ATTACHMENT 9

PERFORMANCE MEASUREMENTS

PERFORMANCE MEASUREMENT

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1.   PURPOSE

1.1   This Attachment 9 and its associated appendices provide Performance
       Measurements, as defined below, and procedures applicable to
       monitoring the quality, timeliness and accuracy of resale of BellSouth
       retail services, unbundled network elements, unbundled network element
       combinations, physical interconnection and operational support systems
       that BellSouth provides to AT&T. This Support, as defined below, must
       comply with minimum performance expectations. Where Performance
       Measurement Results, as defined below, are evaluated in comparison to a
       retail analog, performance levels provided to AT&T must be at least equal
       in quality to that provided by BellSouth to itself, its subsidiaries and
       affiliates and to any other party to which BellSouth provides the same or
       similar services. Where Performance Measurement Results are
       evaluated in comparison to a benchmark, performance levels provided to

AT&T must at least meet the level reflected by the benchmark. Results that do not achieve the Performance Standard, as defined below, will be considered a performance failure.

1.2   The parties agree that this Attachment 9, and related appendices, shall govern:

1.2.1   Monitoring of service quality measurements for performance determination relating to Support provided to AT&T by BellSouth as compared to itself, its subsidiaries, its affiliates and others;

1.2.2   Reporting of performance and comparison to established retail analogs and benchmarks;

1.2.3   The definitions, computational methodology and business rules applicable to all measurements;

1.2.4   Self-enforcing non-exclusive remedies (or incentives), in the nature of liquidated damages, in the event that BellSouth fails to meet its performance obligations.

2.   DEFINITIONS

2.1   For the purpose of this Attachment 9, "Performance Measurement" shall be defined as the methodology for characterizing the quality, timeliness and accuracy of Support delivered by BellSouth to AT&T.   The methodology for each Performance Measurement is specified in Appendix A - Service Quality Measurements.

2.2   For the purpose of this Attachment 9, "Performance Measurement Results" shall be defined as the numerical value (mean, proportion, or rate) produced through application of the appropriate methodology to the monthly data BellSouth captures.

2.3   For the purpose of this Attachment 9, "Performance Standard" is defined as the minimal performance criteria by which a process, service or operational support system Performance Measurement Results are judged as good (pass) or bad (fail).

2.4   For the purpose of this Attachment 9, "Support" is defined as the functions that BellSouth provides to competing carriers such as, computer systems, databases and personnel.

2.5   For the purpose of this Attachment 9, "Benchmark" is defined as a preset and minimally acceptable absolute value for a Performance Measurement. Benchmarks shall be established for all Performance

Measurements for which there is no retail analog. The parties may, by mutual agreement, employ a benchmark standard even when a retail analog exists for comparison.

2.6   For the purpose of this Attachment 9, "Mini Audit" is defined as an audit for which an individual Performance Measurement is evaluated.

3.   REPORTING AND DATA RETENTION

3.1   BellSouth shall capture and retain all the necessary data and perform all calculations in a manner consistent with the business rules specified in Appendix A and provide AT&T with:

3.1.1   data on a monthly basis for each state and region totals;

3.1.2   the disaggregated Performance Measurement Results specific to AT&T for each Performance Measurement at the level of detail specified for each Performance Measurement as specified in Appendix A; and

3.1.3   the disaggregated Performance Measurement Results specific to BellSouth for each Performance Measurement specified in Appendix A. Specifically, BellSouth must report on its performance for:

3.1.3.1   all of its retail customers;

3.1.3.2   any of its subsidiaries and affiliates that provide local service or intraLATA toll traffic;

3.1.3.3   competing carriers (CLECs) in aggregate.

3.2   The reports which must include at least all data and be as detailed as those provided as of October 31, 1999, will include each Performance Measurement specified in Appendix A. Such reports and data files will be provided to AT&T no later than ten (10) calendar days following the end of the previous month. Appendix C - Service Quality Measurements: Reporting Expectations And Report Format reflects the reporting format and data file content and structure for such reports.

3.2.1   Reports regarding BellSouth's performance to AT&T shall be considered "Confidential Information" of AT&T. Absent written permission from AT&T, BellSouth shall not disclose any Performance Measurement Results developed under this Agreement to any third party other than as provided in Section __ (General Terms and Conditions). BellSouth shall not use any individually identifiable carrier information relating to AT&T for any

purpose other than providing and reporting on its provision of Support to AT&T or an appropriate state or federal regulatory agency that provides appropriate levels of proprietary protection.

3.2.2   Reports of BellSouth performance to itself and its subsidiaries and affiliates shall be considered "Confidential Information" of BellSouth. Absent written permission from BellSouth, except as provided below, AT&T shall not use or disclose to any third party any Performance Measurement Results relating to BellSouth's performance to itself, its subsidiaries and its affiliates developed by BellSouth under this Agreement other than provided for in Section __ (General Terms and Conditions).

3.2.2.1   AT&T shall not be precluded from disclosing to relevant regulators, the courts, or appointed representatives of either party, performance data that BellSouth would otherwise consider proprietary if the disclosure is for the purpose of seeking a remedy for non-compliant performance.

4.   COMPARISON OF RESULTS

4.1   Each month BellSouth shall compare the results for each Performance Measurement to the Performance Standard, all of which are specified in Appendix A. For each Performance Measurement, BellSouth shall indicate if the Performance Measurement Results specific to AT&T; (a) meets or exceeds or (b) does not meet the specified Performance Standard and by how much.

4.2   The statistical methodology for making this comparison for Performance Measurements is defined in Appendix B - Statistical Methodology.

4.3   The methodology for determining self-enforcing non-exclusive remedies, as referenced in 1.2.4, for failing to meet the specified Performance Standard is set forth in Appendix D - Non-Exclusive Consequences For Non-Compliant Performance.

5.   VERIFICATION AND AUDITING

5.1   BellSouth shall fully document, implement and test its capability to generate all the Performance Measurement Results, perform comparisons and generate reports and data files in a manner that conforms to the terms of this Agreement as soon as feasible and in all events no later than thirty (30) calendar days after Commission approval of the Agreement. For the purposes of this section, the date of implementation shall be called the "Implementation Date." On the Implementation Date, and

thereafter for a period of six (6) months, BellSouth will allow AT&T to participate in the necessary validation of the Performance Measurement system, including but not limited to, data collection, Performance Measurement Result computation, report production and data retention. Such activities by AT&T do not constitute an audit under the terms of this Agreement, and by participating in these initial verification activities, AT&T in no way waives its rights to perform audits as provided in the Agreement.

5.2   At any time after the Implementation Date and at least once annually thereafter with the implementation date being the first day of that year, AT&T may initiate an audit of the Performance Measurement system including, but not limited to, documentation, data, software and processes, that BellSouth uses to collect, calculate, compare, store, retrieve and retain Performance Measurement Results under this Agreement. Such audit shall be performed by an independent certified public accountant selected and paid for by AT&T.

5.3   Any annual audits shall evaluate whether the Performance Measurement system conforms to the definitions, exclusions and disaggregations set forth in Appendix A; that the data collection is timely, accurate and complete; that the calculation of Performance Measurement Results conforms to the methods set forth in this Agreement; and that the data reflected in the reports and the data stored is complete, accurate, timely and readily accessible to AT&T. BellSouth shall not oppose AT&T coordinating with other CLECs for the purposes of conducting a joint audit.

5.4   The Parties agree that the Change Control Process will be used to manage changes to existing data collection, systems, software and processes that BellSouth uses to develop, compare and report Performance Measurement Results.

5.5   AT&T may request an audit of the individual measure (hereafter referred to as a "Mini-Audit"). Such requests will be limited to no more than five (5) requests in each calendar year. The cost of Mini-Audits shall be paid for by AT&T unless the audit determines that BellSouth is not in compliance with the terms of the Agreement, in which case the cost shall be borne by BellSouth.

5.6   A mutually agreeable electronic format shall be used by BellSouth to retain all data necessary to calculate each AT&T monthly Performance Measurement Result, to establish the Performance Standard for each measurement and to compare the results pursuant to this Attachment 9.

6. MODIFICATION OF PERFORMANCE MEASURES

6.1   Performance Measurements may only be modified or deleted by mutual agreement of the parties. Reporting on modified Performance Measurements shall begin within thirty (30) calendar days of the agreement to modify such measure. Performance Measurements may be added by either party, as necessary, upon thirty (30) calendar days written notice to the other.

6.2   Disputes regarding the addition, modification or deletion of a Performance Measurement shall be resolved pursuant to the Alternative Dispute Resolution procedures set forth in Section 16 (General Terms and Conditions) of this Agreement.

7. COMPLIANCE AND REMEDIES

7.1   Appendix D contains procedures for determining if individual Performance Measurement Results for AT&T fail to meet the minimum level of performance specified in this Agreement. Appendix D also identifies the remedies that are applicable when one or more Performance Standards are not met or when other terms of this Attachment 9 are not satisfied.

APPENDIX A

TABLE OF CONTENTS

PRE-ORDERING - OSS

Report/Measurement :
Average OSS Response Time and Response Interval

Definition:

As an initial step of establishing service, the customer service agent must determine such basic facts as availability of desired features, service delivery intervals, telephone numbers to be assigned, the customer's current products and features, qualification of the customer's loop for advanced digital services, and/or the validity of the street address. This type of information is gathered from supporting OSS while the customer (or potential customer) is on the telephone with the customer service agent. Because pre-ordering activities are the first tangible contact a customer may have with a CLEC, it is critical that the CLEC be perceived as equally competent, knowledgeable and fast as an ILEC customer service agent. This measure is designed to monitor the time required for CLECs to obtain the pre-ordering information necessary to establish and modify service. Comparisons to ILEC results indicate whether a CLEC has an equal opportunity to deliver a comparable customer experience when a retail customer calls the CLEC with a service inquiry.

Exclusions:

None

Business Rules:

For CLEC Results:

Average Response Interval: The response interval for each query is determined by computing the elapsed time from the ILEC receipt of a query from the CLEC, whether or not syntactically correct, to the time the ILEC returns the requested data (or reject notification) to the CLEC. Elapsed time is accumulated for each major query or transaction type, consistent with the specified reporting dimension, and then divided by the associated total number of queries received by the ILEC during the reporting period.

For ILEC Results:

The ILEC computation is identical to that for the CLEC with the clarifications noted below:

Other Clarifications and Qualification:

- The elapsed time for an ILEC query is measured from the point in time when the ILEC customer service agent submits the request for identical or similar information into the ILEC OSS until the time when the ILEC OSS returns the requested information to the ILEC customer service agent.
- As additional pre-ordering functionality is established by the industry, for example with respect to unbundled network elements, the reporting dimensions may be expanded.
- Elapsed time is measured in seconds and tenths of seconds rounded to the nearest tenth of a second.
- Elapsed time is to be measured through automated rather than manual monitoring and logging.
- The ILEC service agent entry of a request for pre-ordering information (to the ILEC OSS) is considered to be the equivalent of the ILEC receipt of a query from the CLEC.
- The ILEC OSS return of information to the ILEC customer service agent, whether in hard copy or by display on a terminal, is considered equivalent to the return of requested information to the CLEC.

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Calculation:

Average Response Interval = Σ[(Query Response Date & Time) - (Query Submission Date & Time)]/(Number of Queries Submitted in Reporting Period)

Report Structure:

CLEC Specific
CLEC Aggregate
Not product/service specific
Regional Level

Data Retained Relating to CLEC Experience:	Data Retained Relating to BST Performance:

Report Month	Report Month
Interface Type (specific to pre-ordering)	Interface Type
Query Identifier (e.g., unique tracking number)	Query Type (per reporting dimension)
Query Receipt Date by ILEC	Query Count
Query Receipt Time by ILEC	Standard Error of the mean response interval
Query Type (per reporting dimension)	Legacy Contract (per reporting dimension)
Response Return Date	Response Interval
Response Return Time	Regional Scope
Legacy Contract (per reporting dimension)	
Response Interval	
Regional Scope	
Retail Analog/Benchmark	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

LEGACY SYSTEM ACCESS TIMES FOR RNS

System	Contract	Data	< 2.3 sec	> 6 sec	Avg. Sec	# of Calls
RSAG	RSAG-TEN	Address	x	x	x	x
RSAG	RSAG-ADDR	Address	x	x	x	x
ATLAS	ATLAS-TN	TN	x	x	x	x
DSAP	DSAPDDI	Schedule	x	x	x	x
CRIS	CRSACCTS	CSR	x	x	x	x
OASIS	OASISBSN	Feature/Service	x	x	x	x
OASIS	OASISCAR	Feature/Service	x	x	x	x
OASIS	OASISLPC	Feature/Service	x	x	x	x
OASIS	OASISMTN	Feature/Service	x	x	x	x
OASIS	OASISBIG	Feature/Service	x	x	x	x

LEGACY SYSTEM ACCESS TIMES FOR LENS

System	Contract	Data	< 2.3 sec	> 6 sec	Avg. Sec	# of Calls
RSAG	RSAG-TN	Address	x	x	x	x
RSAG	RSAG-ADDR	Address	x	x	x	x
ATLAS	ATLAS-TN	TN	x	x	x	x
DSAP	DSAPDDI	Schedule	x	x	x	x
HAL	HAL/CRIS	CSR	x	x	x	x
COFFI	COFFI/USOC	Feature/Service	x	x	x	x
P/SIMS	PSIMS/ORB	Feature/Service	x	x	x	x

LEGACY SYSTEM ACCESS TIMES FOR TAG

System	Contract	Data	< 2.3 sec	> 6 sec	Avg. Sec	# of Calls
RSAG	RSAG-TN	Address	x	x	x	x
RSAG	RSAG-ADDR	Address	x	x	x	x
ATLAS	ATLASTN	TN	x	x	x	x
DSAP	DSAPDDI	Schedule	x	x	x	x
HAL	HAL/CRIS	CSR	x	x	x	x
CRIS	CRSEINIT	CSR	x	x	x	x
CRIS	CRSECSR	CSR	x	x	x	x

PRE-ORDERING - OSS

Report/Measurement:
OSS Interface Availability
Definition:
Percent of time OSS interface is functionally available compared to scheduled availability. Availability percentages for CLEC interface systems and for all Legacy systems accessed by them are captured
Exclusions:
None
Business Rules:
This measurement captures the availability percentages for the BST systems, which are used by CLECs during Pre-Ordering functions. Comparison to BST results allow conclusions as to whether an equal opportunity exists for the CLEC to deliver a comparable customer experience. **For CLEC Results:** Percent System Availability: The total "number of hours functionality was scheduled to be available" is the cumulative number of hours (by date and time on a 24-hour clock) over which the ILEC planned to offer and support CLEC access to ILEC OSS functionality during the reporting period. The ILEC must provide a minimum advance notice of one reporting period regarding availability plans and such plans must be interface-specific. If scheduled availability is not provided with at least one report period's advance notice, then the default availability for the subsequent reporting period will be seven days per week, 24 hours per day. "Hours Functionality is Available" is the actual number of hours, during scheduled available time, that the ILEC gateway or interface is capable of accepting CLEC transactions or data files for processing in the gateway / interface and supporting OSS. The actual time available is divided by the scheduled time available and then multiplied by 100 to produce the "Percent system availability" measure. The "Percent system availability" measure is required for each unique interface type offered by the ILEC. **For ILEC Results:** Each OSS of the ILEC that is employed in the support of CLEC operations must first be identified by supported functional area (e.g., pre-ordering, ordering and provisioning, repair and maintenance and billing) with such mapping disclosed to the CLECs. The "available time" and "scheduled available time" is gathered for each of the identified ILEC OSS during the report period. The OSS function availability is computed based upon the weighted average availability of the subtending support OSS. That is, the available time for each OSS supporting a functional area is accumulated over the report period and then divided by the summation of the scheduled available time for those same supporting OSS. **Other Clarifications and Qualification:** • The ILEC analogs for this performance measure are the internal measures of system downtime (or up time) typically established between the ILEC Systems Management Organization and the client organizations. • OSS scheduled and available time may be utilized in the computation of more than one functional area. • Parity exists if the CLEC "Percent system availability" $\geq$ ILEC function availability for the functionality accessed by the CLEC. • "Capable of accepting" must have a meaning consistent with the ILEC definition down time, whether planned or unplanned, for internal ILEC systems having a comparable potential for customer impact. • Time is measured in hours and tenths of hours rounded to the nearest tenth of an hour.
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks
Calculation:
(Number of Hours Functionality is Availabile to CLECs During Report Period) / (Number of Hours Functionality was Scheduled to be Availabile During the Report Period) X 100
Report Structure:

CLEC Specific
CLEC Aggregate
Not product/service specific
Regional Level

Data Retained Relating to CLEC Experience	Data Retained Relating to BST Experience
Report Month	Report Month
Legacy contract type (per reporting dimension)	Legacy contract type (per reporting dimension)
Regional Scope	Regional Scope
Interface Type (Identifies each unique interface available to CLECs)	Functionality Identification
	Business Period
Business Period	Percent Availability of Functionality
Scheduled Hour Available	
Actual Hours Available	

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

OSS Interface Availability

OSS Interface	% Availability
LENS	x
LEO Mainframe	x
LEO UNIX	x
LESOG	x
EDI	x
HAL	x
BOCRIS	x
ATLAS/COFFI	x
RSAG/DSAP	x
SOCS	x
TAG	x

ORDERING
Note: AT&T Does Not Include This Measure In Its Proposal

Report/Measurement:
Percent Flow Through Service Requests (Summary)
Definition:
The percentage of Local Service Requests (LSR) submitted electronically via the CLEC mechanized ordering process that flow through to SOCS without manual intervention
Exclusions:
Fatal Rejects Auto Clarification CLEC System Fallout Supplements (subsequent versions) to cancel LSRs that are not LESOG eligible (Under development)
Business Rules:
The CLEC mechanized ordering process includes all LSRs, including supplements (subsequent versions) which are submitted through one of the three gateway interfaces (TAG, EDI, and LENS), and flow through to SOCS without manual intervention. These LSRs can be divided into two classes of service; Business and Residence, and three types of service; Resale and Unbundled Network Elements (UNE), and specials. The CLEC mechanized ordering process does not include LSRs, which are, submitted manually (e.g., fax, and courier). **Definitions:** Fatal Rejects: Errors that prevent an LSR, submitted by the CLEC, from being processed further. When an LSR is submitted by a CLEC, LEO will perform edit checks to ensure the data received is correctly formatted and complete. For example, if the PON field contains an invalid character, LEO will reject the LSR and the CLEC will receive a Fatal Reject. Auto-Clarification: errors that occur due to invalid data within the LSR. LESOG will perform data validity checks to ensure the data within the LSR is correct and valid. For example, if the address on the LSR is not valid according to RSAG, the CLEC will receive an Auto-Clarification. * Attached is a list of services, including complex services, that can currently flow through.

ORDERING – (Percent Flow Through Service Requests (Summary) – Continued)

Calculation:
Percent Flow Through Service Requests = Σ[(Total number of valid service requests that flow-through to SOCS)] / (Total number of valid service requests delivered Electronically) X 100   Description: Percent Flow Through = (The total number of LSRs that flow through LESOG to the SOCS) / (the number of LSRs passed from LEO to LESOG) – Σ[(the number of LSRs that are returned to the CLEC for clarification) + (the number of LSRs that contain errors made by CLECs)] X 100.

Report Structure:
• CLEC Aggregate   ➤ Region

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE

• Report month
 • Total number of LSRs received, by interface, by CLEC:
   ➤ TAG
   ➤ EDI
   ➤ LENS
 • Total number of errors by type, by CLEC:
   ➤ Fatal rejects
   ➤
   ➤ Auto clarification
   ➤ CLEC caused system fallout
 • Total number of errors by error code
 • Count of Orders Completed Without Manual Intervention
 • Count of Firm Order Commitments
 • Count of Syntax Rejects
 • Count of Legacy System Rejects
 • Count of Orders Submitted
 • Order Activity Type
 • Original order date for rejected orders
 • Rejection Notice Date and Time
 • Service Type
 • Volume Category
 • Manual Fallout (for Mechanized Orders Only)
	• Report month
	 • Total number of errors by type:
	   ➤ BST system error
	 • Count of Orders Completed Without Manual Intervention
	 • Count of Order Commitments
	 • Count of Syntax Rejects
	 • Count of Legacy System Rejects
	 • Count of Orders Submitted
	 • Order Activity
	 • Service Type
	 • Volume Category

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

ORDERING

Report/Measurement:
Percent Flow Through Service Requests (Detail)

Definition:

A detailed list by CLEC of the percentage of Local Service Requests (LSR) submitted electronically via the CLEC mechanized ordering process that flow through to SOCS without manual or human intervention.

Exclusions:

- Fatal Rejects
- Auto Clarification
-
- CLEC System Fallout
- Supplements (subsequent versions) to cancel LSRs that are not LESOG eligible (Under development)

Business Rules:

The CLEC mechanized ordering process includes all LSRs, including supplements (subsequent versions) which are submitted through one of the three gateway interfaces (TAG, EDI, and LENS), and flow through to SOCS without manual intervention. These LSRs can be divided into two classes of service; Business and Residence, and two types of service; Resale and Unbundled Network Elements (UNE) and specials. The CLEC mechanized ordering process does not include LSRs, which are, submitted manually (e.g., fax, and courier).

Definitions:

Fatal Rejects: Errors that prevent an LSR, submitted by the CLEC, from being processed further. When an LSR is submitted by a CLEC, LEO will perform edit checks to ensure the data received is correctly formatted and complete. For example, if the PON field contains an invalid character, LEO will reject the LSR and the CLEC will receive a Fatal Reject.

Auto-Clarification: errors that occur due to invalid data within the LSR. LESOG will perform data validity checks to ensure the data within the LSR is correct and valid. For example, if the address on the LSR is not valid according to RSAG, the CLEC will receive an Auto-Clarification.

*Attached is a list of services, including complex services that can currently flow through.

ORDERING – (Percent Flow Through Service Requests (Detail) – Continued)

Calculation:
Percent Flow Through Service Requests = (Total number of valid service requests that flow-through to SOCS) / (Total number of valid service requests delivered Electronically) X 100

Description:

Percent Flow Through = The total number of LSRs that flow through LESOG to SOCS / (the number of LSRs passed from LEO to LESOG) – Σ[(the number of LSRs that are returned to the CLEC for clarification + the number of LSRs that contain errors made by CLECs)] X 100.

Report Structure:

- Provides the flow through percentage for each CLEC (by alias designation) submitting LSRs through the CLEC mechanized ordering process. The report provides the following:
  - ➤ CLEC (by alias designation)
  - ➤ Number of fatal rejects
  - ➤ Mechanized interface used
  - ➤ Total mechanized LSRs
  - ➤
  - ➤ Number of auto clarifications returned to CLEC
  - ➤ Number of validated LSRs
  - ➤ Number of BST caused fallout
  - ➤ Number of CLEC caused fallout
  - ➤ Number of Service Orders Issued
  - ➤ Base calculation
  - ➤ CLEC error excluded calculation

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE

• Report month
• Total number of LSRs received, by interface, by CLEC
  ➤ TAG
  ➤ EDI
  ➤ LENS
• Total number of errors by type, by CLEC
  ➤ Fatal rejects
  ➤
  ➤ Auto clarification
  ➤ CLEC errors
• Total number of errors by error code
• Count of Orders Completed Without Manual Intervention
• Count of Firm Order Commitments
• Count of Syntax Rejects
• Count of Legacy System Rejects
• Count of Orders Submitted
• Order Activity Type
• Original order date for rejected orders
• Rejection Notice Date and Time
• Service Type
• Volume Category
• Manual Fallout (for Mechanized Orders Only)
	• Report month
	• Total number of errors by type:
	  ➤ BST system error
	• Count of Orders Completed Without Manual Intervention
	• Count of Order Commitments
	• Count of Syntax Rejects
	• Count of Legacy System Rejects
	• Count of Orders Submitted
	• Order Activity
	• Service Type
	• Volume Category

Retail Analog/Benchmark:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

ORDERING

Report/Measurement:
Flow Through Error Analysis
Definition:
An analysis of each error type (by error code) that was experienced by the LSRs that did not flow through to SOCS.
Exclusions:
Each Error Analysis is error code specific; therefore exclusions are not applicable.
Business Rules:
The CLEC mechanized ordering process includes all LSRs, including supplements (subsequent versions) which are submitted through one of the three gateway interfaces (TAG, EDI, and LENS), and flow through to provisioning SOCS without manual intervention. These LSRs can be divided into two classes of service; Business and Residence, and two types of service; Resale and Unbundled Network Elements (UNE). This measurement captures the total number of errors by type. The CLEC mechanized ordering process does not include LSRs, which are, submitted manually (e.g., fax, and courier).
Calculation:
Σ Of errors by type.
Report Structure:
• Provides an analysis of each error type (by error code). The report is in descending order by count of each error code and provides the following:
➢ Error Type (by error code)
➢ Count of each error type
➢ Percent of each error type
➢ Cumulative percent
➢ Error Description
➢ CLEC Caused Count of each error code
➢ Percent of aggregate by CLEC caused count
➢ Percent of CLEC by CLEC caused count
➢ BST Caused Count of each error code
➢ Percent of aggregate by BST caused count
➢ Percent of BST by BST caused count
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE

• Report month
• Total number of LSRs received
• Total number of errors by type (by error code)
    ➢ CLEC caused error
	• Report month
	• Total number of errors by type (by error code)
	    ➢ BST system error

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Attachment
BellSouth Flow-through Analysis
For CLECs LSRs placed via EDI or TAG

	BellSouth Service Offered to CLEC via resale or UNE	Flow-through if no BST or CLEC Errors (Yes/No)	Complex Service (Yes/No)	Complex Order (Yes/No)	Design Service (Yes/No)	Can ordering this service cause fall out for a reason other than errors or complex? If so, what reason?
1	Flat Rate/Residence	Yes	No	No	no	
2	Flat Rate/Business	Yes	No	No	no	
3	Pay Phone Provider	No	No	No	no	
4	Measured Rate/Res.	Yes	No	No	no	
5	Measured Rate/Bus.	Yes	No	No	no	
6	Area Plus	Yes	No	No	no	
7	Package/Complete Choice and area plus	Yes	No	No	no	
8	Optional Calling Plan	Yes	No	No	no	
9	Ga. Community Calling	Yes	No	No	no	
10	Call Waiting Deluxe	Yes	No	No	no	
11	Call Waiting	Yes	No	No	no	
12	Caller ID	Yes	No	No	no	
13	Speed Calling	Yes	No	No	no	
14	3 Way Calling	Yes	No	No	no	
15	Call Forwarding-Variable	Yes	No	No	no	
16	Remote Access to CF	Yes	No	No	no	
17	Enhanced Caller ID	Yes	No	No	no	
18	Memory Call	Yes	No	No	no	
19	Memory Call Ans. Svc.	Yes	No	No	no	
20	MTS	Yes	No	No	no	
21	RCF	Yes	No	No	no	
22	Ringmaster	Yes	No	No	no	
23	Call Tracing	Yes	No	No	no	
24	Call Block	Yes	No	No	no	
25	Repeat Dialing	Yes	No	No	no	
26	Call Selector	Yes	No	No	no	
27	Call Return	Yes	No	No	no	
28	Preferred Call Forward	Yes	No	No	no	
29	Touchtone	Yes	No	No	no	
30	Visual Director	Yes	No	No	no	
31	INP (all types?)	Yes	UNE	No	no	
32	Unbundled Loop-Analog 2W, SL1, SL2	Yes	UNE	No	Yes-designed, no-non-designed	
33	2 wire analog port	Yes	UNE	No	no	
34	Local Number Portability (always?)	Yes	UNE	No	no	
35	Accupulse	No	Yes	Yes	yes	See note at bottom of matrix.
36	Basic Rate ISDN	No	Yes	Yes	yes	LSR electronically submitted; no flow through

	BellSouth Service Offered to CLEC via resale or UNE	Flow-through if no BST or CLEC Errors (Yes/No)	Complex Service (Yes/No)	Complex Order (Yes/No)	Design Service (Yes/No)	Can ordering this service cause fall out for a reason other than errors or complex? If so, what reason?
37	DID	No*	Yes	Yes	Yes	* yes with OSS'99
38	Frame Relay	No	Yes	Yes	yes	
39	Megalink	No	Yes	Yes	yes	
40	Megalink-T1	No	Yes	Yes	yes	
41	Native Mode LAN Interconnection (NMLI)	No	Yes	Yes	yes	
42	Pathlink Primary Rate ISDN	No	Yes	Yes	yes	
43	Synchronet	No	Yes	Yes	yes	LSR electronically submitted; no flow through
44	PBX Trunks	No	Yes	Yes	Yes	LSR electronically submitted; no flow through
45	LightGate	No	Yes	Yes	yes	
46	Smartpath	No	Yes	Yes	yes	
47	Hunting	No	Yes	no	no	LSR electronically submitted; no flow through
48	CENTREX	No	Yes	Yes	no	
49	FLEXSERV	No	Yes	Yes	yes	
50	Multiserv	No	Yes	Yes	yes	
51	Off-Prem Stations	No	Yes	Yes	yes	
52	SmartRING	No	Yes	Yes	yes	
53	FX	No	Yes	Yes	yes	
54	Tie Lines	No	Yes	Yes	Yes	
55	WATS	No	Yes	Yes	yes	
56	4 wire analog voice grade loop	No	UNE	Yes	yes-designed, no-non-designed	
57	4 wire DS1 & PRI digital loop	No	UNE	Yes	yes	
58	2 wire ISDN digital loop	No	UNE	Yes	yes	
59	4 wire DS1 & PRI digital loop	No	UNE	Yes	yes	
60	ADSL	No*	UNE	Yes	yes	* yes as of OSS'99?
61	HDSL	No	UNE	Yes	yes	
62	2 wire analog DID trunk port	No	UNE	Yes	Yes	
63	2 wire ISDN digital line side port	No	UNE	Yes	yes	
64	4 wire ISDN DSI digital trunk ports	No	UNE	Yes	yes	
65	UNE Combinations	y-loop+port	UNE	Yes	yes	
66	Directory Listings (simple)	No*	UNE	Yes	no	* yes as of OSS'99

	BellSouth Service Offered to CLEC via resale or UNE	Flow-through if no BST or CLEC Errors (Yes/No)	Complex Service (Yes/No)	Complex Order (Yes/No)	Design Service (Yes/No)	Can ordering this service cause fall out for a reason other than errors or complex? If so, what reason?
67	Directory Listings (complex)	No*	UNE	yes	no	* yes as of OSS'99, captions and indentions
68	ESSX	No	Yes	Yes	no	

Note for last column: For all services that indicate 'No' for flow-through, the following reasons, in addition to errors or complex services, also prompt manual handling: Expedites from CLECs, special pricing plans, for denials – restore and conversion or disconnect and conversion both required, partial migrations (although conversions-as-is flow through), class of service invalid in certain states with some TOS – e.g. gov't, or cannot be changed when changing main TN on C activity, low volume – e.g. activity type T=move, pending order review required, more than 25 business lines, restore or suspend for UNE combos, transfer of calls option for CLEC end user – fixed with release 6.0, new TN not yet posted to BOCRIS. All but the last one are unique to the CLEC environment.

