-1-E-8	BLS
Meeting Minutes: November 15, 2000 CCP Monthly Status	No Electronic Copy	CM-1-E-9	BLS
Agenda for CCP Process Improvement Meeting: December 7, 2000	No Electronic Copy	CM-1-E-10	BLS
CLEC notification of delay of Release 8.0.1	No Electronic Copy	CM-1-E-11	BLS
CLEC notification of Release 8.0.2 scheduled for 12/9/00	No Electronic Copy	CM-1-E-12	BLS
Revised 12/7/00 CCP Process Improvement Meeting agenda	No Electronic Copy	CM-1-E-13	BLS
CLEC notification of delay of Release 8.0.2	No Electronic Copy	CM-1-E-14	BLS
Monthly Status Meeting agenda and materials: December 13, 2000	No Electronic Copy	CM-1-E-15	BLS
Change Request Log (December 2000)	No Electronic Copy	CM-1-E-16	BLS

Document	File Name	Location in Work Papers	Source
CLEC notification of Parsed CSR conference call: 1/18/01	No Electronic Copy	CM-1-E-17	BLS
Meeting Minutes: 12/7/00 CCP Process Improvement meeting	No Electronic Copy	CM-1-E-18	BLS
Meeting Minutes: CCP Monthly Status Meeting: December 13, 2000	No Electronic Copy	CM-1-E-19	BLS
12/18/00 Advance copy to CLECs of revision history *for BellSouth Business Rules for Local Ordering, Issue 9K*	No Electronic Copy	CM-1-E-20	BLS
1/10/01 CCP Process Improvement Meeting agenda	No Electronic Copy	CM-1-E-21	BLS
BLS Notification of and User Requirements for CLEC Test Bed conference call	No Electronic Copy	CM-1-E-22	BLS
BLS proposed changes to Defect Section of *CCP* document	No Electronic Copy	CM-1-E-23	BLS
CLEC Test Bed Issue Log for 1/17/01 conference call	No Electronic Copy	CM-1-E-24	BLS
Tentative Agenda for 1/31/01 Change Review Meeting	No Electronic Copy	CM-1-E-25	BLS
Notification of 1/18/01 CLEC Test Bed User Requirements Meeting	No Electronic Copy	CM-1-E-26	BLS
Notification of 1/25/01 User Requirements Meeting – Enhancements to Mechanization of Loop Makeup (CR0279)	No Electronic Copy	CM-1-E-27	BLS
BLS Change Control Process Document Consensus Voting Ballot	No Electronic Copy	CM-1-E-28	BLS
1/18/01 AT&T email to CLEC community with Information on CCP Document Ballot	No Electronic Copy	CM-1-E-29	BLS
"Revised" BLS Change Control Process Document Consensus Voting Ballot	No Electronic Copy	CM-1-E-30	BLS

Document	File Name	Location in Work Papers	Source
Meeting Minutes and Original Change Request Related to Parsed CSR	No Electronic Copy	CM-1-E-31	BLS
1/22/01 AT&T email to CLEC Community with Information on CCP Document Ballot	No Electronic Copy	CM-1-E-32	BLS
Meeting Minutes From 1/17/01 and 1/18/01 CLEC Test Environment Meeting	No Electronic Copy	CM-1-E-33	BLS
Notification of 1/31/01 Change Review Meeting	No Electronic Copy	CM-1-E-34	BLS
Change Request Log (January 2001)	No Electronic Copy	CM-1-E-35	BLS
Updated 1/31/01 Change Review Request List and Log	No Electronic Copy	CM-1-E-36	BLS
Revised Pending Change Request List for 1/31/01 Meeting	No Electronic Copy	CM-1-E-37	BLS
Meeting Minutes From 1/10/01 CCP Process Improvement Meeting	No Electronic Copy	CM-1-E-38	BLS
Change Control Process, Working Document, December 5, 2000, V.2.0	No Electronic Copy	CM-1-E-39	BLS
Change Control Process Improvement Meeting-January 10, 2001 CLEC Ballot Voting Results	No Electronic Copy	CM-1-E-40	BLS
January 25, 2001 Enhancements to Mechanization of Loop Makeup User Requirements Meeting Minutes	No Electronic Copy	CM-1-E-41	BLS
January 31, 2000 Change Review Meeting, Final Ranking Tally	No Electronic Copy	CM-1-E-42	BLS
January 31, 2001 Change Review & Monthly Status Meeting Meeting Minutes	No Electronic Copy	CM-1-E-43	BLS
January 31, 2001 Change Review Meeting Information Package	No Electronic Copy	CM-1-E-44	BLS

Document	File Name	Location in Work Papers	Source
CLEC Documentation Meeting Minutes, February 1, 2001	No Electronic Copy	CM-1-F-1	BLS
BellSouth *Change Control Process*, V.2.1, February 1, 2001, reflecting Process Improvement Meeting Voting Results	No Electronic Copy	CM-1-F-2	BLS
AT&T's February 11, 2001 E-Mail to CLECs and BellSouth Change Control Suggesting Revision to Minutes of January 10, 2001 Process Improvement Meeting	No Electronic Copy	CM-1-F-3	AT&T
February 13, 2001 Notice of Formation of Flow Through Improvement Task Force	No Electronic Copy	CM-1-F-4	BLS
BellSouth's February 13, 2001 Response to AT&T's February 11, 2001 e-mail regarding January 10, 2001 meeting minutes, including amended minutes	No Electronic Copy	CM-1-F-5	BLS
Change Control Process, Working Document, February 16, 2001, V.2.1	No Electronic Copy	CM-1-F-6	BLS
Change Control Process, V.2.1.A, February 16, 2001	No Electronic Copy	CM-1-F-7	BLS
BellSouth's February 20, 2001 Response to AT&T Regarding Questions on *CCP* Document V.2.1.A	No Electronic Copy	CM-1-F-8	BLS
BellSouth's February 20, 2001 e-mail to CLECs providing clarification on February 16, 2001 version of *Change Control Process*	No Electronic Copy	CM-1-F-9	BLS
BellSouth Proposed Subteam Notice	No Electronic Copy	CM-1-F-10	BLS
Materials related to Observation 99	No Electronic Copy	CM-1-F-11	BLS
BellSouth Draft of Release Management Process-February 21, 2001	No Electronic Copy	CM-1-F-12	BLS

Document	File Name	Location in Work Papers	Source
February 21, 2001 Meeting Minutes and CLEC Voting Ballot	No Electronic Copy	CM-1-F-13	BLS
February 21, 2001 *CCP* Process Improvement Meeting Agenda	No Electronic Copy	CM-1-F-14	BLS
Notification of February 21, 2001 *CCP* Process Improvement Meeting	No Electronic Copy	CM-1-F-15	BLS
BellSouth- and CLEC-Proposed Revisions of Section 9.0 of *CCP* Document	No Electronic Copy	CM-1-F-16	BLS
BellSouth Notice of Re-Scheduling of Release 10.0 Package Meeting	No Electronic Copy	CM-1-F-17	BLS
Monthly Status Meeting Agenda, February 28, 2001	No Electronic Copy	CM-1-F-18	BLS
Materials and Agenda for February 28, 2001 Monthly Status Meeting	No Electronic Copy	CM-1-F-19	BLS
February 28, 2001 Monthly Status Meeting Meeting Minutes	No Electronic Copy	CM-1-F-20	BLS
Change Request Log (February 2001)	No Electronic Copy	CM-1-F-21	BLS
Agenda for March 14, 2001 Release 9.4 Package Meeting and Revised Release Management Process Draft	No Electronic Copy	CM-1-F-22	BLS

2.4.1 Data Generation/Volumes

This test relied on review of BellSouth documentation, interviews with BellSouth personnel, and observations of change control meetings.

2.5 Evaluation Methods

The Change Management Practices Review began with a review of BellSouth's *EICCP*[3], associated change control documentation, and established process flows. Interviews were conducted with personnel responsible for BellSouth-CLEC change management, release management, documentation, Carrier Notifications (CNs), and systems and processes for BellSouth internal change

[3] See footnote 1.

management. Following BellSouth's introduction of the revised *Interim Change Control Process* and subsequent *Change Control Process,* KCI executed re-testing activities that included additional interviews, documentation reviews, and observation of BellSouth-CLEC change control meetings. These activities were supplemented with a review of BellSouth's applicable change notification Web site for change event postings.

2.6 Analysis Methods

The Change Management Practices Review included a checklist of evaluation criteria developed by KCI during the initial phase of the BellSouth - Georgia OSS Evaluation. These evaluation criteria provided the framework of norms, standards, and guidelines for the Change Management Practices Review.

The data collected were analyzed employing the evaluation criteria referenced above.

3.0 Results Summary

This section identifies the evaluation criteria and test results.

3.1 Results & Analysis

The results of this test are presented in the table below. Definitions of evaluation criteria, possible results, and exceptions are provided in Section II.

Table VIII-1.3: Evaluation Criteria and Results

Test Cross-Reference	Evaluation Criteria	Result	Comments
CM-1-1-1	Change management process responsibilities and activities are clearly defined.	Satisfied	KCI's initial review of BLS's *EICCP* process demonstrated that change management process responsibilities and activies were clearly defined within its limted scope. The *Change Control Process*, the development of which was initiated at a two-day BLS-CLEC workshop in February 2000, encompasses a broader scope, and clearly defines respective BLS and CLEC change control responsibilities and activities. As part of BLS's revised process, BLS increased its Change Control staff to better manage and execute change control responsibilities, and to enhance the effectiveness of the process. As compared to the staffing associated with the *EICCP*, BLS change control staffing under the revised process has been

Test Cross-Reference	Evaluation Criteria	Result	Comments
			increased from one part-time BLS Change Control Manager (BCCM) to a full time staff of four, including a Director. The process also includes provisions for a defined three-level escalation process, as well as a dispute resolution process, to resolve BLS-CLEC conflicts and/or issues. During the course of KCI's evaluation, the escalation process was formally utilized by CLECs nine times. The formal dispute resolution process was not employed during KCI's evaluation period.
CM-1-1-2	Essential elements of the change management process are in place and adequately documented.	Satisfied	The *Change Control Process* documentation describes the steps in the change management process, including how changes are initiated, evaluated, and implemented. During initial testing of BLS's *EICCP*, deficiencies were noted. Specifically, the scope of the *EICCP* process included change requests only for enhancements (to features) that affect users of BLS's electronic interface applications. Change requests for defects and for associated manual processes were excluded from the process. BLS's *Change Control Process* addresses these deficiencies by delineating change requests into six types, including a category for defects. The process expressly incorporates manual processes that have the potential to impact electronic interfaces. The process also requires the use of the change control process for BLS-initiated changes. On May 30, 2000 BLS proposed a process for "expedited feature" change requests for those cases in which a claimed defect is not validated to be such, yet requires expedited handling. This initial draft process was later modified via the BLS-CLEC change control process improvement meetings, and formally incorporated into the *Change Control Process* document (version 2.1, February 9, 2001). In September 2000 KCI identified a

Test Cross-Reference	Evaluation Criteria	Result	Comments
			discrepancy in BLS's adherence to the documented *CCP*, as it issued an updated version of the *BellSouth Business Rules for Local Ordering* (BBR-LO), Issue 9G, without issuing a BLS-initiated change request. In response, BLS enhanced its internal process to ensure that BLS-identified documentation defects follow the stated change control process. KCI re-testing confirmed that BLS issued a Type 6 change request (CR159) and followed the corresponding process for documentation defect corrections that appeared in a subsequent version, BBR-LO, Issue 9H. In February 2001 KCI indentified an additional discrepancy in BLS's adherence to the documented *CCP*. BLS did not consistently provide email notification to CLECs for Type 1 system outages during the period September 2000 – January 2001. In response, BLS implemented corrective actions to ensure its compliance with Type 1 system outage notification that included: 1) placing administrative duties for this process with a single member of the responsible organization; 2) providing a template of necessary information to be contained in email notifications to the responsible party; 3) enhancing the process for reporting and accountability to BLS management for activities related to this process; and 4) identifying a revised policy for the resending of email notifications for which delivery failure occurs.

Test Cross-Reference	Evaluation Criteria	Result	Comments
CM-1-1-3	Change management process has a framework to evaluate, categorize, and prioritize proposed changes.	Satisfied	BLS's *Change Control Process* categorizes change requests into six types. Process flow steps for evaluating and prioritizing change requests are detailed in the process document. These activities include CLECs' preliminary prioritization and final prioritization, both of which occur in conjunction with the BLS / CLEC Change Review meeting. KCI observed the BLS-CLEC June 28, 2000 Change Review meeting and identified as a deficiency the absence of BLS subject matter experts (SMEs) at this session. Participation by SMEs to present BLS-initiated change requests and to answer CLECs' technical questions would have improved the effectiveness of the meeting. BLS subsequently agreed to ensure appropriate SME participation in future Change Review Meetings. KCI then observed the BLS-CLEC September 27, 2000 and January 31, 2001 Change Review Meetings, at which the appropriate BLS SMEs were present. Their participation allowed for effective, informative meetings. The number of CLECs participating in the change control process increased during the course of this evaluation, as did the number of discrete change requests submitted by all participants. This quantity increase resulted in a backlog of "candidate" change requests that, at the time of this report, were prioritized but unscheduled for implementation into a release. Substantial discussion was devoted to the resolution of this issue at many of the BLS-CLEC CCP Process Improvement and Change Review meetings. At the January 31, 2001 Change Review Meeting, CLECs again expressed concern over the amount of time required for implementation of work requests (change requests). BLS asked the CLECs to make a recommendation, by concensus, on a method by which to manage the priority of those work requests that were

Test Cross-Reference	Evaluation Criteria	Result	Comments
			previously prioritized, but not yet targeted for a specific release. CLEC recommendations included: • Prioritization of 1/31/01 pending CRs, as planned, at that meeting. • At the March 2001 Change Review Meeting, for any CRs not scheduled for a release, BLS should provide a comparison of work hours required for each, and the available hours of programming time for upcoming releases. • BLS should provide the sizing of all CRs (including old CRs) for which scheduling into a release had not occurred, sizing for the scheduled CRs, and the amount of capacity that would be available after regulatory mandates were scheduled for implementation. • At each quarterly Change Review meeting, those CRs that had not yet been scheduled for a release would be re-prioritized. At the February 21, 2001 CCP Improvement Meeting, further discussion on this topic and these recommendations took place. As an outcome, the following items were added to a CLEC-BLS voting ballot as "meeting consensus" (no major objection from either BLS or participating CLECs) items for incorporation as potential documented changes to the *Change Control Process*, subject to the results of a formal vote: • [BLS will] provide preliminary size and scope information on each pending change request to CLECs (with note that an outstanding action item exists to further define the characteristics of the sizing metric). • Non-scheduled changes will be combined with new pending requests and re-ranked quarterly to ensure a current list of priorities is always available. All change

Test Cross-Reference	Evaluation Criteria	Result	Comments
			requests [will be] considered for every release. KCI's change management evaluation concluded prior to CLEC-BLS voting on these balloted items.
CM-1-1-4	The change management process includes procedures for allowing input from all interested parties.	Satisfied	As described in the *Change Control Process*, interested parties are offered the opportunity to provide comments and points on change requests at both Change Review Meetings and during Monthly Status Meetings. In addition, BLS facilitated a series of five CCP Process Improvement meetings with CLECs beginning in October 2000 and concluding in February 2001 to address CLEC-proposed changes to the then current CCP. As input, in November 2000, the CLECs presented a collaborative request for CR171, which was originally submitted by one CLEC. BLS provided its responses to these proposed changes in December 2000. CCP Process Improvement meetings were used to discuss, and ultimately vote on, proposed changes.
CM-1-1-5	The change management process has clearly defined and reasonable intervals for considering and notifying customers about proposed changes.	Satisfied	During initial testing, KCI determined that BLS's change management process did not include clearly defined and published notification intervals. As a result of this issue, KCI issued Exception 2. Re-testing activities, focused on the *Change Control Process*, found that the revised process includes defined and published notification intervals for software releases, documentation changes, and documentation updates. However, the stated 30-day notification interval applicable specifically to software releases maybe insufficient for CLEC coding and associated release preparation. As an example, CLEC systems preparation for a BLS introduction of an entirely new interface/software capability may require more than 30 days time. This issue may be potentially mitigated by the fact that BLS provides 1) an opportunity for some