ORDERING

Report/Measurement:
Percent Rejected Service Requests
Definition:
Percent Rejected Service Request is the percent of total Local Service Requests (LSRs) received which are rejected due to error or omission. An LSR is considered valid when it is electronically submitted by the CLEC and passes LEO edit checks to insure the data received is correctly formatted and complete.
Exclusions:
Service Requests canceled by the CLEC prior to being rejected/clarified.
Business Rules:
Fully Mechanized: An LSR is considered "rejected" when it is submitted electronically but does not pass LEO edit checks in the ordering systems (EDI, TAG, LEO, LESOG) and is returned to the CLEC. There are two types of "Rejects" in the Mechanized category: - A Fatal Reject occurs when a CLEC attempts to electronically submit an LSR but required fields are not populated correctly and the request is returned to the CLEC before it is considered an LSR.   - An Auto Clarification is a valid LSR, which is electronically submitted but rejected from LESOG because it does not pass further edit checks for order accuracy.   **Partially Mechanized:** A valid LSR, which is electronically submitted (via EDI or TAG), but cannot be processed electronically and "falls out" for manual handling. It is then put into "clarification" and (rejected) sent back to the CLEC. **Total Mechanized:** Combination of Fully Mechanized and Partially Mechanized LSRs. **Non Mechanized:** An LSR which is faxed or mailed to the LCSC for processing and is "clarified" (rejected) back to the CLEC by the BST service representative. **LNP:** Under Development **For CLEC Results:** <ins>Percent Orders Rejected</ins>: The percentage of orders rejected is the count of (1) order submissions where the ILEC returns a Fatal Reject notice to the CLEC and (2) order submissions where the ILEC returns an Auto Clarification to the CLEC. The resulting combined count of rejections is divided by the count of orders submitted (For EDI interfaces, the orders submitted would be the combined count of positive and negative 997 messages issued upon receipt of the CLEC order.) **For ILEC Results:** Same computation as for the CLEC.
Calculation
Percent Rejected Service Requests = (Total Number of Rejected Service Requests) / (Total Number of Service Requests Received) X 100 during the month.
Report Structure:
- Fully Mechanized, Partially Mechanized, Total Mechanized, Non-Mechanized   - State and Region   - CLEC Specific   - CLEC Aggregate
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE:	DATA RETAINED RELATING TO BST PERFORMANCE:
• Report Month • Total number of LSRs • Total number of Rejects • Total Number of Errors • State and Region • Count of Orders Completed Without Manual Intervention • Count of Firm Order Commitments • Count of Syntax Rejects • Count of Legacy System Rejects • Count of Orders Submitted • Interface Type • Order Activity Type • Original order date for rejected orders • Rejection Notice Date and Time • Service Type • Volume Category • Manual Fallout (for Mechanized Orders Only)	• Report Month • Total number of LSRs • Total number of Errors • Adjusted Error Volume • State and Region • Count Orders Completed Without Manual Intervention • Count of Order Commitments • Count of Syntax Rejects • Count of Legacy System Reject • Count of Orders Submitted • Interface Type • Order Activity • Service Type • Volume Category

RETAIL ANALOG/BENCHMARK:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

ORDERING

Report/Measurement:
Reject Interval
Definition:
Reject Interval is the average reject time from receipt of an LSR to the distribution of a Reject. An LSR is considered valid when it is electronically submitted by the CLEC and passes LEO edit checks to insure the data received is correctly formatted and complete.
Exclusions:
Service Requests canceled by CLEC prior to being rejected/clarified
Business Rules:

- **Fully Mechanized**: The elapsed time from receipt of a valid LSR (date and time stamp in EDI, TAG) until the LSR is rejected (date and time stamp of reject in EDI, TAG). Fatal Rejects and Auto Clarifications are considered in the Fully Mechanized category.
- **Partially Mechanized**: The elapsed time from receipt of a valid LSR (date and time stamp in EDI, TAG) until it falls out for manual handling. The stop time on partially mechanized LSRs is when the LCSC Service Representative clarifies the LSR back to the CLEC via EDI, TAG.
- **Total Mechanized** Combination of Fully Mechanized and Partially Mechanized LSRs.
- **Non-Mechanized**: The elapsed time from receipt of a valid LSR (date and time stamp from FAX Server) until notice of the reject is returned to the CLEC via FAX Server.
- **LNP**: Under development.

Reject Interval: Reject Interval *(syntax)* is the elapsed time between the ILEC receipt of an order from the CLEC to the ILEC return of a notice of a syntax rejection to the CLEC. The time measurement starts when the ILEC receives the order from the CLEC. The time measurement stops when the ILEC returns a rejection notice to the CLEC. The elapsed time is accumulated by order type with the resulting accumulated time then divided by the count of rejected orders associated with the particular order type.

Reject Interval: Reject Interval *(legacy system)* is the elapsed time between the ILEC's acknowledgement /acceptance of an order from the CLEC to the ILEC's return of a rejection notice to the CLEC. The time measurement starts when the ILEC accepts or acknowledges the order from the CLEC as syntactically correct. The time measurement stops when the ILEC returns a rejection notice to the CLEC. The elapsed time is accumulated by order type with the resulting accumulated time then divided by the count of rejected orders associated with the particular service and order type.

Other Clarifications and Qualification:

- When the ILEC processes orders for a CLEC via different interfaces (e.g., ASR and EDI) then the preceding measurement must be computed for each interface arrangement.
- All intervals are measured in hours and hundredths of hours rounded to the nearest hundredth.
- Because this should be a highly automated process, the accumulation of elapsed time continues through off-schedule, weekends and holidays.
- "Syntactically correct" means all fields required to process an order are populated and reflect the correct format as agreed and documented in the current interface specifications.
- The ILEC service agent's attempt to submit an order for processing by the ILEC OSS is considered equivalent to the ILEC acknowledgment of the CLEC's order.
- The ILEC OSS return of any indication to the service agent that an order cannot be processed as submitted is considered equivalent to the ILEC return of a rejection notice to the CLEC.
- Return of any information (e.g., order recapitulation) to the ILEC customer service agent that indicates no errors are evident or that an order can be processed, is the equivalent of the ILEC return of a FOC to the CLEC.
- Logging of information in the ILEC OSS, whether manual or automatic, that indicates an order may not be completed by the existing due date, is equivalent of the return of a jeopardy notice to the CLEC regardless of whether or not the ILEC takes action based upon such information.
- Automatic logging of work completion and manual logging of work completion, whether input directly to the ILEC OSS or into an intermediate storage devise, is considered the equivalent of the return of a completion notice to the CLEC.

Calculation:

Reject Interval = Σ[(Date and Time of Service Request Rejection) – (Date and Time of Service Request Receipt)] / (Number of Service Requests Rejected in Reporting Period)

Report Structure:
- CLEC Specific
- CLEC Aggregate
- Fully Mechanized, Partially Mechanized, Total Mechanized, Non-Mechanized, Trunks

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE:	DATA RETAINED RELATING TO BST PERFORMANCE:
- Report Month - Reject Interval - Total Number of LSRs - Total number of Errors - State and Region - Number of Orders Reflected in Result - Interface Type - Average Status Interval - Order Submission Date - Order Submission Time - Standard Order Activity - Status Type - Status Notice Date - Status Notice Time - Number of Statuses Provided •	- Report Month - Reject Interval - Total number of LSRs - Total number of Errors - State and Region - Number of Orders Reflected in Result - Interface Type - Average Status Interval - Standard Error of Status Interval - Standard Order Activity - Status Type - Status Notice Date - Status Notice Time - Number Of Statuses Provided

Retail Analog/Benchmark:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

ORDERING

Report/Measurement:
Firm Order Commitment Timeliness
Definition:
Interval for Return of a Firm Order Commitment (FOC Interval) is the average response time from receipt of valid LSR to distribution of a firm order commitment.
Exclusions:
•
• None.
Business Rules:
• **Mechanized** - The elapsed time from receipt of a valid electronically submitted LSR (date and time stamp in LENS, EDI, TAG) until the LSR is processed, including mechanized facilities validation in LFACS and any other appropriate data bases to ensure available facilities, and appropriate service orders are generated in SOCS and the FOC is sent to the CLEC from LENS, EDI, TAG.
• **Partially Mechanized** – The elapsed time from receipt of a valid electronically submitted LSR (date and time stamp in LENS, EDI, TAG) which falls out for manual handling by the LCSC personnel until appropriate service orders are issued by a BST service representative via Direct Order Entry (DOE) or Service Order Negotiation Generation System (SONGS) to SOCS and the FOC is sent to the CLEC from LENS, EDI, TAG. A mechanized facilities validation in LFACS and any other appropriate data bases is conducted to ensure available facilities prior to the return of the FOC.
• **Total Mechanized** - Combination of Fully Mechanized and Partially Mechanized LSRs
• **Non-Mechanized** - The elapsed time from receipt of a valid LSR (FAX Server receive date and time stamp) until appropriate service orders are issued by BST service representative via Direct Order Entry (DOE) or Service Order Negotiation Generation System (SONGS) to SOCS and the FOC is sent to the CLEC from the FAX Server.
• **LNP** – Under development.
Firm Order Commitment (FOC) Interval: Interval for Return of a Firm Order Commitment is the elapsed time between the ILEC acceptance of a syntactically correct order and the return of a commitment to the CLEC that the order will be worked as submitted or worked with the modifications specified on the commitment. A database query in LFACS is conducted to ensure availability of facilities. The time measurement starts when the ILEC accepts (acknowledges) the order from the CLEC. The time measurement stops when the ILEC returns a valid firm order commitment to the CLEC. The elapsed time is accumulated by order type with the resulting accumulated time then divided by the count of orders associated with the particular order type.
Other Clarifications and Qualification:
• When the ILEC processes orders for a CLEC via different interfaces (e.g., ASR and EDI) then the preceding measurement must be computed for each interface arrangement.
• All intervals are measured in hours and hundredths of hours rounded to the nearest hundredth.
• Because this should be a highly automated process, the accumulation of elapsed time continues through off-schedule, weekends and holidays.
• "Syntactically correct" means all fields required to process an order are populated and reflect the correct format as agreed and documented in the current interface specifications.
• The ILEC service agent's attempt to submit an order for processing by the ILEC OSS is considered equivalent to the ILEC acknowledgment of the CLEC's order.
• The ILEC OSS return of any indication to the service agent that an order cannot be processed as submitted is considered equivalent to the ILEC return of a rejection notice to the CLEC.
• Return of any information (e.g., order recapitulation) to the ILEC customer service agent that indicates no errors are evident or that an order can be processed, is the equivalent of the ILEC return of a FOC to the CLEC.
• Logging of information in the ILEC OSS, whether manual or automatic, that indicates an order may not be completed by the existing due date, is equivalent of the return of a jeopardy notice to the CLEC regardless of whether or not the ILEC takes action based upon such information.
Automatic logging of work completion and manual logging of work completion, whether input directly to the ILEC OSS or into an intermediate storage devise, is considered the equivalent of the return of a completion notice

to the CLEC.

Calculation:

Firm Order Commitment Timeliness = Σ[(Date and Time of Firm Order Commitment) -- (Date and Time of Service Request Receipt)] / (Number of Service Requests Committed in Reporting Period)

Report Structure:

- Fully Mechanized, Partially Mechanized, Total Mechanized, Non-Mechanized
- CLEC Specific
- CLEC Aggregate

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE:	DATA RETAINED RELATING TO BST PERFORMANCE:
• Report Month	• Report Month
• Interval for FOC	• Interval for FOC
• Total number of LSRs	• Total Number of LSRs
• State and Region	• State and Region
• Number of Orders Reflected in Result	• Number of Orders Reflected in Result
• Interface Type	• Interface Type
• Average Status Interval	• Average Status Interval
• Order Submission Date	• Standard Error of Status Interval
• Order Submission Time	• Standard Order Activity
• Standard Order Activity	• Status Type
• Status Type	• Status Notice Date
• Status Notice Date	• Status Notice Time
• Status Notice Time	• Number Of Statuses Provided
• Number of Statuses Provided	

Retail Analog/Benchmark:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

ORDERING

Report/Measurement:
Speed of Answer in Ordering Center

Definition:
Measures the average time a customer is in queue.

Exclusions:
None

Business Rules:

For CLEC Results:

Mean Time to Answer Calls: Speed of Answer is determined by measuring and accumulating the elapsed time from the entry of a CLEC call into the ILEC call management system until the CLEC call is transferred to the ILEC personnel assigned to handling CLEC calls for assistance. The elapsed time is measured in seconds and tenths of seconds rounded to the nearest tenth of a second. The accumulated elapsed time is divided by the count of calls transferred to ILEC agents for accuracy.

For ILEC Results:

Mean Time to Answer Calls: Speed of Answer, as it relates to the ILEC, will be measured in an identical manner as described for the CLEC. The results for the ILEC business office operations and its repair bureau operations should be separately accumulated, computed and retained. If further distinctions are made or more discrete tracking is performed within the ILEC call receipt centers (e.g., by business and residence), then results should be reported at the lowest possible level of detail. Where call receipt for such operations are commingled and inseparable, then only a single result for each measure will be generated and serve as the comparative result for both the CLEC repair support and the CLEC provisioning support results.

Other Clarifications and Qualification:

- Speed of Answer minimum service standards, established in many states for business office, maintenance center, and/or operator services represent a similar ILEC measure and are derived from identical data (although the result displayed may be in comparison to a pre-established standard performance minimum).
- For ILEC and CLEC calls, an ILEC Agent answering and placing the caller on hold does not stop timing for purposes of the speed of answer interval.
- An interactive voice response (IVR) unit does not stop the timing for purposes of the speed of answer interval. For a call to be considered answered, the live ILEC Agent must handle the CLEC request.
- Results may be reported for the CLEC industry in aggregate to the extent that separate carrier-specific support centers are not provided. If separate centers are provided (either for an individual CLEC or a group of CLECs) then results should be gathered and supplied for each center and reported to the CLEC(s) based upon the center providing the specific CLEC's support.
- If the ILEC call management technology cannot measure speed of answer on a call-specific basis, then an alternate methodology that simulates speed of answer based upon the average time for component parts of the call (e.g., queue to IVR + IVR to queue + queue to agent answer) can be utilized by mutual consent of the ILEC and CLECs.

Calculation:

Mean Time to Answer Calls = Σ [(Date and Time of Call Answer) - (Date and Time of Call Receipt)]/(Total Calls Answered by Center)

Report Structure:
• BST Aggregate (Combination of Residence Service Center and Business Service Center data under development.)

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE:	DATA RETAINED RELATING TO BST PERFORMANCE:
- Mechanized tracking through LCSC Automatic Call Distributor - Month - Center Identifier - Center Type - Mean Speed of Answer - Standard Error for Mean Speed of Answer	- Mechanized tracking through BST Retail center support systems - Month - Center Identifier - Center Type - Mean Speed of Answer - Standard Error for Mean Speed of Answer
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

PROVISIONING

Report/Measurement:
Mean Held Order Interval & Distribution Intervals

Definition:
When delays occur in completing CLEC orders, the average period that CLEC orders are held for BST reasons, pending a delayed completion, should be no worse for the CLEC when compared to BST delayed orders.

Exclusions:
•
• Order Activities of BST associated with internal or administrative use of local services.

Business Rules:
For CLEC Results:
Mean Held Order Interval: This metric is computed at the close of each report period. The held order interval is established by first identifying all orders, at the close of the reporting interval, that both have not been reported as completed in SOCS and have passed the currently committed due date for the order. For each such order, the number of calendar days between the committed due date and the close of the reporting period is established and represents the held order interval for that particular order. The held order interval is accumulated by the standard groupings, unless otherwise noted, and the reason for the order being held. The total number of days accumulated in a category is then divided by the number of held orders within the same category to produce the mean held order interval.
CLEC Specific reporting is by type of held order (facilities, equipment, other), total number of orders held, and the total and average days.
Held Order Distribution Interval: This measure provides data to report total days held and identifies these in categories of >15 days and > 90 days. (orders counted in >90 days are also included in >15 days).
For ILEC Results:
Same computation as for the CLEC with the clarifications provided below.
Other Clarifications and Qualification:
• The "held order" measure established by some state commissions as part of minimum service standards is analogous to this proposed measure but, because it is typically limited to monitoring only those orders held because of facility shortages, needs to be expanded to include all reasons that an order is pending and past due.
• Order Supplements - If the CLEC initiates a supplement to the originally submitted order for the purpose of reflecting changes in customer requirements, then the due date returned on the FOC will be the basis for the preceding calculations. No other supplemental order activities will result in an update to the committed due date.
• See "Order Status" measurement definitions for discussion of the ILEC analog for a completion notice.
• The held order interval is measured in calendar rather than business days.

Calculation:
Mean Held Order Interval:
Σ (Reporting Period Close Date – Committed Order Due Date) / (Number of Orders Pending and Past The Committed Due Date) for all orders pending and past the committed due date.
Held Order Distribution Interval:
(# of Orders Held for $\geq$ 90 days) / (Total # of Orders Pending But Not Completed) X 100
(# of Orders Held for $\geq$ 15 days) / (Total # of Orders Pending But Not Completed) X 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month	• Report Month
• CLEC Order Number and PON	• BST Order Number

• Order Submission Date • Committed Due Date • Service Type • Hold Reason • Total line/circuit count (under development) • Geographic Scope **NOTE:** Code in parentheses is the corresponding header found in the raw data file.	• Order Submission Date • Committed Due Date • Service Type • Hold Reason • Geographic Scope • Average Held Order • Standard Error for Average Held Order Interval • Number of Orders Rejected

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

PROVISIONING

Report/Measurement:
Average Jeopardy Notice Interval & Percentage of Orders Given Jeopardy Notice
Definition:
When BST can determine in advance that a committed due date is in jeopardy, it will provide advance notice to the CLEC.
Exclusions:
•
• Orders held for CLEC end user reasons
•
Business Rules:
When BST can determine in advance that a committed due date is in jeopardy it will provide advance notice to the CLEC. The number of committed orders in a report period is the number of orders that have a due date in the reporting period.

For CLEC Results:

Jeopardy Interval: Jeopardy Interval is the remaining time between the pre-existing committed order completion date and time (communicated via the FOC) and the date and time the ILEC issues a notice to the CLEC indicating an order is in jeopardy of missing the due date. The scheduled order completion time will be assumed to be 5:00 p.m. local time unless other information is communicated in the FOC. The date and time of the jeopardy notice delivered by the ILEC is subtracted from the scheduled completion date to establish the jeopardy interval for any order placed in jeopardy before its scheduled due date. The jeopardy interval is accumulated by standard order activity with the resulting accumulated time then divided by the count of orders placed in jeopardy before the due date for each order activity.

Percent Jeopardies: Percent Jeopardies is the percentage of total orders processed for which the ILEC notifies the CLEC that the work will not be completed as committed on the original FOC. The measurement result is derived by dividing the count of jeopardy notices the ILEC issues to the CLEC by the count of FOCs returned by the ILEC during the identical period. Both the "Number of Orders Jeopardized in Reporting Period" and "Number of Orders Committed in Reporting Period" are utilized in other status measurement computations and have identical meaning and derivation for this measurement.

For ILEC Results:

Same computation as the CLEC with the clarifications outlined below:

Other Clarifications and Qualification:

• When the ILEC processes orders for a CLEC via different interfaces (e.g., ASR and EDI) then the preceding measurement must be computed for each interface arrangement.
• All intervals are measured in hours and hundredths of hours rounded to the nearest hundredth.
• Because this should be a highly automated process, the accumulation of elapsed time continues through off-schedule, weekends and holidays.
• "Syntactically correct" means all fields required to process an order are populated and reflect the correct format as agreed and documented in the current interface specifications.
• The ILEC service agent's attempt to submit an order for processing by the ILEC OSS is considered equivalent to the ILEC acknowledgment of the CLEC's order.
• The ILEC OSS return of any indication to the service agent that an order cannot be processed as submitted is considered equivalent to the ILEC return of a rejection notice to the CLEC.
• Return of any information (e.g., order recapitulation) to the ILEC customer service agent that indicates no errors are evident or that an order can be processed, is the equivalent of the ILEC return of a FOC to the CLEC.
• Logging of information in the ILEC OSS, whether manual or automatic, that indicates an order may not be completed by the existing due date, is equivalent of the return of a jeopardy notice to the CLEC regardless of whether or not the ILEC takes action based upon such information.
Automatic logging of work completion and manual logging of work completion, whether input directly to the ILEC OSS or into an intermediate storage devise, is considered the equivalent of the return of a completion notice to the CLEC.

Calculation:

Average Jeopardy Interval =Σ [(Date and Time of Scheduled Due Date on Service Order) - (Date and Time of Jeopardy Notice)]/[Number of Orders Notified of Jeopardy in Reporting Period). For all orders jeopardized on or before the scheduled due date.

Percent of Orders Given Jeopardy Notice = Σ [(Number of Orders Given Jeopardy Notices in Reporting Period) / (Number of Orders Committed(due) in Reporting Period)

Report Structure:

- CLEC Specific and CLEC Aggregate
- BST Aggregate (under development with estimated release date of 8/15/99 for June reporting)

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	**DATA RETAINED RELATING TO BST EXPERIENCE**
• Report Month	• Report Month
• CLEC Order Number and PON	• ILEC Order Number
• Date and Time Jeopardy Notice sent	• Date and Time Jeopardy Notice sent
• Committed Due Date	• Due Date
• Standard Service Groupings	• Standard Service Groupings
• Number of Orders Reflected in Result	• Number of Orders Reflected in Result
• Interface Type	• Interface Type
• Average Status Interval	• Average Status Interval
• Order Submission Date	• Standard Error of Status Interval
• Order Submission Time	• Standard Service Order Activity
• Standard Service Order Activity	• Status Type
• Status Type	• Status Notice Date
• Status Notice Date	• Status Notice Time
• Status Notice Time	• Number Of Statuses Provided
• Number of Statuses Provided	
	NOTE: Code in parentheses is the corresponding header found in the raw data file.
NOTE: Code in parentheses is the corresponding header found in the raw data file.	

Retail Analog/Benchmark:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

PROVISIONING

Report/Measurement:

Percent Orders Completed On Time

Definition:

The "orders completed on time" measure monitors the reliability of ILEC commitments with respect to committed due dates to assure that CLECs can reliably quote expected due dates to their retail customers. In addition, when monitored over time, the "average completion interval" and "percent completed on time" may prove useful in detecting developing capacity issues.

Exclusions:

- Canceled Service Orders
- Order Activities of BST or the CLEC associated with internal or administrative use of local services (Record Orders, Test Orders, etc.)
-
- ILEC Orders associated with internal or administrative use of local services
- Orders where CLEC has selected a longer due date than requested.

Business Rules:

For CLEC Results:
Percent Orders Completed On Time: The percentage of orders completed on time is determined by first counting, for each specified reporting dimension, both the total numbers of orders completed within the reporting interval and the number of orders completed by the committed due date (as specified on the initial FOC returned to the CLEC). For each reporting dimension, the resulting count of orders completed no later than the committed due date is divided by the total number of orders completed with the resulting fraction expressed as a percentage.

For ILEC Results:
Same as for CLEC with the clarifications noted below.

Other Clarifications and Qualification:
- The elapsed time for an ILEC order is measured from the point in time when the ILEC customer service agent enters the order into the ILEC order processing system until the date and time that the ILEC personnel log actual completion of all work necessary to permit service initiation, whether or not the ILEC initiates customer billing at that point in time.
- Results for the CLECs are captured and retained at the order level (e.g., unique PON).
- The Completion Date and Time is the date upon which the ILEC issues the Order Completion Notice to the CLEC.
- If the CLEC initiates a supplement to the originally submitted order and the supplement reflects changes in customer requirements (rather than responding to ILEC initiated changes), then the order submission date and time will be the date and time of the ILEC receipt of a syntactically correct order supplement.
- No other supplemental order activities will result in an update to the order submission date and time used for the purposes of computing the order completion interval.
- See "Order Status" measurement detail for a discussion of ILEC analogs, receipt of a syntactically correct order and return of a valid completion notice.
- Elapsed time is measured in hours and hundredths of hours rounded to the nearest hundredth of an hour.
- The accumulation of elapsed time continues through off-schedule, weekends and holidays.

Calculation:

Percent Orders Completed on Time = (Count of Orders Completed within ILEC Committed Due Date) / (Count of Orders Completed in Reporting Period) x 100

Report Structure:

- CLEC Specific
- CLEC Aggregate
- BST Aggregate

Report explanation: The difference between End User MA and Total MA is the result of BST caused misses. Here, Total MA is the total % of orders missed either by BST or CLEC end user and End User MA represents the percentage of orders missed by the end user.

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month • CLEC Order Number and PON • Order Submission Date • Order Submission Time • Committed Due Date • Completion Date • Order Completion Time • Status Type • Status Notice Date • Standard Order Activity (See Appendix 1) • Geographic Scope • Average Order Completion Interval • Service Type (See Appendix 1) **NOTE:** Code in parentheses is the corresponding header found in the raw data file.	• Report Month • BST Order Number • Committed Due Date • Completion Date • Status Type • Status Notice Date • Standard Order Activity (See Appendix 1) • Geographic Scope • Average Order Completion Interval • Standard Error for the Order Completion Interval • Count of Orders Completed • Count of Orders Completed by the Due Date • Service Type (See Appendix 1) • Volume Category

Retail Analog/Benchmark:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

PROVISIONING

Report/Measurement :
Average Completion Interval (OCI) & Order Completion Interval Distribution & Average Offered Interval

Definition:
The "average completion interval" measure monitors the interval of time it takes BST to provide service for the CLEC or its' own customers. The "Order Completion Interval Distribution" provides the percentage of orders completed within certain time periods. The "average offered interval" indicates whether both ILEC and CLEC have the same scheduling opportunities for service delivery.

Exclusions:
• Canceled Service Orders • Order Activities of BST or the CLEC associated with internal or administrative use of local services • (Record Orders, Test Orders, etc.) • "L" Appointment coded orders (where the customer has requested a later than offered interval)

Business Rules:

For CLEC Results:
    • The actual completion interval is determined for each order processed during the reporting period. The Completion interval is the elapsed time from when the order is electronically entered into SOCS after the FOC on a CLEC order, or the date time stamp receipt into SOCS by BST on retail orders to the order completion date. The clock starts when a valid order number is assigned by SOCS and stops when the technician or system completes the order in SOCS, whether or not the ILEC initiates customer billing at that point in time.. Elapsed time for each order is accumulated for each reporting dimension. The accumulated time for each reporting dimension is then divided by the associated total number of orders completed
 	
Average Offered Interval: The offered interval is the due date that an ILEC provides the CLEC on a firm order commitment (i.e. the earliest date on which the CLEC's customer can obtain service without paying for an escalation).
 	
For ILEC Results:
Same as for CLEC with the clarifications noted below.
 	
Other Clarifications and Qualification:
    • Results for the CLECs are captured and retained at the order level (e.g., unique PON).
    • The Completion Date and Time is the date upon which the ILEC issues the Order Completion Notice to the CLEC.
    • If the CLEC initiates a supplement to the originally submitted order and the supplement reflects changes in customer requirements (rather than responding to ILEC initiated changes), then the order submission date and time will be the date and time of the ILEC receipt of a syntactically correct order supplement.
    • No other supplemental order activities will result in an update to the order submission date and time used for the purposes of computing the order completion interval.
    • See "Order Status" measurement detail for a discussion of ILEC analogs, receipt of a syntactically correct order and return of a valid completion notice.
    • Elapsed time is measured in hours and hundredths of hours rounded to the nearest hundredth of an hour.
    • The accumulation of elapsed time continues through off-schedule, weekends and holidays.

Calculation :
Average Completion Interval: Σ [(Completion Date & Time) - (Order Issue Date & Time)] / Σ (Count of Orders Completed in Reporting Period) **Order Completion Interval Distribution:** Σ (Service Orders Completed in "X" days) / (Total Service Orders Completed in Reporting Period) X 100 **Average Offered Interval:** = [(Date & Time Due Date) – (Date &Time of Receipt of Service Request)]/(Number of Committed Due Dates)

Report Structure:
• CLEC Specific • CLEC Aggregate

- BST Aggregate

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
- Report Month - CLEC Company Name - Order Number - Submission Date & Time - Completion Date & Time - Service Type - Geographic Scope - Activity Type **NOTE:** Code in parentheses is the corresponding header found in the raw data file.	- Report Month - CLEC Order Number - Order Submission Date & Time - Order Completion Date & Time - Service Type - Geographic Scope - Average Order Completion Interval - Standard Error for the Order Completion Interval - Count of Orders Completed - Count of Orders Completed by the Due Date - Average Offered Interval - Activity Type - Volume Category

RETAIL ANALOG/BENCHMARK

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

PROVISIONING

Report/Measurement:
Average Completion Notice Interval

Definition:
The Completion Notice Interval is the elapsed time between the BST reported completion of work and the issuance of a valid completion notice to the CLEC.

Exclusions:
•
• Cancelled Service Orders
• Order Activities of BST associated with internal or administrative use of local services
•

Business Rules:

For CLEC Results:

Completion Notice Interval is the elapsed time between the ILEC technician's reported completion of physical work and the issuance of a valid completion notice to the CLEC. Where physical work is not required, such as in the case of software-only changes, the elapsed time will be measured beginning at 5:00 p.m. local time of the date for the committed completion and will end when the ILEC returns a valid completion notice to the CLEC. If a valid completion notice is returned before 5:00 p.m. on the committed completion date and no physical work is involved, then the elapsed time will be recorded as 1/10 hour. The elapsed time is accumulated by order type with the resulting accumulated time then divided by the count of completion notices returned for each service and order type.

For ILEC Results:

Same computation as the CLEC with the clarifications outlined below:

Other Clarifications and Qualification:
• When the ILEC processes orders for a CLEC via different interfaces (e.g., ASR and EDI) then the preceding measurement must be computed for each interface arrangement.
• All intervals are measured in hours and hundredths of hours rounded to the nearest hundredth.
• Because this should be a highly automated process, the accumulation of elapsed time continues through off-schedule, weekends and holidays.
• "Syntactically correct" means all fields required to process an order are populated and reflect the correct format as agreed and documented in the current interface specifications.
• The ILEC service agent's attempt to submit an order for processing by the ILEC OSS is considered equivalent to the ILEC acknowledgment of the CLEC's order.
• The ILEC OSS return of any indication to the service agent that an order cannot be processed as submitted is considered equivalent to the ILEC return of a rejection notice to the CLEC.
• Return of any information (e.g., order recapitulation) to the ILEC customer service agent that indicates no errors are evident or that an order can be processed, is the equivalent of the ILEC return of a FOC to the CLEC.
• Logging of information in the ILEC OSS, whether manual or automatic, that indicates an order may not be completed by the existing due date, is equivalent of the return of a jeopardy notice to the CLEC regardless of whether or not the ILEC takes action based upon such information.
• Automatic logging of work completion and manual logging of work completion, whether input directly to the ILEC OSS or into an intermediate storage devise, is considered the equivalent of the return of a completion notice to the CLEC.

Calculation:
Σ (Date and Time of Notice of Completion Issued to the CLEC) – (Date and Time of Work Completion by ILEC) / (Number of Orders Completed in Reporting Period)

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate (in development-expected release date 08/15/99 reporting)

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

PROVISIONING – (Average Completion Notice Interval- Continued)

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
- Report Month - CLEC Order Number - Order Submission Date - Order Submission Time - Work Completion Date - Work Completion Time - Completion Notice Delivery Date - Completion Notice Delivery Time - Service Type - Activity Type - Geographic Scope - Interface Type - Status Type (Rejection, FOC, Jeopardy Type, Completion Notice) - Standard Order Activity - Order Due Date **NOTE:** Code in parentheses is the corresponding header found in the raw data file.	- Report Month - Service Order Number - Work Completion Date - Work Completion Time - Completion Notice Delivery Date - Completion Notice Delivery Time - Service Type - Standard Order Activity - Geographic Scope - Interface Type - Status Type (Rejection, FOC, Jeopardy Type, Completion Notice) - Average Status interval - Standard error of status interval - Number of Orders Reflected In Result - Number of Statuses Provided **NOTE:** Code in parentheses is the corresponding header found in the raw data file.
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

PROVISIONING

Report/Measurement:
Coordinated Customer Conversions
Definition:
This category measures the average time it takes BST to disconnect an unbundled loop from the BST switch termination connector and cross connect it to a CLEC's equipment termination connector. This measurement applies to service orders with and without NP, and where the CLEC has requested BST to provide a coordinated cutover.
Exclusions:
•
•   None
Business Rules:
Average Coordinated Conversion Interval: The elapsed time between the disconnection of an access line (for a retail customer of the ILEC) from the switch port of the ILEC to the time that the ILEC finishes both the physical work necessary to re-terminate the loop (at the point of re-termination specified by the CLEC) and receives CLEC confirmation that electrical continuity exists. The elapsed time is accumulated for the reporting period and divided by the number of loops that were re-terminated on a coordinated basis.
Calculation:
Σ[(Date & Time Re-termination is Completed by ILEC) – Date & Time of Initial Service Interruption (disconnect for Customer Transferring Service)]/(Count of Completed Coordinated Conversions in Reporting Period)
Report Structure:
•   CLEC Specific
•   CLEC Aggregate
•
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month	•
• CLEC Order Number	• Report Month
• Committed Due Date	• Number of Early Conversions
• Service Type	• Total Number of Conversions
• Cutover Start Date & Time	• Average Conversion Interval
• Cutover Completion Date & Time	• Standard Error of Conversion Interval
• Portability start and completion times (NP Orders)	• Geographic Scope
• Total Items	• Volume Category
• Order Activity	• Record Type or Invoice Type
• Geographic Scope	• Number of Records With Errors
• Volume Category	• Number of Records Created
• Record Type or Invoice Type	
• Number of Records With Errors	
NOTE: Code in parentheses is the corresponding header found in the raw data file.	

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

PROVISIONING

Report/Measurement:
% Provisioning Troubles within 30 days of Service Order Activity
Definition:
Percent Provisioning Troubles within 30 days of Installation measures the quality and accuracy of installation activities.
Exclusions:
• Canceled Service Orders
• Order Activities of BST or the CLEC associated with internal or administrative use of local services (R Orders, Test Orders, etc.)
• D & F orders
Business Rules:
Measures the quality and accuracy of completed orders. The first trouble report from a service order after completion is counted in this measure. Subsequent trouble reports are measured in Repeat Report Rate. Reports are calculated searching in the prior report period for completed service orders and following 30 days after completion for a trouble report.
D & F orders are excluded as there is no subsequent activity following a disconnect.
For CLEC Results:
Percent Troubles Within 30 Days of Installation: The results are computed by accumulating the number of trouble tickets submitted by a CLEC to the ILEC for a service arrangement that had at least one install or service order activity within the 30 calendar days preceding the creation of the current trouble ticket. The count of troubles is divided by the count of service-affecting orders completed by the ILEC for the CLEC during the report period.
Non-parity results for Percent Trouble Rate within 30 Days of Install and Other Order Activity may require further reporting to determine root cause issues. For instance, reports on whether facilities provided on new installations tested to industry standard per interconnection contract, tariff or regulatory requirements may be required if results indicate a poorer performance of facilities and supporting network equipment provided to CLECs. ILECs also may need to cooperate with CLECs on comparative mechanized line testing (through respective ILEC and CLEC switches) of the transmission quality of ILEC loops versus CLEC unbundled loops obtained from the ILEC. Reporting dimensions of copper versus fiber deployment may show that CLEC install troubles result from a disparity in use of underlying transmission media for install of ILEC vs. CLEC facilities. The broadening of the measure to include more than just new installs will detect new service activations (hunt group changes, other feature additions) that cause troubles versus network transmission quality.
For ILEC Results:
Calculations are similar to those for CLECs.
Calculation:
% Provisioning Troubles within 30 days of Service Order Activity = Σ (Trouble reports on all completed lines ≤ 30 days following service order(s) completion) / (All Service Orders completed in the report period) X 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	**DATA RETAINED RELATING TO BST EXPERIENCE**
• Report Month	• Report Month
• CLEC Order Number and PON	• BST Order Number
• Order Submission Date	• Order Submission Date
• Order Submission Time	• Order Submission Time

• Status Type • Status Notice Date • Standard Order Activity • Geographic Scope • CLEC Ticket Number • Ticket Submission Time • Ticket Submission Date • Trouble Resolution Time • Trouble Resolution Date • Service Type (See Appendix 1) • WTN or CKTID (a unique identifier for elements combined in a service configuration) • Trouble Type **NOTE:** Code in parentheses is the corresponding header found in the raw data file.	• Status Type • Status Notice Date • Standard Order Activity • Geographic Scope • Service Type (See Appendix 1) • Trouble Type • Number of Tickets • Number of Service Access Lines
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

PROVISIONING
Note: AT&T Does Not Include This Measure In Its Proposal

Report/Measurement :
Total Service Order Cycle Time (TSOCT)   (under development 3Q99)
Definition:
This is a new measurement under development to measure the total service order cycle time from receipt of a valid service order request to the completion of the service order.
Exclusions:
• Canceled Service Orders
• Order Activities of BST or the CLEC associated with internal or administrative use of local services
• (Record Orders, Test Orders, etc.)
• D (Disconnect) and F (From) orders. (From is disconnect side of a move order when the customer moves to a new address).
• "L" Appointment coded orders (where the customer has requested a later than offered interval)
• Orders with CLEC/Subscriber caused delays or CLEC/Subscriber requested due date changes.
Business Rules:
The interval is determined for each order processed during the reporting period. This measurement combines two reports: FOC (Firm Order Commitment) with Average Order Completion Interval.
This interval starts with the receipt of a valid service order request and stops when the technician or system completes the order in SOCS. Elapsed time for each order is accumulated for each reporting dimension. The accumulated time for each reporting dimension is then divided by the associated total number of orders completed
Calculation :
Total Service Order Cycle Time
(under development)
Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

PROVISIONING – (Total Service Order Cycle Time (TSOCT) – Continued

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month • Interval for FOC • CLEC Company Name • Order Number (PON) • Submission Date & Time (TICKET_ID) • Completion Date (CMPLTN_DT) • Service Type (CLASS_SVC_DESC) • Geographic Scope **NOTE:** Code in parentheses is the corresponding header found in the raw data file.	• Report Month • CLEC Order Number • Order Submission Date & Time • Order Completion Date & Time • -Service Type • Geographic Scope
Retail Analog/Benchmark	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

MAINTENANCE & REPAIR
Note: AT&T Does Not Include This Measure In Its Proposal

Report/Measurement:
Missed Repair Appointments

Definition:
The percent of trouble reports not cleared by the committed date and time.

Exclusions:
• Trouble tickets canceled at the CLEC request.
• BST trouble reports associated with internal or administrative service.
• Customer Provided Equipment (CPE) troubles or CLEC Equipment Trouble.

Business Rules:
The negotiated commitment date and time is established when the repair report is received. The cleared time is the date and time that BST personnel clear the trouble and closes the trouble report in his Computer Access Terminal (CAT) or workstation. If this is after the Commitment time, the report is flagged as a "Missed Commitment" or a missed repair appointment. When the data for this measure is collected for BST and a CLEC, it can be used to compare the percentage of the time repair appointments are missed due to BST reasons. Note: Appointment intervals vary with force availability in the POTS environment. Specials and Trunk intervals are standard interval appointments of no greater than 24 hours.

Calculation:
Percentage of Missed Repair Appointments =Σ (Count of Customer Troubles Not Cleared by the Quoted Commitment Date and Time) / Σ (Total Trouble reports closed in Reporting Period) X 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month	• Report Month
• CLEC Company Name	• BST Company Code
• Submission Date & Time (TICKET_ID)	• Submission Date & Time
• Completion Date (CMPLTN_DT)	• Completion Date
• Service Type (CLASS_SVC_DESC)	• Service Type
• Disposition and Cause (CAUSE_CD & CAUSE_DESC)	• Disposition and Cause (Non-Design / Non-Special Only)
• Geographic Scope	• Trouble Code (Design and Trunking Services)
	• Geographic Scope
NOTE: Code in parentheses is the corresponding header found in the raw data file.	

Retail Analog/Benchmark
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

MAINTENANCE & REPAIR

Report/Measurement:
Customer Trouble Report Rate

Definition:
Initial and repeated customer direct or referred troubles reported within a calendar month per 100 lines/ circuits in service.

Exclusions:
- Trouble tickets canceled at the CLEC request.
- BST trouble reports associated with administrative service.
- Instances where the CLEC or an ILEC customer requests a ticket be "held open" for monitoring
- Trouble tickets created for tracking and/or monitoring requests for clarifying information (e.g., confirmation of customer ownership from CLEC support centers)
- Tickets used to track referrals of misdirected calls

Business Rules:

For CLEC Results:
The frequency of trouble metric is computed by accumulating, by standard service grouping and disposition and cause, the total number of maintenance tickets logged by a CLEC (with the ILEC) during the reporting period. The resulting number of tickets for each trouble type is accumulated within each standard service grouping, and trouble type is divided by the total number of "service access lines" existing for the CLEC at the end of the report period

For ILEC Results:
Same calculation as for the CLEC with the clarifications provided below.

Other Clarifications and Qualification:
- Unbundled loops or UNE combinations involving unbundled loops would be counted as a "service access line."
- A trouble is "resolved" when the ILEC issues notice to the CLEC that the customer's service is restored to normal operating parameters.
- See the "Time to Restore" measurement for a discussion of the ILEC equivalent of "trouble tickets" and "trouble logging".

Calculation:

Customer Trouble Report Rate = (Count of Initial and Repeated Trouble Reports in the Current Period) / (Number of Service Access Lines in service at End of the Report Period) X 100

Report Structure:
- CLEC Specific
- CLEC Aggregate
- BST Aggregate.

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month	• Report Month
• CLEC Company Name	• BST Company Code
• CLEC Ticket Number	• Ticket Submission Date & Time
• Ticket Submission Date & Time	• Ticket Completion Date
• Ticket Completion Date	• Service Type
• Trouble Resolution Time	• Disposition and Cause (Non-Design / Non-Special Only)
• Trouble Resolution Date	• Trouble Code (Design and Trunking Services)
• Service Type	• # Service Access Lines in Service at the end of
• Disposition and	

• # Service Access Lines in Service at the end of period • Geographic Scope • WTN or CKTID (a unique identifier for elements combined in a service configuration) • Trouble Type **NOTE:** Code in parentheses is the corresponding header found in the raw data file.	period • Geographic Scope • Number of Tickets • Trouble Type • Number of Tickets • Number of Service Access Lines

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

MAINTENANCE & REPAIR

Report/Measurement:
Maintenance Average Duration

Definition:
The Average duration of Customer Trouble Reports from the receipt of the Customer Trouble Report to the time the trouble report is cleared.

Exclusions:
• Trouble reports canceled at the CLEC request
• BST trouble reports associated with administrative service
• Instances where the CLEC or an ILEC customer requests that a ticket be "held open" for monitoring
• Subsequent Reports (additional reports on an already open ticket)
• Any trouble type tracking that parties agree are technically unfeasible or operationally prohibitive
• A trouble ticket created for tracking and/or monitoring requests for clarifying information (e.g. confirmation of customer ownership from CLEC support centers.
• Tickets used to track referrals of misdirected calls

Business Rules:
• For Average Duration the clock starts on the date and time of the receipt of a correct repair request. The clock stops when the ILEC issues notice to the CLEC that the customer's service is restored to normal operating parameters.

For CLEC Results:

Mean Time To Restore: The restoral interval for resolution of customer requested maintenance and repair is the elapsed time, measured in hours and tenths of hours, measured from the CLEC submission of a customer trouble to the ILEC, regardless of the ultimate resolution of the trouble, to the time the ILEC returns a valid trouble resolution notification to the CLEC. The elapsed time is accumulated by service type and trouble disposition for the reporting period. The accumulated time is divided by the count of maintenance tickets reported as resolved by the ILEC (by service type and trouble type) during the report period.

For ILEC Results:

Same computation as for the CLEC.

Other Clarifications and Qualification:
- Elapsed time is measured on a 24-hour-a-day, seven-days-a-week basis. The time is measured in hours and hundredths of hours rounded to the nearest hundredth hour.
- Multiple reports for the same customer service are treated as the same incident only when a subsequent report is received for a customer service arrangement that already has an open ticket.
- "Restore" means to return to the normally expected operating parameters for the service regardless of whether or not the service, at the time of trouble ticket creation, was operating in a degraded mode or was completely unusable.
- A trouble is "resolved" when the ILEC issues notice to the CLEC that the customer's service is restored to normal operating parameters.
- A trouble ticket or trouble report is any record (whether paper or electronic) used by the ILEC for the purpose of monitoring action and disposition of a service repair or maintenance situation.
- ILEC acceptance of a trouble by the call receipt agent is considered equivalent to the CLEC logging or submitting a trouble to the ILEC.
- The ILEC closure of a trouble ticket (whether automatic or manual) is considered equivalent to returning a trouble resolution notice to the CLEC.

Calculation:
Maintenance Average Duration = Σ(Date and Time ofTrouble Ticket Resolution Returned to CLEC) – (Date and Time Trouble Ticket wasReferred to ILEC) / Σ(Total Closed Trouble Tickets Resolved in the reporting period)

Report Structure:

- CLEC Specific
- BST Aggregate
- CLEC Aggregate

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
- Report Month - CLEC Ticket Number - Total Tickets - CLEC Company Name - Ticket Submission Date & Time - Ticket Completion Date & Time - Trouble Resolution Date & Time - Service Type - Disposition and Cause - Geographic Scope - WTN or CKTID (a unique identifier for elements combined in a service configuration) - Trouble Type (See Appendix 1) **NOTE:** Code in parentheses is the corresponding header found in the raw data file.	- Report Month - Total Tickets - BST Company Code - Ticket Submission Date - Ticket submission Time - Ticket completion Date - Ticket Completion Time - Total Duration Time - Service Type - Disposition and Cause (Non – Design / Non-Special Only) - Trouble Code (Design and Trunking Services) - Geographic Scope - Standard Error for the Average Restoral Interval - Trouble Type (See Appendix 1)

Retail Analog/Benchmark:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

MAINTENANCE & REPAIR

Report/Measurement:
Percent Repeat Troubles within 30 Days
Definition:
Trouble reports on the same line/circuit as a previous trouble report received within 30 calendar days as a percent of total troubles reported.
Exclusions:
• Trouble Reports canceled at the CLEC request • BST Trouble Reports associated with administrative service • Instances where the CLEC or an ILEC customer requests that a ticket be "held open" for monitoring. • Subsequent trouble report(s) on a maintenance ticket that has (have) not been reported as resolved (or closed) • Trouble tickets created for tracking and/or monitoring requests for clarifying information (e.g., confirmation of customer ownership from CLEC support centers) • Tickets used to track referrals of misdirected calls.
Business Rules:
Includes Customer trouble reports received within 30 days of an original Customer trouble report. **For CLEC Results:** The repeat trouble rate measure is computed by accumulating the number of instances where a trouble ticket is submitted by a CLEC to the ILEC for a service arrangement that had at least one prior trouble ticket any time in the 30 calendar days preceding the creation of the current trouble ticket. The number of repeat troubles are accumulated for the reporting period by service type and trouble type. The count of repeat troubles, by service type, is divided by the count of initial trouble reports (by service type) received during the report period. **For ILEC Results:** Same computation as for CLECs. **Other Clarifications and Qualification:** • Unbundled loops or UNE combinations involving and unbundled loops are considered a "service access line". • A trouble is "resolved" when the ILEC issues notice to the CLEC that the Customer's service is restored to normal operating parameters. • The "same service arrangement" means a trouble report being reported for the same telephone number or the same circuit identifier. • The trouble resolution need not be identical between the repeated reports for the incident to be counted as a repeated trouble.
Calculation:
Percentage of Missed Repair Appointments = (Count of Customer Troubles where more than one trouble report was logged for the same service line within a continuous 30 days) / (Total Trouble Reports in Reporting Period) X 100
Report Structure:
• CLEC Specific • CLEC Aggregate • BST Aggregate
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
- Report Month - Total Tickets - CLEC Company Name - Ticket Submission Date & Time - Ticket Completion Date & Time - Total and Percent Repeat Trouble Reports within 30 Days (TOT_REPEAT) - Service Type Disposition and Cause - Geographic Scope - CLEC Ticket Number - Service Type - WTN or CKTID (a unique identifier for elements combined in a service configuration) - Trouble Type **NOTE:** Code parentheses is the corresponding header format found in the raw data file.	- Report Month - Total Tickets - BST Company Code - Ticket Submission Date - Ticket Submission Time - Ticket Completion Date - Ticket Completion Time - Total and Percent Repeat Trouble Reports within 30 Days - Service Type - Disposition and Cause (Non – Design/ Non-Special only) - Trouble Code (Design and Trunking Services) - Geographic Scope
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

MAINTENANCE & REPAIR
Note: AT&T Does Not Include This Measure In Its Proposal

Report/Measurement:
Out of Service (OOS) > 24 Hours

Definition:
For Out of Service Troubles (no dial tone, cannot be called or cannot call out) the percentage of troubles cleared in excess of 24 hours. (All design services are considered to be out of service.)

Exclusions:
• Trouble Reports canceled at the CLEC request
• BST Trouble Reports associated with administrative service
• Customer Provided Equipment (CPE) Troubles or CLEC Equipment Troubles.

Business Rules:
Customer Trouble reports that are out of service and cleared in excess of 24 hours. The clock begins when the trouble report is created in LMOS and the trouble is counted if the time exceeds 24 hours.

Calculation:
Out of Service (OOS) > 24 hours = (Total Troubles OOS > 24 Hours) / Total OOS Troubles in Reporting Period) X 100

Report Structure:
• CLEC Specific
• BST Aggregate
• CLEC Aggregate.

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month • Total Tickets • CLEC Company Name • Ticket Submission Date & Time (TICKET_ID) • Ticket Completion Date (CMPLTN_DT • Percentage of Customer Troubles out of Service > 24 Hours (OOS>24_FLAG) • Service type (CLASS_SVC_DESC) • Disposition and Cause (CAUSE_CD & CAUSE-DESC) • Geographic Scope **NOTE:** Code in parentheses is the corresponding header found in the raw data file.	• Report Month • Total Tickets • BST Company Code • Ticket Submission Date • Ticket Submission time • Ticket Completion Date • Ticket Completion Time • Percent of Customer Troubles out of Service > 24 Hours • Service type • Disposition and Cause (Non – Design/ Non-Special only) • Trouble Code (Design and Trunking Services) • Geographic Scope

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

MAINTENANCE & REPAIR

Report/Measurement:
OSS Interface Availability

Definition:
The percentage of time the OSS Interface is functionally available compared to scheduled availability. Availability percentage for the CLEC and BST interface systems and for the legacy systems accessed by them are captured.

Exclusions:
None

Business Rules:
This measure is designed to compare the OSS availability versus scheduled availability of BST's legacy systems.

For CLEC Results:

Percent System Availability: The total "number of hours functionality was scheduled to be available" is the cumulative number of hours (by date and time on a 24-hour clock) over which the ILEC planned to offer and support CLEC access to ILEC OSS functionality during the reporting period. The ILEC must provide a minimum advance notice of one reporting period regarding availability plans and such plans must be interface-specific. If scheduled availability is not provided with at least one report period's advance notice, then the default availability for the subsequent reporting period will be seven days per week, 24 hours per day.

"Hours Functionality is Available" is the actual number of hours, during scheduled available time, that the ILEC gateway or interface is capable of accepting CLEC transactions or data files for processing in the gateway / interface and supporting OSS.

The actual time available is divided by the scheduled time available and then multiplied by 100 to produce the "Percent system availability" measure. The "Percent system availability" measure is required for each unique interface type offered by the ILEC.

For ILEC Results:

Each OSS of the ILEC that is employed in the support of CLEC operations must first be identified by supported functional area (e.g., pre-ordering, ordering and provisioning, repair and maintenance and billing) with such mapping disclosed to the CLECs. The "available time" and "scheduled available time" is gathered for each of the identified ILEC OSS during the report period. The OSS function availability is computed based upon the weighted average availability of the subtending support OSS. That is, the available time for each OSS supporting a functional area is accumulated over the report period and then divided by the summation of the scheduled available time for those same supporting OSS.

Other Clarifications and Qualification:
- The ILEC analogs for this performance measure are the internal measures of system downtime (or up time) typically established between the ILEC Systems Management Organization and the client organizations.
- OSS scheduled and available time may be utilized in the computation of more than one functional area.
- Parity exists if the CLEC "Percent system availability" $\geq$ ILEC function availability for the functionality accessed by the CLEC.
- "Capable of accepting" must have a meaning consistent with the ILEC definition down time, whether planned or unplanned, for internal ILEC systems having a comparable potential for customer impact.
- Time is measured in hours and tenths of hours rounded to the nearest tenth of an hour.

Calculation:
OSS Interface Availability = (Number of Hours Functionality is Availabile to CLECs During Report Period) / (Number of Hours Functionality was Scheduled to be Availabile During the Report Period) X 100

Report Structure:
- CLEC Specific   - CLEC Aggregate   - BST Aggregate

• BST/CLEC	
Level of Disaggregation:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	
DATA RETAINED RELATING TO CLEC EXPERIENCE	**DATA RETAINED RELATING TO BST EXPERIENCE**
• Availability of CLEC TAFI	• Availability of BST TAFI
• Availability of LMOS HOST, MARCH and SOCS	• Availability of LMOS HOST, MARCH and SOCS
• CRIS, PREDICTOR, LNP, and OSPCM (under development at this time)	• Report Month
• Report Month	• Functionality Identification
• Interface Type (Identifies each unique interface available to CLECs)	• Business Period
	• Percent Availability of Functionality
• Business Period	
• Scheduled Hour Available	
• Actual Hours Available	
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

MAINTENANCE & REPAIR

Report/Measurement:
OSS Response Interval and Percentages

Definition:
Maintenance customer service agents must obtain real-time information in order to log customer troubles. In Maintenance information is gathered from supporting OSS while the customer (or potential customer) is on the telephone with the customer service agent. Because customers already may be dissatisfied when they report a trouble, it is critical that the CLEC be perceived as equally competent, knowledgeable and fast as and ILEC customer service agent. This measure is designed to monitor the time required for CLECs to obtain maintenance information necessary to log trouble reports. Comparisons to ILEC results indicate whether a CLEC has an equal opportunity to deliver a comparable customer experience when a retail customer calls the CLEC with a service inquiry.

Exclusions:
Queries received during scheduled system maintenance time.

Business Rules:

For CLEC Results:

The response interval for each query is determined by computing the elapsed time from the ILEC receipt of a query from the CLEC, whether or not syntactically correct, to the time the ILEC returns the requested data (or reject notification) to the CLEC. Elapsed time is accumulated for each major query or transaction type, consistent with the specified reporting dimension, and then divided by the associated total number of queries received by the ILEC during the reporting period.

For ILEC Results:

The ILEC computation is identical to that for the CLEC with the clarifications noted below.

Other Clarifications and Qualification:
- The elapsed time for an ILEC query is measured from the point in time when the ILEC customer service agent submits the request for identical or similar information into the ILEC OSS until the time when the ILEC OSS returns the requested information to the ILEC customer service agent.
- Elapsed time is measured in seconds and tenths of seconds rounded to the nearest tenth of a second.
- Elapsed time is to be measured through automated rather than manual monitoring and logging.
- The ILEC service agent entry of a request for repair information (to the ILEC OSS) is considered to be the equivalent of the ILEC receipt of a query from the CLEC.
- The ILEC OSS return of information to the ILEC customer service agent, whether in hard copy or by display on a terminal, is considered equivalent to the return of requested information to the CLEC.

Calculation:
OSS Response Interval = (Query Response Date and Time for Category "X") - (Query Request Date and Time for Category "X") / (Number of Queries Submitted in the Reporting Period) where, "X" is 0-4, ≥ 4 to 10, ≥ 10, ≥ 30 seconds.

Report Structure:

- CLEC
- BST Residence
- BST Business (BST Total is under development at this time) by interface for each legacy system and function as appropriate.