Test Cross-Reference	Evaluation Criteria	Result	Comments
			CLEC pariticipation in beta testing for a new interface, as described in the CCP, Section 10.0, and 2) an interface retirement process whereby a previous version operates in parallel with a new interface for a specified period of time. At the February 21, 2001 process improvement meeting BLS presented CLECs with a propsed revised release management schedule for multiple types of releases (industry major, major, minor) that, if adopted, would significantly expand advance distribution of user requirements and notification to CLECs for each release type. As this draft process was not implemented at the time of this report, no observation of its use was possible during KCI's evaluation. See Exception 2 for additional information on this issue. Exception 2 is closed.
CM-1-1-6	Documentation regarding proposed changes is distributed on a timely basis.	Satisfied	Initially, documentation regarding proposed changes had not been provided to CLECs on a timely and consistent basis. An initial assessment of BLS's actual change event notification history for the period September 9, 1999 through April 21, 2000 revealed inadequate and highly variable notification intervals. This assessment also demonstrated numerous instances of the absence of notification in advance of change events, as well as errors in the Web site posting process. As a result of these errors, KCI issued Exception 17. KCI's monitoring of BLS's change event notification history for the period April 24, 2000 – February 28, 2001 revealed significant improvement in BLS's record for Web postings. BLS also enhanced its notification process by providing Carrier Notifications, in advance of their Web posting, to the change control distribution list via email. BLS developed a revised internal process to avoid defects in postings to the Interconnection Web site. Based on the May 31, 2000 implementation of this

Test Cross-Reference	Evaluation Criteria	Result	Comments
			revised process, and on the improved demonstrated accuracy of Web site postings, KCI closed Exception 17. See Exception 17 for additional information on this issue.
CM-1-1-7	Procedures and systems are in place to track information such as descriptions of proposed changes, key notification dates, and change status.	Satisfied	During initial testing, KCI determined that BLS tracking procedures were not adequate. Specifically, no comprehensive mechanism existed for tracking and managing change requests. As a result of these issues, KCI issued Exception 30. As part of the *Change Control Process*, BLS revised its Change Request Log (beginning in March 2000) to track intervals and provide the ability to determine the status of a discrete change request in the process flow. Key steps of the process flow for change requests, along with 'commit' and 'actual' dates for these events are included in the revised Log. At the request of CLECs participating in Change Review, Monthly Status, and process improvement meetings, BLS amended the Change Request Log multiple times to include additional CLEC-desired information. This mechanism allows the BLS change control staff to verify that the process is in compliance with established cycle times and notification intervals for each request. Exception 30 is closed. See Exception 30 for additional information on this issue.
CM-1-1-8	Criteria are defined for the prioritization system and for severity coding.	Satisfied	BLS's *Change Control Process* describes a prioritization system for Type 2-5 change requests. CLECs participate in this prioritization process through a system of voting on candidate requests to generate both a Preliminary Priority List and a Final Priority List. BLS differentiates Types 1 (system outages) from Type 6 (defect) change requests. This separation reflects the differing severity levels that exist between the two types, as all system outages are highest priority emergencies. A defect is assigned one of three impact

Test Cross-Reference	Evaluation Criteria	Result	Comments
			levels (high, medium, or low) by the originator of a Type 6 change request, who has the ability to assess its impact and indicate such at the time the request is made. A separate Expedited Feature process allows participants to request expedited implementation of features with significant business impact.

RSIMMS & ENCORE
Review

BellSouth Telecommunications, Inc.
OSS Evaluation – Georgia

RSIMMS and ENCORE Systems Review

VERSION 1.0

Submitted by:

KPMG Consulting

March 20, 2001

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I. SUMMARY SYSTEMS REVIEW

1.0 Description

The objective of the RSIMMS and ENCORE Systems Review was to evaluate the Volume test environment developed by BellSouth – the Reengineered Services, Installation and Maintenance Management System (RSIMMS) – to determine if the hardware and software configurations mirrored those of BellSouth's production system (ENCORE), except where additional hardware or software had been created to support the specified test volume.

This review was conducted in parallel to the planning and execution of the volume tests associated with the BellSouth – Georgia OSS Evaluation described in the *Master Test Plan* (PRE-4, PRE-5, OP-3, and OP-4).

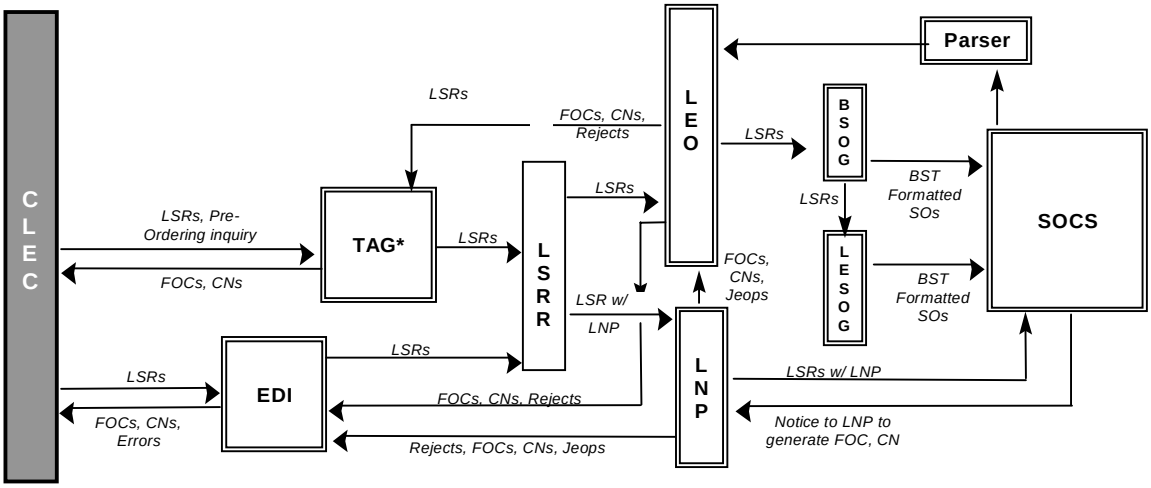
2.0 Method

2.1 Business process description

The ENCORE production order system (see Figure 1) consists of all the systems (hardware, software and communications) that facilitate a CLEC's ability to process the following transactions types on BellSouth's Operations Support Systems (OSS):

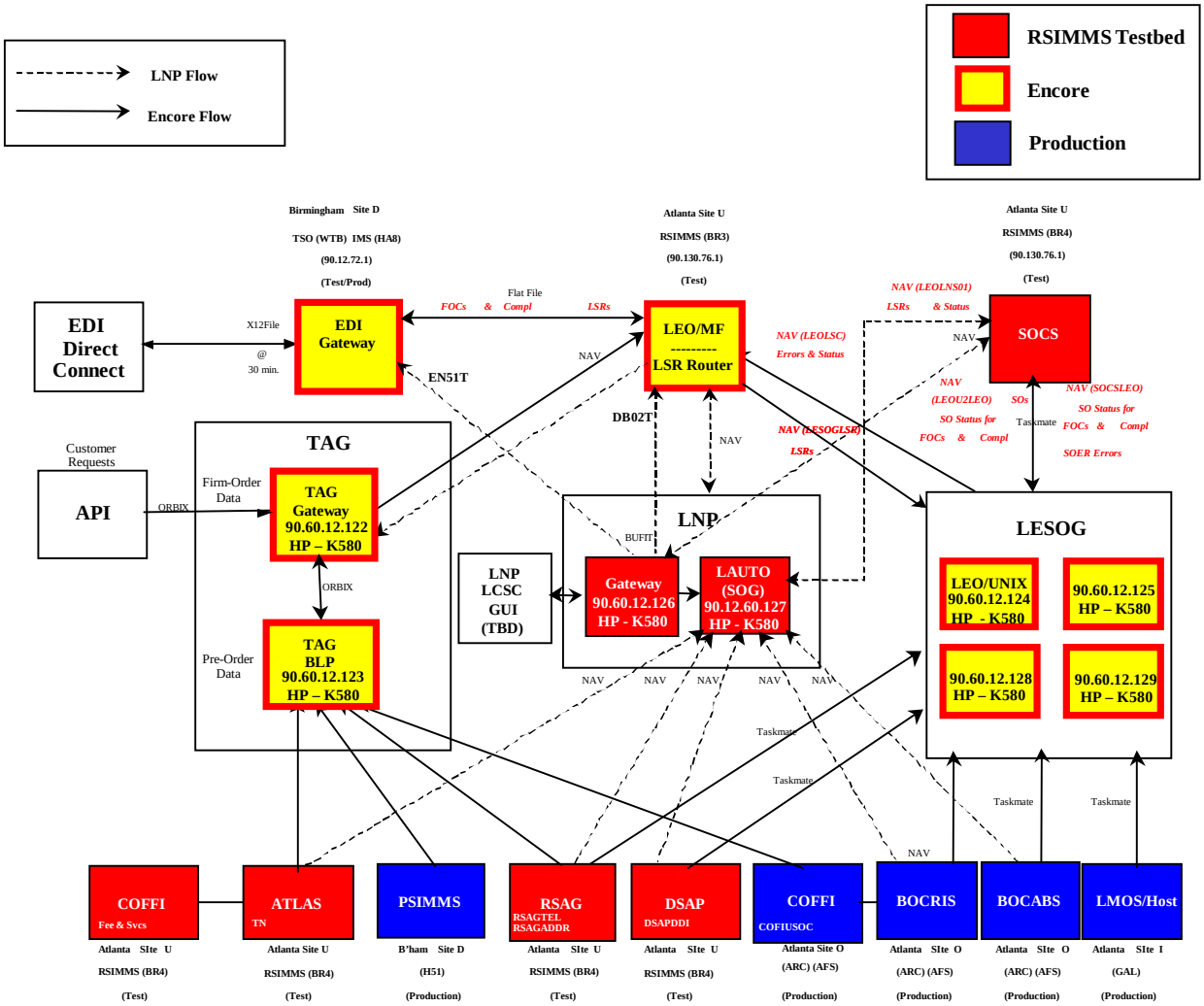
- Submit Local Service Requests (LSRs)
- Receive Functional Acknowledgements (FAs)
- Receive Firm Order Confirmations (FOCs)
- Receive Completion Notices (CNs)
- Receive Rejects, Clarifications (CLRs) and Service Jeopardies

Figure 1: BellSouth's ENCORE Production System



The RSIMMS environment (See Figure 2) was a test facility consisting of hardware, software, and communications equipment in an operational environment that emulated the ENCORE production environment in interoperability and end-to-end (flow-thru) testing in support of the above listed functionality. The RSIMMS environment also provided testing coordination resources for BellSouth initiatives.

Figure 2: BellSouth's RSIMMS Third Party Testing Environment



The applications and servers that were included as part of the Volume Tests, as described in RSIMMS and the ENCORE production system, are listed in Table 1 below.

Table 1: Application and Server List

Application	RSIMMS	ENCORE Production
TAG	HP 9000 model K580 (JRTAG-1T) HP 9000 model K580 (JRTAG-2T) HP 9000 model K580 (JRLNOP-2T)	HP 9000 model K570 (CRTAG1D) HP 9000 model K570 (CRTAG3D)
LESOG / LEO-UNIX	HP 9000 model K580 (JRRSIM1T) HP 9000 model K580 (JRRSIM5T) HP 9000 model K580 (JRRSIM6T)	HP 9000 model K520 (BRLSOG1D) HP 9000 model K520 (BRLSOG2D)
LNP Gateway / LAUTO SOG LCSC GUI	HP 9000 model K580 (JRRSIM3T) HP 9000 model K580 (JRRSIM5T) HP 9000 model K360 (JRLNOP-2T)	HP 9000 model K460 (CRLNOP1D) HP 9000 model K460 (CRLNOP4D) HP 9000 model K460 (BOLNOP1D)
P / SIMMS, EDI Gateway	Hitachi (HDS)-P8 (D2SY)	
LEO	Hitachi - Skyline 625 (U4SY)	Hitachi (HDS)-P9 (B2SY)
COFFI-Features, ATLAS, RSAG, DSAP, GA.SOCS	Hitachi - Skyline 625 (U4SY)	Hitachi - Skyline 727 (O1SY)
COFFI-USOC, GA.BOCRIS, GA.BOCABS	Hitachi - Skyline 727 (O1SY)	
GA.LMOS	Amdahl GS-765 (I3SY)	

2.2 Test approach

Operational analysis techniques were used to evaluate the RSIMMS environment and ENCORE production system. Interviews were conducted with program management staff, the systems development staff, and system operations and administration personnel responsible for the operation and maintenance of the RSIMMS environment and ENCORE production systems. These interviews were supplemented with an analysis of BellSouth systems performance and management data as well as data collected from the UNIX servers that comprise each of the environments.

The test was executed, according to the following steps:

1. Requested initial system data from BellSouth
2. Conducted interviews with program management staff, systems administration and support personnel as appropriate.
3. Reviewed procedural and other documentation related to systems change and capacity management.
4. Documented findings.
5. Resolved discrepancies

The following Information was requested from BellSouth

1. Software information
   - Application architecture
   - Operating system (OS) version on each server
   - OS patch levels
   - Applications on each server, by module
   - Database information (if any deployed in this environment)
   - Application load balancing information
2. Hardware information
   - Network connectivity
   - Hardware system information
   - Processes running on each server
   - Data storage information
   - Detailed network information
3. System and network monitoring information
4. Application monitoring information
5. Problem and change management procedures and documentation
6. Capacity management procedures and documentation
7. System and network performance thresholds
8. Disaster recovery information

The data collected for this analysis were supplied by BellSouth or its contractors. No validation of the data was done except for a series of test commands that were executed against selected servers on May 19th, 2000 with the extracted data logged to an ASCII file.

3.0 Assumptions made in advance of the evaluation

1. BellSouth would provide the data about the RSIMMS and ENCORE production system environment s requested by KCI.
2. KCI would not validate the data provided by BellSouth.
3. Systems deployed for the Volume Tests within the RSIMMS environment would remain the same throughout the tests, except where updates are communicated by BellSouth (a final list was provided to KCI by BellSouth on September 20th, 2000. See Appendix A).
4. Software versions of the applications deployed in the production and

RSIMMS environments were the same, and were managed through a change control facility.

5. All hardware was configured using standard configurations developed by BellSouth and implemented by EDS using a build tool.
6. The servers run no other applications except the specific applications indicated in documents provided to KCI.
7. The configuration of the mainframe partitions/regions was identical in both the RSIMMS environment and ENCORE production system.

4.0 Systems review

Application components were the specific applications within the ENCORE production system, such as TAG, LESOG, etc., that were evaluated as part of the Volume Tests, and consisted of a single server, a group of servers, or a mainframe partitioned region. Additional information about these applications and their associated hardware is provided in Appendix A.

5.0 Summary

Based upon KCI's evaluation, it is our opinion that, except for specific, preauthorized changes that were made in RSIMMS to support the requirements of the volume test, the applications implemented in the RSIMMS environment mirrored those of BellSouth's ENCORE production system.

Specific changes were made to the RSIMMS environment to support the business volumes required to accomplish KCI's volume test. KCI is not aware of any reasons, and is satisfied, that these same changes could be made to the production environment such that it could support the same volumes as were tested in KCI's volume evaluation.

The network configuration supporting the RSIMMS environment was different from that of BellSouth's ENCORE production system in that the former was largely based on a local area network, and the latter was largely based upon a wide area network. This difference might result in a lesser system performance for the production environment than was observed for RSIMMS, even if production was an exact mirror image of RSIMMS in terms of applications and hardware.

5.1 Applications

5.1.1 Unix Server Applications

The three main applications groups evaluated as part of this system review are TAG, LESOG, and LNP.

The applications were evaluated from two perspectives: First, we validated that the servers that run the applications are setup and configured similar to the

servers in the ENCORE production system, Second, we took a snap shot of the servers by running a series of commands (or a script) on the servers, logging the output to an ASCII file. The processes running on the server, the directory structure, IO scan, the file listing, and the OS versions are all captured and evaluated.

TAG - The servers that ran Tag had different configurations in ENCORE and RSIMMS. In the ENCORE production system two servers contained the \XST directory, and one contained the \POG directory. In the RSIMMS environment one server contained the \XST directory, and two servers contained the \POG directory.

The directory structure of the two servers running the TAG gateway software with the \XST directory were not the same. The servers were CRTAG-1D in production and server JR-TAG-1T in the RSIMMS environment.

LESOG - The servers that ran the LESOG application had different file and directory structures. Additionally, the application was running across three servers in the RSIMMS environment, and two servers in the ENCORE production system. During KCI's review we noted that BellSouth's internal performance thresholds were crossed under current production volume for production servers BRLSOG1D and BRLSOG2Dd.

LNP - The implementation of the LNP application group varied by environment. In the ENCORE production system there were two gateway servers, CRLNOP1D and CRLNOP2D, The was a single server, JRRSIM3T, in RSIMMS. The LAUTO and LNPTA applications were deployed on the same server CRLNOP4D in the ENCORE production system. In the RSIMMS environment the LAUTO was on a separate server JRRSIM4T, and the LNPTA application was deployed on the gateway server JRRSIM3T.