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• CLEC Transaction Intervals • Report Month • Interface Type (specific to pre-ordering or maintenance and repair) • Query Identifier (e.g., unique tracking number) • Query Receipt Date by ILEC • Query Receipt Time by ILEC • Query Type (per reporting dimension) • Response Return Date • Response Return Time	• BST Business and Residence transaction Intervals • Report Month • Interface Type • Query Type (per reporting dimension) • Mean response interval • Query Count • Standard error of the mean response interval
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

MAINTENANCE & REPAIR

Report/Measurement:
Average Answer Time – Repair Centers

Definition:
This measure demonstrates an average response time for the CLEC representative to contact a BST representative. The average time a CLEC Rep is in queue waiting for the LCSC or UNE Center Rep to answer.

Exclusions:
None

Business Rules:

For CLEC Results:
Speed of Answer is determined by measuring and accumulating the elapsed time from the entry of a CLEC call into the ILEC call management system until the CLEC call is transferred to the ILEC personnel assigned to handling CLEC calls for assistance. The elapsed time is measured in seconds and tenths of seconds rounded to the nearest tenth of a second. The accumulated elapsed time is divided by the count of calls transferred to ILEC agents for accuracy.

For ILEC Results:
Mean Time to Answer Calls: Speed of Answer, as it relates to the ILEC, will be measured in an identical manner as described for the CLEC. The results for the ILEC business office operations and its repair bureau operations should be separately accumulated, computed and retained. If further distinctions are made or more discrete tracking is performed within the ILEC call receipt centers (e.g., by business and residence), then results should be reported at the lowest possible level of detail. Where call receipt for such operations are commingled and inseparable, then only a single result for each measure will be generated and serve as the comparative result for both the CLEC repair support and the CLEC provisioning support results.

Other Clarifications and Qualification:
- Speed of Answer minimum service standards, established in many states for business office, maintenance center, and/or operator services represent a similar ILEC measure and are derived from identical data (although the result displayed may be in comparison to a pre-established standard performance minimum).
- For ILEC and CLEC calls, an ILEC Agent answering and placing the caller on hold does not stop timing for purposes of the speed of answer interval.
- An interactive voice response (IVR) unit does not stop the timing for purposes of the speed of answer interval. For a call to be considered answered, the live ILEC Agent must handle the CLEC request.
- Results may be reported for the CLEC industry in aggregate to the extent that separate carrier-specific support centers are not provided. If separate centers are provided (either for an individual CLEC or a group of CLECs) then results should be gathered and supplied for each center and reported to the CLEC(s) based upon the center providing the specific CLEC's support.
   If the ILEC call management technology cannot measure speed of answer on a call-specific basis, then an alternate methodology that simulates speed of answer based upon the average time for component parts of the call (e.g., queue to IVR + IVR to queue + queue to agent answer) can be utilized by mutual consent of the ILEC and CLECs.

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Calculation:
Mean Time to Answer Calls = Σ [(Date and Time of Call Answer) - (Date and Time of Call Receipt)]/(Total Calls Answered by Center)

Report Structure:
• CLEC Aggregate
• BST/CLEC Aggregate

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• CLEC Average Answer Time • Month • Center Identifier • Center Type • Standard Error for Mean Speed of Answer	• BST Average Answer Time • Month • Center Identifier • Center Type • Standard Error for Mean Speed of Answer
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

BILLING

AT&T Proposes That This Measure Be Replaced By The Following Measures:

- **Percent Mechanized Billing Format Accuracy**   **NB-5**
- **Percent Process Accuracy of Current Billing Activity** **NB-6**
- **Percent Switched Local Billing Accuracy**   **NB-7**

BILLING

AT&T Proposes That This Measure Be Replaced By The Following Measures:

- **Percent On-Time Mechanized Local Services Invoice Delivery**
- **Percent On-Time Service Order Billing**
- **Percent On-Time Correction/Adjustment D**
- **Percent On-Time Switched Local Charges**

BILLING

Report/Measurement:
Usage Data Delivery Accuracy

Definition:
This measurement captures the percentage of recorded usage and recorded usage data packets transmitted error free and in an agreed upon format to the appropriate CLEC, as well as a parity measurement against BST Data Packet Transmission.

Exclusions:
None

Business Rules:

For CLEC Results:

The completeness of content, accuracy of information/charges and conformance of formatting will be determined based upon the terms of the individual CLEC interconnection agreements with the ILECs. The ILEC will establish a quality control process that is disclosed to CLECs and that is no less rigorous than the most rigorous quality monitoring established in the ILEC billing service contracts for long distance service providers. The quality monitoring process must be disclosed in advance and process auditing must be permitted. The records delivered by the ILEC must simultaneously meet the standards relating to content, accuracy and formatting in order to be counted as accurate. The measurement is expressed as a ratio (expressed as a percentage) of accurate records/charges to the total records/charges delivered.

For ILEC Results:

The computation for the ILEC is identical to that described for the CLEC. The usage accuracy determination is based upon comparison of the usage records, following format conversion to the EMR (or equivalent) format as compared to the internally established content and formatting requirements.

Other Clarifications and Qualification:

- The usage accuracy measures identified here are similar to the type of measures that ILECs commonly institute in service contracts with long distance service suppliers who use ILEC billing services.

Calculations:
Usage Data Delivery Accuracy = Σ [(Total number of usage records delivered during current reporting period that reflected complete information content and proper formating)] / (Total number of usage records transmitted during reporting period) X 100

Report Structure:

- CLEC Specific
- CLEC Aggregate
- BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE:	DATA RETAINED RELATING TO BST PERFORMANCE:
- Report Month - Record Type - BellSouth Recorded - Non BellSouth Recorded Number of Records With Errors Number of Records Delivered	- Report Month - Record Type - Number of Records With Errors - Number of Records Created

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

BILLING

Note: AT&T Does Not Include This Measure In Its Proposal

Report/Measurement:
Usage Data Delivery Completeness

Definition:
This measurement provides percentage of complete and accurately recorded usage data (usage recorded by BellSouth and usage recorded by other companies and sent to BST for billing) that is processed and transmitted to the CLEC within thirty (30) days of the message recording date. A parity measure is also provided showing completeness of BST messages processed and transmitted via CMDS. BellSouth delivers its own retail usage from recording location to billing location via CMDS as well as delivering billing data to other companies. Timeliness, Completeness and Mean Time to Deliver Usage measures are reported on the same report.

Exclusions:
None

Business Rules:
The purpose of these measurements is to demonstrate the level of quality of usage data delivered to the appropriate CLEC. Method of delivery is at the option of the CLEC.

Calculation:
Usage Data Delivery Completeness = Σ(Total number of Recorded usage records delivered during the current month that are within thirty (30) days of the message recording date) / Σ(Total number of Recorded usage records delivered during the current month) X 100

REPORT STRUCTURE
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE:	DATA RETAINED RELATING TO BST PERFORMANCE:
• Report Month	• Report Monthly
• Record Type	• Record Type
➢ BellSouth Recorded	
➢ Non BellSouth Recorded	

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

BILLING
Note: AT&T Does Not Include This Measure In Its Proposal

Report/Measurement:
Usage Data Delivery Timeliness
Definition:
This measurement provides percentage of recorded usage data (usage recorded by BST and usage recorded by other companies and sent to BST for billing) that is delivered to the appropriate CLEC within six (6) calendar days from the receipt of the initial recording. A parity measure is also provided showing timeliness of BST messages processed and transmitted via CMDS. Timeliness, Completeness and Mean Time to Deliver Usage measures are reported on the same report.
Exclusions:
None
Business Rules:
The purpose of this measurement is to demonstrate the level of timeliness for processing and transmission of usage data delivered to the appropriate CLEC. The usage data will be mechanically transmitted or mailed to the CLEC data processing center once daily. The Timeliness interval of usage recorded by other companies is measured from the date BST receives the records to the date BST distributes to the CLEC. Method of delivery is at the option of the CLEC.
Calculation:
Usage Data Delivery Timeliness – Σ (Total number of usage records sent within six (6) calendar days from initial recording/receipt) / Σ (Total number of usage records sent) X 100
Report Structure:
• CLEC Aggregate • CLEC Specific • BST Aggregate
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE:	DATA RETAINED RELATING TO BST PERFORMANCE:

• Report Month
• Record Type
  ➢ BellSouth Recorded
  ➢ Non-BellSouth Recorded
	• Report Monthly
	• Record Type

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

BILLING

Report/Measurement:
Mean Time to Deliver Usage

Definition:
This measurement provides the average time it takes to deliver Usage Records to a CLEC. A parity measure is also provided showing timeliness of BST messages processed and transmitted via CMDS. Timeliness, Completeness and Mean Time to Deliver Usage measures are reported on the same report.

Exclusions:
None

Business Rules:
The purpose of this measurement is to demonstrate the average number of days it takes to deliver Usage data to the appropriate CLEC. Usage data is mechanically transmitted or mailed to the CLEC data processing center once daily. Method of delivery is at the option of the CLEC.

For CLEC Results:

Usage Records: This measure captures the elapsed time between the recording of usage data generated either by CLEC retail customers or by CLEC access customers (by the AMA recording equipment associated with the ILEC switch) and the time when the data set, in a compliant format, is successfully transmitted to the CLEC. For each usage record, the calendar date and time of usage recording is compared to the calendar date and time of successful completion of data set transmission to the CLEC. The number of hours and tenths of hours elapsed between message recording and data set transmission will constitute the elapsed delivery time. The elapsed delivery time is accumulated for each usage record with the resulting total number of hours accumulated being divided by the number of complete usage records in all the data sets transmitted.

For ILEC Results: Identical computations are made for the ILEC with the clarifications provided below.

Other Clarifications and Qualification:

- The elapsed time for delivery of ILEC usage records is measured from the time of message recording, as captured on the ILEC's AMA tape, to the time the AMA tape is converted to billing format (EMR format or equivalent).
- Mean time to deliver usage records is to be reported separately for end user usage and access related usage.

Calculation:
Mean Time to Provide Recorded Usage Records = { Σ[(Data Set Transmission Date)-(Date of Message Recording)]}/(Count of All Messages Transmitted in Reporting Period)

Report Structure:
• CLEC Aggregate
• CLEC Specific
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE:	DATA RETAINED RELATING TO BST PERFORMANCE:

• Report Month
• Record Type
   ➢ BellSouth Recorded
   ➢ Non-BellSouth Recorded
• Mean Delivery Interval
• Standard Error of Delivery Interval
• Number of Messages or Invoices Delivered
	• Report Monthly
	• Record Type
	• Mean Delivery Interval
	• Standard Error of Delivery Interval
	• Number of Messages or Invoices Delivered

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

OPERATOR SERVICES AND DIRECTORY ASSISTANCE

Note: AT&T Proposes One OS/DA Measure:
Mean Time To Answer With Separate Reporting For OS And DA

Report/Measurement:
Speed to Answer Performance/Average Speed to Answer – Toll

Definition:
Measurement of the average time in seconds calls wait before answered by a toll operator.

Exclusions:
None

Business Rules:
Mean Time To Answer: Speed of Answer is determined by measuring and accumulating the elapsed time from the entry of a CLEC retail customer call into the ILEC call management system queue until the CLEC retail customer call is transferred to the ILEC personnel assigned to handling CLEC calls for assistance (whether DA or OS). The elapsed time is measured in seconds and tenths of seconds rounded to the nearest tenth of a second.

Calculation:
Mean Time To Answer =[Σ(Date and Time of Call Answer) – (Date and Time of Call Receipt)]/(Total Calls Answered on Behalf of the CLECs in Reporting Period)

Report Structure:
Reported for the aggregate of BST and CLECs
• State

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED (ON AGGREGATE BASIS)
•

DATA RETAINED RELATING TO CLEC EXPERIENCE:	**DATA RETAINED RELATING TO BST PERFORMANCE:**
• Month	• Month
• Type of Measurement (OS Calls, DA Calls or Directory Listing	• Type of Measurement (OS Calls, DA calls or Directory Listings)
• Center Identifier (or Directory ID for DL)	• Center Identifier (or Directory ID for DL)
• Mean Speed of Answer (OS & DA only)	• Mean Speed of Answer (OS & DA only)
• Standard Error for Mean Speed of Answer (OS & DA only)	• Standard Error for Mean Speed of Answer (OS & DA only)
• Number of Calls Answered (OS & DA only)	• Standard Error for Mean Speed of Answer (OS & DA only)
• Directory Close Date (DL only)	• Directory Close Date (DL only)
• List Availability Date (DL only)	• Listing Availability Date (DL only)

Retail Analog/Benchmark
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

OPERATOR SERVICES AND DIRECTORY ASSISTANCE
Note: AT&T Does Not Include This Measure In Its Proposal

Report/Measurement:
Speed to Answer Performance/Percent Answered within "X" Seconds – Toll

Definition:
Measurement of the percent of toll calls that are answered in less than "X" seconds. The number of seconds represented by "X" is thirty, except where a different regulatory benchmark has been set against the Average Speed to Answer by a State Commission.

Exclusions:
Calls abandoned by customers are not reflected in the average speed to answer but are reflected in the conversion tables where the percent answered within "X" seconds is determined.

Business Rules:
The call waiting measurement scan starts when the customer enters the queue and ends when a BST representative answers the call. The average speed to answer is determined by measuring and accumulating the seconds of wait time from the entry of a customer into the BST call management system queue until the customer is transferred to a BST representative. No distinction is made between CLEC customers and BST customers.

Calculation:
The Percent Answered within "X" Seconds measurement for toll is derived by using the BellCore Statistical Answer Conversion Tables, to convert the Average Speed to Answer measure into a percent of calls answered within "X" seconds. The BellCore Conversion Tables are specific to the defined parameters of work time, number of operators, max queue size and call abandonment rates.

Report Structure:
Reported for the aggregate of BST and CLECs
• State

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED (ON AGGREGATE BASIS)
For the items below, BST's Performance Measurement Analysis Platform (PMAP) receives a final computation; therefore, no raw data file is available in PMAP.
• Month
• Call Type (Toll)
• Average Speed of Answer

Retail Analog/Benchmark
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

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OPERATOR SERVICES AND DIRECTORY ASSISTANCE

Note: AT&T Proposes One OS/DA Measure:
Mean Time To Answer With Separate Reporting For OS And DA
See "Speed to Answer Performance/Average Speed to Answer – Toll"

Report/Measurement:
Speed to Answer Performance/Average Speed to Answer – Directory Assistance (DA)
Definition:
Measurement of the average time in seconds calls wait before answer by a DA operator.
Exclusions:
Calls abandoned by customers are not reflected in the average speed to answer but are reflected in the conversion tables where the percent answered within "X" seconds is determined.
Business Rules:
The call waiting measurement scan starts when the customer enters the queue and ends when a BST representative answers the call. The average speed to answer is determined by measuring and accumulating the seconds of wait time from the entry of a customer into the BST call management system queue until the customer is transferred to a BST representative. No distinction is made between CLEC customers and BST customers.
Calculation:
The Average Speed to Answer for DA is calculated by using data from monthly system measurement reports taken from the centralized call routing switches. The "total call waiting seconds" is a sub-component of this measure which BST systems calculate by monitoring the number of calls in queue throughout the day multiplied by the time (in seconds) between monitoring events. The "total calls served" is the other sub-component of this measure, which BST systems record as the total number of calls handled by Operator Services DA centers. Since calls abandoned are not reflected in the calculation, the percent answered within the required timeframe is determined by using conversion tables with input for the abandonment rate.
Report Structure:
Reported for the aggregate of BST and CLECs
• State
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks
DATA RETAINED (ON AGGREGATE BASIS)
For the items below, BST's Performance Measurement Analysis Platform (PMAP) receives a final computation; therefore, no raw data file is available in PMAP.
• Month
• Call Type (DA)
• Average Speed of Answer
Retail Analog/Benchmark
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

OPERATOR SERVICES AND DIRECTORY ASSISTANCE
Note: AT&T Does Not Include This Measure In Its Proposal

Report/Measurement:
Speed to Answer Performance/Percent Answered within "X" Seconds – Directory Assistance (DA)
Definition:
Measurement of the percent of DA calls that are answered in less than "X" seconds. The number of seconds represented by "X" is twenty, except where a different regulatory benchmark has been set against the Average Speed to Answer by a State Commission.
Exclusions:
Calls abandoned by customers are not reflected in the average speed to answer but are reflected in the conversion tables where the percent answered within "X" seconds is determined.
Business Rules:
The call waiting measurement scan starts when the customer enters the queue and ends when a BST representative answers the call. The average speed to answer is determined by measuring and accumulating the seconds of wait time from the entry of a customer into the BST call management system queue until the customer is transferred to a BST representative. No distinction is made between CLEC customers and BST customers.
Calculation:
The Percent Answered within "X" Seconds measurement for DA is derived by using the BellCore Statistical Answer Conversion Tables, to convert the Average Speed to Answer measure into a percent of calls answered within "X" seconds. The BellCore Conversion Tables are specific to the defined parameters of work time, number of operators, max queue size and call abandonment rates.
Report Structure:
Reported for the aggregate of BST and CLECs
• State
Level of Disaggregation:
None
DATA RETAINED (ON AGGREGATE BASIS)
For the items below, BST's Performance Measurement Analysis Platform (PMAP) receives a final computation; therefore, no raw data file is available in PMAP.
• Month
• Call Type (DA)
• Average Speed of Answer
Retail Analog/Benchmark
Parity by Design

E911

Note: AT&T Does Not Include This Measure In Its Proposal

Report/Measurement:	
E911/Timeliness	
Definition:	
Measures the percentage of batch orders for E911 database updates (to CLEC resale and BST retail records) processed successfully within a 24-hour period.	
Exclusions:	
• Any resale order canceled by a CLEC	
• Facilities-based CLEC orders	
Business Rules:	
The 24-hour processing period is calculated based on the date and time processing starts on the batch orders and the date and time processing stops on the batch orders. Mechanical processing starts when SCC (BST's E911 vendor) receives E911 files containing batch orders extracted from BST's Service Order Communication System (SOCS). Processing stops when SCC loads the individual records to the E911 database. No distinctions are made between CLEC resale records and BST retail records.	
Calculation:	
E911 Timeliness = Σ (Number of batch orders processed within 24 hours ÷ Total number of batch orders submitted) X 100	
Report Structure:	
Reported for the aggregate of CLEC resale updates and BST retail updates	
• State	
• Region	
Levels of Disaggregation:	
None	
DATA RETAINED	
• Report month	
• Aggregate data	
Retail Analog/Benchmark	
Parity by Design	

E911
Note: AT&T Does Not Include This Measure In Its Proposal

Report/Measurement:
E911/Accuracy
Definition:
Measures the individual E911 telephone number (TN) record updates (to CLEC resale and BST retail records) processed successfully for E911 with no errors.
Exclusions:
• Any resale order canceled by a CLEC
• Facilities-based CLEC orders
Business Rules:
Accuracy is based on the number of records processed without error at the conclusion of the processing cycle. Mechanical processing starts when SCC (BST's E911 vendor) receives E911 files containing telephone number (TN) records extracted from BST's Service Order Communication System (SOCS). No distinctions are made between CLEC resale records and BST retail records.
Calculation:
E911 Accuracy = Σ(Number of record individual updates processed with no errors ÷ Total number of individual record updates) X 100
Report Structure:
Reported for the aggregate of CLEC resale updates and BST retail updates
• State
• Region
Level of Disaggregation:
None
DATA RETAINED
• Report month
• Aggregate data
Retail Analog/Benchmark
Parity by Design

E911
Note: AT&T Does Not Include This Measure In Its Proposal

Report/Measurement:
E911/Mean Interval
Definition:
Measures the mean interval processing of E911 batch orders (to update CLEC resale and BST retail records).
Exclusions:
• Any resale order canceled by a CLEC
• Facilities-based CLEC orders
Business Rules:
The processing period is calculated based on the date and time processing starts on the batch orders and the date and time processing stops on the batch orders. Data is posted in 4-hour increments up to and beyond 24 hours. No distinctions are made between CLEC resale records and BST retail records.
Calculation:
E911 Mean Interval = $\sum$ (Date and time of batch order completion – Date and time of batch order submission) ÷ (Number of batch orders completed)
Report Structure:
Reported for the aggregate of CLEC resale updates and BST retail updates
• State
• Region
Level of Disaggregation:
None
DATA RETAINED (ON AGGREGATE BASIS)
• Report month
• Aggregate data
Retail Analog/Benchmark
Parity by Design

TRUNK GROUP PERFORMANCE

Note: AT&T Does Not Include This Measure In Its Proposal

Report/Measurement:
Trunk Group Service Report

Definition:
A report of the percent blocking above the Measured Blocking Threshold (MBT) on all final trunk groups between CLEC Points of Termination and BST end offices or tandems.

Exclusions:
• Trunk groups for which valid traffic data is not available • High use trunk groups

Business Rules:
Traffic trunking data measurements are validated and processed by the Total Network Data System/Trunking (TNDS/TK), a Telcordia (BellCore) supported application, on an hourly basis for Average Business Days (Monday through Friday). The traffic load sets, including offered load and observed blocking ratio (calls blocked divided by calls attempted), are averaged for a 20 day period, and the busy hour is selected. The busy hour average data for each trunk group is captured for reporting purposes. Although all trunk groups are available for reporting, the report highlight those trunk groups with blocking greater than the Measured Blocking Threshold (MBT) and the number of consecutive monthly reports that the trunk group blocking has exceeded the MBT. The MBT for CTTG is 2% and the MBT for all other trunk groups is 3%.

Calculation:
Measured blocking = (Total number of blocked calls) / (Total number of attempted calls) X 100

Report Structure:

• BST Aggregate
  ➤ CTTG
  ➤ Local
• CLEC Aggregate
  ➤ BST Administered CLEC Trunk
  ➤ CLEC Administered CLEC Trunk
• CLEC Specific
  ➤ BST Administered CLEC Trunk
  ➤ CLEC Administered CLEC Trunk

Level of Disaggregation:
State

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report month • Total trunk groups • Total trunk groups for which data is available • Trunk groups with blocking greater than the MBT • Percent of trunk groups with blocking greater than the MBT	• Report month • Total trunk groups • Total trunk groups for which data is available • Trunk groups with blocking greater than the MBT • Percent of trunk groups with blocking greater than the MBT

Retail Analog/Benchmark:
Retail Analog

TRUNK GROUP PERFORMANCE

Report/Measurement:
Trunk Group Service Detail

Definition:
A detailed list of all final trunk groups between CLEC Points of Presence and BST end offices or tandems, and the actual blocking performance when the blocking exceeds the Measured Blocking Threshold (MBT) for the trunk groups.

Exclusions:
•
• None.

Business Rules:

For CLEC Results:
Percent Call Completion: For determining outbound call blocking, the number of CLEC customer call attempts, where the customer dials a valid telephone number, is accumulated for the reporting period. The number of blocked call attempts experienced by CLEC customers, where a call to a valid telephone number was not completed by the network because of ILEC-controlled capacity limitations or other ILEC network trouble, also is accumulated during the reporting period. At the end of the reporting period, the total number of blocked attempts is divided by the total number of attempts, and the ratio is expressed as a percentage. For inbound calling, the results will measure calls originating on the ILEC's network and blocked from terminating on the CLEC's network.

For ILEC Results:
The approach is identical to that described for the CLEC, except that the network performance is measured only for representative ILEC service configurations.

Other Clarifications and Qualifications:
CLECs may agree to call completion reports in lieu of or in addition to blocking reports.

Calculation:
Measured Blocking = (Total number of blocked call attempts (separate measure for inbound and outbound) during the busy hour / (Total number of attempted calls during busy hour) X 100

Report Structure:

• BST Specific	• CLEC Specific
➤ Traffic Identity	➤ Traffic Identity
➤ TGSN	➤ TGSN
➤ Tandem	➤ Tandem
➤ End Office	➤ CLEC POT
➤ Description	➤ Description
➤ Observed Blocking	➤ Observed Blocking
➤ Busy Hour	➤ Busy Hour
➤ Number Trunks	➤ Number Trunks
➤ Valid study days	➤ Valid study days
➤ Number reports	➤ Number reports
➤ Remarks	➤ Remarks

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
- Report month - Total trunk groups - Total trunk groups for which data is available - Trunk groups with blocking greater than the MBT - Percent of trunk groups with blocking greater than the MBT - Traffic identity, TGSN, end points, description, busy hour, valid study days, number reports - By Switch (Serving CLEC) for CLEC - Trunk Capacity Type - Trunk Group Identifier - Geographic Identifier - Busy Hour and Day - Calls Attempted - Calls Blocked	- Report month - Total trunk groups - Total trunk groups for which data is available - Trunk groups with blocking greater than the MBT - Percent of trunk groups with blocking greater than the MBT - Traffic identity, TGSN, end points, description, busy hour, valid study days, number reports - By Switch (Serving CLEC) for ILEC - Trunk Capacity Type - Trunk Group Identifier - Geographic Identifier - Busy Hour and Day - Calls Attempted - Calls Blocked
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

COLLOCATION

Report/Measurement:
Collocation/Average Response Time

Definition:
Measures the average time (counted in business days) from the receipt of a complete and accurate collocation application (including receipt of application fees) to the date BellSouth responds in writing.

Exclusions:
• Any application cancelled by the CLEC or CLEC requested delays

Business Rules:
For CLEC Results: Mean Time to Respond to Collocation Request: The response interval for each space request is determined by computing the elapsed time from the ILEC receipt of a collocation request (or inquiry) from the CLEC, to the time the ILEC returns the requested information or commitment to the CLEC. Elapsed time is accumulated for each type of collocation space request, and then divided by the associated total number of collocation requests received by the ILEC during the report period.   **For ILEC Results:**   The ILEC computation is identical to that for the CLEC for provision of collocations to ILEC affiliates. Largely, however, tariff and contract standards will be the benchmarks that ILECs must meet for a parity determination. Their vast number of end offices compared to CLECs' switch deployment make it difficult to develop the appropriate analog.   **Other Clarifications and Qualifications:**   • Elapsed time is measured in days and hours.   • A response to the collocation request will only be considered to be "received" if it is a thorough and actionable plan (i.e., a simple "yes" or "no" is not sufficient).   • Questions about the CLEC's collocation request also do not count as a "received response."

Calculation:
Average Response Time = Σ(Request Response Date) – (Request Submission Date) / Count of Responses Returned within Reporting Period.

Report Structure:
• Individual CLEC (alias) aggregate   • Aggregate of all CLECs

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks
•

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month • Request Identifier (e.g., unique tracking number) • Date and Time of Request receipt by ILEC. • Request type (per reporting dimension) • Response Date and Time • Committed Delivery Date and Time • Actual Delivery Date and Time • Response Date and Time • Geographic Scope	• Report Month • Request Identifier • Date and Time of Request Receipt by ILEC • Response Date and Time • Committed Delivery Date and Time • Actual Delivery Date and Time • Geographic scope

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

COLLOCATION

Report/Measurement:
Collocation/Average Arrangement Time

Definition:
Measures the average time (counted in business days) from the receipt of a complete and accurate Bona Fide firm order (including receipt of appropriate fee) to the date BST completes the collocation arrangement.

Exclusions:
• Any Bona Fide firm order cancelled by the CLEC or CLEC requested delays
•

Business Rules:

For CLEC Results:

Mean Time To Provide Collocation Arrangements: The interval is the elapsed time from the ILEC's receipt of an order for collocation (from the CLEC) to the ILEC's return of a valid completion notification to the CLEC. Elapsed time for each order is then divided by the associated total number of collocation orders completed within the reporting period for each type of collocation. The measurement is similar to the Average Completion Interval for resold services and unbundled network element orders and could be reflected as a separate category of that measurement.

For ILEC Results:

The ILEC computation is identical to that for the CLEC for provision of collocations to ILEC affiliates. Largely, however, tariff and contract standards will be the benchmarks that ILECs must meet for a parity determination. Their vast number of end offices compared to CLECs' switch deployment make it difficult to develop the appropriate analog.

Other Clarifications and Qualifications:
- Elapsed time is measured in days and hours.
- A response to the collocation request will only be considered to be "received" if it is a thorough and actionable plan (i.e., a simple "yes" or "no" is not sufficient).
- Questions about the CLEC's collocation request also do not count as a "received response."

Calculation:
Average Arrangement Time = Σ(Date Collocation Arrangement is Complete) – (Date Order for Collocation Arrangement Submitted) / Total Number of Collocation Arrangements Completed during Reporting Period.

Report Structure:
• Individual CLEC (alias) aggregate
• Aggregate of all CLECs

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks
•

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month	• Report Month
• Request Identifier (e.g., unique tracking number)	• Request Identifier
• Date and Time of Request receipt by ILEC.	• Date and Time of Request Receipt by ILEC
• Request type (per reporting dimension)	• Response Date and Time
• Response Date and Time	• Committed Delivery Date and Time
• Committed Delivery Date and Time	• Actual Delivery Date and Time
• Actual Delivery Date and Time	• Geographic scope
• Response Date and Time	

• Geographic Scope	
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

COLLOCATION

Report/Measurement:
Collocation/Percent of Due Dates Missed

Definition:
Measures the percent of missed due dates for collocation arrangements.

Exclusions:
• Any Bona Fide firm order cancelled by the CLEC or CLEC requested delays
•

Business Rules:

For CLEC Results:
Percent Due Dates Missed: For each type of collocation, both the total numbers of orders completed within the reporting interval and the number of orders completed but missing the committed due date (as specified on the initial confirmation returned to the CLEC) are counted. The resulting count of orders completed later than the committed due date is divided by the total number of orders completed. The measurement is similar to the Percent Completed on Time for resold services and unbundled network element orders and could be reflected as a separate category within the Percent Completed on Time measurement.

For ILEC Results:
The ILEC computation is identical to that for the CLEC for provision of collocations to ILEC affiliates. Largely, however, tariff and contract standards will be the benchmarks that ILECs must meet for a parity determination. Their vast number of end offices compared to CLECs' switch deployment make it difficult to develop the appropriate analog.

Other Clarifications and Qualifications:
- Elapsed time is measured in days and hours.
- A response to the collocation request will only be considered to be "received" if it is a thorough and actionable plan (i.e., a simple "yes" or "no" is not sufficient).
  Questions about the CLEC's collocation request also do not count as a "received response."

Calculation:
% of Due Dates Missed = Σ (Number of Orders not completed w/ ILEC Committed Due Date during Reporting Period) / Number of Orders Completed in Reporting Period) X 100

Report Structure:
• Individual CLEC (alias) aggregate
• Aggregate of all CLECs

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks
•

DATA RETAINED RELATING TO CLEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month	• Report Month
• Request Identifier (e.g., unique tracking number)	• Request Identifier
• Date and Time of Request receipt by ILEC.	• Date and Time of Request Receipt by ILEC
• Request type (per reporting dimension)	• Response Date and Time
• Response Date and Time	• Committed Delivery Date and Time
• Committed Delivery Date and Time	• Actual Delivery Date and Time
• Actual Delivery Date and Time	• Geographic scope
• Response Date and Time	
• Geographic Scope	

Retail Analog/Benchmark:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

MEASURES PROPOSED BY AT&T TO REPLACE BELLSOUTH'S BILLING INVOICE MEASURES:

Report/Measurement:
Percent Mechanized Billing Format Accuracy

Definition:
The purpose of this measurement is to monitor the accuracy of the mechanized billing format.

Exclusions:
• None

Business Rules:
The ILEC will establish a quality control process that is disclosed to CLECs and that is no less rigorous than the most rigorous quality monitoring established in the ILEC billing service contracts for long distance service providers. The quality monitoring process must be disclosed in advance and process auditing must be permitted. The records and invoices delivered by the ILEC must simultaneously meet the standards relating to content, accuracy and formatting in order to be counted as accurate. If a sampling process is used to monitor accuracy, then the study results must be reconfirmed no less than quarterly.

Calculation:
Percent Mechanized Billing Format Accuracy = [(Total Number of Accurate Mechanized Local Bills)/(Total Number of Mechanized Local Bills Processed)] x 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO ALEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month • Record Type or Invoice Type • Mean Delivery Interval • Standard Error of Delivery Interval • Number of Messages or Invoices Delivered • Number of Accurate Mechanized Local Bills • Number of Mechanized Local Bills	• Report Month • Record Type or Invoice Type • Number of Records With Errors • Number of Records Created • Number of Messages or Invoices Delivered • Number of Accurate Mechanized Local Bills • Number of Mechanized Local Bills

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Percent Process Accuracy of Current Billing Activity
Definition:
The purpose of this measurement is to monitor the process accuracy of the current billing activity.
Exclusions:
• None
Business Rules:
Calculation:
Percent Process Accuracy of Current Billing Activity = {[(|Total Other Charges &Credits Billed Dollars|)+(|Total Detail Of Adjustments Billed Dollars|)]-(|Total Correction & Correction Adjustment Dollars|)}/[(|Total Other Charges & Credits Billed Dollars|)+(|Total DOA Billed Dollars|)] x 100
Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO ALEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month	• Report Month
• Record Type or Invoice Type	• Record Type or Invoice Type
• Mean Delivery Interval	• Number of Records With Errors
• Standard Error of Delivery Interval	• Number of Records Created
• Number of Messages or Invoices Delivered	• Charges & Credits Billed Dollars
• Charges & Credits Billed Dollars	• Adjustment Billed Dollars
• Adjustment Billed Dollars	• Correction Adjustment Dollars
• Correction Adjustment Dollars	

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Percent Switched Local Billing Accuracy

Definition:
The purpose of this measurement is to monitor the switched local billing accuracy.

Exclusions:
• None

Business Rules:
The ILEC will establish a quality control process that is disclosed to CLECs and that is no less rigorous than the most rigorous quality monitoring established in the ILEC billing service contracts for long distance service providers. The quality monitoring process must be disclosed in advance and process auditing must be permitted. The records and invoices delivered by the ILEC must simultaneously meet the standards relating to content, accuracy and formatting in order to be counted as accurate. If a sampling process is used to monitor accuracy, then the study results must be reconfirmed no less than quarterly

Calculation:
Percent Switched Local Billing Accuracy = [(|Total Switched Billed Dollars|)-(|Switched Adjustment Dollars|)]/(|Total Switched Billed Dollars|) x 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO ALEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month	• Report Month
• Record Type or Invoice Type	• Record Type or Invoice Type
• Mean Delivery Interval	• Number of Records With Errors
• Standard Error of Delivery Interval	• Number of Records Created
• Number of Messages or Invoices Delivered	• Switched Billed Dollars
• Switched Billed Dollars	• Switched Adjustment Dollars
• Switched Adjustment Dollars	

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Percent On-Time Mechanized Local Services Invoice Delivery

Definition:
The purpose of this measurement is to monitor the percent of invoices successfully transmitted to the CLEC within 10 calendar days of the close of a bill cycle.

Exclusions:
• Any invoices rejected due to formatting or content errors

Business Rules:
This measure captures the elapsed number of days between the scheduled close of a Bill Cycle and the ILEC's successful transmission of the associated invoice to the CLEC. For each invoice, the calendar date of the scheduled close of Bill Cycle is compared to the calendar date that successful invoice transmission to the CLEC completes to determine the number transmitted within 10 calendar days. The number transmitted within 10 calendar days is divided by the number of complete invoices sent in the reporting period.

Calculation:
Percent On-Time Mechanized Local Services Invoice Delivery = [(Total Number of Mechanized Local Bills Received On Time)/(Total Number of Mechanized Local Bills Processed)] x 100

Report Structure:
• CLEC Specific • CLEC Aggregate • BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO ALEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month • Record Type or Invoice Type • Mean Delivery Interval • Standard Error of Delivery Interval • Number of Messages or Invoices Delivered • Number of Mechanized Local Bills Received On-Time • Number of Mechanized Local Bills	• Report Month • Record Type or Invoice Type • Number of Records With Errors • Number of Records Created • Number of Mechanized Local Bills Received On-Time • Number of Mechanized Local Bills

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Percent On-Time Service Order Billing

Definition:
The purpose of this measurement is to monitor the percent of dollars on all service orders completed within 60 calendar days of the current bill date/cycle.

Exclusions:
• None

Business Rules:

Calculation:
Percent On-Time Service Order Billing = [(Sum of the Absolute Value of Timely Other Charges & Credits Dollars)/(Sum of the Absolute Value of Other Charges & Credits Billed Dollars)] x 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO ALEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month
• Record Type or Invoice Type
• Mean Delivery Interval
• Standard Error of Delivery Interval
• Number of Messages or Invoices Delivered
• Charged Dollars
• Credit Dollars	• Report Month
• Record Type or Invoice Type
• Mean Delivery Interval
• Standard Error of Delivery Interval
• Number of Messages or Invoices Delivered
• Charged Dollars
• Credit Dollars

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

| **Report/Measurement:** |
| Percent On-Time Correction/Adjustment Dollars |

| **Definition:** |
| The purpose of this measurement is to monitor the adjustments or corrections which are implemented within 60 days of decision to grant adjustment or adjustment claim submission. |

| **Exclusions:** |
| • None |

| **Business Rules:** |
| |

| **Calculation:** |
| Percent On-Time Correction/Adjustment Dollars = [(\|Total Correction/Adjustment Dollars\|)-(\|Total Correction/Adjustment Dollars > 60 Calendar Days\|)]/(\|Total Correction/Adjustment Dollars\|) x 100 |

| **Report Structure:** |
| • CLEC Specific |
| • CLEC Aggregate |
| • BST Aggregate |

| **Level of Disaggregation:** |
| See Appendix A: AT&T Disaggregation, Analogs and Benchmarks |

DATA RETAINED RELATING TO ALEC EXPERIENCE	**DATA RETAINED RELATING TO BST EXPERIENCE**
• Report Month	• Report Month
• Record Type or Invoice Type	• Record Type or Invoice Type
• Mean Delivery Interval	• Mean Delivery Interval
• Standard Error of Delivery Interval	• Standard Error of Delivery Interval
• Number of Messages or Invoices Delivered	• Number of Messages or Invoices Delivered
• Correction/Adjustment Dollars	• Correction/Adjustment Dollars

| **Retail Analog/Benchmark:** |
| See Appendix A: AT&T Disaggregation, Analogs and Benchmarks |

Report/Measurement:
Percent On-Time Switched Local Charges
Definition:
The purpose of this measurement is to monitor the on-time delivery of Switched Local Charges.
Exclusions:
• None
Business Rules:
Calculation:
Percent On-Time Switched Local Charges = [(Switched Local Charges)-(Switched Local Charges Billed>60 Calendar Days From Date Service Rendered)] x 100
Report Structure:
• CLEC Specific • CLEC Aggregate • BST Aggregate
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

DATA RETAINED RELATING TO ALEC EXPERIENCE	DATA RETAINED RELATING TO BST EXPERIENCE
• Report Month • Record Type or Invoice Type • Mean Delivery Interval • Standard Error of Delivery Interval • Number of Messages or Invoices Delivered • Number of Charges > 60 Calendar Days From Date Service Rendered • Delivery Date of Switched Local Charges	• Report Month • Record Type or Invoice Type • Mean Delivery Interval • Standard Error of Delivery Interval • Number of Messages or Invoices Delivered

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

ADDITIONAL MEASURES PROPOSED BY AT&T

Report/Measurement:
Acknowledgement Timeliness

Definition:
This measure is designed to monitor the rate at which the CLECs receive a timely acknowledgement from the ILEC after the submission of a Local Service Request.

Exclusions:
• None

Business Rules:
For CLEC Results:
An acknowledgement is the first indicator that the Local Service Request has been received by the ILEC and is under analysis. Acknowledgement Timeliness is determined by computing the elapsed time (in minutes and seconds) from the ILEC receipt of a Local Service Request from the CLEC, to the time the ILEC returns the acknowledgement that a syntactically correct order has been received. Elapsed time is calculated for each acknowledgement. The acknowledgments that are returned within 15 Minutes are categorized in a manner consistent with the specified level of disaggregation, then divided by the associated total number of acknowledgements transmitted by the ILEC during the reporting period.
Other Clarifications and Qualification:
• When the ILEC processes orders for a CLEC via different interfaces (e.g., LENS, EDI or TAG) then the preceding measurement must be computed for each interface arrangement.
• All intervals are measured in minutes and seconds rounded to the nearest second.
• Because this should be a highly automated process, the accumulation of elapsed time continues through off-schedule, weekends and holidays.
• "Syntactically correct" means all fields required to process an order are populated and reflect the correct format as agreed and documented in the current interface specifications.

Calculation:
Acknowledgement Timeliness = [(Date and Time Local Service Request is Received by the ILEC)-(Date and Time Acknowledgement of Syntactically Correct Local Service Request is Transmitted From the ILEC Gateway)];
[(Count of All Acknowledgements Transmitted Within 15 Minutes)/(Count of All Acknowledgements Transmitted in the Reporting Period)] X 100

Report Structure:
• Fully Mechanized, Partially Mechanized, Total Mechanized
• State and Region
• CLEC Specific
• CLEC Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month	• Report Month
• Total number of LSRs	• Total number of LSRs
• Total number of Rejects	• Total number of Errors
• Total Number of Errors	• Adjusted Error Volume
• State and Region	• State and Region
• Count of Firm Order Acknowledgements	• Count of Order Acknowledgments
• Count of Syntax Rejects	• Count of Syntax Rejects
• Count of Legacy System Rejects	• Count of Legacy System Reject
• Count of Orders Submitted	• Count of Orders Submitted
• Interface Type	• Interface Type
• Order Activity Type	• Order Activity
• Original order date for rejected orders	• Service Type
• Rejection Notice Date and Time	• Volume Category
• Service Type	

| • Volume Category | |
| • Manual Fallout | |

Retail Analog/Benchmark:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Acknowledgement Completeness

Definition:

This measure is designed to monitor the percent of acknowledgements received by the CLEC from the ILEC after the submission of a Local Service Request.

Exclusions:

- None

Business Rules:

For CLEC Results:

An acknowledgement is the first indicator that the Local Service Request has been received by the ILEC and is under analysis. Acknowledgement Completeness is determined by computing the number of acknowledgements transmitted by the ILEC and divided by the number of Local Service Requests received by the ILEC during the reporting period.

Other Clarifications and Qualification:

- When the ILEC processes orders for a CLEC via different interfaces (e.g., LENS, EDI or TAG) then the preceding measurement must be computed for each interface arrangement.
- All intervals are measured in minutes and seconds rounded to the nearest second.
- Because this should be a highly automated process, the accumulation of elapsed time continues through off-schedule, weekends and holidays.
- "Syntactically correct" means all fields required to process an order are populated and reflect the correct format as agreed and documented in the current interface specifications.

Calculation:

Acknowledgements Completeness = [(Total Number of Acknowledgements)/(Total Number of Service Requests Received in the Reporting Period)] X 100

Report Structure:

- Fully Mechanized, Partially Mechanized, Total Mechanized
- State and Region
- CLEC Specific
- CLEC Aggregate

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
- Report Month - Total number of LSRs - Total number of Rejects - Total Number of Errors - State and Region - Count of Firm Order Acknowledgements - Count of Syntax Rejects - Count of Legacy System Rejects - Count of Orders Submitted - Interface Type - Order Activity Type - Original order date for rejected orders - Rejection Notice Date and Time - Service Type - Volume Category - Manual Fallout	- Report Month - Total number of LSRs - Total number of Errors - Adjusted Error Volume - State and Region - Count of Order Acknowledgments - Count of Syntax Rejects - Count of Legacy System Reject - Count of Orders Submitted - Interface Type - Order Activity - Service Type - Volume Category

Retail Analog/Benchmark:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Firm Order Commitment and Reject Response Completeness

Definition:

A response is expected from the ILEC for every Local Service Request transaction (version). More than one response or differing responses per transaction is not expected. Firm Order Commitment and Reject Response Completeness is the corresponding number of Local Service Requests received to the combination of Firm Order Commitment and Reject Responses.

Exclusions:

- Service Requests canceled by the CLEC prior to being committed or rejected.

Business Rules:

- **Mechanized** - The number of FOCs or Rejects sent to the CLEC from LENS, EDI, TAG in response to electronically submitted LSRs (date and time stamp in LENS, EDI, TAG).
- **Partially Mechanized** – The number of FOCs or Rejects sent to the CLEC from LENS, EDI, TAG in response to electronically submitted LSRs (date and time stamp in LENS, EDI, TAG), which fall out for manual handling by the LCSC personnel.
- **Total Mechanized** - The number of the combination of Fully Mechanized and Partially Mechanized LSRs
- **Non-Mechanized** - The number of FOCs or Rejects sent to the CLEC via FAX Server in response to manually submitted LSRs (date and time stamp in FAX Server).

For CLEC Results:

Firm Order Commitment and Reject Response Completeness is determined in two dimensions:

- Percent responses is determined by computing the number of Firm Order Commitments and Rejects transmitted by the ILEC and dividing by the number of Local Service Requests (all versions) received in the reporting period.
- Percent of multiple responses is determined by computing the number of Local Service Request unique versions receiving more than one Firm Order Commitments, Reject or the combination of the two and dividing by the number of Local Service Requests (all versions) received in the reporting period.

For ILEC Results:

Same computation as for the CLEC.

Other Clarifications and Qualification:

- When the ILEC processes orders for a CLEC via different interfaces (e.g., LENS, EDI or TAG) then the preceding measurement must be computed for each interface arrangement.
- The ILEC service agent's attempt to submit an order for processing by the ILEC OSS is considered equivalent to the ILEC acknowledgment of the CLEC's order.
- The ILEC OSS return of any indication to the service agent that an order cannot be processed as submitted is considered equivalent to the ILEC return of a rejection notice to the CLEC.
- Return of any information (e.g., order recapitulation) to the ILEC customer service agent that indicates no errors are evident or that an order can be processed, is the equivalent of the ILEC return of a FOC to the CLEC.

Calculation – Single FOC/Reject Response Expected

Firm Order Commitments / Reject Response Completeness = [(Total Number of Service Requests for Which a Firm Order Commitments or Reject is Sent/Total Number of Service Requests Received in the Report Period)] X 100

Calculation – Multiple or Differing FOC/Reject Responses Not Expected

Firm Order Commitment and Reject Response Completeness = [(Total Number of Firm Order Commitments Per LSR Version)+(Total Number of Reject Responses Per LSR Version)+(Combination of Firm Order Commitments and Reject Per LSR Version)/(Total Number of Service Requests (All Versions) Received in the Reporting Period) X 100]

Report Structure:

- Fully Mechanized, Partially Mechanized, Total Mechanized, Non-Mechanized
- State and Region
- CLEC Specific
- CLEC Aggregate
- BellSouth Specific

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
- Report Month - Total number of LSRs - Total number of Rejects - Total Number of Errors - State and Region - Count of Orders Completed Without Manual Intervention - Count of Firm Order Commitments - Count of Syntax Rejects - Count of Legacy System Rejects - Count of Orders Submitted - Interface Type - Order Activity Type - Original order date for rejected orders - Rejection Notice Date and Time - Service Type - Volume Category - Manual Fallout (for Mechanized Orders Only)	- Report Month - Total number of LSRs - Total number of Errors - Adjusted Error Volume - State and Region - Count Orders Completed Without Manual Intervention - Count of Order Commitments - Count of Syntax Rejects - Count of Legacy System Reject - Count of Orders Submitted - Interface Type - Order Activity - Service Type - Volume Category
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

Report/Measurement:
Provisioning Notification Completeness

Definition:
The percent of Local Service Requests eligible to complete that receive notification of provisioning completion. Local Service Requests are eligible to complete if the order is not in clarification on the date and time the LSR is due to be provisioned and completed; a supplement LSR has not been sent to the ILEC to cancel the LSR, and the due date has passed.

Exclusions:
• Service Requests which is in clarification on the date and time the LSR is due to be provisioned and completed.   • Service Requests canceled by the CLEC prior to being committed or rejected.   • Service Requests which have not yet reached the due date.

Business Rules:
Provisioning Notification Completeness is determined by counting the number of completed Local Service Requests and then dividing by the total number of Local Service Requests received that are eligible to complete.

Calculation:
Provisioning Notification Completeness = [(Count of Completed Local Service Requests)/(Total Number of Local Service Requests Received That are Eligible to Complete in the Reporting Period)] X 100

Report Structure:
• Fully Mechanized, Partially Mechanized, Total Mechanized, Non-Mechanized   • State and Region   • CLEC Specific   • CLEC Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month • Total number of LSRs • Total number of Rejects • Total Number of Errors • State and Region • Count of Orders Completed Without Manual Intervention • Count of Firm Order Commitments • Count of Syntax Rejects • Count of Legacy System Rejects • Count of Orders Submitted • Interface Type • Order Activity Type • Original order date for rejected orders • Rejection Notice Date and Time • Service Type • Volume Category • Manual Fallout (for Mechanized Orders Only)	• Report Month • Total number of LSRs • Total number of Errors • Adjusted Error Volume • State and Region • Count Orders Completed Without Manual Intervention • Count of Order Commitments • Count of Syntax Rejects • Count of Legacy System Reject • Count of Orders Submitted • Interface Type • Order Activity • Service Type • Volume Category

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Percent Order Accuracy

Definition:
Customers expect that their service provider will deliver precisely the service ordered and all the features specified. A service provider that is unreliable in fulfilling orders, will not only generate ill-will with customers when errors are made, but will also incur higher costs to rework orders and to process customer complaints. This measurement monitors the accuracy of the provisioning work performed by the ILEC, in response to CLEC orders. When the ILEC provides the comparable measure for its own operation, it is possible to know if provisioning work performed for CLECs is at least as accurate as that performed by the ILEC for its own retail local service operations.

Exclusions:
• Orders canceled by the CLEC
• Order Activities of the ILEC associated with internal or administrative use of local services.
• For resubmissions impact on due date measure, ILEC would not have to comply if tying final accepted order to original order is technically infeasible (But feasibility issue will be revised as systems are upgraded.)

Business Rules:
For CLEC Results:
For each order completed during the reporting period, the original account profile and the order that the CLEC sent to the ILEC are compared to the services and features reflected upon the account profile as it existed following completion of the order by the ILEC. An order is "completed without error" if all service attribute and account detail changes (as determined by comparing the original and the post order completion account profile) completely and accurately reflect the activity specified on the original and any supplemental CLEC orders. "Total number of orders completed" refers to the total number of order completion notices sent to the CLEC by the ILEC for each reporting dimension identified below.
For ILEC Results:
Same computation as for the CLEC with the clarifications noted below.
Other Clarifications and Qualification:
• Order Supplements - If the CLEC initiates any supplements to the originally submitted order, for the purposes of reflecting changes in customer requirements, then the cumulative effect of the initial order and all the supplemental orders will be compared. Differences will be determined by comparing the pre- and post-order completion account profiles for the affected customer.
• Completion Notices - To the extent that the ILEC supplies a completion notice containing sufficient information to perform validation of the order accuracy, then the Completion Notice information can be utilized in lieu of the comparison of the "before" and "after" account profiles. Use of the completion notice for this purpose would need to be at the mutual agreement of the ILEC and the CLEC.
• All Orders - The comparison is between the CLEC order and the account profile as it existed before and after order completion.
• Service Profile - If a sample is employed for this measurement, then the ILEC should also be prepared, if requested, to demonstrate that the order activity types represented within each service type for both the ILEC and CLEC sample are representative of actual experiences for each entity.
• Sampling may be utilized to establish order accuracy provided the results produced are consistent with the reporting dimensions specified, the sample methodology is disclosed in advance and reflects generally accepted sampling methodology and the sampling process may be audited by the CLEC.

Calculation:
Percent Order Accuracy = [(Σ Orders Completed w/o Error)/(ΣOrders Completed)] X 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month	• Report Month
• Count of Orders Completed Without Manual Intervention	• Count Orders Completed Without Manual Intervention

• Count of Firm Order Commitments • Count of Syntax Rejects • Count of Legacy System Rejects • Count of Orders Submitted • Interface Type • Order Activity Type • Original order date for rejected orders • Rejection Notice Date and Time • Service Type • Volume Category • Manual Fallout (for Mechanized Orders Only)	• Count of Order Commtments • Count of Syntax Rejects • Count of Legacy System Reject • Count of Orders Submitted • Interface Type • Order Activity • Service Type • Volume Category
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

Report/Measurement:
Percent Completions/Attempts without Notice or with Less Than 24 Hours Notice.

Definition:
CLECs need adequate notice of order completion activities. They can be made to look disorganized by ILECs providing service without such advance notice: Customers and CLECs may even be unable to schedule necessary vendors on the scene to complete the installation, resulting in ILEC technicians being turned away and customer frustration with the CLEC. An ILEC could cause a great deal of harm to the CLEC competitively, yet look like it is providing parity or above parity service by the results other provisioning measures. A measurement capturing any non-parity in the occurrence of surprise or short-notice service deliveries also is critical to affording CLECs a reasonable opportunity to compete.

Exclusions:
• Rejection Interval - None
• Jeopardy Interval - None
• Firm Order Commitment Interval - None
• Completion Notification Interval - None
• Percent Jeopardies – None
• Completions or Attempts Without Notice or With less than 24-hours' notice delivery that the CLEC specifically requested.

Business Rules:
For CLEC Results:
Calculation would exclude any successful or unsuccessful service delivery that CLEC was informed of at least 24 hours in advance. ILEC may also exclude from calculation deliveries on less than 24 hours' notice that CLEC requested.
For ILEC Results:
The ILEC reports completions for which ILEC technicians delivered service to customers without giving sufficient advance notice to customers, sales or to internal account team to arrange for appropriate vendors to be on hand. Calculation of insufficient notice is similar to CLEC calculation (none or less than 24 hours). Similar surprise service deliveries are calculated for ILEC affiliate's account representatives.

Calculation:
Percent Completions or Attempts without Notice or with Less Than 24 Hours Notice = [(Completion Dispatches (Successful and Unsuccessful) With No FOC or FOC Received Within 24 Hours of Due Date)/(All Completions)] X 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month	• Report Month
• Interface Type	• Interface Type
• Service Type	• Service Type
• CLEC Order Number	• Status Type (Rejection, FOC, Jeopardy Type,
• Order Submission Date	• Completion Notice)
• Order Submission Time	• Average Status interval
• Status Type (Rejection, FOC, Jeopardy Type,	• Standard error of status interval
• Completion Notice)	• Number of Orders Reflected In Result
• Status Notice Date	• Standard Order Activity
• Status Notice Time	• Number of Statuses Provided
• Standard Order Activity	
• Order Due Date	

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Percent Service Loss from Early Cuts

Definition:
Customers must not be subjected to unscheduled service disruptions because of lengthy or uncoordinated cutovers of loops with interim or permanent number portability or the provision of any other UNEs that require disconnection and reconnection of a customer.

Exclusions:
• None

Business Rules:
For CLEC Results:
For coordinated loop cuts, the same loop is moved from an existing port to what is effectively a different port (The CLEC collocation point). Translation disconnects also are reported if they occur too early in a conversion involving local number portability.   For each conversion, the ILEC will track whether the cutover time (for facilities and translations) was earlier than the committed due date and time that appeared on the FOC. The total number of early cutovers will be divided by the total number of customer conversions that were completed during the reporting period. The resulting ratio will be expressed as a percentage.
For ILEC Results:
ILECs would use retail residential or business POTS outside move activity as an analog. An outside move occurs when a customer, with existing service, moves from one premises to another within the same central office area without disconnecting and reconnecting service. With inside moves the customer keeps their own phone number. Although an outside move involves disconnecting an existing loop from an operating port and reconnecting a different loop (within the same office) to that same port, the work involved is very similar (i.e. coordinated re-termination).

Calculation:
Percent Service Loss from Early Cuts = [(Customer Conversion Where Cutover Time is Earlier Than Due Date and Time)/(All Customer Conversions Completed During Reporting Period)] x 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month	• Report Month
• Service Type	• Number of Early Conversions
• Order Activity	• Number of Conversions >30 Minutes Late
• Committed Due Date and Time (from Firm Order Commitments	• Total Number of Conversions
• Completion Date and Time	• Average Conversion Interval
• Geographic Scope	• Standard Error of Conversion Interval
• Volume Category	• Geographic Scope
• Record Type or Invoice Type	• Volume Category
• Number of Records With Errors	• Record Type or Invoice Type
• Number of Records Delivered	• Number of Records With Errors
	• Number of Records Created

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Percent Service Loss from Late Cuts

Definition:
Customers must not be subjected to unscheduled service disruptions because of lengthy or uncoordinated cutovers of loops with interim or permanent number portability or the provision of any other UNEs that require disconnection and reconnection of a customer.

Exclusions:
• None

Business Rules:
For CLEC Results:
For coordinated loop cuts, the same loop is moved from an existing port to what is effectively a different port (The CLEC collocation point). Translation disconnects also are reported if they occur too late in a conversion involving local number portability. For each conversion, the ILEC will track whether the cutover time (for facilities and translations) was later than the committed due date and time that appeared on the FOC. The total number of cutovers that were completed more than 1 hour past the committed due date and time for 1-10 lines and more than 2 hours for more than 10 lines will be divided by the total number of customer conversions that were completed during the reporting period. The resulting ratio will be expressed as a percentage.
For ILEC Results:
ILECs would use retail residential or business POTS outside move activity as an analog. An outside move occurs when a customer, with existing service, moves from one premises to another within the same central office area without disconnecting and reconnecting service. With inside moves the customer keeps their own phone number. Although an outside move involves disconnecting an existing loop from an operating port and reconnecting a different loop (within the same office) to that same port, the work involved is very similar (i.e. coordinated re-termination).

Calculation:
Percent Service Loss from Late Cuts =[(Customer Conversions Where Cutover Time is More than 30 Minutes Past Due Date and Time)/(All Customer Conversions Completed During Reporting Period)] x 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month	• Report Month
• Service Type	• Number of Early Conversions
• Order Activity	• Number of Conversions >30 Minutes Late
• Committed Due Date and Time (from Firm Order Commitment)	• Total Number of Conversions
	• Average Conversion Interval
• Completion Date and Time	• Standard Error of Conversion Interval
• Geographic Scope	• Geographic Scope
• Volume Category	• Volume Category
• Record Type or Invoice Type	• Record Type or Invoice Type
• Number of Records With Errors	• Number of Records With Errors
• Number of Records Delivered	• Number of Records Created

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Percent of Orders Cancelled or Supplemented at the Request of the ILEC

Definition:
Prior to or during the cutover, the ILEC may encounter internal problems with its network which make it impossible to perform the cutover at the agreed upon time. This results in significant inconvenience to the customer. As a result, the percent of orders that are cancelled or supped by the CLEC at the request ILEC must be measured. This measurement must be expressed as a fraction to understand both the number and the percent of times that the order must be supped at the ILEC Request.