5.1.2 Mainframe Applications

The ENCORE production system mainframes that ran the applications P/SIMMS, EDI Gateway, LEO, COFFI-Features, ATLAS, RSAG, DSAP, GA.SOCS, COFFI USOC, GA.BOCRIS, GA.BOCABS, GA.LMOS were evaluated against the corresponding RSIMMS environment mainframes.

Based on the data provided to KCI on the mainframe environment, it is our opinion that the mainframe system performance is not likely to adversely affect these applications.

Three of the mainframe systems, O1SY, D2SY, and I3SY, are part of both the RSIMMS environment and the ENCORE production system. The other mainframe in the ENCORE production system, B2SY, was more powerful than the equivalent system in the RSIMMS environment, U4SY.

5.2 Network

The ENCORE production system was distributed across three data centers at three different geographic locations connected by BellSouth's data network. The RSIMMS environment was located at the Jackson, MS data center with most of the servers connected to a common Fiber Distributed Data Interface (FDDI) ring. A performance difference could exist between the two environments due to inherent latency across a distributed BellSouth production network. Network information provided by BellSouth shows negligible latency across the FDDI rings that were connected to the core ATM networks.

5.3 Hardware[1]

The servers deployed by BellSouth within the RSIMMS environment for the Volume Tests were a newer generation of HP servers than those deployed in production. The RSIMMS applications and were deployed within a single data center in Jackson, MS. This was consistent with the objectives of the test environment, where compute power was added to compensate for the additional test volume.

5.3.1 TAG Servers

RSIMMS - The systems that ran the TAG application in RSIMMS were JRTAG-1T, JRTAG-2T and JRLNOP-2T. These servers were HP 9000 Enterprise servers, model K580 with four CPUs and 4GB of memory located in Jackson, MS connected to the FDDI network.

ENCORE - The servers in the production system that ran the TAG application were CRTAG-1D and CRTAG-3D. These were HP 9000 Enterprise model K570 with four CPUs and 2GB of memory located in Charlotte, NC connected to the FDDI network.

FINDINGS - Based on the reference document "K-Class Product Information" published on Hewlett Packard's Web site, the K580 servers in the RSIMMS environment "deliver a 20% faster compute performance" than the K570 servers deployed in the ENCORE production system.

5.3.2 LESOG Servers

RSIMMS - The systems in the RSIMMS environment that ran the LESOG and the LEO-UNIX application were three K580 servers with four CPUs and 4GB of memory each. The servers were connected to the network via FDDI connections and were located in Jackson, MS.

ENCORE - The two servers in the production system, BRLSOG1D and BRLSOG2D, were HP 9000 series model T520, with four CPUs and 2GB of memory, and were FDDI connected to the network.

[1] Appendices A and B list the applications and servers that were included as part of this evaluation

FINDINGS - The compute performance of the servers in the RSIMMS environment was far greater than those in production, because there were three servers in the RSIMMS environment, each of which had a compute performance four to six times that of the compute performance of the two servers in the ENCORE production system.

5.3.3 LNP Servers

RSIMMS - The systems in the RSIMMS environment running the LNP gateway and LAUTO application consisted of two HP9000 model K580 servers with four CPUs and 4GB of memory, and one model K360 with two CPUs and 1GB of memory. One of the K580 servers, JRRSIM3T, ran the Gateway application, while the other K580 server, JRRSIM4T, ran the LAUTO application. The third server in the LNP group, JRLNOP1T, ran the LCSC application. All of the servers were located in Jackson and were FDDI connected to the network.

ENCORE -The servers deployed within the production system for the LNP application group were HP 9000 K460 servers. The server that ran the production gateway, CRLNOP1D, had four CPUs and 3GBGB of memory. The server that ran the production LAUTO application, CRLNOP4D, had two CPUs and 1GB of memory. These two servers were located in Charlotte, NC and were connected to the network via a 10 MB Ethernet connection. The third server, BOLNOP1D, located in Birmingham, AL had four CPUs with 2GB memory and was connected to the network via a 10 MB Ethernet connection.

FINDINGS - Comparing the servers running the Gateway and LAUTO applications, each of the HP K580 servers in the RSIMMS environment had a relative compute performance of approximately 48% more than each of the HP K460 servers that ran the same application in the ENCORE production system. The total relative compute performance of the two combined systems in the RSIMMS environment would be almost 100% greater than the combination of the two servers in the ENCORE production system. A comparison of the servers running the LCSC application, a K460 with four CPUs and 2GB memory in production, and a K360, with two CPUs and 1GB in the RSIMMS environment, showed that the production server has a much higher compute performance (72%) and would not negatively impact the ENCORE production system.

5.3.4 Mainframes

RSIMMS, EDI Gateway, LEO, COFFI, ATLAS, RSAG, DSAP, GA.SOCS, COFFI-USOC, GA.BOCRIS, GA.BOCABS, GA.LMOS

Three of the mainframe systems, O1SY, D2SY, and I3SY, were part of both the RSIMMS and ENCORE production environments. The other mainframe in the production environment, B2SY, was more powerful than the equivalent system in the RSIMMS environment, U4SY.

II. DETAILED SYSTEMS REVIEW

6.0 Applications Review - Details

The two environments, ENCORE production system and RSIMMS, were functionally similar because the applications that were deployed across the servers that constitute the two environments provided the same functionality. This was verified by processing sample transactions from the PRE-1, OP-1, and OP-2 functional tests in both the ENCORE production and the RSIMMS environment prior to the volume test. The applications that were included as part of the Operational Support System volume test, as described in the RSIMMS 3PT Volume Test environment, are shown in Appendix B.

6.1 TAG Application Group

TAG was developed for BellSouth by Telcordia Technologies. The applications within this group were evaluated using the following dimensions:

- Software Version
- OS Version and Patch Levels
- Configuration (multiple servers within an application group)
- Database
- Directory Structure
- File information
- Change Management
- Capacity Management

TAG used a multi-server configuration (see Table 2). One server, the Gateway, provided communication with the CLECs and balanced the workload across the servers that were running Business Logic Processors (BLPs) in that environment. TAG performance was primarily a function of BLP throughput.

The TAG servers in the Production environment were configured to run the various TAG versions used by BellSouth's wholesale customers. There are production customers using versions of TAG that are both older and newer than those used in testing RSIMMS. System resources are allocated based on which versions are being used.

Table 2: Name and IP address of Servers Running the TAG Application

Production Servers	IP Address	RSIMMS Servers	IP Address
CRTAG-1D	90.70.124.148	JRTAG-1T	90.60.12.122
CRTAG-3D	90.70.124.150	JRTAG-2T	90.60.12.123
		JRLNOP-2T	90.60.12.137

The TAG API on the client machine is compiled to a specific TAG version. Therefore, the user determines the version based on the version of the API in use. During installation of the TAG Client API, configuration parameters, provided by BellSouth, are set, which specify a host and a TAG Gateway server on that host that runs the TAG release used by the client. At startup, the TAG client invokes an ORBIX daemon on the client that establishes a connection to the client's pre-configured host and gateway server.

Each TAG host runs a TAG Gateway server for each TAG Release. At system startup, each TAG Gateway starts an ORBIX daemon that listens for connections to the TAG Gateway. Because the daemon processes are invoked at startup time on the TAG host, and the client and remain memory resident until shutdown, there is no performance impact due to TAG server invocation.

6.1.1 Software Version

The packages deployed in this application group at the time of our evaluation are shown in Table 3 below

Table 3: TAG Application Version by Server

Production	IP Address	Application Version	RSIMMS	IP Address	Application Version
CRTAG-1D	90.70.124.148	TAG 2.1.0.4	JRTAG-1T	90.60.12.122	TAG 2.2.0.5
CRTAG-3D	90.70.124.150	TAG 2.2.0.4	JRTAG-2T	90.60.12.123	TAG 2.2.0.7
		TAG 2.2.0.5	JRLNOP-2T	90.60.12.137	TAG 2.2.0.7B
		TAG 2.2.0.6			TAG 2.2.0.8
		TAG 2.2.0.7B			
		TAG 2.2.0.8			
		TAG 3.1.0.3			

Because the volume evaluations of KCI – the only CLEC using the RSIMMS environment – were based solely on TCIF 7, no RSIMMS application greater than release 2.2.0.8 was necessary.

BellSouth has contracted the development of the TAG application to Telcordia Technologies. Through this agreement, only binaries are delivered to a third party outsourced testing and configuration team via FTP for deployment to the

TAG servers. These binaries are then deployed on the servers via BAIST, the application deployment tool for the TAG application. Discrepancies in the number of deployed TAG versions reported by BellSouth versus the number identified by KCI were due to the fact that some releases were removed manually without using the BAIST tool. The tool, therefore, does not show those versions that are not available.

6.1.2 Operating System

All of the servers within the RSIMMS environment and ENCORE production system ran HP UNIX version B.10.20. All servers had been updated to the same patch level with minor differences that would not impact the performance of the servers.

6.1.3 Databases

TAG BLP (Business Logic Processor) used an Oracle database to store RSIMMS information, which is updated in production via weekly updates. The RSIMMS data on the RSIMMS platform was static.

The BLP application that TAG uses exclusively contains local copies of RSIMMS data and NPA/NXX data in Oracle databases. This is essentially a data cloning of read-only data from other applications for performance reasons. TAG/BLP does not store customer order data.

6.1.4 Configuration

There were two servers in the ENCORE production environment – one TAG gateway (GW) server and one business logic processor (BLP) server. Three servers supported the RSIMMS environment – one TAG gateway (GW) server and two business logic processor (BLP) servers. The gateway server in the ENCORE production system was CRTAG-1D. In the RSIMMS environment the server was JRTAG-1T.

6.1.5 Specified Differences

TAG used a random distribution that is written into the proprietary TAG code provided by Telcordia. There were no functional differences for TAG in RSIMMS and the ENCORE production system except for selected changes made in the RSIMMS environment to accommodate the OSS volume test. KPMG Consulting was aware of these changes in advance, and does not believe that the changes had any material impact on the system's performance observed during the test.

a. As in the Production environment, duplicate PONS were not allowed in RSIMMS. However, in the RSIMMS environment, because PONS were often re-used for testing purposes, a batch job was run manually to clean out the LEO database of existing orders. This was executed once prior to a test.

b. In the RSIMMS environment multiple orders on the same account were allowed. In production, LESOG failed orders that were submitted on the same account. This functionality was turned off in the RSIMMS environment to allow for volumes of data without requiring unique accounts. This was an environment flag that required no change in code.

c. CLEC ownership checks were turned off in LESOG. This meant that company code 7421, for example, could disconnect accounts owned by company code 7219 in RSIMMS, but could not do so in production.

d. Additional listings were not considered in RSIMMS.

e. Checks for frozen accounts were not performed in RSIMMS. An account with LSF FID on an ACT of V or W with a REQTYP of E, F, C, or M whose value includes EU or LP, fell out for manual handling in production. In RSIMMS, or on a production account with a company code of 8000 (test account), this check was not performed.

f. Embedded base errors on account ownership were bypassed. In RSIMMS, if the RESH field was not found on the BOCRIS record, the RESH was placed on the order. This is a result of not checking the CLEC ownership of the account. In production, this case would be caught via CLEC ownership check.

The above differences were turned on/off by an environment variables and not by code changes. The same code existed in both environments.

6.1.6 Directory Structure

Data was collected by running scripts on the TAG application servers, both in the production and in the RSIMMS environment (see Figure 3). The production server (CRTAG-1D) that ran the TAG gateway application had an application directory structure /XST. The second server (CRTAG-3D) also running the BLP application had a /POG directory structure.

In the RSIMMS environment, the gateway server (JRTAG-1T) had an /XST directory structure, and the two servers (JRTAG-2T and JRLNOP-2T) that ran the BLP application had /POG directory structures.

6.1.7 File Information

Data was collected from the TAG servers in Production and RSIMMS by running a script on each server (see Figure 3). A comparison of the data collected for servers that perform the same function revealed that there were differences in the files. BellSouth has stated that the differences noted would not impact the performance of the systems.[2]

Figure 3: Directory listing of files from server CRTAG-1D (ENCORE Production) and server JR_TAG-1T (RSIMMS)

Server CRTAG-1D running the TAG application in the Encore production environment

/bto/appl/tag/files:
total 36

-rwxr-xr-x	1	xst_adm	xst_grp	1467 Jun 25 1999 mail.msg
-rwxr-x---	1	xst_adm	xst_grp	87 Jun 30 1999 ordertran
-rwxr-xr-x	1	xst_adm	xst_grp	1397 Jun 25 1999 tag_cronfile
-rwxr-x---	1	xst_adm	xst_grp	33 Jun 30 1999 tagcc
-rwxrwxrwx	1	xst_adm	xst_grp	69 Nov 2 1999 tagcust
-rw-r-----	1	xst_adm	xst_grp	1247 Jan 15 13:24 tagobject
-rwxr-xr-x	1	xst_adm	xst_grp	823 May 10 16:06 tagobjects
-rw-r-----	1	xst_adm	xst_grp	243 Aug 6 1999 tagobjects.chuck
-rwxr-x---	1	xst_adm	xst_grp	381 Dec 8 13:45 tagobjects.save
-rwxrwxrwx	1	xst_adm	xst_grp	1066 May 10 16:29 tagobjectsnew
-rwxr-xr-x	1	xst_adm	xst_grp	33 Jun 30 1999 tagtran
-rw-r-----	1	xst_adm	xst_grp	40 Oct 28 1999 tagversions
-rw-r-----	1	xst_adm	xst_grp	1328 Dec 8 14:01 tmp

Server JR-TAG-1T - RSIMMS environment

/bto/appl/tag/files:
total 40

-rwxrwxr-x	1	xst_adm	xst_grp	12277 Mar 5 02:00 cma_dump.log
-rw-rw-r--	1	xst_adm	xst_grp	1716 Apr 18 11:35 tagobjects
-rwxrwxr-x	1	xst_adm	xst_grp	658 Mar 20 09:52 tagobjects.3103
-rwxrwxr-x	1	xst_adm	xst_grp	563 Apr 3 09:21 tagobjects.403
-rw-rw-r--	1	xst_adm	xst_grp	9 Mar 10 15:42 tagobjects.tst
-rwxrwxr-x	1	xst_adm	xst_grp	858 Apr 18 11:33 tagobjects2
-rw-rw-r--	1	xst_adm	xst_grp	858 Apr 18 11:34 tagobjects3
-rwxrwxr-x	1	xst_adm	xst_grp	858 Apr 3 09:14 tagobjects_bkp

6.1.8 Change Management

There appears to be an exception to the standard distribution policy for the TAG application. KCI was informed by BellSouth that the TAG software does not work well with DDS, the BellSouth tool for application distribution within the

[2] KCI was unable to verify the accuracy of this statement without conducting a detailed examination of each file and its purpose.

UNIX environment. Thus, the application distribution tool, BAIST, is used to distribute the TAG software.

Based on the information supplied for the evaluation, the servers should normally have the same directory structure, file information, and software versions, but in comparing data collected from the servers we noted differences in the software versions in the two environments (see Table 4). BellSouth stated that the differences noted would not impact the performance of the systems .

Table 4: TAG server directory listing - versions by server

Production			RSIMMS		
Host Name	**IP Address**	**TAG Version**	**Host Name**	**IP Address**	**TAG Version**
CRTAG-1D	90.70.124.148	2.0.1.5	JRTAG-1T	90.60.12.122	2.2.0.6
\XST		2.1.0.4	/XST Directory		2.2.0.7
		2.1.0.8			2.2.0.7A
		2.2			2.2.0.8
		2.2.0.1			2.2
		2.2.0.4			3.1
		2.2.0.5	JRTAG-2T		2.3
		2.2.0.7B	/POG Directory		3.2.0.2
		3.1			2.3.0.2
		3.1.0.3	JRLNOP-2T		2.3.0.2
		3.1.0.7.	/POG Directory		
CRTAG-3D	90.170.124.150	3.2.0.3			
\POG		2.3.0.2			
		2.1.0.6			
		2.3.0.1			
		2.2.0.4			
		3.2.0.2			

6.1.9 Capacity Management

As part of its ongoing systems performance and capacity management regime BellSouth monitors CPU utilization and sends an alert when predefined thresholds of utilization are exceeded. These alerts signify the need to examine trends in both peak and average CPU utilization in order to predict when expansion of capacity is warranted. Our review of the performance data provided for evaluation of the servers in the TAG application group indicated that all of the servers in the ENCORE production system performed well within BellSouth's defined system performance thresholds, with the exception of the server JRTAG-2T (see Table 5). This server, during the month of February, experienced five instances of crossing the CPU utilization threshold in a ten-day

[3] KCI was unable to verify the accuracy of this statement without conducting a detailed examination of each directory and its purpose.

period. In our opinion, this was not indicative of a performance or capacity problem at that time.

Table 5: February 2000 CPU utilization for TAG server JRTAG-2T

Collect	Node	Average Utilization	Max. CPU Utilization > 70%
Date	**Name**	**Avg.**	**Max.**
20000102	m0012123	0.73	3.66
20000103	m0012123	0.83	9.65
20000104	m0012123	18.9	81.71
20000105	m0012123	7.36	84.64
20000106	m0012123	1.4	26.35
20000107	m0012123	3.16	79.07
20000109	m0012123	0.71	3.8
20000110	m0012123	7.79	85.34
20000111	m0012123	2.63	74.92

6.2 LESOG Application Group

LESOG is the Local Exchange Service Order Generator application. The applications within this group were evaluated against the following dimensions:

- Version
- OS version and Patch Levels
- Configuration (multiple servers within an application group)
- Specified Differences
- Database
- Directory Structure
- File information
- Change Management
- Capacity Management

This application group included the LEO UNIX, LESOG (OSS7), and LESOG (OSS9) applications. The servers that ran the applications in this group were HP UNIX servers (see Table 6).

Table 6: LESOG servers and IP addresses

Production Server	IP Address	RSIMMS Server	IP Address
BRLSOG1D	90.110.108.47	JRRSIM1T	90.60.12.124
BRLSOG2D	90.110.108.48	JRRSIM5T	90.60.12.128
		JRRSIM6T	90.60.12.129

6.2.1 Software Version

The software release versions of the applications deployed in this group are shown in Table7 below.

Table 7: LESOG application versions by Server

Application	Production		RSIMMS	
LEO UNIX	90.110.108.47	leoU.06.01C.01	90.60.12.124	leoU.06.01C.01
LEO UNIX	90.110.108.48	leoU.06.01C.01	90.60.12.129	leoU.06.01C.01
LESOG (OSS7)	90.110.108.47	lsog08.01C.09	90.60.12.124	lsog08.01C.09
LESOG (OSS7)	90.110.108.48	lsog08.01C.09	90.60.12.128	lsog08.01C.09
LESOG (OSS7)			90.60.12.129	lsog08.01C.09
LESOG (OSS9)	90.110.108.47	asop06.01C.06	90.60.12.124	asop06.01C.06
LESOG (OSS9)	90.110.108.48	asop06.01C.06	90.60.12.128	asop06.01C.06
LESOG (OSS9)			90.60.12.129	asop06.01C.06

6.2.2 Operating System

All of the servers within the RSIMMS environment and ENCORE production system ran HP UNIX version B.10.20. All servers had been updated to the same patch level with minor differences that would not impact the performance of the servers.

6.2.3 Databases

There were no databases deployed as part of the LESOG application in the UNIX server environment.

6.2.4 Configuration

The configuration of the application varied between the production and the RSIMMS environments. There were only two servers in the production group and three in the RSIMMS group. There was a one-to-one applications deployment match between the two environments, with the exception of server JRRSIM6T, which also ran the LESOG (OSS7) and LESOG (OSS9) applications.

Each hardware server ran a series of BellSouth Navigator server processes, the number determined by the load balance between hardware servers. The Navigator posts messages in the order in which they are received to the available LESOG server processes. When a LESOG process completes, a message in the process issues a new receive request to the Navigator. If no receive request is available to the Navigator, it buffers the message until one is available.

Therefore, there is no direct interaction between LESOG hardware servers to manage the total workload.

6.2.5 Specified Differences

Selected changes were made in the RSIMMS and ENCORE production system environments to support the OSS volume test. These differences disabled the production exception processing that results in auto-clarification (manual processing to correct exception conditions) of an order before sending the order to SOCS. KPMG Consulting was aware of these changes in advance, and does not believe that they had a material adverse impact on the test.

a. Did not perform CLEC ownership checks.

b. Did not perform additional listing and abandoned station searches.

c. Did not perform edits on Local Service Freeze (LSF) fid. While RSIMMS recapped LSF, production orders fell out for manual handling.

d. Bypassed internal errors on ownership of accounts. Reseller Sharer (RESH) was recapped, when it existed, but several of the test accounts did not have RESH on them. Normally this would fall out because of the CLEC ownership checks. But since those checks were bypassed, the orders were submitted to SOCS and received SOER errors. As a fix, when RESH did not exist on the CSR of the account and it therefore could not be recapped, it was added to the order anyway.

e. The pending service order check was turned off. This prevented errors from duplicate orders received during testing.

f. Placed LEOTEST in the Remarks Section of the order. This was not an edit, just a difference.

Table 8 lists parameters that were expanded in the RSIMMS environment as compared to the ENCORE production system for the LESOG application.

Table 8: System parameter variations between Production and RSIMMS

Parameter type	Parameter	Production Value	RSIMMS Value
Kernel	msgseg	2048	4096
Kernel	semmap	256	258
LesogMonTM	TM_MAX_PROCESSES	25	30
LesogMonTM	PROC_SLEEP_SECS	30	10
LesogMonTM	EXEC_SLEEP_SECS	1	5
LesogNavServ	NUMBER_TO_START	70	40

Table 9 identifies scripts/commands which were executed in the ENCORE production system and not in the RSIMMS environment:

Table 9: Listing of scripts that were executed only in Production

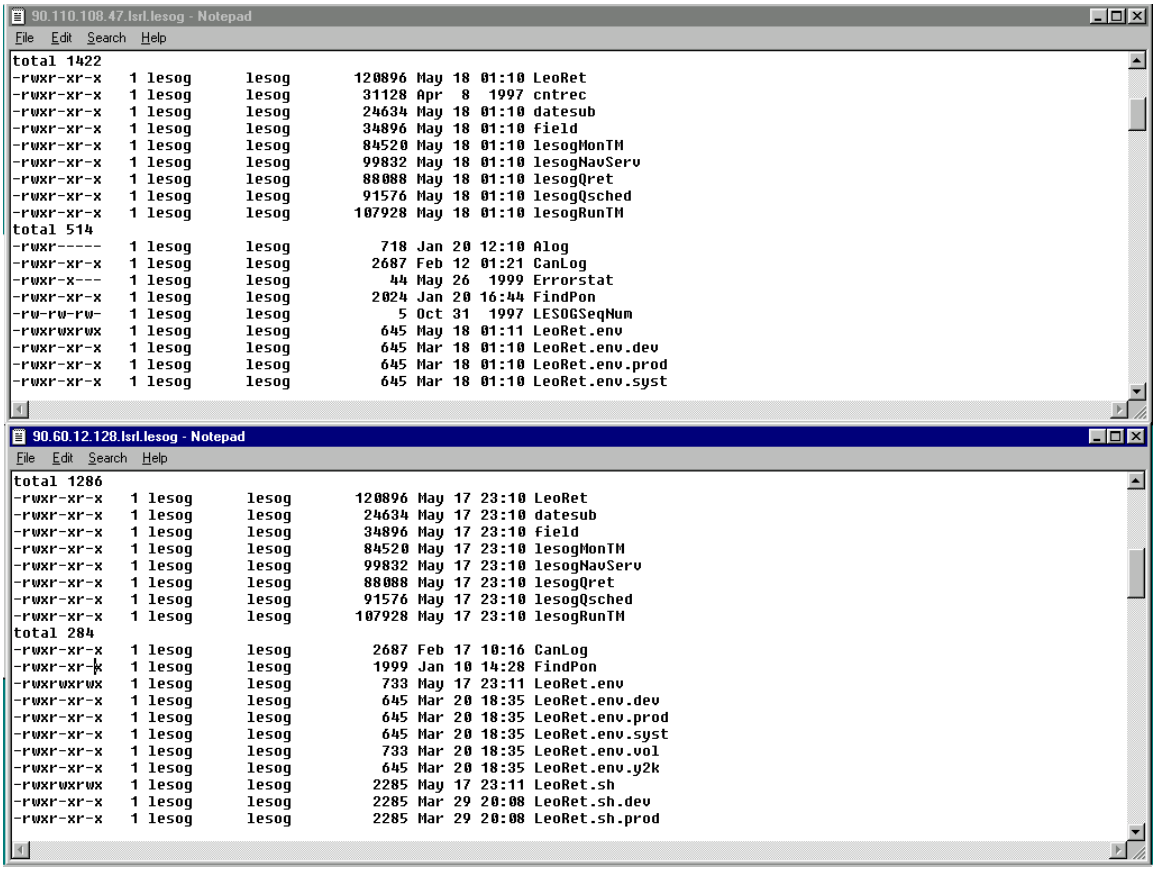
lesogPurge.ksh	Removed temporary files created in the taskmate/dat dir.
htr.ksh	Compressed and moved the screen capture files into an archival file system.
intZip	Compressed and moved the TaskMate standard out files into an archival file system . Removed old compressed files.
other	Commands were run to find and compress SOCS and CSR files.

6.2.6 Directory Structure

The two main application directories within the LESOG group of servers were the LESOG and AESOP directories. A review of the information collected showed that there were differences in the directory structure, specifically with the data queues to the other systems within the ENCORE production system. There were a number of directories that did not exist in the RSIMMS environment. We were not able to determine the implications of these missing directories.

An example of the differences in the directory structure between servers BRLSOG1D and JRRSIM1T is shown Figure 5 below. These differences were also observed on server BRLSOG2D and JRRSIM5T / JRRSIM6T.

Figure 5: Listing of directory structure – LESOG application



90.110.108.47.lsrl.lesog - Notepad

File Edit Search Help

```
total 1422
-rwxr-xr-x   1 lesog      lesog       120896 May 18 01:10 LeoRet
-rwxr-xr-x   1 lesog      lesog        31128 Apr  8  1997 cntrec
-rwxr-xr-x   1 lesog      lesog        24634 May 18 01:10 datesub
-rwxr-xr-x   1 lesog      lesog        34896 May 18 01:10 field
-rwxr-xr-x   1 lesog      lesog        84520 May 18 01:10 lesogMonTM
-rwxr-xr-x   1 lesog      lesog        99832 May 18 01:10 lesogNavServ
-rwxr-xr-x   1 lesog      lesog        88088 May 18 01:10 lesogQret
-rwxr-xr-x   1 lesog      lesog        91576 May 18 01:10 lesogQsched
-rwxr-xr-x   1 lesog      lesog       107928 May 18 01:10 lesogRunTM
total 514
-rwxr-----   1 lesog      lesog          718 Jan 20 12:10 Alog
-rwxr-xr-x   1 lesog      lesog         2687 Feb 12 01:21 CanLog
-rwxr-x---   1 lesog      lesog           44 May 26  1999 Errorstat
-rwxr-xr-x   1 lesog      lesog         2024 Jan 20 16:44 FindPon
-rw-rw-rw-   1 lesog      lesog            5 Oct 31  1997 LESOGSeqNum
-rwxrwxrwx   1 lesog      lesog          645 May 18 01:11 LeoRet.env
-rwxr-xr-x   1 lesog      lesog          645 Mar 18 01:10 LeoRet.env.dev
-rwxr-xr-x   1 lesog      lesog          645 Mar 18 01:10 LeoRet.env.prod
-rwxr-xr-x   1 lesog      lesog          645 Mar 18 01:10 LeoRet.env.syst
```

90.60.12.128.lsrl.lesog - Notepad

File Edit Search Help

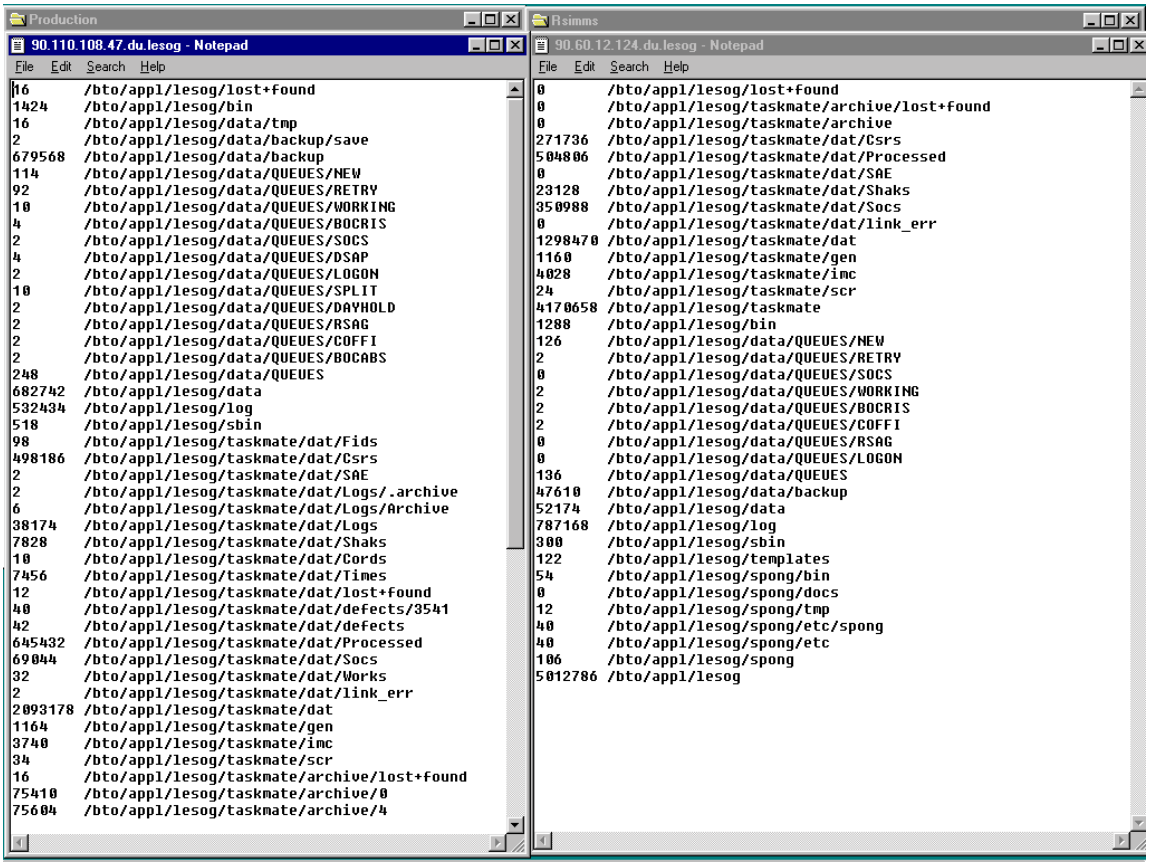
```
total 1286
-rwxr-xr-x   1 lesog      lesog       120896 May 17 23:10 LeoRet
-rwxr-xr-x   1 lesog      lesog        24634 May 17 23:10 datesub
-rwxr-xr-x   1 lesog      lesog        34896 May 17 23:10 field
-rwxr-xr-x   1 lesog      lesog        84520 May 17 23:10 lesogMonTM
-rwxr-xr-x   1 lesog      lesog        99832 May 17 23:10 lesogNavServ
-rwxr-xr-x   1 lesog      lesog        88088 May 17 23:10 lesogQret
-rwxr-xr-x   1 lesog      lesog        91576 May 17 23:10 lesogQsched
-rwxr-xr-x   1 lesog      lesog       107928 May 17 23:10 lesogRunTM
total 284
-rwxr-xr-x   1 lesog      lesog         2687 Feb 17 10:16 CanLog
-rwxr-xr-x   1 lesog      lesog         1999 Jan 10 14:28 FindPon
-rwxrwxrwx   1 lesog      lesog          733 May 17 23:11 LeoRet.env
-rwxr-xr-x   1 lesog      lesog          645 Mar 20 18:35 LeoRet.env.dev
-rwxr-xr-x   1 lesog      lesog          645 Mar 20 18:35 LeoRet.env.prod
-rwxr-xr-x   1 lesog      lesog          645 Mar 20 18:35 LeoRet.env.syst
-rwxr-xr-x   1 lesog      lesog          733 Mar 20 18:35 LeoRet.env.vol
-rwxr-xr-x   1 lesog      lesog          645 Mar 20 18:35 LeoRet.env.y2k
-rwxrwxrwx   1 lesog      lesog         2285 May 17 23:11 LeoRet.sh
-rwxr-xr-x   1 lesog      lesog         2285 Mar 29 20:08 LeoRet.sh.dev
-rwxr-xr-x   1 lesog      lesog         2285 Mar 29 20:08 LeoRet.sh.prod
```

6.2.7 File Information

There were differences in the files on the servers within an application group. An example of the differences in files between two servers is shown in Figure 6 below.