Exclusions:
• None

Business Rules:
For CLEC Results:
The percent of orders that are supplemented or cancelled due to a jeopardy and network problems attributable to the ILEC. The ILEC will track the number of orders that they request to be supplemented or changed. The total number of supplements and cancels from the CLEC will also be tracked. The ratio will be calculated by dividing the number of orders supplemented or cancelled at the request of the ILEC divided by the total supplements or cancels by the CLEC. For this formula, the resulting ratio will be expressed as a percentage.
For ILEC Results:
ILECs would use retail residential or business POTS outside move activity as an analog. An outside move occurs when a customer, with existing service, moves from one premises to another within the same central office area without disconnecting and reconnecting service. With inside moves the customer keeps their own phone number. Although an outside move involves disconnecting an existing loop from an operating port and reconnecting a different loop (within the same office) to that same port, the work involved is very similar (i.e. coordinated re-termination).

Calculation:
Percent of Orders Cancelled or Supplemented at the Request of the ILEC = [(Number of Orders Cancelled or Supplemented at the Request of the ILEC During Reporting Period)/(Number of Cancels and Supplements During the Reporting Period)] x 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month	• Report Month
• Service Type	• Number of Early Conversions
• Order Activity	• Number of Conversions >30 Minutes Late
• Committed Due Date and Time (from Firm Order Commitment)	• Total Number of Conversions
• Completion Date and Time	• Average Conversion Interval
• Geographic Scope	• Standard Error of Conversion Interval
• Volume Category	• Geographic Scope
• Record Type or Invoice Type	• Volume Category
• Number of Records With Errors	• Record Type or Invoice Type
• Number of Records Delivered	• Number of Records With Errors
	• Number of Records Created

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Percent of Coordinated Cuts Not Working as Initially Provisioned

Definition:
Customers may experience either a full or partial loss of service due to defective ILEC facilities where the CLEC is reusing the customer's existing loop, or due to the switching platform not being properly set up with the 10 Digit / 6 Digit trigger being applied. To ensure that the CLEC's customers are not disproportionately losing dial tone, the percent of ILEC caused service interruptions outside of the initial customer cutover must be measured.

Exclusions:
• None

Business Rules:
For CLEC Results:
The ILEC will track the number of Coordinated Cuts that are not working as initially provisioned by the number of provisioning troubles by the CLEC during the cutover process that are ultimately attributable to the ILEC. The measurement will be calculated by dividing the number of troubles by the total number of Coordinated Cuts provisioned for the CLEC during the reporting period.
For ILEC Results:
ILECs would use retail residential or business POTS outside move activity as an analog. An outside move occurs when a customer, with existing service, moves from one premises to another within the same central office area without disconnecting and reconnecting service. With inside moves the customer keeps their own phone number. Although an outside move involves disconnecting an existing loop from an operating port and reconnecting a different loop (within the same office) to that same port, the work involved is very similar (i.e. coordinated re-termination).

Calculation:
Percent of Coordinated Cuts Not Working as Initially Provisioned = [(Number of Troubles Attributable to the ILEC on Initial Customer Cutover)/(Number of Coordinated Cuts Provisioned During The Reporting Period)] X 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month	• Report Month
• Service Type	• Number of Early Conversions
• Order Activity	• Number of Conversions >30 Minutes Late
• Committed Due Date and Time (from Firm Order Commitment)	• Total Number of Conversions
• Completion Date and Time	• Average Conversion Interval
• Geographic Scope	• Standard Error of Conversion Interval
• Volume Category	• Geographic Scope
• Record Type or Invoice Type	• Volume Category
• Number of Records With Errors	• Record Type or Invoice Type
• Number of Records Delivered	• Number of Records With Errors
	• Number of Records Created

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Average Recovery Time
Definition:
Customers do not expect lengthy service outages due to problems experienced during the coordinated cut process. If problems do occur, the ILEC should work to minimize the customer outage. If a problem is found and can be isolated to the ILEC side of the network, the time between notification and resolution by the ILEC must me measured to ensure that CLEC customers do not experience unjustifiably lengthy service outages.
Exclusions:
• None
Business Rules:
For CLEC Results: When there is a problem during the porting process, the ILEC will track the average duration of each service outage or trouble. The duration time is defined as the time from the initial trouble notification until the trouble has been restored and an index number issued by the CLEC. For each trouble, the ILEC will track the duration of the trouble. The sum of all time associated with the troubles will be divided by the number of troubles. Average recovery time does not include time restoring a customer to the ILEC. **For ILEC Results:** ILECs would use retail residential or business POTS outside move activity as an analog. An outside move occurs when a customer, with existing service, moves from one premises to another within the same central office area without disconnecting and reconnecting service. With inside moves the customer keeps their own phone number. Although an outside move involves disconnecting an existing loop from an operating port and reconnecting a different loop (within the same office) to that same port, the work involved is very similar (i.e. coordinated re-termination).
Calculation:
Average Recovery Time = $\Sigma\{[(\text{Date \& Time That Trouble is Closed By CLEC})-(\text{Date \& Time Initial Trouble is Opened With ILEC})]/(\text{Number of Troubles Referred to the ILEC})\}$
Report Structure:
• CLEC Specific • CLEC Aggregate • BST Aggregate
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month • Service Type • Order Activity • Geographic Scope • Volume Category • Record Type or Invoice Type • Number of Troubles • Date & Time Trouble is Received • Date & Time Trouble is Closed • Interval of Each Trouble	• Report Month • Standard Error of Conversion Interval • Geographic Scope • Volume Category • Record Type or Invoice Type • Number of Troubles • Date & Time Trouble is Received • Date & Time Trouble is Closed • Interval of Each Trouble

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Mean Time to Restore a Customer to the ILEC

Definition:
If there are extenuating circumstances during a port such that the customer is out of service for an extended amount of time, the CLEC may determine that the problem cannot be resolved quickly, and the service must be restored to the ILEC. The CLEC will communicate to the ILEC Coordinator that the customer needs to be restored to the ILEC until the situation can be resolved. To ensure that the customer is not out of service for an extended period of time during the restoration to the ILEC, the time it takes to re-establish the end user's service must be also be measured.

Exclusions:
• None

Business Rules:
For CLEC Results:
If the customer has been out of service, and there are issues that cannot be fixed or resolved in an expeditious manner, the CLEC may request to reestablish the customer on the existing ILEC facilities. This will allow both the ILEC and the CLEC to resolve the issues and the port to proceed at a later date without further outage of the customer's service. For each customer restored to ILEC service, the ILEC will track the cumulative amount of time between the initial notification from the CLEC until the time when the end user or CLEC has confirmed that their service has been restored. The cumulative time will be divided by the number of customers restored to the ILEC during the reporting period.
For ILEC Results:
ILECs would use retail residential or business POTS outside move activity as an analog. An outside move occurs when a customer, with existing service, moves from one premises to another within the same central office area without disconnecting and reconnecting service. With inside moves the customer keeps their own phone number. Although an outside move involves disconnecting an existing loop from an operating port and reconnecting a different loop (within the same office) to that same port, the work involved is very similar (i.e. coordinated re-termination).

Calculation:
Mean Time to Restore A Customer to the ILEC = $\Sigma\{[(\text{Date \& Time Service is Restored to Customer}) - (\text{Date \& Time of Initial Notification to Restore})]/(\text{Number of Circuits Restored to ILEC})\}$

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month • Service Type • Order Activity • Geographic Scope • Volume Category • Record Type or Invoice Type • Number of Circuits Restored • Date & Time Notification is Received • Date & Time Restoration is Completed • Interval of Each Restoration	• Report Month • Total Number of Conversions • Average Conversion Interval • Standard Error of Conversion Interval • Geographic Scope • Volume Category • Record Type or Invoice Type

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Percent of Customers Restored to the ILEC

Definition:
In addition to monitoring the time it takes for the ILEC to re-establish the end-user's service, the frequency that a CLEC customer must be restored to the ILEC must be measured.

Exclusions:
• None

Business Rules:
For CLEC Results:
The ILEC will track the number of circuits that need to be reestablished with the ILEC and divide them by the cumulative number of coordinated cuts during the established period. This measurement will be expressed as a percentage.
For ILEC Results:
ILECs would use retail residential or business POTS outside move activity as an analog. An outside move occurs when a customer, with existing service, moves from one premises to another within the same central office area without disconnecting and reconnecting service. With inside moves the customer keeps their own phone number. Although an outside move involves disconnecting an existing loop from an operating port and reconnecting a different loop (within the same office) to that same port, the work involved is very similar (i.e. coordinated re-termination).

Calculation:
Percent Of Customers Restored to the ILEC = [(Number of Circuits Restored to ILEC/Number of Total Circuits Attempted to Port During Interval] X 100

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month	• Report Month
• Service Type	• Standard Error of Conversion Interval
• Order Activity	• Geographic Scope
• Geographic Scope	• Volume Category
• Volume Category	• Record Type or Invoice Type
• Record Type or Invoice Type	
• Number of Circuits Restored	
• Number of Circuit Port Attempts	

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Call Abandonment Rate – Ordering & Provisioning
Definition:
When CLECs experience operational problems dealing with ILEC processes or interfaces, prompt responses by ILEC support centers are required to ensure that the CLEC customers are not adversely affected. Any delay in responding to CLEC center requests for support (e.g., request for a vanity telephone number) will, in turn, adversely impact the CLEC retail customer who may be holding on-line with the CLEC customer service agent. This measure monitors the ILEC's handling of support calls from CLECs to determine if responsiveness is at parity with the service the ILEC provides its retail customers seeking assistance.
Exclusions:
• None
Business Rules:
For CLEC Results:
The Call Abandonment Rate is based on the number of calls received by the call distribution system of the ILEC center for the reporting period, regardless whether the call actually is transferred to ILEC personnel for processing. In addition, a count is accumulated of all calls that are subsequently terminated by the calling party or dropped due to equipment failure before transfer to the service agent for processing. The accumulated count of calls abandoned (terminated) is divided by the total count of calls received at the monitored center.
Call Abandonment Rate is monitored through the call management technology utilized to distribute calls to ILEC agents supporting CLEC activities (i.e., call receipt personnel staffing ILEC support centers intended for CLEC use). Results for each measure are to be provided separately for each center handing CLEC inquiries. If centers deployed by the ILEC support multiple functions (e.g., both maintenance and provisioning) then the results for each function supported should be separately reported.
Calculation:
Call Abandonment Rate = [(Count of Calls Terminated Before Answer During the Reporting Period)/(Count of All Calls Placed in Queue During the Reporting Period)] X 100
Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate
Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Month	• Month
• Center Identifier	• Center Identifier
• Center Type	• Center Type
• Mean Speed of Answer	• Mean Speed of Answer
• Standard Error for Mean Speed of Answer	• Standard Error for Mean Speed of Answer
• Count of Calls Answered	• Count of Calls Answered
• Count of Calls Abandoned	• Count of Calls Abandoned

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Mean Jeopardy Interval for Maintenance and Trouble Handling

Definition:
Customers need to know that the CLEC is monitoring the status of their repair closely. The CLEC, therefore, needs jeopardy notification if repair commitments are not going to be met. This measure, when collected and compared for the CLEC and ILEC, monitors whether the CLEC receives the same jeopardy notices regarding repairs as the ILEC provides for its own or an affiliate's retail customers.

Exclusions:
• Trouble tickets that are canceled at the CLEC's request
• ILEC trouble reports associated with administrative service
• Instances where the CLEC or an ILEC customer requests that a ticket be "held open" for monitoring
• Subsequent Reports (additional reports on an already open ticket)
• Any trouble type tracking that parties agree are technically unfeasible or operationally prohibitive
• A trouble ticket created for tracking and/or monitoring requests for clarifying information (e.g. confirmation of customer ownership from CLEC support centers.
• Tickets used to track referrals of misdirected calls

Business Rules:
CLEC Results:
Jeopardy Interval is the remaining time between the pre-existing committed maintenance or trouble handing appointment date and time and the date and time the ILEC issues a notice to the CLEC indicating an appointment is in jeopardy of being missed. The scheduled appointment time will be assumed to be 5:00 p.m. local time unless other information is communicated. The date and time of the jeopardy notice delivered by the ILEC is subtracted from the scheduled completion date to establish the jeopardy interval for any appointment placed in jeopardy. The jeopardy interval is accumulated by service group with the resulting accumulated time then divided by the count of scheduled appointments associated with the particular service.
For ILEC Results:
Computations are the same as for the CLEC with the clarifications outlined below.
Other Clarifications and Qualification:
All intervals are measured in hours and hundredths of an hour rounded to the nearest hundredth. The lack of electronic bonding for maintenance does not excuse the ILEC from jeopardy reporting requirements.

Calculation:
Mean Jeopardy Interval for Maintenance and Trouble Handling = Σ {[(Date and Time of Committed Due Date for Maintenance or Trouble Handling)-(Date and Time of Jeopardy Notice)]/(Number of Maintenance or Trouble Handling Appointments Jeopardized in Reporting Period)}

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	**Data Retained Relating To BST Performance:**
• Report Month
• CLEC Ticket Number
• Ticket Submission Time
• Ticket Submission Date
• Ticket Completion Time
• Trouble Resolution Time
• Trouble Resolution Date
• Service Type
• WTN or CKTID (a unique identifier for elements combined in a service configuration)
• Trouble Type
• Geographic Scope	• Report Month
• Average Restoral Interval
• Standard Error for the Average Restoral Interval
• Service Type
• Trouble Type
• Geographic Scope
• Number of Tickets
•

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Percent Customer Troubles Resolved Within Estimate

Definition:
When customers experience trouble on working services, they naturally expect the services to be restored within the time frame promised. When such commitments are not fulfilled, an already unsatisfactory condition, in the customer's eyes, becomes even worse. When this measure is collected for the ILEC and CLEC and then compared, it can be used to establish that CLECs are receiving equally reliable (as compared to the ILEC operations) estimates of the time required to complete repairs.

Exclusions:

- Trouble tickets that are canceled at the CLEC request
- ILEC trouble reports associated with administrative service
- Instances where the CLEC or an ILEC customer requests a ticket be "held open" for monitoring
- Trouble tickets created for tracking and/or monitoring requests for clarifying information (e.g., confirmation of customer ownership from CLEC support centers).
- Tickets used to track referrals of misdirected calls.

Business Rules:

For CLEC Results:

The computation of the measure is as follows: The quoted repair completion date and time is compared to the actual repair date and time (ticket closure as defined in Time to Restore metric). In each instance where the actual repair date and time is on or before the initially provided estimated or quoted date and time to restore, the count of "troubles resolved within estimate" is incremented by one for the relevant "service type" and "trouble type." The resulting count is divided by the total number of troubles resolved (for the consistent service and trouble type), for the report period, in all instances where an estimated interval was provided or a standard interval existed.

For ILEC Results:

Same calculation as for CLEC.

Other Clarifications and Qualification:

The ILEC analog for this measure is derived by comparing the actual date and time of ILEC trouble ticket closure compared to the projected trouble clearance date and time established through the ILEC agent's on-line interaction with the ILEC's work management system, regardless of whether or not the ILEC currently quotes this information to its retail customer.

- See the "Time To Restore" measurement for discussion of analogous ILEC maintenance activities (e.g., trouble resolution).
- The "quoted" or "estimated" time to restore is the actual scheduled time projection returned by the ILEC work management system or the standardized repair interval that the ILEC uses for its own operations when equivalent service arrangements are involved.
- A trouble is "resolved" when the ILEC issues notice to the CLEC that the customer's service is restored to normal operating parameters.
- If the ILEC supplies only the estimated repair interval, then the estimated date and time of repair is determined by adding the repair interval to the date and time that the CLEC logged the repair request with the ILEC.

Calculation:

Percent Customer Troubles Resolved Within Estimate = [(Count of Customer Troubles Resolved By The Quoted Resolution Time and Date)/(Count of Customer Troubles Tickets Closed)] X 100

Report Structure:

- CLEC Specific
- CLEC Aggregate
- BST Aggregate

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
- Report Month - CLEC Ticket Number - Ticket Submission Time - Ticket Submission Date	- Report Month - Service Type - Trouble Type - Number of Troubles Resolved Within Estimate

• Trouble Resolution Time • Trouble Resolution Date • Service Type • WTN or CKTID (a unique identifier for elements combined in a service configuration) • Trouble Type • Geographic Scope	• Number of Troubles Resolved • Geographic Scope •
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

Report/Measurement:

Call Abandonment Rate – Maintenance

Definition:

When CLECs experience operational problems dealing with ILEC processes or interfaces, prompt responses by ILEC support centers are required to ensure that the CLEC customers are not adversely affected. Any delay in responding to CLEC center requests for support (e.g., request for a vanity telephone number) will, in turn, adversely impact the CLEC retail customer who may be holding on-line with the CLEC customer service agent. This measure monitors the ILEC's handling of support calls from CLECs to determine if responsiveness is at parity with the service the ILEC provides its retail customers seeking assistance.

Exclusions:

- None

Business Rules:

For CLEC Results:

The Call Abandonment Rate is based on the number of calls received by the call distribution system of the ILEC center for the reporting period, regardless whether the call actually is transferred to ILEC personnel for processing. In addition, a count is accumulated of all calls that are subsequently terminated by the calling party or dropped due to equipment failure before transfer to the service agent for processing. The accumulated count of calls abandoned (terminated) is divided by the total count of calls received at the monitored center.

Call Abandonment Rate is monitored through the call management technology utilized to distribute calls to ILEC agents supporting CLEC activities (i.e., call receipt personnel staffing ILEC support centers intended for CLEC use). Results for each measure are to be provided separately for each center handing CLEC inquiries. If centers deployed by the ILEC support multiple functions (e.g., both maintenance and provisioning) then the results for each function supported should be separately reported.

Calculation:

Call Abandonment Rate = [(Count of Calls Terminated Before Answer During the Reporting Period)/(Count of All Calls Placed in Queue During the Reporting Period)] X 100

Report Structure:

- CLEC Specific
- CLEC Aggregate
- BST Aggregate

Level of Disaggregation:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
- Month	- Month
- Center Identifier	- Center Identifier
- Center Type	- Center Type
- Mean Speed of Answer	- Mean Speed of Answer
- Standard Error for Mean Speed of Answer	- Standard Error for Mean Speed of Answer
- Count of Calls Answered	- Count of Calls Answered
- Count of Calls Abandoned	- Count of Calls Abandoned

Retail Analog/Benchmark:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Average Time Allotted To Proof Listing Updates Before Publication

Definition:
CLECs must be provided the same opportunity to review directory listing updates to catch any errors before publication in white pages directories.

Exclusions:
None

Business Rules:
For CLEC Results:
Time Allotted To Proof Listing Updates encompasses the amount of review time afforded to CLECs for the purposes of validating directory listings prior to directory publication. If electronic access permits a CLEC to view, on demand, its customers' listings as they will be published, then this measure is not necessary. An interface availability measurement, however, should be included within the reporting dimensions for the "General" OSS systems measurements. The directory proofing interval information should be captured and retained for each directory published. The interval is measured from the date and time the CLEC receives a final listing of customer-related information that will be contained within the ILEC's next directory publication to the final date and time for submission of changes to the listings provided.
For ILEC Results:
Same calculation as for CLEC.

Calculation:
Average Time Allotted To Proof Listing Updates Before Publication = $\Sigma\{[(\text{Date \& Time of Directory Publication Deadline})-(\text{Date and Time Updates Available for Proofing})]/(\text{Number of Updates Sent for Proofing})\}$

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	**Data Retained Relating To BST Performance:**
• Month	• Month
• Type of Measurement - Directory Listing	• Type of Measurement - Directory Listing
• Directory Close Date (DL only)	• Directory Close Date (DL only)
• List Availability Date (DL only)	• Listing Availability Date (DL only)

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Meantime To Notify CLEC

Definition:
Both CLECs and ILECs must be made aware of major network events in order to notify customers and regulatory agencies (e.g. E-911 agencies, FAA, and other key customer accounts).
To that end, the ILECs must provide the CLECs with timely and detailed information (pertaining to a network incident) to afford CLECs the opportunity to make prudent business decisions regarding management of their own customer base and networks. For example, the ILEC would inform the CLEC that the network incident was caused by a cable cut at a specified location.

Exclusions:
• None

Business Rules:
For CLEC Results:
The results will be based on the time it takes for the ILEC's Centralized Control Center to notify the CLEC and ILEC of a customer impacting network incident in equipment utilized by the CLEC. When the ILEC's Centralized Control Center becomes aware of the network incident, they must electronically notify both the ILEC and the CLEC.
The notification time for each outage will be measured in minutes and divided by the number of outages for the reporting period.
For ILEC Results:
Same computation as for the CLEC.

Calculation:
Meantime To Notify CLEC $= \Sigma\{[(\text{Date and Time ILEC Notified CLEC})-(\text{Date and Time ILEC detected network incident})]/(\text{Count of Network Incidents})\}$

Report Structure:
• CLEC Specific
• CLEC Aggregate
• BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month	• Report Month
• Type of Event	• Type of Event
• Meantime to notify CLEC	• Mean Time to Detect Event
• Number of Events	• Number of Events
• Geographic Scope Indicator	• Geographic Scope Indicator

Retail Analog/Benchmark:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Report/Measurement:
Average Update Interval

Definition:
CLECs must rely on ILEC databases in order to provide accurate E911/911 services, directory listings, directory assistance, and operator services. ILECs currently control the updating of many essential databases, such as the Line Information Database (LIDB); directory listings, E911 Automatic Location Identifier (ALI), Master Street Address Guide (MSAG) and selective routing databases. In addition, accurate and timely loading of NXXs before the LERG (Local Exchange Routing Guide) effectiveness date is vital to CLEC customer's receiving calls from ILEC customers, and it is essential to ensure that customers are charged correctly for local and toll calls. Routing of CLEC's NXXs at the tandem and central office to the proper Public Safety Answering Point (PSAP) for emergency calls also is critical to E911/911 service. Disparity in timely and accurate updates of the above databases can lead to annoying, costly and possibly "life and death" situations for CLEC customers.

Exclusions:
• Updates Canceled by the CLEC • Initial update when supplemented by CLEC • ILEC updates associated with internal or administrative use of local services

Business Rules:
For CLEC Results: The actual update interval is determined for each update processed during the reporting period. It is the elapsed time from the ILEC receipt of a syntactically correct transaction from the CLEC to the ILEC's accurate completion of updating all databases affected by the CLEC activity. Elapsed time for each update is accumulated for each affected database (e.g., E911/911, LIDB, Directory and Directory Listings). The time required to update each database is accumulated and then divided by the associated total number of updates completed within the reporting period. **For ILEC Results:** The ILEC computation is identical to that for the CLEC with the clarifications noted below. **Other Clarifications and Qualification:** • For LIDB, the elapsed time for an ILEC update is measured from the point in time when the ILEC's file maintenance process makes the LIDB update information available until the date and time reported by the ILEC that database updates are completed. • Results for the CLECs are captured and reported at the update level by Reporting Dimension (see below). • The Completion Date is the date upon which the ILEC issues the Update Completion Notice to the CLEC. • If the CLEC initiates a supplement to the originally submitted update and the supplement reflects changes in customer requirements (rather than responding to ILEC initiated changes), then the update submission date and time will be the date and time of ILEC receipt of a syntactically correct update supplement. Update activities responding to ILEC initiated changes will not result in changes to the update submission date and time used for the purposes of computing the update completion interval. • Elapsed time is measured in hours and hundredths of hours rounded to the nearest tenth of an hour. • Because this should be a highly automated process, the accumulation of elapsed time continues through off-schedule, weekends and holidays; however, scheduled maintenance windows are excluded.

Calculation:
Average Update Interval = Σ {[(Completion Date & Time of Database Update)–(Submission Date and Time of Database Change)]/(Total Number of Updates Completed During Reporting Period)}

Report Structure:
• CLEC Specific • CLEC Aggregate • BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month • Database Type • Update Submission Date	• Report Month • Database Type • Mean Interval for Update

• Update Submission Time • Update Completion Date • Update Completion Time • Reporting Dimension • Geographic Scope	• Standard Error of Mean • Number of Updates • Number of Updates With Errors • Geographic Scope
Retail Analog/Benchmark:	
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks	

Report/Measurement:
Percent Update Accuracy

Definition:
CLECs must rely on ILEC databases in order to provide accurate E911/911 services, directory listings, directory assistance, and operator services. ILECs currently control the updating of many essential databases, such as the Line Information Database (LIDB); directory listings, E911 Automatic Location Identifier (ALI), Master Street Address Guide (MSAG) and selective routing databases. In addition, accurate and timely loading of NXXs before the LERG (Local Exchange Routing Guide) effectiveness date is vital to CLEC customer's receiving calls from ILEC customers, and it is essential to ensure that customers are charged correctly for local and toll calls. Routing of CLEC's NXXs at the tandem and central office to the proper Public Safety Answering Point (PSAP) for emergency calls also is critical to E911/911 service. Disparity in timely and accurate updates of the above databases can lead to annoying, costly and possibly "life and death" situations for CLEC customers.

Exclusions:
• Updates Canceled by the CLEC • Initial update when supplemented by CLEC • ILEC updates associated with internal or administrative use of local services

Business Rules:
For CLEC Results: For each update completed during the reporting period, the original update that the CLEC sent to the ILEC is compared to the Database following completion of the update by the ILEC. An update is "completed without error" if the database completely and accurately reflects the activity specified on the original and supplemental update (e.g., orders) submitted by the CLEC. Each Database (e.g., E911/911, LIDB, Directory and Directory Listings) should be separately tracked and reported. **For ILEC Results:** The ILEC computation is identical to that for the CLEC with the clarifications noted below. **Other Clarifications and Qualification:** • For LIDB, the elapsed time for an ILEC update is measured from the point in time when the ILEC's file maintenance process makes the LIDB update information available until the date and time reported by the ILEC that database updates are completed. • Results for the CLECs are captured and reported at the update level by Reporting Dimension (see below). • The Completion Date is the date upon which the ILEC issues the Update Completion Notice to the CLEC. • If the CLEC initiates a supplement to the originally submitted update and the supplement reflects changes in customer requirements (rather than responding to ILEC initiated changes), then the update submission date and time will be the date and time of ILEC receipt of a syntactically correct update supplement. Update activities responding to ILEC initiated changes will not result in changes to the update submission date and time used for the purposes of computing the update completion interval. • Elapsed time is measured in hours and hundredths of hours rounded to the nearest tenth of an hour. • Because this should be a highly automated process, the accumulation of elapsed time continues through off-schedule, weekends and holidays; however, scheduled maintenance windows are excluded.