Additionally, on the RSIMMS server, JRRSIM1T, there was sub-directory /bto/appl/lesog/spong, which was not present in the production ENCORE servers. BellSouth has stated that the differences noted would not have impacted the performance of the systems.

Figure 6: Selected file differences – LESOG application



6.2.8 Change Management

Based on the information supplied for the evaluation, the servers should normally have the same directory structure and file information. This could not be validated based on the data collected from the servers during the course of the evaluation. BellSouth has stated that processes are in place for change management to maintain consistency across environments.

6.2.9 Capacity Management

As part of its ongoing systems performance and capacity management regime BellSouth monitors CPU utilization and sends an alert when predefined thresholds of utilization are exceeded. These alerts signify the need to examine trends in both peak and average CPU utilization in order to predict when expansion of capacity is warranted. Our review of the performance data provided for evaluation of the servers that are part of the LESOG application group (see Tables 10 and 11) found that the servers in the ENCORE production system consistently crossed the CPU utilization threshold set by BellSouth. The data provided for the months of January through May showed that both

BRLSOG1D and BRLSOG2D crossed the maximum CPU utilization threshold. In accordance with its M&Ps, BellSouth responded to this situation by making changes to improve the performance of the systems, so as to reduce CPU utilization.

Table 10: February 2000 CPU utilization for server BRLSOG1D

Collection Date	Node Name	Avg. CPU Utilization	Max. CPU Utilization
20000206	f0224034	11.39	28.79
20000207	f0224034	28.59	99.79
20000213	f0224034	3.22	28.85
20000214	f0224034	34.92	100
20000220	f0224034	17.83	40.65
20000221	f0224034	35.8	98.1
20000227	f0224034	4.5	14.02
20000228	f0224034	32.88	98.83

Table 11: February 2000 CPU utilization for server BRLSOG1D

Collection Date	Node Name	Avg. CPU Utilization	Max. CPU Utilization
20000201	f0224035	14.7	49.35
20000203	f0224035	32.04	99.78
20000204	f0224035	32.76	99.89
20000205	f0224035	11.71	48.25
20000206	f0224035	12.8	33.05
20000207	f0224035	3.55	10.91
20000208	f0224035	34.55	100
20000209	f0224035	26.12	92.6
20000210	f0224035	27.29	94.7
20000211	f0224035	26.32	77.8

6.3 LNP Application Group

LNP is the Local Number Portability application. The applications within this group were evaluated across the following dimensions:

- Version
- OS version and Patch Levels
- Configuration (multiple servers within an application group)
- Database
- Directory Structure
- File information
- Change Management
- Capacity Management

The four main software packages within this application group were the LNP Gateway, LNPTA, LAUTO, and the LCSC GUI application, which, in the ENCORE production system, was installed on a number of servers that are geographically dispersed. These servers did not have an impact on the overall performance of the servers in the ENCORE production system, since they provide only a GUI interface for, and are physically located close to, the customer service staff. The servers that ran the applications in this group were HP UNIX servers (see Table 12).

Table 12: Name and IP addresses of LNP application servers

Production Server	IP Address	RSIMMS Server	IP Address
CRLNOP1D	90.73.72.34	JRRSIM3T	90.60.12.126
CRLNOP2D	90.73.72.35	JRRSIM4T	90.60.12.127
CRLNOP4D	90.73.72.53	JRLNOP1T	90.60.12.136
BOLNOP1D	90.17.192.29		

In production, FAX LSRs are entered via the LCSC GUI. EDI and TAG LSRs are processed by the GW initially (first level validation). The LAUTO/SOG server then processes the EDI and TAG LSRs that meet these validation requirements. LSRs that do not meet second level validations require manual handling by LCSC personnel (using the LCSC GUI server). Therefore, based on the results of the second level validations, either a Firm Order Confirmation (FOC) is prepared for return to the CLEC, or the database is flagged for handling by the LCSC.

6.3.1 Software Version

The versions of the packages deployed in this application group are shown in Table 13.

Table 13: LNP application software version by server

Application	Production	IP Address	RSIMMS	IP Address
LNP Gateway 4.1	CRLNOP1D	90.73.72.34	JRRSIM3T	90.60.12.126
	CRLNOP2D	90.73.72.35		
LAUTO	CRLNOP4D	90.73.72.53	JRRSIM4T	90.60.12.127
LNPTA	CRLNOP4D	90.73.72.53	JRRSIM3T	90.60.12.126
LCSC GUI	BOLNOP1D	90.17.192.29	JRLNOP1T	90.60.12.136

6.3.2 Operating System

All of the servers within the RSIMMS environment and ENCORE production system ran HP UNIX version B.10.20. All servers had been updated to the same patch level with minor differences that would not have impacted the performance of the servers.

6.3.3 Databases

The database deployed within the LNP application was Informix.

6.3.4 Configuration

The configuration of the application varied between the ENCORE production and RSIMMS environments. Excluding the LCSC GUI servers, there were three servers in the ENCORE production group and two servers in the RSIMMS group. The deployment of the applications packages within this application group, as shown in the table above, varied by application. In the ENCORE production system there were two gateway servers (CRLNOP1D and CRLNOP2D), whereas there was only one in RSIMMS (JRRSIM3T). The LAUTO and LNPTA applications were deployed on the same server (CRLNOP4D) in the ENCORE production system. In the RSIMMS environment, the LAUTO was located on a separate server (JRRSIM4T), and the LNPTA application was deployed on the gateway server (JRRSIM3T).

There was a variation in number of servers with the LCSC GUI. The number of users determined the number of GUI servers. Each user was assigned a specific server for login. A shared database was connected to all servers in the environment and provided the only communication among servers. When the LAUTO/SOG server determined that an order required manual handling by the LCSC, a flag on the order was updated on the database. The user queried the database for his/her work.

6.3.5 Specified Differences

The following differences were created between the RSIMMS and the ENCORE production system environments in order to support OSS volume test. KPMG Consulting was aware of these changes in advance. We do not believe that these changes had a material adverse impact on the test.

a. No second validation occurred for the Pending Service Order validation in

RSIMMS. This was to prevent errors from duplicate orders received during testing. The navigator contract was issued, but the results were ignored. A configuration parameter enabled / disabled this function.

b. No NPAC connectivity existed in RSIMMS. Therefore, SOA and LSMS processes were not started. This was controlled by command line arguments in the startup script.

c. There were differences in the tunable Kernel Parameters to improve performance of the BellSouth Navigator. These changes had previously been made in the LNP Certification Test Servers. These changes were scheduled to be applied to the production servers on May 21, 2000.

d. The changes were:

    1) Increase EQMEMSIZE parm to avoid warning messages in / var / adm / syslog / syslog.log

    2) Increase IPC resources for Navigator

    3) Standardize Tunable Kernel Parms for the LNP LCSC servers.

6.3.6 Directory Structure

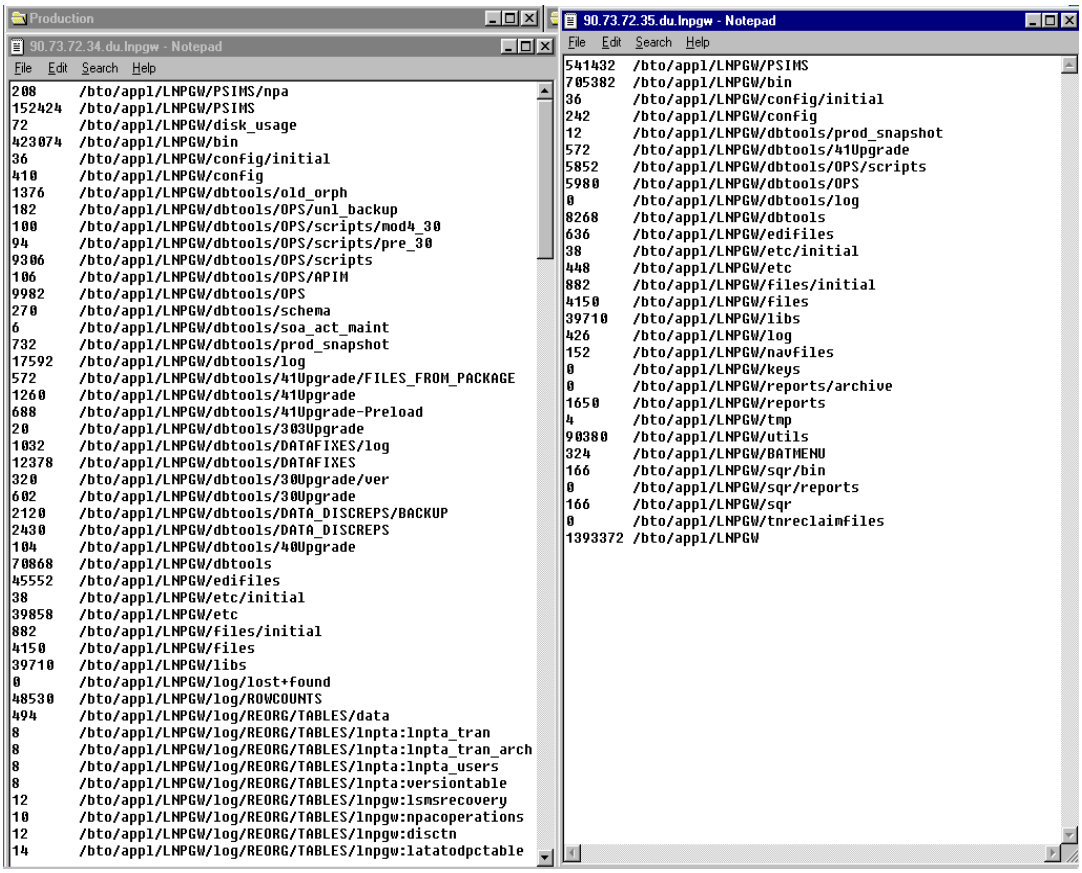
There were differences in the directory structure between the gateway servers (CRLNOP1D and CRLNOP2D) in the ENCORE production system, and between the gateway server in the ENCORE production system (CRLNOP1D) and the gateway server (JRRSIM3T) in the RSIMMS environment. These differences are shown in Figures 7 and 8. Similarly configured servers dedicated to running the same application should have had similar directory structures.

The directory structures of the servers running the LAUTO application were very similar, both on the production server (CRLNOP4D) and the server in the RSIMMS environment (JRRSIM4T).

The LNPTA application that ran on the production server CRLNOP4D had a different directory structure compared to the server JRRSIM3T, which ran the same application in the RSIMMS environment.

Figure 7: Directory structure differences between Gateway servers in the ENCORE Production System

Server CRLNOP1D (90.73.72.34) **Server CRLNOP2D (90.73.72.35)**



Production

90.73.72.34.du.lnpgw - Notepad

File Edit Search Help

```
208     /bto/appl/LNPGW/PSIMS/npa
152424  /bto/appl/LNPGW/PSIMS
72      /bto/appl/LNPGW/disk_usage
423074  /bto/appl/LNPGW/bin
36      /bto/appl/LNPGW/config/initial
410     /bto/appl/LNPGW/config
1376    /bto/appl/LNPGW/dbtools/old_orph
182     /bto/appl/LNPGW/dbtools/OPS/unl_backup
100     /bto/appl/LNPGW/dbtools/OPS/scripts/mod4_30
94      /bto/appl/LNPGW/dbtools/OPS/scripts/pre_30
9306    /bto/appl/LNPGW/dbtools/OPS/scripts
106     /bto/appl/LNPGW/dbtools/OPS/APIM
9982    /bto/appl/LNPGW/dbtools/OPS
270     /bto/appl/LNPGW/dbtools/schema
6       /bto/appl/LNPGW/dbtools/soa_act_maint
732     /bto/appl/LNPGW/dbtools/prod_snapshot
17592   /bto/appl/LNPGW/dbtools/log
572     /bto/appl/LNPGW/dbtools/41Upgrade/FILES_FROM_PACKAGE
1260    /bto/appl/LNPGW/dbtools/41Upgrade
688     /bto/appl/LNPGW/dbtools/41Upgrade-Preload
20      /bto/appl/LNPGW/dbtools/303Upgrade
1032    /bto/appl/LNPGW/dbtools/DATAFIXES/log
12378   /bto/appl/LNPGW/dbtools/DATAFIXES
320     /bto/appl/LNPGW/dbtools/30Upgrade/ver
602     /bto/appl/LNPGW/dbtools/30Upgrade
2120    /bto/appl/LNPGW/dbtools/DATA_DISCREPS/BACKUP
2430    /bto/appl/LNPGW/dbtools/DATA_DISCREPS
104     /bto/appl/LNPGW/dbtools/40Upgrade
70868   /bto/appl/LNPGW/dbtools
45552   /bto/appl/LNPGW/edifiles
38      /bto/appl/LNPGW/etc/initial
39858   /bto/appl/LNPGW/etc
882     /bto/appl/LNPGW/files/initial
4150    /bto/appl/LNPGW/files
39710   /bto/appl/LNPGW/libs
0       /bto/appl/LNPGW/log/lost+found
48530   /bto/appl/LNPGW/log/ROWCOUNTS
494     /bto/appl/LNPGW/log/REORG/TABLES/data
8       /bto/appl/LNPGW/log/REORG/TABLES/lnpta:lnpta_tran
8       /bto/appl/LNPGW/log/REORG/TABLES/lnpta:lnpta_tran_arch
8       /bto/appl/LNPGW/log/REORG/TABLES/lnpta:lnpta_users
8       /bto/appl/LNPGW/log/REORG/TABLES/lnpta:versiontable
12      /bto/appl/LNPGW/log/REORG/TABLES/lnpgw:lsmsrecovery
10      /bto/appl/LNPGW/log/REORG/TABLES/lnpgw:npacoperations
12      /bto/appl/LNPGW/log/REORG/TABLES/lnpgw:disctn
14      /bto/appl/LNPGW/log/REORG/TABLES/lnpgw:latatodpctable
```

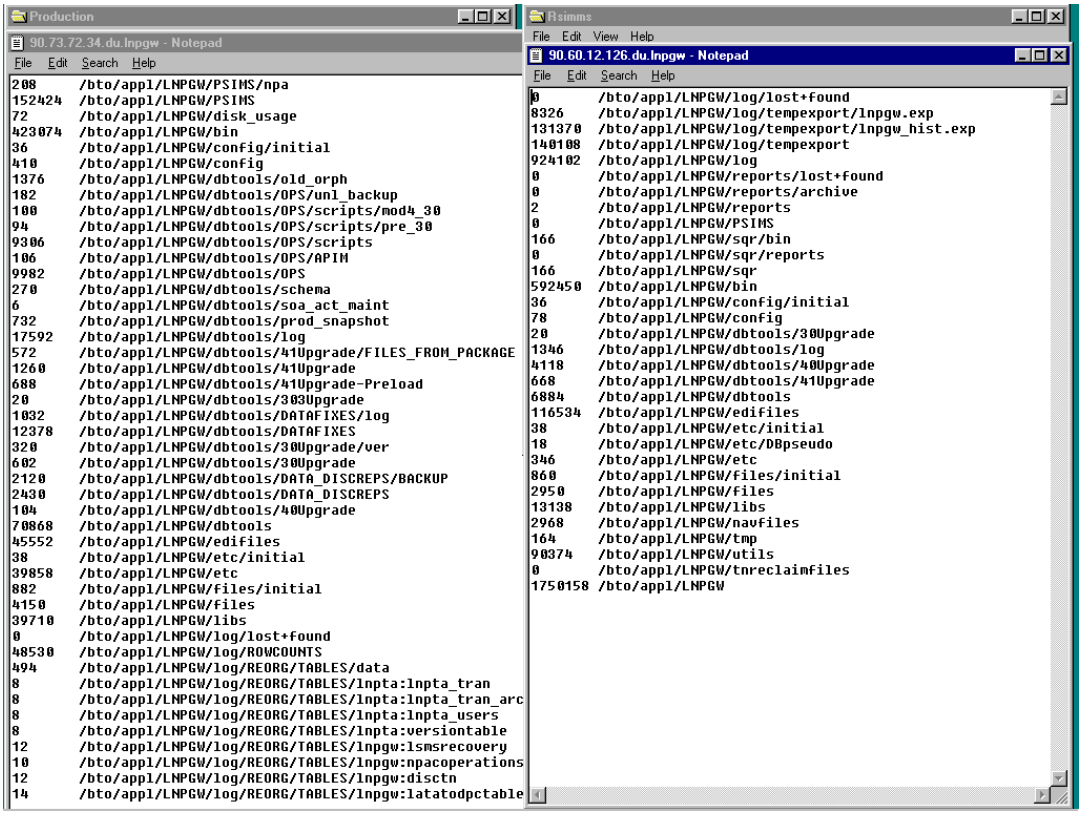
90.73.72.35.du.lnpgw - Notepad

File Edit Search Help

```
541432  /bto/appl/LNPGW/PSIMS
705382  /bto/appl/LNPGW/bin
36      /bto/appl/LNPGW/config/initial
242     /bto/appl/LNPGW/config
12      /bto/appl/LNPGW/dbtools/prod_snapshot
572     /bto/appl/LNPGW/dbtools/41Upgrade
5852    /bto/appl/LNPGW/dbtools/OPS/scripts
5980    /bto/appl/LNPGW/dbtools/OPS
0       /bto/appl/LNPGW/dbtools/log
8268    /bto/appl/LNPGW/dbtools
636     /bto/appl/LNPGW/edifiles
38      /bto/appl/LNPGW/etc/initial
448     /bto/appl/LNPGW/etc
882     /bto/appl/LNPGW/files/initial
4150    /bto/appl/LNPGW/files
39710   /bto/appl/LNPGW/libs
426     /bto/appl/LNPGW/log
152     /bto/appl/LNPGW/navfiles
0       /bto/appl/LNPGW/keys
0       /bto/appl/LNPGW/reports/archive
1650    /bto/appl/LNPGW/reports
4       /bto/appl/LNPGW/tmp
90380   /bto/appl/LNPGW/utils
324     /bto/appl/LNPGW/BATMENU
166     /bto/appl/LNPGW/sqr/bin
0       /bto/appl/LNPGW/sqr/reports
166     /bto/appl/LNPGW/sqr
0       /bto/appl/LNPGW/tnreclaimfiles
1393372 /bto/appl/LNPGW
```

Figure 8: Directory structure differences between Gateway servers in the ENCORE Production System and RSIMMS Environment

Server CRLNOP1D (90.73.72.34) **Server JRRSIM3T (90.60.12.126)**



Production

90.73.72.34.du.lnpgw - Notepad

File Edit Search Help

```
208      /bto/appl/LNPGW/PSIMS/npa
152424   /bto/appl/LNPGW/PSIMS
72       /bto/appl/LNPGW/disk_usage
423074   /bto/appl/LNPGW/bin
36       /bto/appl/LNPGW/config/initial
410      /bto/appl/LNPGW/config
1376     /bto/appl/LNPGW/dbtools/old_orph
182      /bto/appl/LNPGW/dbtools/OPS/unl_backup
100      /bto/appl/LNPGW/dbtools/OPS/scripts/mod4_30
94       /bto/appl/LNPGW/dbtools/OPS/scripts/pre_30
9306     /bto/appl/LNPGW/dbtools/OPS/scripts
106      /bto/appl/LNPGW/dbtools/OPS/APIM
9982     /bto/appl/LNPGW/dbtools/OPS
270      /bto/appl/LNPGW/dbtools/schema
6        /bto/appl/LNPGW/dbtools/soa_act_maint
732      /bto/appl/LNPGW/dbtools/prod_snapshot
17592    /bto/appl/LNPGW/dbtools/log
572      /bto/appl/LNPGW/dbtools/41Upgrade/FILES_FROM_PACKAGE
1260     /bto/appl/LNPGW/dbtools/41Upgrade
688      /bto/appl/LNPGW/dbtools/41Upgrade-Preload
20       /bto/appl/LNPGW/dbtools/303Upgrade
1032     /bto/appl/LNPGW/dbtools/DATAFIXES/log
12378    /bto/appl/LNPGW/dbtools/DATAFIXES
320      /bto/appl/LNPGW/dbtools/30Upgrade/ver
602      /bto/appl/LNPGW/dbtools/30Upgrade
2120     /bto/appl/LNPGW/dbtools/DATA_DISCREPS/BACKUP
2430     /bto/appl/LNPGW/dbtools/DATA_DISCREPS
104      /bto/appl/LNPGW/dbtools/40Upgrade
70868    /bto/appl/LNPGW/dbtools
45552    /bto/appl/LNPGW/edifiles
38       /bto/appl/LNPGW/etc/initial
39858    /bto/appl/LNPGW/etc
882      /bto/appl/LNPGW/files/initial
4150     /bto/appl/LNPGW/files
39710    /bto/appl/LNPGW/libs
0        /bto/appl/LNPGW/log/lost+found
48530    /bto/appl/LNPGW/log/ROWCOUNTS
494      /bto/appl/LNPGW/log/REORG/TABLES/data
8        /bto/appl/LNPGW/log/REORG/TABLES/lnpta:lnpta_tran
8        /bto/appl/LNPGW/log/REORG/TABLES/lnpta:lnpta_tran_arc
8        /bto/appl/LNPGW/log/REORG/TABLES/lnpta:lnpta_users
8        /bto/appl/LNPGW/log/REORG/TABLES/lnpta:versiontable
12       /bto/appl/LNPGW/log/REORG/TABLES/lnpgw:lsmsrecovery
10       /bto/appl/LNPGW/log/REORG/TABLES/lnpgw:npacoperations
12       /bto/appl/LNPGW/log/REORG/TABLES/lnpgw:disctn
14       /bto/appl/LNPGW/log/REORG/TABLES/lnpgw:latatodpctable
```

jrsimm

File Edit View Help

90.60.12.126.du.lnpgw - Notepad

File Edit Search Help

```
0        /bto/appl/LNPGW/log/lost+found
8326     /bto/appl/LNPGW/log/tempexport/lnpgw.exp
131370   /bto/appl/LNPGW/log/tempexport/lnpgw_hist.exp
140108   /bto/appl/LNPGW/log/tempexport
924102   /bto/appl/LNPGW/log
0        /bto/appl/LNPGW/reports/lost+found
0        /bto/appl/LNPGW/reports/archive
2        /bto/appl/LNPGW/reports
0        /bto/appl/LNPGW/PSIMS
166      /bto/appl/LNPGW/sqr/bin
0        /bto/appl/LNPGW/sqr/reports
166      /bto/appl/LNPGW/sqr
592450   /bto/appl/LNPGW/bin
36       /bto/appl/LNPGW/config/initial
78       /bto/appl/LNPGW/config
20       /bto/appl/LNPGW/dbtools/30Upgrade
1346     /bto/appl/LNPGW/dbtools/log
4118     /bto/appl/LNPGW/dbtools/40Upgrade
668      /bto/appl/LNPGW/dbtools/41Upgrade
6884     /bto/appl/LNPGW/dbtools
116534   /bto/appl/LNPGW/edifiles
38       /bto/appl/LNPGW/etc/initial
18       /bto/appl/LNPGW/etc/DBpseudo
346      /bto/appl/LNPGW/etc
860      /bto/appl/LNPGW/files/initial
2950     /bto/appl/LNPGW/files
13138    /bto/appl/LNPGW/libs
2968     /bto/appl/LNPGW/navfiles
164      /bto/appl/LNPGW/tmp
90374    /bto/appl/LNPGW/utils
0        /bto/appl/LNPGW/tnreclaimfiles
1750158  /bto/appl/LNPGW
```

6.*3.7 File Information*

There were differences in the files on the servers that ran the same application. The files contained in the LNPGW/Bin were similar on the server CRLNOP1D in the ENCORE production system and the RSIMMS server JRRSIM3T, but there were differences in the /bto/appl/LNPGW/config directory and the /Dbtools directory, etc.

6.3.8 Change Management

Based on the information supplied for the evaluation, the servers should normally have had the same directory structure and file information. This could not be validated based on the data collected from the servers during the course of the evaluation.

6.3.9 Capacity Management

As part of its ongoing systems performance and capacity management regime BellSouth monitors CPU utilization and sends an alert when predefined thresholds of utilization are exceeded. These alerts signify the need to examine trends in both peak and average CPU utilization in order to predict when expansion of capacity is warranted. Our review of the performance data provided for evaluation of the servers that were part of the LNP application group, showed that all the servers in the ENCORE production system performed well within BellSouth's system performance thresholds, with the exception of the gateway server CRLNOP1D. This server during the month of February had three instances of crossing the CPU utilization threshold (see Table 14). In our opinion, this was not indicative of a performance or capacity problem at that time.

Table 14: February 2000 CPU utilization for server CRLNOP1D

Collection Date	Node Name	Avg. CPU Utilization %	Max CPU Utilzation %
20000102	n3072034	14	32.96
20000103	n3072034	18.2	47.79
20000104	n3072034	30.2	62.8
20000105	n3072034	30.9	62.75
20000106	n3072034	25.8	58.02
20000107	n3072034	23.7	55.94
20000108	n3072034	14.5	55.39
20000109	n3072034	28.8	49.27
20000110	n3072034	48.7	83
20000111	n3072034	52.7	75.6
20000112	n3072034	33.3	61.32
20000113	n3072034	36.4	61.31

Collection Date	Node Name	Avg. CPU Utilization %	Max CPU Utilzation %
20000114	n3072034	38.7	71.6
20000116	n3072034	10.6	36.53

7.0 RSIMMS Environment and ENCORE Production Systems Hardware Review

The list of the hardware components that were included in BellSouth's RSIMMS and ENCORE production systems, including detailed information for each system, is shown in Appendix A.

7.1 TAG Systems

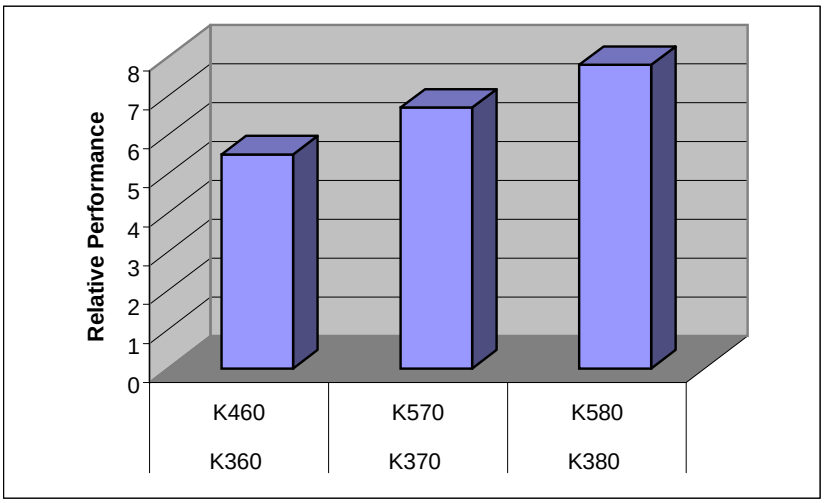
7.1.1 RSIMMS Environment

The systems that ran the TAG application in the RSIMMS were JRTAG-1T, with a backup, JYTAG-1T, and a third server, JRTAG-2T, which served a function listed as BLP. The servers were HP 9000 Enterprise servers, model K580 with 4 CPUs, with the exception of the backup server JRTAG-2T, which was a K570. The backup server had 2GB of memory and the two K580 servers had 4GB of memory. These servers were all located in Jackson, MS, and were FDDI connected to the network, except for the backup server which had an Ethernet connection.

7.1.2 ENCORE Production System

The servers in the ENCORE production system that ran the TAG application were CRTAG-1D, an HP 9000 Enterprise model K570 with four CPUs, as was the server CRTAG-3D with the BLP function. There was no equivalent backup server (not required). These servers, all of which were located in Charlotte, NC, had 2GB of memory and were FDDI connected to the network.

Figure 9: Relative OLTP Performance[4] of HP K-Class Servers



7.1.3 Differences

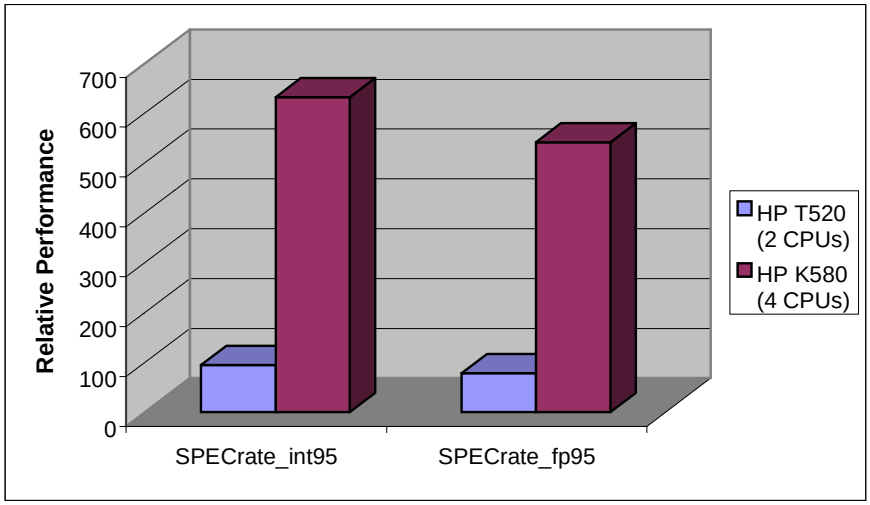
Based on the reference document[5] "K-Class Product Information" published on HP's Web site (see Figure 9), the K580 servers in the RSIMMS environment "deliver a 20% faster compute performance" than the K570 servers deployed in the ENCORE production system.

Excluding the backup system, a comparison of the two machines in the RSIMMS environment and ENCORE production system using published performance data from HP, shows that a 60% increase in relative compute performance existed in the RSIMMS environment. Additionally, the K580 systems in the test environment had 4GB of memory, whereas the systems in the ENCORE production environment had 2GB of memory. Depending on the nature of the application, the reduced memory could have had a negative impact on the performance of the systems in the ENCORE production system, especially if the applications were memory intensive. The backup servers were HP K570s, with the systems in the RSIMMS environment and ENCORE production system having two and four processors, respectively. Should the backup systems be deployed, there would be a 40% reduction in the relative compute performance of the backup server in the RSIMMS environment.

[4] On Line Transaction Processing (OLTP). This graph compares the performance of HP's K series servers, various models of which are used in BellSouth's RSIMMS and production environments, relative to the performance of the HP 9000 2-way D350 Enterprise server (a baseline)

[5] "K-Class Product information" on HP's product information Web site:
http://www.unixservers.hp.com/midrange/KClass/specifications/index.html

Figure 10: Relative Performance of HP T-Class Versus K-Class Servers



7.2 LESOG/LEO-UNIX

7.2.1 RSIMMS Environment

The systems in the RSIMMS environment that ran the LESOG and the LEO-UNIX application were a combination of six HP9000 T520 and K580 servers with four CPUs each. The four K580 servers, JRRSIM1T, JRRSIM2T, JRRSIM5T, and JRRSIM6T, each had 4GB of memory. The servers were connected to the network via FDDI connections and were located in Jackson, MS.

7.2.2 ENCORE Production System

The servers in the ENCORE production system consisted of two HP9000 server model T520s with four CPUs and 2GB of memory per server. These servers, BRLSOG1D and BRLSOG2D, were FDDI connected to the network and were located in Birmingham, AL.

7.2.3 Differences

The two servers in the ENCORE production system were HP 9000 series model T520, with four CPUs and 2GB of memory and the servers in the RSIMMS environment were HP9000 K580, with four CPUs and 4GB of memory. The four K580 servers were added to handle the added volume of order and pre-orders during volume testing. The usage of four HP9000 K580 servers did not mirror the ENCORE production system and it is possible that performance data obtained during the Volume Tests would not scale to the ENCORE production

system. The difference in compute performance between a T520 server and K580 server is shown in Figure 10 above.

7.3 LNP - Gateway – LAUTO (SOG)

7.3.2 RSIMMS Environment

The systems in the RSIMMS environment running the LNP gateway and LAUTO application consisted of two HP9000 model K580 servers with four CPUs and 4GB of memory, and one model K360 with two CPUs and 1GB of memory. One of the K580 servers, JRRSIM3T, ran the Gateway application, while the other K580 server, JRRSIM4T, ran the LAUTO application. The third server in the LNP group, JRLNOP1T, ran the LCSC application. All of the servers were located in Jackson, MS and were FDDI connected to the network.

7.3.3 ENCORE Production System

The servers deployed within the ENCORE production system for the LNP application group were HP 9000 K460 servers. The server that ran the production gateway, CRLNOP1D, had four CPUs and 3GB memory. The server that ran the production LAUTO application, CRLNOP4D, had two CPUs and 1GB memory. These two servers were located in Charlotte, NC and were connected to the network via a 10 MB Ethernet connection. The third server, BOLNOP1D, located in Birmingham, AL, had four CPUs with 2GB memory and was connected to the network via a 10 MB Ethernet connection.