Calculation:
Percent Update Accuracy = [(Number of Updates Completed Without Error)/(Number Updates Completed)] X 100

Report Structure:
• CLEC Specific • CLEC Aggregate • BST Aggregate

Level of Disaggregation:
See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

Data Retained Relating To CLEC Experience:	Data Retained Relating To BST Performance:
• Report Month • Database Type • Update Submission Date • Update Submission Time	• Report Month • Database Type • Mean Interval for Update • Standard Error of Mean

• Update Completion Date	• Number of Updates
• Update Completion Time	• Number of Updates With Errors
• Reporting Dimension	• Geographic Scope
• Geographic Scope	

Retail Analog/Benchmark:

See Appendix A: AT&T Disaggregation, Analogs and Benchmarks

APPENDIX A: AT&T DISAGGREGATION, ANALOGS AND BENCHMARKS*

Appendix A

Disaggregation Explanation
(Process Level)

Disaggregation
A. Pre-Order OSS Responsiveness
1. Feature Function Availability/Service Availability
2. Facility Availability Qualification of Loops for Advanced Digital Services
3. Street Address Validation
4. Appointment Scheduling
5. Customer Service Records
6. Telephone Number
7. Rejected or Failed Queries (regardless of type)
B. Maintenance & Repair OSS Responsiveness
1. Create (or confirm logging of) a Maintenance Request
2. Obtain Status
3. Obtain Test Results
4. Cancel Request
5. Rejected of Failed Queries (regardless of type)
6. Clearance Notification
7. Closure Notification
C. Collocation
1. Physical Caged
2. Shared Caged
3. Cageless
4. Adjacent On-Site
5. Adjacent Off-Site
6. Augment to Physical
7. Virtual
8. Augment to Virtual
D. Multi-Functional Disaggregation
1. Interface type—for preordering, ordering, billing and maintenance and repair OSS
2. Dispatch and non-dispatch—for provisioning and maintenance measures
3. Volume—for ordering, provisioning, and maintenance measures (a) 1-5 lines, (b) 6-14 lines, and (c) 15+ lines
4. Geographic --All measures should be disaggregated to a state level, if the data is available. Additionally, provisioning and maintenance measures should be disaggregated to the MSA level
5. By CLEC, BST, and all BST affiliates for all measures
6. Center—for OS/DA, ordering & maintenance service center measures
E. Service Order Activities
1. New Service Installations
2. Service Migrations Without Changes
3. Service Migrations With Changes
4. Local Number Porting
5. Inside Move
6. Outside Move
7. Records Change
8. Feature Changes
9. Service Disconnects
10. Translation Disconnects

Disaggregation
11. Standalone Directory Listing (DL)
12. Standalone Directory Assistance (DA) Listing
13. Standalone DL & DA Activity
F. Billing
1.   Record Type (resale, interconnection, UNE)

Disaggregation, Analogs and Benchmarks		
G. Product Disaggregation for (Ordering, Provisioning, and Maintenance & Repair)	**Benchmark-- 95% within x Days unless otherwise noted (resale) for <u>Order Completion Interval</u>**	**Retail analog for other provisioning and maintenance and repair measures**
1. Resold Residence POTS	1. Retail Analog	1. Retail Analog
2. Resold Business POTS	2. Retail Analog	2. Retail Analog
3. Resold BRI ISDN	3. Retail Analog	3. Retail Analog
4. Resold PRI ISDN	4. Retail Analog	4. Retail Analog
5. Resold Centrex/Centrex-like	5. Retail Analog	5. Retail Analog
6. Resold Analog PBX trunks	6. Retail Analog	6. Retail Analog
7. Resold DID Trunks	7. Retail Analog	7. Retail Analog
8. Resold Voice-Grade Private Line	8. Retail Analog	8. Retail Analog
9. Resold DS1 Services	9. Retail Analog	9. Retail Analog
10. Resold DS3 Services	10. Retail Analog	10. Retail Analog
11. Resold >DS3 Services	11. Retail Analog	11. Retail Analog
12. Other Resold Services	12. Retail Analog	12. Retail Analog
13. UNE Platform	13. Retail POTS	13. Retail POTS
14. UNE Channelized DS1 (DS1 loop + multiplexing)	14. 3, 7, and 10 days, for a ,b, and c, volumes respectively	14. DS1
15. Unbundled 8 dB Analog Loops	15. Same as above	15. Retail POTS
16. Unbundled 2-wire Digital Loops	16. Same as above	16. Retail POTS
17. Unbundled 4-wire Digital Loops	17. Same as above	17. Retail POTS
18. Unbundled ADSL Loops	18. Same as above	18. DS1
19. Unbundled HDSL Loops	19. Same as above	19. DS1
20. Unbundled xDSL Loops	20. Same as above	20. DS1
21. Other Unbundled Loops	21. Same as above	21. DS1
22. UNE Analog Switch Port (line side)	22. 2 days	22. POTS
23. UNE BRI Capable Switch Port (line side)	23. 3 days	23. ISDN
24. UNE DS1 Switch Port (line side)	24. 5 days	24. DS1
25. UNE PRI Switch Port (trunk side)	25. 5 days	25. ISDN
26. UNE DID-capable Switch Port (trunk side)	26. 5 days	26.
27. UNE Message Trunk Port	27. 5 days	27. DS1
28. UNE Dedicated DS0 Transport	28. 3, 7, and 10 days, for a ,b, and c, volumes respectively	28. DS1
29. UNE Dedicated DS1 Transport	29. Same as above	29. DS1
30. UNE Dedicated DS3 Transport	30. Same as above	30. DS3
31. Interconnect Trunks (DS0s, DS1s and DS3s,)	31. ILEC Trunks	31. ILEC Trunks
32. Two-Way Trunking, Inbound Augments, separately)	32. ILEC Trunks	32. ILEC Trunks

Disaggregation, Analogs and Benchmarks		
G. Product Disaggregation for (Ordering, Provisioning, and Maintenance & Repair)	**Benchmark— 95% within x Days unless otherwise noted (resale) for <u>Order Completion Interval</u>**	**Retail analog for other provisioning and maintenance and repair measures**
33. ILNP	33. 3, 7, and 10 days, for a ,b, and c, volumes respectively	33. Retail POTS
34. PNP	34. Same as above	**34.** Retail POTS

AT&T Performance Standards By Measure

BellSouth Measure	Standard/Benchmark
1. Average Response Time and Response Interval (Pre-Ordering) 2. Interface Availability (Pre-Ordering) 3. Interface Availability (Maintenance & Repair) 4. Response Interval (Maintenance & Repair)	(See Section D above re: interface, company, and geographic disaggregation) 1. Retail analogs by function. See Section A above. 2. 99.5 % availability for all OSS interfaces. 3. 99.5% availability for all OSS interfaces. 4. Retail analogs by function. See Section B above.
1. Percent Flow-through Service Requests 2. Order Acknowledgement Timeliness 3. Order Acknowledgement Completeness 4. Percent Rejected Service Requests 5. Reject Interval 6. Firm Order Commitment Timeliness 7. Firm Order Commitment/Rejection Response Completeness 8. Speed of Answer in Ordering Center 9. Percent Order Accuracy	(See Section G above re: products) (See Section D above re: interface, company, and geographic, and volume disaggregation) 1. 98% flow-through, with an improvement plan if BST's current methodology is not rejected by the Commission. 2. 100% of all Mechanized Acknowledgements Are Returned Within 15 Minutes of Receiving LSR 3. Mechanized Acknowledgements Are Sent 100% of Time 4. Diagnostic 5. 95% or greater within: mechanized-- 1 hour, partially mechanized—5 hours, non-mechanized--24 hours 6. 95% or greater within: mechanized-- 1 hour, partially mechanized—5 hours, non-mechanized--24 hours 7. Firm Order Commitments or Reject Responses are Returned on 100% of LSRs. 8. 95% within 20 seconds, 100% within 30 seconds 9. 99% of Completed CLEC Orders Are Accurate
1. Mean Held Order Interval & Distribution Intervals 2. Average Jeopardy Notice Interval & % of Orders Given Jeopardy Notices 3. Percent Orders Completed On Time 4. Average Completion Interval 5. Average Completion Notice Interval 6. Provisioning Notification Completeness 7. Coordinated Customer Conversions 8. % Provisioning Troubles w/i 30 days of Service Order Activity 9. Percent Completions/Attempts without Notice or with Less Than 24 Hours Notice 10. Percent Service Loss from Early Cuts	(See Section G above for product specific benchmark or retail analog) (See Section D above re: company, and geographic, dispatch, and volume disaggregation) 1. Retail Analog 2. Retail Analog 3. Retail Analog 4. Benchmark 5. Retail Analog 6. Completion notification sent for 98% of completed service orders 7. <10 lines – 100% within 1 hour >11 lines – 100% within 2 hours 8. Retail analog 9. $\geq$ 98 percent of completions and completion attempts should receive more

BellSouth Measure	Standard/Benchmark
11. Percent Service Loss from Late Cuts 12. Percent of Orders Cancelled or Supplemented at the Request of the ILEC 13. Percent of Hot Cuts Not Working as Initially Provisioned 14. Average Recovery Time 15. Mean Time to Restore a Customer to the ILEC	than 24 hours notice via a FOC 10. 100% of coordinated cutovers begin no earlier than 15 minutes prior to committed due date and time on FOC 11. 100 % of coordinated cutovers complete no later than 1 hour past the committed due date and time on FOC for 1-10 lines and no later than 2 hours for greater than 10 lines. 12. < 1.0% Supped or Cancelled at Request of ILEC 13. < 1.0% of All Coordinated Cuts Not Working as Initially Provisioned 14. 98% of Customer Recoveries Done Within 1 Hour/ 100% of Customer Recoveries Done Within 2 Hours 15. 98% of Customer Restorral to the ILEC Completed Within 1 Hour and 100% Within 2 Hours
1. Customer Trouble Report Rate 2. Maintenance Average Duration 3. Percent Repeat Troubles w/i 30 days) 4. Average Answer Time - Repair Centers 5. Mean Jeopardy Interval for Maintenance & Trouble Handling 6. Percent Customer Troubles Resolved Within Estimate	(See Section G above for product specific retail analog) (See Section D above re: company, and geographic, dispatch, and volume disaggregation) 1. Retail Analog 2. Retail Analog 3. Retail Analog 4. 95% within 20 seconds, 100% within 30 seconds 5. Retail Analog 6. > 99% Resolved Within Estimate
1. Call Abandonment Rate 2. Mean Time To Answer Calls(Service Center)	(See Section D above re: center) 1. < 1% of calls abandoned from queue 2. > 95% of calls, by center, are answered within 20 seconds All calls are answered within 30 seconds
1. Percent Mechanized Billing Format Accuracy 2. Percent Process Accuracy of Current Billing Activity 3. Percent Switched Local Billing Accuracy 4. Percent On-Time Mechanized Local Services Invoice Delivery 5. Percent On-Time Service Order Billing 6. Percent On-Time Correction/Adjustment Dollars 7. Percent On-Time Switched Local Charges 8. Usage Data Delivery Accuracy 9. Mean Time to Deliver Usage	(See Section D above re: interface and company disaggregation) 1. Retail Analog 2. Retail Analog 3. Retail Analog 4. Retail Analog 5. Retail Analog 6. Retail Analog 7. Retail Analog 8. Retail Analog 9. Retail Analog
1. Mean Time To Answer(OS/DA) 2. Mean Time Allotted to Proof Listing Updates Before	((See Section D above re: company and center) 1. >90% of Calls Answered by a Live Agent in 10 Seconds 2. Review Time May be no More than 4 Hours Less Than the ILECs' review time

BellSouth Measure	Standard/Benchmark
Publication(Disaggregated by Directory)	
1. Database Average Update Interval 2. Database Percent Update Accuracy	(See Section d above re: company) 1. 99.99% Completed in 24 Hours 3. > 99.99% Accurate
1. Percent Call Completion	1. Dedicated trunk groups not to exceed blocking standard of B.01. Common Trunk Groups: Where CLEC/LD traffic share common ILEC trunks: No more than 1% of end offices may have more than 2% blockage a month based on Erlang B.01 scale. Where CLEC traffic traverses a separate common network from ILEC traffic: No more than 2% of end offices may have more than 2% blocking.
1. Collocation Average Response Time 2. Collocation Average Arrangement Time 3. Collocation % of Due Dates Missed	(See Section D above re: company and geographic disaggregation and Section C re: collocation disaggregation) 1. 95% within 10 calendar days 2. Physical-90 calendar days, virtual 60 calendar days 3. 0 misses of committed due date

APPENDIX B: GLOSSARY OF ACRONYMS AND TERMS

A	**ACD**	Automatic Call Distributor - A service that provides status monitoring of agents in a call center and routes high volume incoming telephone calls to available agents while collecting management information on both callers and attendants.
	AGGREGATE	Sum total of all items in like category, e.g. CLEC aggregate equals the sum total of all CLECs' data for a given reporting level.
	ASR	Access Service Request - A request for access service terminating delivery of carrier traffic into a Local Exchange Carrier's network.
	ATLAS	Application for Telephone Number Load Administration System - The BellSouth Operations System used to administer the pool of available telephone numbers and to reserve selected numbers from the pool for use on pending service requests/service orders.
	ATLASTN	ATLAS software contract for Telephone Number
	AUTO CLARIFICATION	The number of LSRs that were electronically rejected from LESOG and electronically returned to the CLEC for correction.
B	**BILLING**	The process and functions by which billing data is collected and by which account information is processed in order to render accurate and timely billing.
	BOCRIS	Business Office Customer Record Information System - A front-end presentation manager used by BellSouth organizations to access the CRIS database.
	BRC	Business Repair Center – The BellSouth Business Systems trouble receipt center which serves large business and CLEC customers.
	BST	BellSouth Telecommunications, Inc.
C	**CKTID**	A unique identifier for elements combined in a service configuration
	CLEC	Competitive Local Exchange Carrier
	CMDS	Centralized Message Distribution System - BellCore administered national system used to transfer specially formatted messages among companies.
	COFFI	Central Office Feature File Interface - A BellSouth Operations System database which maintains Universal Service Order Code (USOC) information based on current tariffs.

Appendix B: Glossary of Acronyms and Terms - Continued

C	COFIUSOC	COFFI software contract for feature/service information
	CRIS	Customer Record Information System - The BellSouth proprietary corporate database and billing system for non-access customers and services.
	CRSACCTS	CRIS software contract for CSR information
	CSR	Customer Service Record
	CTTG	Common Transport Trunk Group - Final trunk groups between BST & Independent end offices and the BST access tandems.
D	DESIGN	Design Service is defined as any Special or Plain Old Telephone Service Order which requires BellSouth Design Engineering Activities
	DISPOSITION & CAUSE	Types of trouble conditions, e.g. No Trouble Found, Central Office Equipment, Customer Premises Equipment, etc.
	DLETH	Display Lengthy Trouble History - A history report that gives all activity on a line record for trouble reports in LMOS
	DLR	Detail Line Record - All the basic information maintained on a line record in LMOS, e.g. name, address, facilities, features etc.
	DOE	Direct Order Entry System - An internal BellSouth service order entry system used by BellSouth Service Representatives to input business service orders in BellSouth format.
	DSAP	DOE (Direct Order Entry) Support Application - The BellSouth Operations System which assists a Service Representative or similar carrier agent in negotiating service provisioning commitments for non-designed services and UNEs.
	DSAPDDI	DSAP software contract for schedule information
E	E911	Provides callers access to the applicable emergency services bureau by dialing a 3-digit universal telephone number.
	EDI	Electronic Data Interchange - The computer-to-computer exchange of inter and/or intra company business documents in a public standard format.
F	FATAL REJECT	The number of LSRs that were electronically rejected from LEO, which checks to see of the LSR has all the required fields correctly populated
	FLOW-THROUGH	In the context of this document, LSRs submitted electronically via the CLEC mechanized ordering process that flow through to the BST OSS without manual or human intervention.
	FOC	Firm Order Commitment - A notification returned to the CLEC committing that the LSR has been received and accepted, including a facilities availability validation and the specified commitment date.

Appendix B: Glossary of Acronyms and Terms - Continued

G		
H	**HAL**	"Hands Off" Assignment Logic - Front end access and error resolution logic used in interfacing BellSouth Operations Systems such as ATLAS, BOCRIS, LMOS, PSIMS, RSAG and SOCS.
	HALCRIS	HAL software contract for CSR information
I	**ISDN**	Integrated Services Digital Network
K		
L	**LCSC**	Local Carrier Service Center - The BellSouth center which is dedicated to handling CLEC LSRs, ASRs, and Preordering transactions along with associated expedite requests and escalations.
	LEGACY SYSTEM	Term used to refer to BellSouth Operations Support Systems (see OSS)
	LENS	Local Exchange Negotiation System - The BellSouth LAN/web server/OS application developed to provide both preordering and ordering electronic interface functions for CLECs.
	LEO	Local Exchange Ordering - A BellSouth system which accepts the output of EDI, applies edit and formatting checks, and reformats the Local Service Requests in BellSouth Service Order format.
	LESOG	Local Exchange Service Order Generator - A BellSouth system which accepts the service order output of LEO and enters the Service Order into the Service Order Control System using terminal emulation technology.
	LMOS	Loop Maintenance Operations System - A BellSouth Operations System that stores the assignment and selected account information for use by downstream OSS and BellSouth personnel during provisioning and maintenance activities.
	LMOS HOST	LMOS host computer
	LMOSupd	LMOS updates
	LNP	Local Number Portability - In the context of this document, the capability for a subscriber to retain his current telephone number as he transfers to a different local service provider.
	LOOPS	Transmission paths from the central office to the customer premises.
	LSR	Local Service Request – A request for local resale service or unbundled network elements from a CLEC.
M	**MAINTENANCE & REPAIR**	The process and function by which trouble reports are passed to BellSouth and by which the related service problems are resolved.
	MARCH	A BellSouth Operations System which accepts service orders, interprets the coding contained in the service order image, and constructs the specific switching system Recent Change command messages for input into end office switches.

Appendix B: Glossary of Acronyms and Terms – Continued

N	NC	"No Circuits" - All circuits busy announcement
O	OASIS	Obtain Availability Services Information System - A BellSouth front-end processor, which acts as an interface between COFFI and RNS. This system takes the USOCs in COFFI and translates them to English for display in RNS.
	OASISBSN	OASIS software contract for feature/service
	OASISCAR	OASIS software contract for feature/service
	OASISLPC	OASIS software contract for feature/service
	OASISMTN	OASIS software contract for feature/service
	OASISNET	OASIS software contract for feature/service
	OASISOCP	OASIS software contract for feature/service
	ORDERING	The process and functions by which resale services or unbundled network elements are ordered from BellSouth as well as the process by which an LSR or ASR is placed with BellSouth.
	OSPCM	Outside Plant Contract Management System - Provides Scheduling Information.
	OSS	Operations Support System - A support system or database which is used to mechanize the flow or performance of work. The term is used to refer to the overall system consisting of hardware complex, computer operating system(s), and application which is used to provide the support functions.
	OUT OF SERVICE	Customer has no dial tone and cannot call out.
P	POTS	Plain Old Telephone Service
	PREDICTOR	The BellSouth Operations system which is used to administer proactive maintenance and rehabilitation activities on outside plant facilities, provide access to selected work groups (e.g. RRC & BRC) to Mechanized Loop Testing and switching system I/O ports, and provide certain information regarding the attributes and capabilities of outside plant facilities.
	PREORDERING	The process and functions by which vital information is obtained, verified, or validated prior to placing a service request.
	PROVISIONING	The process and functions by which necessary work is performed to activate a service requested via an LSR or ASR and to initiate the proper billing and accounting functions.
	PSIMS	Product/Service Inventory Management System - A BellSouth database Operations System which contains availability information on switching system features and capabilities and on BellSouth service availability. This database is used to verify the availability of a feature or service in an NXX prior to making a commitment to the customer.
	PSIMSORB	PSIMS software contract for feature/service

Appendix B: Glossary of Acronyms and Terms – Continued

Q		
R	**RNS**	Regional Negotiation System - An internal BellSouth service order entry system used by BellSouth Consumer Services to input service orders in BellSouth format.
	RRC	Residence Repair Center - The BellSouth Consumer Services trouble receipt center which serves residential customers.
	RSAG	Regional Street Address Guide - The BellSouth database, which contains street addresses validated to be accurate with state and local governments.
	RSAGADDR	RSAG software contract for address search
	RSAGTN	RSAG software contract for telephone number search
S	**SOCS**	Service Order Control System - The BellSouth Operations System which routes service order images among BellSouth drop points and BellSouth Operations Systems during the service provisioning process.
	SOIR	Service Order Interface Record - any change effecting activity to a customer account by service order that impacts 911/E911.
T	**TAFI**	Trouble Analysis Facilitation Interface - The BellSouth Operations System that supports trouble receipt center personnel in taking and handling customer trouble reports.
	TAG	Telecommunications Access Gateway – TAG was designed to provide an electronic interface, or machine-to-machine interface for the bi-directional flow of information between BellSouth's OSSs and participating CLECs.
	TN	Telephone Number
	TOTAL MANUAL FALLOUT	The number of LSRs which are entered electronically but require manual entering into a service order generator.
U	**UNE**	Unbundled Network Element
V		
W	**WTN**	A unique identifier for elements combined in a service configuration
X		
Y		
Z		
Σ		Sum of:

APPENDIX C: BELLSOUTH'S AUDIT POLICY

BELLSOUTH'S AUDIT POLICY:

BellSouth currently provides many CLECs with audit rights as a part of their individual interconnection agreements. However, it is not reasonable for BellSouth to undergo an audit for every CLEC with which it has a contract. As of June 1999, that would equate to over 732 audits per year and that number is continually growing. BellSouth developed a proposed Audit Plan for use by the parties to an audit If requested by a Public Service Commission, BellSouth will agree to undergo a comprehensive audit of the aggregate level reports for both BellSouth and the CLECs for each of the next five (5) years (2001-2005), to be conducted by an independent third party.   The results of that audit will be made available to all the parties subject to proper safeguards to protect proprietary information. This aggregate level audit includes the following specifications:
1.The cost shall be borne 50% by BellSouth and 50% by the CLECs.

2.   The independent third party auditor shall be selected with input from BellSouth, the PSC, if applicable, and the CLEC(s).

3.   BellSouth, the PSC and the CLECs shall jointly determine the scope of the audit.

BellSouth reserves the right to make changes to this audit policy as growth and changes in the industry dictate.

Statistical Methodology

Basic concepts and Terms

When making the comparison of BellSouth results to AT&T results, it is necessary to employ comparative methods that are based upon generally accepted statistical procedures. It is important to use statistical procedures because all of the BellSouth-AT&T processes that will be measured are processes that contain some degree of randomness. The use of statistical procedures recognizes the practical existence of measurement variability, and assists in translating results data into decision-making information. AT&T and BellSouth agree that the use of the modified "Z-test," for the difference between the two means (BellSouth and AT&T) or two percentages, or the difference in two proportions, is the appropriate statistical test for the determination of parity when the result for BellSouth and AT&T are compared. The modified Z-tests are applicable if the number of data points are greater than or equal to 10 for a given measurement. For testing compliance for measures for which the number of data points are 9 or less, a permutation analysis is applicable.

The parties agree that the definition of performance measure parity should be that parity exists when the measured results in a single month (whether in the form of means, percents or proportions) for the same measurement, at equivalent disaggregation, for both BellSouth and AT&T are used to calculate a Z-test statistic and the resulting value is no greater than zero.

The Z-test

The objective of the statistical test is to compare the mean of a sample of the ILEC measurements with the mean of a sample of CLEC measurements. Suppose both samples were drawn from the same population; then the difference between these two sample means (*i.e.*, $DIFF = \underline{x}CLEC - \underline{x}ILEC$) will have a sampling distribution which will

(i) have a mean of zero; and
(ii) have a standard error that depends on the population standard deviation and the sizes of the two samples.

Statisticians utilize an index for comparing measurement results for different samples. The index employed is a ratio of the difference in the two sample means (being compared) and the standard deviation estimated for the overall population. This ratio is known as a z-score. The z-score compares the two samples on a standard scale, making proper allowance for the sample sizes.

Statistical Methodology

The computation of the difference in the two sample means is straightforward.

$$DIFF = \underline{x}CLEC - \underline{x}ILEC$$

The standard deviation is less intuitive. Nevertheless, statistical theory establishes the fact that

$$s_{DIFF}^2 = \frac{s^2}{n_{CLEC}} + \frac{s^2}{n_{ILEC}},$$

where $\square$ is the standard deviation of the population from which both samples are drawn. That is, the squared standard error of the difference is the sum of the squared standard errors of the two means being compared.[1]

We do not know the true value of the population $\square$ because the population cannot be fully observed. However, we can estimate $\square$ given the standard deviation of the ILEC sample ($\square$ILEC).[2] Hence, we may estimate the standard error of the difference with

$$s_{DIFF} = \sqrt{\frac{s_{ILEC}^2}{n_{CLEC}} + \frac{s_{ILEC}^2}{n_{ILEC}}} = \sqrt{s_{ILEC}^2 \left[\frac{1}{n_{CLEC}} + \frac{1}{n_{ILEC}} \right]}$$

If we then divide the difference between the two sample means by this estimate of the standard deviation of this difference, we get what is called a "z-score".

$$z = \frac{DIFF}{s_{DIFF}}$$

Proposed Test Procedures

Applying the Appropriate Test

Three z-tests will be described in this section: the "Test for Parity in Means", the "Test for Parity in Rates", and the "Test for Parity in Proportions".

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[1] Winkler and Hays, *Probability, Inference, and Decision.* (Holt, Rinehart and Winston: New York), p. 370.
[2] Winkler and Hays, *Probability, Inference, and Decision.* (Holt, Rinehart and Winston: New York), p. 338.

Statistical Methodology

Test for Parity in Means

Several of the measurements in the LCUG SQM document are averages (*i.e.*, means) of certain process results. The statistical procedure for testing for parity in the ILEC and CLEC means is described below:

1. Calculate for each sample the number of measurements (nILEC and nCLEC), the sample means ($\underline{x}$ILEC and $\underline{x}$CLEC), and the sample standard deviations ($\square$ILEC and $\square$CLEC).

2. Calculate the difference between the two sample means; if *larger* CLEC mean indicates possible violation of parity, use $DIFF = \underline{x}$CLEC - $\underline{x}$ILEC, otherwise reverse the order of the CLEC mean and ILEC mean.

3. To determine a suitable scale on which to measure this difference, we use an estimate of the population variance based on the ILEC sample, adjusted for the sized of the two samples: this gives the standard error of the difference between the means as

$$\square DIFF = \sqrt{s^2_{ILEC}\left[\frac{1}{n_{CLEC}} + \frac{1}{n_{ILEC}}\right]}$$

4. Compute the test statistic

$$z = \frac{DIFF}{s_{DIFF}}$$

5. Determine a critical value c so that the type one error is suitably small.

6. Declare the means to be in violation of parity if $z > c$.

Test for Parity in Proportions

Several of the measurements in the LCUG SQM document are proportions derived from certain counts. The statistical procedure for testing for parity in the ILEC and CLEC proportions is described below. It is the same as that for means, except that we do not need to estimate the ILEC variance separately.

1. Calculate for each sample sizes (nILEC and nCLEC), and the sample proportions (pILEC and pCLEC).

Statistical Methodology

2. Calculate the difference between the two sample means; if *larger* CLEC proportion indicates worse performance, use $DIFF = p\text{CLEC} - p\text{ILEC}$, otherwise reverse the order of ILEC and CLEC proportions.

3. Calculate an estimate of the *standard error for the difference* in the two proportions according to the formula

$$s_{DIFF} = \sqrt{p_{ILEC}(1 - p_{ILEC})\left[\frac{1}{n_{CLEC}} + \frac{1}{n_{ILEC}}\right]}$$

4. Hence compute the test statistic

$$z = \frac{DIFF}{s_{DIFF}}$$

5. Determine a critical value c so that the type one error is suitably small.

6. Declare the means to be in violation of parity if $z > c$.

Test for Parity in Rates

A rate is a ratio of two counts, *num/denom*. An example of this is the trouble rate experience for POTS. The procedure for analyzing measurements results that are rates is very similar to that for proportions.

1. Calculate the numerator and the denominator counts for both the ILEC and CLEC, and hence the two rates $r\text{ILEC} = num\text{ILEC}/denom\text{ILEC}$ and $r\text{CLEC} = num\text{CLEC}/denom\text{CLEC}$.

2. Calculate the difference between the two sample rates; if *larger* CLEC rate indicates worse performance, use $DIFF = r\text{CLEC} - r\text{ILEC}$, otherwise take the negative of this.

3. Calculate an estimate of the *standard error for the difference* in the two rates according to the formula

$$s_{DIFF} = \sqrt{r_{ILEC}\left[\frac{1}{denom_{CLEC}} + \frac{1}{denom_{ILEC}}\right]}$$

4. Compute the test statistic

Statistical Methodology

$$z = \frac{DIFF}{s_{DIFF}}$$

5. Determine a critical value c so that the type one error is suitably small.

6. Declare the means to be in violation of parity if $z > c$.

Service Quality Measurements:
Reporting Expectations And Report Format

Basic Operating Principles

Performance Results Comparison:

For all performance measurement metrics, AT&T results for the report month are to be shown in comparison to BellSouth retail results for the same period. The difference between the AT&T and BellSouth retail results for the performance metric and an indication where the AT&T result is lesser in quality compared to BellSouth will also be shown.

Separate Results Reporting:

BellSouth shall also report separately on its performance for each reporting dimension as provided to: (1) its own retail customers, (2) any of its affiliates that provide local service, (3) competing carriers (CLECs) in the aggregate, and (4) AT&T. The "affiliate" category above includes any BellSouth affiliate that purchases local service for resale or purchases unbundled network elements from BellSouth.

Detailed Reporting:

Detailed reporting shall be provided only to AT&T unless written permission is provided to do otherwise. Reporting to AT&T shall include, for each measure, a representation of the dispersion around the average (mean) of the measured results for the reporting period (e.g. percent of 1-4 lines installed in the 1st day, 2nd day, 3rd day, and > 10 days, etc.)

Disaggregation:

Measurement data shall be reported in a manner consistent with natural geographic and operational areas. AT&T and BellSouth shall agree upon the appropriate disaggregation within 30 days of the commission approval of the Interconnection Agreement. Such disaggregation shall be at a level necessary to reveal underlying differences in performance, which could mask parity comparison. For purposes of this Agreement, the parties concur that reporting must be disaggregated at a level lower than the statewide or LATA-wide level (preferably at the MSA Metropolitan Statistical Area level.)

The reporting dimensions in the Formula Quick Reference Guide (Attachment 1) provide the disaggregation level for each Performance Measurement.

Service Quality Measurements:
Reporting Expectations And Report Format

Raw Data:

BellSouth shall provide all data records captured in its observation for the reporting period for all performance measurement reports. A corresponding data file will be provided for each performance measurement report which contains the associated data records.

Each record will contain a minimal set of data corresponding to the CLEC retained data described in the performance measurement definition. A column heading will be provided for each field in the record. The raw data records will include delimiters between data fields. The raw data files will be provided in a format that can be used as direct input into a common database management system such as Microsoft ACCESS.

Raw Data User's Guide:

BellSouth shall provide explicit instructions of what is contained in the raw data files, including column heading definitions, column purpose and data field code definitions. BellSouth shall provide instructions on how to gain access to reports and raw data. BellSouth shall comprehensively describe how to recreate the performance result reports using the raw data records. When instructions need clarity, BellSouth shall receive input from AT&T and make appropriate changes as agreed to by both parties.