7.3.4 Differences

Comparing the servers running the Gateway and LAUTO applications, each of the HP K580 servers in RSIMMS environment had a relative compute performance of approximately 48% more than each of the HP K460 servers that ran the same application in the ENCORE production system. This performance data was obtained from a product information document[6] on HP's Web site. The total relative compute performance of the two combined systems in the RSIMMS environment would be almost 100% greater than the combination of the two servers in the ENCORE production system. Additionally, the servers in the ENCORE production system had less memory than the servers in the RSIMMS environment, which could negatively impact the performance of the server in the ENCORE production system, especially if Gateway and LAUTO applications are memory intensive. There could be performance issues when the servers are connected to the network via 10MB Ethernet interfaces, when compared to similar servers connected to a FDDI network. However, if the data flow between server and network utilization is low, there would not be a significant impact to the performance of the system / application group.

[6] "HP 9000 K-Class Enterprise Server and K-Class Technical server" available on HP's product information Web site: http://www.unixservers.hp.com/midrange/KCIass/ specifications/index.html

A comparison of the servers running the LCSC application - a K460, with four CPUs and 2GB memory in production, and a K360, with two CPUs and 1GB of memory in the RSIMMS environment, showed that the production server had a much higher compute performance (72%) and would not negatively impact the ENCORE production system.

8.0 Mainframe Hardware

P/SIMMS, EDI Gateway, LEO, COFFI-Features, ATLAS, RSAG, DSAP, GA.SOCS, COFFI-USOC, GA.BOCRIS, GA.BOCABS, GA.LMOS

Additional data was provided to KCI on the mainframe environment. Based on this information, mainframe system performance was not likely to adversely affect these applications.

In December 1999 the operating system running on both test and production was MVS 5.2. In March 2000 the operating system running on both test and production was OS/390 2.5. EDS upgraded the operating system software to OS/390 2.8 later during the year 2000. The hardware platform may be updated as necessary.

Table 15: Mainframe Application and Region Names used in the ENCORE Production and RSIMMS Environments

Application Name	SYS ID	Site	Control Region	CPU Model	MIPs[7]
SOCS	O1SY	O	ARC-IMS	Hitachi Skyline -727	878
SOCS RSIMMS	U4SY	U	BR4-IMS	Hitachi Skyline -625	620/24% Share
LEO	B2SY	D	IOA-IMS	Hitachi CMOS P9-89S	1078/35% Share
LEO RSIMMS	U4SY	U	BR3-IMS	Hitachi Skyline -625	620/24% Share
ATLAS	O1SY	O	ARC-IMS	Hitachi Skyline -727	878
ATLAS RSIMMS	U4SY	U	BR4-IMS	Hitachi Skyline -625	620/24% Share
RSAG	O1SY	O	ARC-IMS	Hitachi Skyline -727	878
RSAG RSIMMS	U4SY	U	BR4-IMS	Hitachi Skyline -625	620/24% Share
DSAP	O1SY	O	ARC-IMS	Hitachi Skyline -727	878
DSAP RSIMMS	U4SY	U	BR4-IMS	Hitachi Skyline -625	620/24% Share
BOCRIS	O1SY	O	ARC-IMS	Hitachi Skyline -727	878
COFFI	O1SY	O	ARC-IMS	Hitachi Skyline -727	878
P/SIMS	D2SY	D	H51-IMS	Hitachi CMOS P8-98S	846/60% Share

System U4SY was an RSIMMS image; O1SY, B2SY, D2SY were ENCORE production images.

The BR4 and ARC control regions had different applications. The applications that existed on both regions were RSAG, CORTS, BOCRIS, SOCS, LCCSM,

[7] Millions of instructions per second

ORDMAN, TIPS, SONGS/DSAP, and RATEF. BR4 (test) had the following additional applications: LIST, SIMS, RELOG, WASSP, DSAP, and CABS. The ARC control region had 37 additional applications that did not exist on the BR4 control region. This was probably not significant since the ENCORE production system had been tailored to isolate applications.

The BOCRIS and COFFI applications were defined to the ARC control region and P/SIMS was defined to the H51 control region.

8.1 Platform and Application Monitoring

IMSAUTO and DB2AUTO were used to monitor both production and test subsystems and control regions. DB2AUTO monitored the DB2 platform and alerted on certain subsystem problems. IMSAUTO monitored the IMS platform, alerted on specific control region problems, and, in certain critical situations, initiated automated corrective actions. This monitoring, alerting, and automation was the same in all control regions.

IMSAUTO had also been customized to perform application level monitoring. These application-specific monitors were created with input from the Application groups and Database Administrators. Monitors for an application can be added, deleted, or refined at any time and are typically the same for every control region where that application runs. During the review, there were Financial and LEO application monitors in both production and test bed.

The primary functions of Solve: Operations for MVS were:

1. To provide remote operation of all MVS images from a Centralized Operations Center.
2. To suppress non-essential messages.
3. To provide delivery of essential messages to operations.
4. To manage status of MVS/VTAM resources (i.e., Started Tasks, Jobs, Cross Domains, Major Nodes, etc.).
5. To identify and respond to conditions that would result in system degradation or failure.

EDS does not run MVS systems without functioning automation since Solve is critical for normal mainframe operations.

8.2 Data Storage

The Data Access and Storage Device (DASD) pools were monitored by a BMC product called StorageGuard. Every 30 minutes, all of the DASD was scanned. If any pool exceeded the defined utilization threshold, StorageGuard issued a message and sent an E-mail to the primary and backup Site Storage Manager.

DFSM's Hierarchical Storage Management (HSM) checked each pool on an hourly basis and attempted to reduce the utilization of any pool exceeding its threshold by releasing allocated and unused space, deleting data sets eligible for deletion, and migrating any eligible data set to compressed DASD or tape.

8.3 Differences

Three of the mainframe systems, O1SY, D2SY, and I3SY, were part of the RSIMMS environment and ENCORE production system. The other mainframe, B2SY, in the ENCORE production system, was more powerful than the equivalent system in the RSIMMS environment, U4SY. Performance differences within the mainframe environment would most likely be due to latency across BellSouth's network, since the RSIMMS mainframe environment was within a single data center, whereas the production systems mainframes were distributed across two data centers. Additional network information provided by BellSouth showed negligible latency across the FDDI rings that are connected to the core ATM networks.

9.0 Network Review

The topological layout of the network for the RSIMMS environment and the ENCORE production system are show in the logical network maps. BellSouth developed the topological diagrams based on a request from the Test team. These diagrams are shown in Appendix C.

9.1 ENCORE Production System

The servers within the ENCORE production system were distributed across the Birmingham, AL Data Center and the Charlotte, NC Data Center, although one server (BOLNOP1D) was located at an administrative building in Birmingham, AL.

9.1.1 ENCORE Production System – Connectivity

Due to the distribution of the ENCORE production system servers across many locations on the BellSouth network, it is important to note that the characteristics of the network need be taken in to consideration due to the inherent latency of data movement across a network. This is especially critical in the case of the server BOLNOP1D, which was located three hops from the closest connection to a FDDI ring and was networked via a 10MB Ethernet connection.

Table 16: ENCORE Production Environment - server network information

Host Name	IP Address	LAN	Location	Type
TAG				
CRTAG-1D	90.70.124.148	FDDI	Charlotte	Production
CRTAG-3D	90.70.124.150	FDDI	Charlotte	BLP
LESOG / LEO-UNIX				
BRLSOG1D	90.110.108.47	FDDI	Birmingham	Production
BRLSOG2D	90.110.108.48	FDDI	Birmingham	Production
LNP - Gateway-LAUTO(SOG)				
CRLNOP1D	90.73.72.34	Ethernet	Charlotte	Production Gateway
CRLNOP2D	90.73.72.35	Ethernet	Charlotte	Production LAUTO
CRLNOP4D	90.73.72.53	Ethernet	Charlotte	Production LAUTO
BOLNOP1D	90.17.192.29	Ethernet	Bham-600 N 19th	Production LCSC
P/SIMMS, EDI Gateway				
D2SY Mainframe	90.12.72.1	Channel-FDDI	Birmingham	EDI Production
LEO				
B2SY Mainframe	90.12.12.1	Channel-FDDI	Birmingham	Production
COFFI-Features, ATLAS, RSAG, DSAP, GA. SOCS				
COFFI-USOC, GA. BOCRIS, GA. BOCABS				
O1SY Mainframe - Atlanta	90.12.24.1	Channel-FDDI	Birmingham	Production
O2SY Mainframe - GA Outstate	90.17.72.1	Channel-FDDI	Birmingham	Production
GA. LMOS				
I3SY Mainframe	90.70.136.1	Channel-FDDI	Charlotte	Production

9.2 RSIMMS – Connectivity (Logical)

A review of the RSIMMS network diagram showed that all of the HP servers were located in Jackson, MS on a single FDDI ring. One mainframe was located in the Atlanta, GA data center, one in Charlotte, NC, and two others are located in Birmingham, AL. Table 17 lists systems in the RSIMMS environment. The servers are listed with their IP address, which indicates their location on the specific sub-networks.

Table 17: RSIMMS Test Environment - server network information

Host Name	IP Address	LAN	Location	Type
TAG				
JRTAG-1T	90.60.12.122	FDDI	Jackson	Test
JRTAG-2T	90.60.12.123	FDDI	Jackson	Test BLP
JYTAG-1T	90.63.40.42	ETHER	Jackson	Backup - Test
LESOG / LEO-UNIX				
JRRSIM1T (also LEO-UNIX)	90.60.12.124	FDDI	Jackson	Test
JRRSIM2T (also LEO-UNIX)	90.60.12.125	FDDI	Jackson	Test
JRRSIM5T	90.60.12.128	FDDI	Jackson	Test
JRRSIM6T	90.60.12.129	FDDI	Jackson	Test
LNP - Gateway-LAUTO(SOG)				
JRRSIM3T	90.60.12.126	FDDI	Jackson	Test Gateway
JRRSIM4T	90.60.12.127	FDDI	Jackson	Test LAUTO
JRLNOP1T (reused IOT box)	90.60.12.136	FDDI	Jackson	Test LCSC
JRLNOP2T (not installed)	90.60.12.137	FDDI	Jackson	Test
JRLNOP3T (not installed)	90.60.12.138	FDDI	Jackson	Test
EDI GATEWAY, P/SIMMS				
D2SY Mainframe	90.12.72.1	Channel-FDDI	Birmingham	EDI Prod.-Vol. Test
LEO				
COFFI-Features, ATLAS, RSAG, DSAP, GA. SOCS				
U4SY Mainframe	90.130.76.1	Channel-FDDI	Atlanta	RSIMMS Vol. Test
COFFI-USOC, GA. BOCRIS, BOCABS				
O1SY Mainframe - Atlanta	90.12.24.1	Channel-FDDI	Birmingham	Production-Vol. Test
GA. LMOS				
I3SY Mainframe	90.70.136.1	Channel-FDDI	Charlotte	Production-Vol. Test

APPENDIX A - RSIMMS AND PRODUCTION SYSTEMS

RSIMMS Test Environment

5/9/00

HOST NAME	IP ADDRESS	MODEL	CPU	RAM	DISK SPACE	LAN	OS	Region/ Partition	Location	TYPE
TAG										
JRTAG-1T	90.60.12.122	K580	4	4GB	82GB	FDDI	HP-UX 10.2		Jackson	Test - GW
JRTAG-2T	90.60.12.123	K580	4	4GB	82GB	FDDI	HP-UX 10.2		Jackson	Test BLP
JRLNOP-2T	90.60.12.137	K580	4	4GB	82GB	FDDI	HP-UX 10.2		Jackson	Test BLP
LESOG / LEO-UNIX										
JRRSIM1T (also LEO-UNIX)	90.60.12.124	K580	4	4GB	82GB	FDDI	HP-UX 10.2		Jackson	Test
JRRSIM5T	90.60.12.128	K580	4	4GB	82GB	FDDI	HP-UX 10.2		Jackson	Test
JRRSIM6T	90.60.12.129	K580	4	4GB	82GB	FDDI	HP-UX 10.2		Jackson	Test
LNP - Gateway-LAUTO(SOG)										
JRRSIM3T (Gateway)	90.60.12.126	K580	4	4GB	82GB	FDDI	HP-UX 10.2		Jackson	Test Gateway
JRRSIM4T (LAUTO)	90.60.12.127	K580	4	4GB	82GB	FDDI	HP-UX 10.2		Jackson	Test LAUTO
JRLNOP1T (GUI/reused IOT box)	90.60.12.136	K360	2	1GB	18GB	FDDI	HP-UX 10.2		Jackson	Test LCSC
EDI GATEWAY, P/SIMMS										
D2SY Mainframe	90.12.72.1	Hitachi (HDS) P8				Channel-FDDI	TSO	WTB	Birmingham	EDI Prod.-Vol. Test
						Channel-FDDI	IMS 6.1	HA8		EDI Prod.-Vol. Test
						Channel-FDDI	IMS 6.1	H51		P/SIMMS Prod-Vol Test
LEO										
U4SY Mainframe	90.130.76.1	Hitachi (HDS) Skyline 625				Channel-FDDI	IMS 6.1	BR3	Atlanta	RSIMMS Vol. Test
COFFI-Features, ATLAS, RSAG, DSAP, GA. SOCS										
U4SY Mainframe	90.130.76.1	Hitachi (HDS) Skyline 625				Channel-FDDI	IMS 6.1	BR4	Atlanta	RSIMMS Vol. Test
COFFI-USOC, GA. BOCRIS, BOCABS										
O1SY Mainframe - Atlanta	90.12.24.1	Hitachi (HDS) Skyline 727				Channel-FDDI	IMS 6.1	ARC	Birmingham	Production-Vol. Test
O2SY Mainframe - Ga. Outstate	90.17.72.1	Amdahl GS-775				Channel-FDDI	IMS 6.1	AFS	Birmingham	Production-Vol. Test
GA. LMOS										
I3SY Mainframe	90.70.136.1	Amdahl GS-765				Channel-FDDI	IMS 6.1	GAL	Charlotte	Production-Vol. Test

Production Environment

09/21/2000

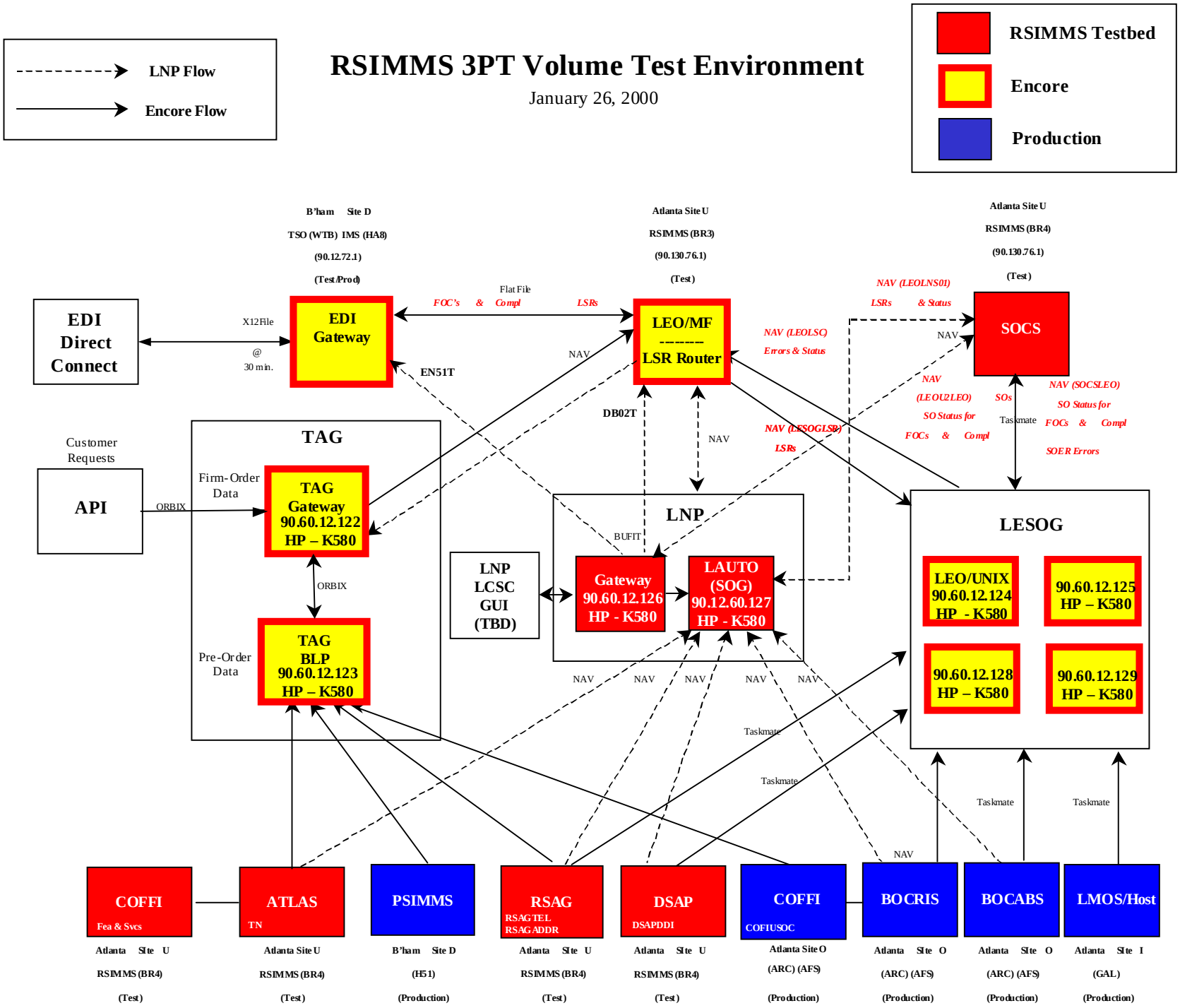
HOST NAME	IP ADDRESS	MODEL	CPU	RAM	DISK SPACE	LAN	OS	Region/ Partition	Location	TYPE
TAG										
CRTAG-1D	90.70.124.148	K570	4	2GB	29GB	FDDI	HP-UX 10.2		Charlotte	Production
CRTAG-3D	90.70.124.150	K570	4	2GB	37GB	FDDI	HP-UX 10.2		Charlotte	BLP
LESOG / LEO-Unix										
BRLSOG1D	90.110.108.47	T520	10	2GB	100GB	FDDI	HP-UX 10.2		Birmingham	Production
BRLSOG2D	90.110.108.48	T520	10	2GB	100GB	FDDI	HP-UX 10.2		Birmingham	Production
LNP - Gateway-LAUTO(SOG)										
CRLNOP1D (Gateway)	90.73.72.34	K460	4	3GB	49GB	Ethernet	HP-UX 10.2		Charlotte	Production Gateway
***	90.73.72.35	***	***	***	***	***	***		Charlotte	Production Gateway
CRLNOP4D (LAUTO)	90.73.72.53	K460	2	1GB	2GB	Ethernet	HP-UX 10.2		Charlotte	Production LAUTO
BOLNOP1D (LCSC GUI)	90.17.192.29	K460	4	2GB	2GB	Ethernet	HP-UX 10.2		Bham-600 N 19th	Production LCSC
(LCSC GUI)	90.17.192.32	***	***	***	***	***	***		Bhm	Production LCSC
(LCSC GUI)	90.17.192.154	***	***	***	***	***	***		Bhm	Production LCSC
(LCSC GUI)	99.8.128.62	***	***	***	***	***	***		Bhm	Production LCSC
(LCSC GUI)	90.131.96.32	***	***	***	***	***	***		***	Production LCSC
(LCSC GUI)	90.131.80.55	***	***	***	***	***	***		***	Production LCSC
(LCSC GUI)	90.131.92.3	***	***	***	***	***	***		***	Production LCSC
(LCSC GUI)	90.133.200.2	***	***	***	***	***	***		***	Production LCSC
(LCSC GUI)	90.132.112.2	***	***	***	***	***	***		***	Production LCSC
(LCSC GUI)	90.133.112.33	***	***	***	***	***	***		***	Production LCSC
P/SIMMS, EDI Gateway										
D2SY Mainframe	90.12.72.1	Hitachi (HDS) P8				Channel-FDDI	TSO	WTB	Birmingham	EDI Production
LEO										
B2SY Mainframe	90.12.12.1	Hitachi (HDS) P9				Channel-FDDI	IMS 6.1	IOA	Birmingham	Production
COFFI-Features, ATLAS, RSAG, DSAP, GA. SOCS										
O1SY Mainframe - Atlanta	90.12.24.1	Hitachi (HDS) Skyline 727				Channel-FDDI	IMS 6.1	ARC	Birmingham	Production
O2SY Mainframe - Ga. Outstate	90.17.72.1	Amhahl GS-775				Channel-FDDI	IMS 6.1	AFS	Birmingham	Production
COFFI-USOC, GA. BOCRIS, GA. BOCABS										
O1SY Mainframe - Atlanta	90.12.24.1	Hitachi (HDS) Skyline 727				Channel-FDDI	IMS 6.1	ARC	Birmingham	Production
O2SY Mainframe - Ga. Outstate	90.17.72.1	Amhahl GS-775				Channel-FDDI	IMS 6.1	AFS	Birmingham	Production
GA. LMOS										
I3SY Mainframe	90.70.136.1	Amdahl GS-765				Channel-FDDI	IMS 6.1	GAL	Charlotte	

*** - Indicates data was not available

APPENDIX B - RSIMMS APPLICATION ARCHITECTURE

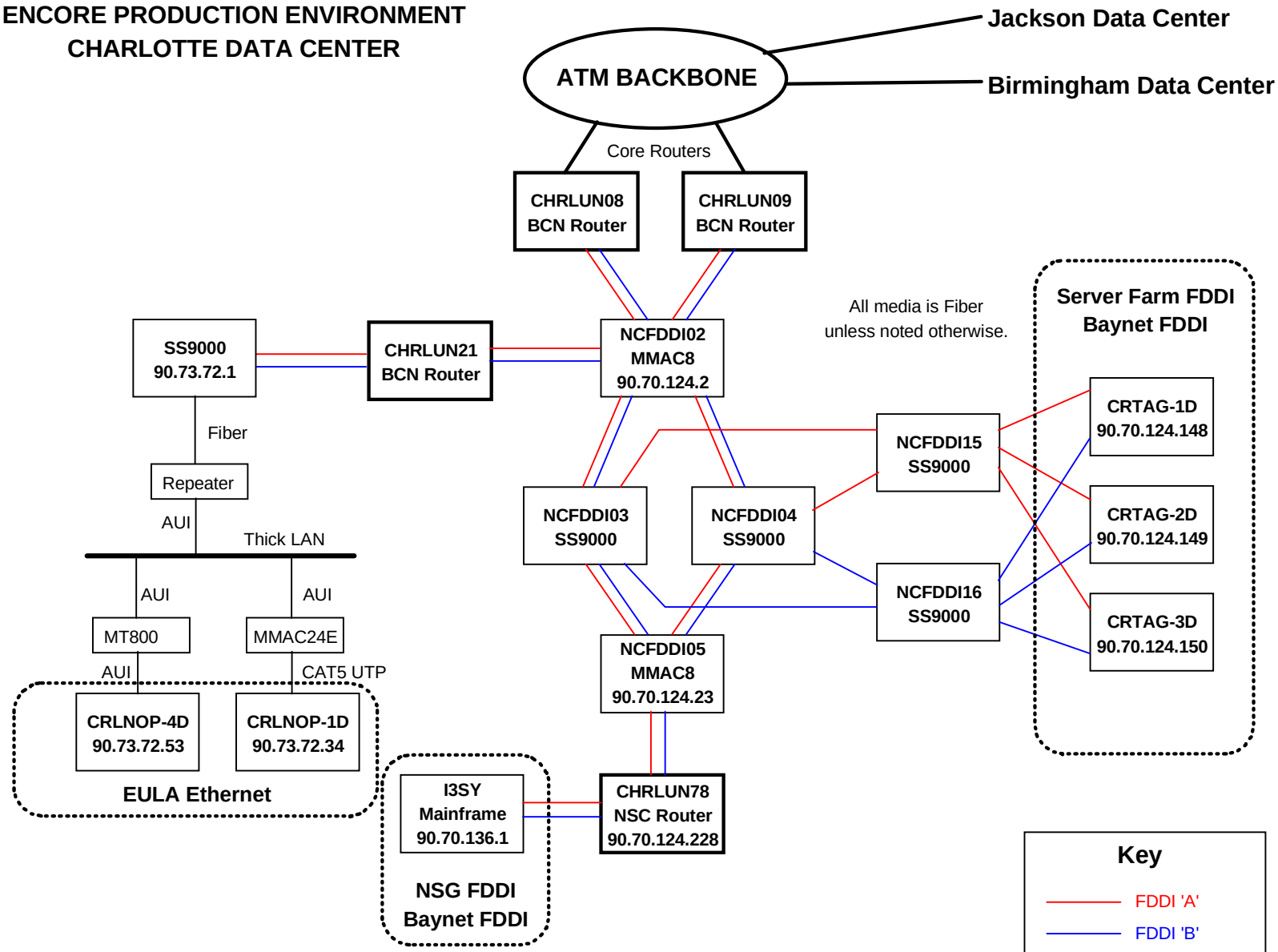
RSIMMS 3PT Volume Test Environment

January 26, 2000

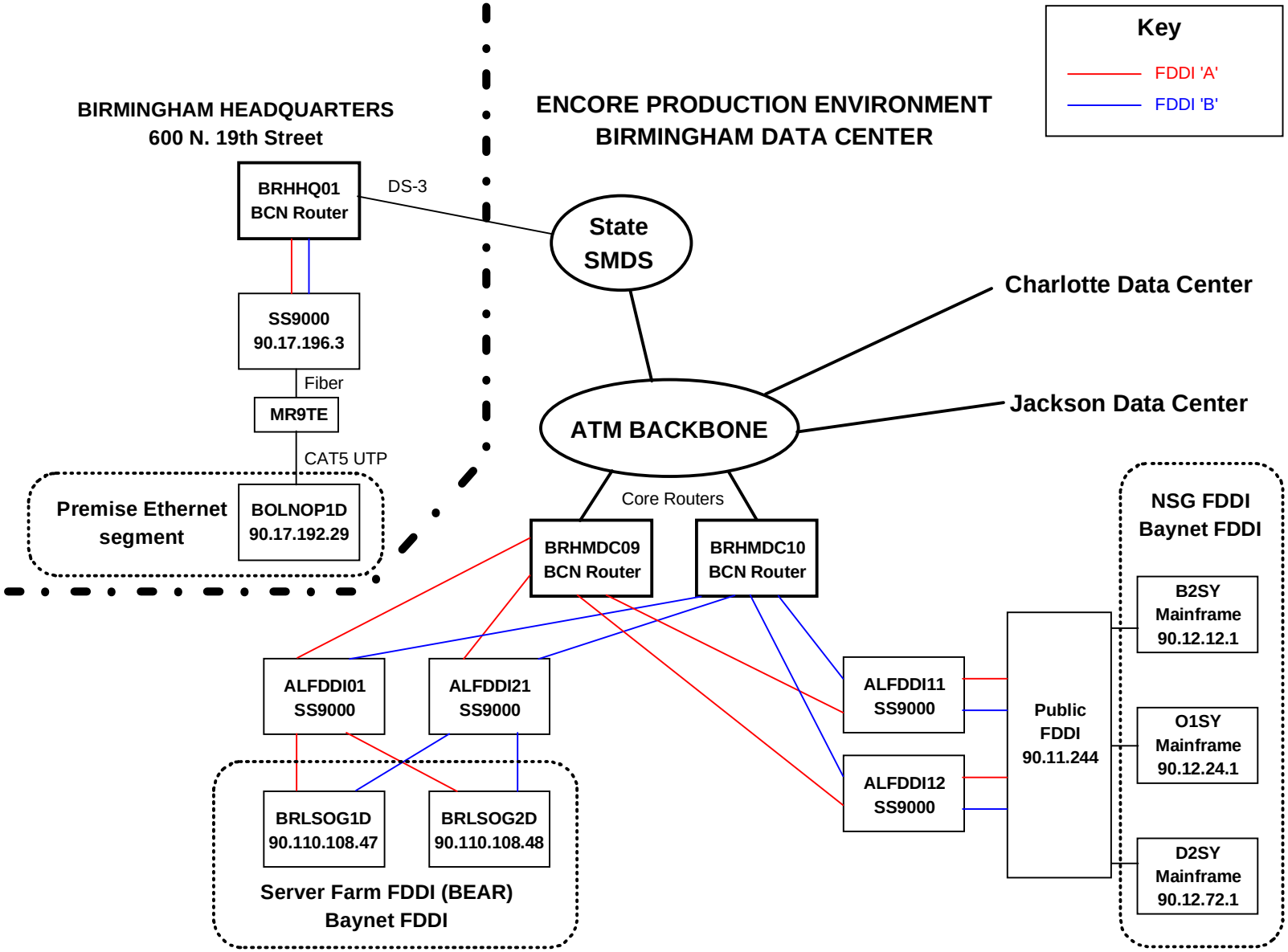


APPENDIX C - NETWORK TOPOLOGY MAPS

ENCORE PRODUCTION ENVIRONMENT
CHARLOTTE DATA CENTER

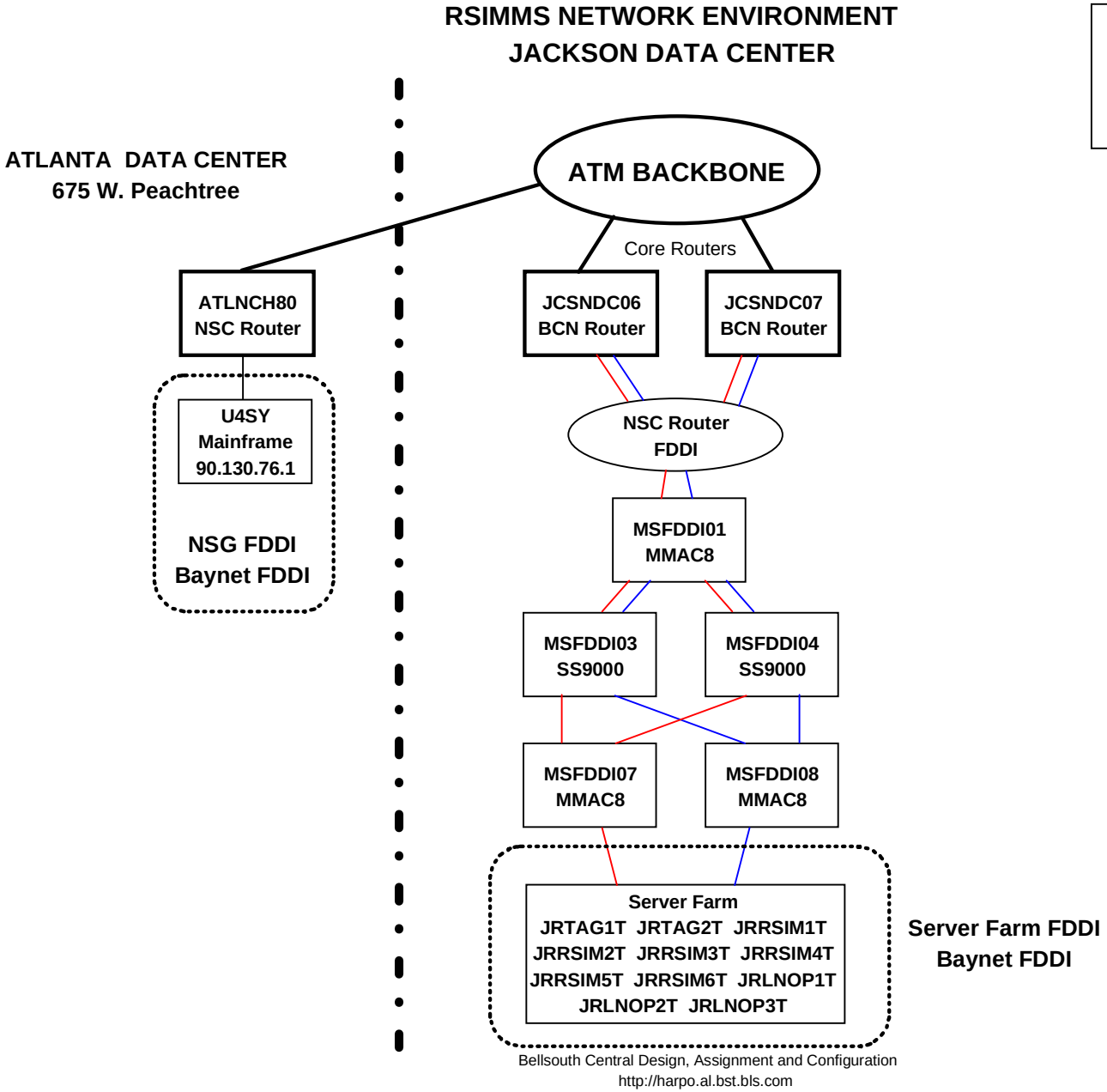


Bellsouth Central Design, Assignment and Configuration
http://harpo.al.bst.bls.com



Bellsouth Central Design, Assignment and Configuration
http://harpo.al.bst.bls.com

RSIMMS NETWORK ENVIRONMENT
JACKSON DATA CENTER



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http://harpo.al.bst.bls.com