Timely Delivery of Reports and Raw Data:

Reports and raw data files shall be made available to AT&T no later than ten (10) calendar days following the close of the calendar report month.

Failure to Report in a Timely Manner:

Unless otherwise agreed to by AT&T, failure of BellSouth to provide timely reports as to any performance measurement result shall be considered a failure by BellSouth to meet the minimum level of performance specified in the Agreement.

Changes to Performance Reporting Formats or Raw Data File Formats:

Changes to any performance report format will be conducted as set forth in Section 6 of Attachment 9.

Service Quality Measurements:
Reporting Expectations And Report Format

Data Update or Revision:

BellSouth shall notify AT&T within three (3) business days of a determination that reports and/or data previously provided to AT&T under this Agreement are in need of revisions or updates. Such notification shall include the reason for the revision or update and a specific plan for providing such revisions or updates, including the identification of the metrics involved and those calculations or comparisons that BellSouth is proposing to modify to accurately reflect BellSouth performance. BellSouth shall provide the revised reports to AT&T within five (5) business days of first notifying AT&T of the need for revisions or updates.

Benchmark Reporting

The general structure for reporting benchmark results shall be the same for the different measures/sub-measures and will consist of three components. The first component, is the monthly performance results over a period of time. The second component is performance results for each measure/sub-measures for the current month. Finally, the third component of the reporting structure is a summary of any adjustments to the data made in the process of calculating the data, including a description of how many records were excluded from analysis and the reason for the exclusion (i.e., excluded due to business rules pertaining to the measure).

An outline of the report is shown below. Reporting will be presented in a manner consistent with the Basic Operating Principles outlined above.

1. Monthly Benchmark attainment Over a Period of Time
2. Results For The Current Month
3. Adjustment to Data
   A. Records Excluded Due to Business Rules

Statistical Reporting

The general structure for reporting statistical results shall be the same for the different measures/sub-measures and will consist of three components. The first component, is the monthly test statistics over a period of time. The second component is test statistic for each measure/sub-measures for the current month and the parity outcome. Finally, the third component of the reporting structure is a summary of any adjustments to the data made in the process of running the tests, including a description of how many records were excluded from analysis and the reason for the exclusion (i.e., excluded due to business rules, or due to statistical/methodological rules pertaining to the measure). This component is important to assure that the reported results can be audited.

Service Quality Measurements:
Reporting Expectations And Report Format

An outline of the report is shown below. Reporting will be presented in a manner consistent with the Basic Operating Principles outlined above.

1. Monthly Test Statistics Over a Period of Time
2. Results For The Current Month
3. Adjustment to Data
   A. Records Excluded Due to Business Rules
   B. Records Excluded Due to Statistical Rules

Service Quality Measurements:

Formula Quick Reference Guide:

The Formula Quick Reference Guide represents the measures that AT&T requires and the formulas for the data. The Guide is separated by Measurement Designations: Order Provisioning (OP), Maintenance and Repair (MR), General (GE), Billing (BI), Operator Services / Directory Assistance & Listings (OS, DA, & DL), Network Performance (NP), Collocation Provisioning (CP), Database Updates (DU), and Interconnect / Unbundled Elements and Combos (IUE).

Measurement Designation refers to the measurement category and number. Measurement Name describes the measurement being reported. Measurement Formula represents the formula used to calculate the measurements. Reporting Dimensions represents the subcategories of measures required. Each item in the column for Reporting Dimensions marked with a (*) is detailed in Attachment 2 to this Appendix C - Reporting Dimensions.

Service Quality Measurements:
Reporting Expectations And Report Format
ATTACHMENT 1:
FORMULA QUICK REFERENCE GUIDE

Measurement Designation:	Measurement Name:	Measurement Formula:	Reporting Dimensions
Ordering and Provisioning (OP)			
OP-1	Average Completion Interval	Average Completion Interval = Σ [(Completion Date & Time) - (Order Submission Date & Time)] /(Count of Orders Completed in Reporting Period)	• Company • Service Type* • Order Activity* • Geographic Scope • Volume Category
OP-2	Percent Orders Completed on Time	Percent Orders Completed on Time = (Count of Orders Completed within the ILEC Committed Due Date) / (Count of Orders Completed in Reporting Period) x 100	• Company • Service Type* • Order Activity* • Geographic Scope • Volume Category
OP-3	Average Offered Interval	Average Offered Interval = Σ [(Committed Due Date & Time) – (Date & Time of Receipt of valid Service Request)]/(Number of Committed Due Dates)	• Company • Service Type* • Order Activity* • Geographic Scope • Volume Category
OP-4	Percent Order Accuracy	Percent Order Accuracy = (Σ Orders Completed w/o Error)/ (Σ Orders Completed) x 100	• Company • Interface Type • Service Type* • Order Activity* • Volume Category
OP-5	Percent Mechanized Order Flow Through	Percent Mechanized Order Flow Through = [(Total Number of Orders Processed Without Manual Intervention)/(Total Number of Orders Completed)] x 100	• Company • Interface Type • Service Type* • Order Activity* • Volume Category
OP-6	Percent Orders Rejected	Percent Orders Rejected = [Number of Orders Rejected Due to Error or Omission/Number of Orders Received by the ILEC During Reporting Period] x 100	• Company • Interface Type • Service Type* • Order Activity* • Volume Category

Service Quality Measurements:
Reporting Expectations And Report Format

Measurement Designation:	Measurement Name:	Measurement Formula:	Reporting Dimensions
OP-7	Average Submissions Per Order	Average Submissions Per Order = Σ[(Number of Firm Order Confirmations) + (Number of Rejections Issued)/(Number of Firm Order Confirmations	• Company • Interface Type • Service Type* • Order Activity* • Volume Category

	Ordering and Provisioning (OP)		
OP-8	Reject Interval	Reject Interval = Σ [(Date and Time of Order Rejection) - (Date and Time of Order Receipt or Acknowledgment)]/(Number of Orders Rejected in Reporting Period)	• Order Activity* • Company • Interface Type • Service Type* • Geographic Scope
OP-9	FOC Interval	FOC Interval = Σ [(Date and Time of Firm Order Confirmation) - (Date and Time of Order Acknowledgment)]/(Number of Orders Confirmed in Reporting Period)	• Order Activity* • Company • Interface Type • Service Type* • Geographic Scope
OP-10	Jeopardy Interval	Jeopardy Interval = Σ [(Date and Time of Committed Due Date for the Order) - (Date and Time of Jeopardy Notice)]/(Number of Orders Jeopardized in Reporting Period). For all orders jeopardized on or before the scheduled due date.	• Order Activity* • Company • Interface Type • Service Type* • Geographic Scope
OP-11	Completion Notice Interval	Completion Notice Interval = Σ [(Date and Time of Notice of Completion Issued to the CLEC) - (Date and Time of Work Completion by the ILEC)]/(Number of Orders Completed in Reporting Period)	• Order Activity* • Company • Interface Type • Service Type* • Geographic Scope

Service Quality Measurements:
Reporting Expectations And Report Format

Measurement Designation:	Measurement Name:	Measurement Formula:	Reporting Dimensions
OP-12	Percent Completions / Attempts without Notice or with Less Than 24 Hours Notice.	Percent Completions/Attempts without Notice or with Less Than 24 Hours Notice = [Completion Dispatches (Successful and Unsuccessful) With No FOC or FOC Received Within 24 Hours of Due Date/All Completions] x 100	• Order Activity* • Company • Interface Type • Service Type* • Geographic Scope
OP-13	Percent Jeopardies	Percent Jeopardies = (Number of Orders Jeopardized in Reporting Period)/(Number of Orders Confirmed in Reporting Period)	• Order Activity* • Company • Interface Type • Service Type* • Geographic Scope
OP-14	Average Coordinated Conversion Interval	Average Coordinated Conversion Interval = Σ [(Date & Time Re-termination is Completed by the ILEC) – Date and Time of Initial Service Interruption (disconnect of facilities and translations for customer transferring service)/All Customer Conversions Completed During Reporting Period)] x 100	• Company • Type of Loop or UNE Combination Cutover and Type of NP involved (Service Type*) • Order Activity* • Geographic Scope • Volume Category

Ordering and Provisioning (OP)			
OP-15	Percent Service Loss from Early Cuts	Percent Service Loss from Early Cuts = (Customer Conversion Where Cutover Time is Earlier Than Due Date and Time)/(All Customer Conversions Completed During Reporting Period) x 100	• Company • Type of Loop or UNE Combination Cutover and Type of NP involved (Service Type*) • Order Activity* • Geographic Scope • Volume Category

Service Quality Measurements:
Reporting Expectations And Report Format

Measurement Designation:	Measurement Name:	Measurement Formula:	Reporting Dimensions
OP-16	Percent Service Loss from Late Cuts	Percent Service Loss from Late Cuts = (Customer Conversion Where Cutover Time Is More Than 30 Minutes Past Due Date and Time)/All Customer Conversion Completed During Reporting Period) x 100	• Company • Type of Loop or UNE Combination Cutover and Type of NP involved (Service Type*) • Order Activity* • Geographic Scope • Volume Category
OP-17	Held Order Interval	Held Order Interval = Σ(Reporting Period Close Date - Committed Order Due Date) / (Number of Orders Pending and Past The Committed Due Date) for all orders pending and past the committed due date	• Company • Service Type* • Reason for Hold (no facilities, no equipment, workload, other) • Geographic Scope
OP-18	Percent Orders Held $\geq$ 90 Days	Percent Orders Held $\geq$ 90 Days = (Number of Orders Held for $\geq$ 90 days) / (Total Number of Orders Pending But Not Completed) x 100	• Company • Service Type* • Reason for Hold (no facilities, no equipment, workload, other) • Geographic Scope
OP-19	Percent Orders Held $\geq$ 15 Days	Percent Orders Held $\geq$ 15 Days = (Number of Orders Held for $\geq$ 15 days) / (Total Number of Orders Pending But Not Completed) x 100	• Company • Service Type* • Reason for Hold (no facilities, no equipment, workload, other) • Geographic Scope

Service Quality Measurements:
Reporting Expectations And Report Format

		Ordering and Provisioning (OP)	
NOP-20	**Percent of Orders Cancelled or Supplemented at the Request of the ILEC**	Number of Orders Cancelled or Supplemented at the Request of the ILEC = [(Number of orders cancelled or supped at the request of the ILEC during reporting period)/(Number of cancels and sups during the reporting period)] x 100	• Company • Type of Loop or UNE Combination Cutover and Type of NP involved (i.e. ILNP, PNP or ILNP-to-PNP conversion). See also Service Type (Appendix 1) • Order Activity • Geography • Volume Category • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)
NOP-20	**Percent of Orders Cancelled or Supplemented at the Request of the ILEC**	Number of Orders Cancelled or Supplemented at the Request of the ILEC = [(Number of Orders Cancelled or Supplemented at the Request of the ILEC During Reporting Period)/(Number of Cancels and Supplements During the Reporting Period)] x 100	• Company • Type of Loop or UNE Combination Cutover and Type of NP involved (i.e. ILNP, PNP or ILNP-to-PNP conversion). See also Service Type (Appendix 1) • Order Activity • Geography • Volume Category • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)

Service Quality Measurements:
Reporting Expectations And Report Format

| NOP-21 | Percent of Hot Cuts Not Working as Initially Provisioned | Percent of Hot Cuts Not Working as Initially Provisioned = (Number of Troubles Attributable to the ILEC on Initial Customer Cutover)/(Number of Hot Cuts Provisioned During The Reporting Period) X100 | • Company
• Type of Loop or UNE Combination Cutover and Type of NP involved (i.e. ILNP, PNP or ILNP-to-PNP conversion). See also Service Type (Appendix 1)
• Order Activity
• Geography
• Volume Category
• Type of Record (end user or access) or Invoice (resale, UNE or interconnection services) |

	Ordering and Provisioning (OP)		
NOP-22	Average Recovery Time	Average Recovery Time = Σ[(Date & Time That Trouble is Closed By CLEC)–(Date & Time Initial Trouble is Opened With ILEC)]/(Number of Troubles Opened With ILEC)	• Company • Type of Loop or UNE Combination Cutover and Type of NP involved (i.e. ILNP, PNP or ILNP-to-PNP conversion). See also Service Type (Appendix 1) • Order Activity • Geography • Volume Category • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)

Service Quality Measurements:
Reporting Expectations And Report Format

NOP-23	Mean Time to Restore a Customer to the ILEC	Mean Time to Restore A Customer to the ILEC = $\Sigma[($Date & Time Service is Restored to Customer$)-($Date & Time of Initial Notification to Restore$)]/$Number of Circuits Restored to ILEC	• Company • Type of Loop or UNE Combination Cutover and Type of NP involved (i.e. ILNP, PNP or ILNP-to-PNP conversion). See also Service Type (Appendix 1) • Order Activity • Geography • Volume Category • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)
NOP-24	Percent of Customers Restored to the ILEC	Percent Of Customers Restored to the ILEC = (Number of Circuits Restored to ILEC/Number of Total Circuits Attempted to Port During Interval) X 100	• Company • Type of Loop or UNE Combination Cutover and Type of NP involved (i.e. ILNP, PNP or ILNP-to-PNP conversion). See also Service Type (Appendix 1) • Order Activity • Geography • Volume Category • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)

Maintenance and Repair (MR)

Service Quality Measurements:
Reporting Expectations And Report Format

MR-1	Mean Time to Restore	Mean Time To Restore = Σ [(Date and Time of Trouble Ticket Resolution Returned to CLEC)-(Date and Time Trouble Ticket Referred to the ILEC)] / (Count of Trouble Tickets Resolved in Reporting Period)	• Service Type* • Trouble Type* • Geographic Scope
MR-2	Mean Jeopardy Interval for Maintenance and Trouble Handling	Mean Jeopardy Interval for Maintenance and Trouble Handling = Σ [(Date and Time of Committed Due Date for Maintenance or Trouble Handling) - (Date and Time of Jeopardy Notice)]/(Number of Maintenance or Trouble Handling Appointments Jeopardized in Reporting Period)	• Service Type* • Trouble Type* • Geographic Scope
MR-3	Repeat Trouble Rate	Repeat Trouble Rate = (Count of Trouble Reports Where More Than One Trouble Report Was Logged for the Same Service Access Line Within a Continuous 30 Day Period) / (Number of Reports in the Report Period) x 100	• Service Type* • Company • Trouble Type* • Geographic Scope
MR-4	Trouble Rate	Trouble Rate = (Count of Initial & Repeated Trouble Reports in the Current Period) / (Number of Service Access Line in Service at End of the Report Period) x 100	• Standard Service Groupings • Company • Trouble Type* • Geographic Scope
MR-5	Percent Troubles Within 30 Days of Install and Other Order Activity	Percent Troubles Within 30 Days of Install and Other Order Activity = (Total Number of Trouble Tickets Associated With Lines That Had Service Order Activity Within 30 Days of the Trouble Report)/(Total Number of Orders Completed in the Report Period	• Service Type* • Company • Trouble Type* • Geographic Scope

Service Quality Measurements:
Reporting Expectations And Report Format

MR-6	Percent Customer Troubles Resolved Within Estimate	Percent Customer Troubles Resolved Within Estimate = (Count of Customer Troubles Resolved By The Quoted Resolution Time and Date) / (Count of Customer Troubles Tickets Closed) x 100	• Company • Service Type* • Trouble Type* • Geographic Scope

General (GE)			
GE-1	Percent System Availability	Percent System Availability = [(Hours Functionality is Available to CLECs During Report Period) / (Number of Hours Functionality was Scheduled to be Available During the Period)] x 100	• Company • Interface type offered for each functional area • Business Period (8:00 AM to 8:00 PM local time vs 8:00 PM to 8:00 AM, weekends and holidays)
GE-2	Mean Time to Answer Calls	Mean Time to Answer Calls = Σ [(Date and Time of Call Answer) - (Date and Time of Call Receipt)]/(Total Calls Answered by Center)	• Support Center Type (i.e., CLEC Maintenance, CLEC Provisioning, ILEC Maintenance, ILEC Provisioning/business office)
GE-3	Call Abandonment Rate	Call Abandonment Rate = (Count of Calls Terminated Before Answer During the Reporting Period)/(Count of All Calls Placed in Queue During the Reporting Period)	• Support Center Type (i.e., CLEC Maintenance, CLEC Provisioning, ILEC Maintenance, ILEC Provisioning/business office)
GE-4	Average Response Interval	Average Response Interval = Σ [(Query Response Date & Time) - (Query Submission Date & Time)] /(Number of Queries Submitted in Reporting Period	• Company • Interface Type • Pre-ordering Query Types* • Maintenance Query Types*

Service Quality Measurements:
Reporting Expectations And Report Format

Billing (BI)			
BI-1	**Mean Time to Provide Recorded Usage Records**	Mean Time to Provide Recorded Usage Records = {Σ[(Data Set Transmission Date)-(Date of Message Recording)]}/(Count of All Messages Transmitted in Reporting Period)	• Company • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)
BI-4	**Percent Usage Accuracy**	Percent Usage Accuracy = [(Number of Usage Records Delivered in the Reporting Period That Reflected Complete Information Content and Proper Formatting) / (Total Number of Usage Records Transmitted)] x 100	• Company • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)
NBI-5	**Percent Mechanized Billing Format Accuracy**	Percent Mechanized Billing Format Accuracy = [(Total Number of Accurate Mechanized Local Bills)/(Total Number of Mechanized Local Bills Processed)] x 100	• Company • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)
NBI-6	**Percent Process Accuracy of Current Billing Activity**	Percent Process Accuracy of Current Billing Activity = {[(|Total Other Charges &Credits Billed Dollars|)+(|Total Detail Of Adjustments Billed Dollars|)]-(|Total Correction & Correction Adjustment Dollars|)}/[(|Total Other Charges & Credits Billed Dollars|)+(|Total Detail Of Adjustment Billed Dollars|)] x 100	• Company • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)
NBI-7	**Percent Switched Local Billing Accuracy**	Percent Switched Local Billing Accuracy = [(|Total Switched Billed Dollars|)-(|Switched Adjustment Dollars|)]/(|Total Switched Billed Dollars|) x 100	• Company • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)
Billing (BI)			

Service Quality Measurements:
Reporting Expectations And Report Format

NBI-8	Percent On-Time Mechanized Local Services Invoice Delivery	Percent On-Time Mechanized Local Services Invoice Delivery = [(Total Number of Mechanized Local Bills Received On Time)/(Total Number of Mechanized Local Bills Processed)] x 100	• Company • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)
NBI-9	Percent On-Time Service Order Billing	Percent On-Time Service Order Billing = [(Sum of the Absolute Value of Timely Other Charges & Credits Dollars)/(Sum of the Absolute Value of Other Charges & Credits Billed Dollars)] x 100	• Company • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)
NBI-10	Percent On-Time Correction/Adjustment Dollars	Percent On-Time Correction/Adjustment Dollars = [(|Total Correction/Adjustment Dollars|)-(|Total Correction/Adjustment Dollars > 60 Calendar Days|)/(|Total Correction/Adjustment Dollars|) x 100	• Company • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)
NBI-11	Percent On-Time Switched Local Charges	Percent On-Time Switched Local Charges = [(Switched Local Charges)-(Switched Local Charges Billed>60 Calendar Days From Date Service Rendered)] x 100	• Company • Type of Record (end user or access) or Invoice (resale, UNE or interconnection services)

Operator Services/Directory Assistance & Listings (OS, DA and DL)			
OS/DA-1	Mean Time To Answer	Mean Time To Answer = Σ [(Date and Time of Call Answer) - (Date and Time of Call Receipt)]/(Total Calls Answered on Behalf of CLECs in Reporting Period)	• Company • Operator Services by Center • Directory Assistance by Center • Directory Listings by Directory
Operator Services/Directory Assistance & Listings (OS, DA and DL)			

Service Quality Measurements:
Reporting Expectations And Report Format

DL-1	Average Time Allotted To Proof Listing Updates Before Publication	Average Time Allotted To Proof Listing Updates Before Publication = Σ[(Date & Time of Directory Publication Deadline) – (Date and Time Updates Available for Proofing)]/ Number of Updates Sent for Proofing	• Company • Operator Services by Center • Directory Assistance by Center • Directory Listings by Directory
Network Performance (NP)			
NP-1	Percent Call Completion	Percent Call Completion = [(Total number of blocked call attempts during busy hour)/(Total number of call attempts during busy hour)] x 100. (inbound and outbound call attempts would be measured separately)	• Trunk Capacity Type (DSO, DS1, DS3, etc. • Dedicated Trunk Groups • Common Trunk Groups where CLEC/LD Traffic Share Common ILEC Trunks. • Common Trunk Groups where CLEC traffic traverses a separate common network from the ILEC traffic. • Availability of 7-digit call back-up to PSAP location • E911/911 Trunk Groups • OS/DA Trunk Groups • By Switch (Serving CLEC) for CLEC • By Switch (Serving CLEC) for ILEC • Company • Geographic
NP-2	Meantime To Notify CLEC	Meantime To Notify CLEC = Σ[(Date and Time ILEC Notified CLEC) – (Date and Time ILEC detected network incident)]/Count of Network Incidents	• Company • Type of Event – By each Reportable Incident Grouping* • By Switch and Tandem
NP-3	Network Performance Parameters	Network Performance Parameters = Σ(Network Performance Parameter Result)/(Number of Tests Conducted)	• Transmission Quality*

Service Quality Measurements:
Reporting Expectations And Report Format

		Collocation Provisioning (CP)	
CP-1	**Meantime To Respond To Collocation Request**	Meantime To Respond To Collocation = Σ [(Request Response Date) – Request Submission Date)]/Count of Request Responses Issued	• Company • Type of Collocation* • Geographic Scope
CP-2	**Meantime To Provide Collocation Arrangement**	Meantime To Provide Collocation Arrangement Request = Σ [(Date & Time Collocation Arrangement is Compete) – (Date & Time Collocation application submitted)]/Number of Collocation Arrangements Complete	• Company • Type of Collocation* • Geographic Scope
CP-3	**Percent Due Dates Missed**	Percent Due Dates Missed = (Number of Orders Not Completed By ILEC Committed Due Date)/Total Number of Orders Completed During the Reporting Period	• Company • Type of Collocation* • Geographic Scope
		Database Updates (DU)	
DU-1	**Average Update Interval**	Average Update Interval = Σ [(Completion Date & Time of Database Update) – (Submission Date and Time of Database Change)]/Total Number of Updates Completed During Reporting Period	• Company • Database Type*
DU-2	**Percent Update Accuracy**	Percent Update Accuracy = [Number of Updates Completed Without Error)/(Number Updates Completed)] x 100l	• Company • Database Type*

Service Quality Measurements:
Reporting Expectations And Report Format

Interconnect / Unbundled Elements and Combos (IUE)			
IUE-1	Function Availability	Function Availability[1] = (Amount of Time[2] a Functionality is Useable[1] by a CLEC in a Specified Period)/(Total Time[2] Functionality Was Intended to Be Useable) Notes: 1. These measures may also be expressed in the negative, that is, in term of unavailability. 2. In some instances, rather than time, the availability will be expressed in terms of transactions executed successfully compared to transactions attempted.	• By unique UNE or UNE combinations requested by AT&T
IUE-2	Timeliness of Element Performance	Timeliness of Element Performance = (Number of Times Functionality Executes Successfully Within the Established Timeliness Standard)/(Number of Times Execution of Functionality was Attempted)	• By unique UNE or UNE combinations requested by AT&T

Service Quality Measurements:
Reporting Expectations And Report Format
ATTACHMENT 2:
REPORTING DIMENSIONS

Service Types:	
	• Resold Residence POTS
	• Resold Business POTS
	• Resold BRI ISDN
	• Resold PRI ISDN
	• Resold Centrex/Centrex-like
	• Resold Analog PBX trunks
	• Resold DID Trunks
	• Resold Voice-Grade Private Line
	• Resold DS1 Services
	• Resold DS3 Services
	• Resold >DS3 Services
	• Other Resold Services
	• UNE Platform (at least DS0 loop + local switch + transport elements)
	• UNE Channelized DS1 (DS1 loop + multiplexing)
	• Unbundled or UNE-derived 8 dB Analog Loops
	• Unbundled or UNE-derived 2-wire Digital Loops
	• Unbundled or UNE-derived 4-wire Digital Loops
	• Unbundled or UNE-derived ADSL Loops
	• Unbundled or UNE-derived HDSL Loops
	• Unbundled or UNE-derived xDSL Loops
	• Other Unbundled or UNE-derived Loops
	• UNE Analog Switch Port (line side)
	• UNE BRI Capable Switch Port (line side)
	• UNE DS1 Switch Port (line side)
	• UNE PRI Switch Port (trunk side)
	• UNE DID-capable Switch Port (trunk side)
	• UNE Message Trunk Port
	• UNE Dedicated DS0 Transport
	• UNE Dedicated DS1 Transport
	• UNE Dedicated DS3 Transport
	• Interconnect Trunks (DS0s, DS1s and DS3s,
	• Two-Way Trunking, Inbound Augments, separately)
	• Common Transport
	• ILNP
	• PNP
	• ILNP-to-LNP conversions

Service Quality Measurements:
Reporting Expectations And Report Format

Standard Order Activities:	• New Service Installations • Service Migrations Without Changes • Service Migrations With Changes • Local Number Porting • Inside Move • Outside Move • Records Change • Feature Changes • Service Disconnects • Translation Disconnects • Standalone Directory Listing (DL) • Standalone Directory Assistance (DA) Listing • Standalone DL & DA Activity

Service Quality Measurements:
Reporting Expectations And Report Format

Pre-Ordering Query Types:	• Due Date Reservation (if separate transaction from Appointment Scheduling) • Feature Function Availability • Facility Availability (if separate transaction from Feature/Function Availability) • Qualification of Loops for Advanced Digital Services • Street Address Validation • Service Availability Information (if separate transaction from Feature/Function Availability) • Appointment Scheduling • Customer Service Records • Telephone Number • Rejected or Failed Queries (regardless of type)
Maintenance Query Types	• Create (or confirm logging of) a Maintenance Request • Obtain Status • Obtain Test Results • Cancel Request • Rejected of Failed Queries (regardless of type) • Clearance Notification • Closure Notification
Order Rejection Reason Codes	• Invalid Address • Address Errors • End User Name Doesn't Match ILEC Records • Incorrect Directory Assistance Listing/Due Date • Duplicate PON • Winback (Customer Returned to ILEC) • ILEC System Problem • TN Already Disconnected
Transmission Quality Parameter:	• Subscriber Loop Loss • Signal to Noise Ratio • Idle Channel Circuit Noise • Loop-Circuit Balance • Circuit Notched Noise • Attenuation Distortion
Type of Collocation:	• Physical within CO (space available at time of request) • Physical within CO (space created in response to request) • Physical outside of CO (space available at time of request) • Physical outside of CO (space created in response to request) • Virtual • Backhauling to neighboring CO • Access to GR-303 compatible concentration equipment (leased UNE alternative)

Service Quality Measurements:
Reporting Expectations And Report Format

	• Other alternatives to physical

Service Quality Measurements:
Reporting Expectations And Report Format

Databases and Switch Tables:	• E911/911 ALI, Selective Router • MSAG • LIDB • OS/DA • DL • NXX tables at CO for call completion and NXX routing • NXX tables at tandem for call completion and NXX routing
Reportable Network Incidents:	***Switching (Local/Tandem):*** • Complete loss of call processing capability from a switch (host/remotes) lasting = > 2 minutes or longer. • Network Incident (Loss of Dial Tone) affecting one thousand access lines. • Media Interest: Any interruption or outage that may cause public or news media attention. ***Transport:*** • EQUIPMENT AND/OR FACILITY FAILURES • Local (200 or more working pairs affected, causing loss of dial tone) • Toll/EAS (Isolation of an entire exchange) > 2 minutes. • Fiber (Any working fiber providing customer service that fails without protection) lasting > 2 Minutes. • A transport equipment failure (E.G. DACS) > 2 minutes. • BROADBAND • Frame Relay (A failure of one or more channelized T1 carrier systems or two or more non-channelized T1 carrier systems. • ATM (A failure of one OC3 or two DS3s) • SMDS (A failure of one DS3 or four T1s) • Packet Switching (Any failure of an access module (AM) or resource module (RM) • NARROWBAND • 5 T1 carrier systems (within a switch) • Fiber (Any working fiber providing customer service that falls without protection) • Media Interest: Any interruption or outage that may cause public or news media attention. ***SS7:*** • Loss of mated pair of STP or SCP > 2 minutes

Service Quality Measurements:
Reporting Expectations And Report Format

- Media Interest: Any interruption or outage that may cause public or news media attention

Trunking:

- Loss of intra/interoffice calling lasting > 2 minutes. (E.G. Toll and/or EAS)
- Media Interest: Any interruption or outage that may cause public or news media attention

911:

- A central office isolation from the E911 network for = > 2 minutes or longer.
- Loss of 25% or more of the trunking capabilities from an E911 tandem to the PSAPs it serves for = > 2 minutes or longer (e.g. translations, trunking frame failure, etc.)
- A PSAP isolation from the E911 network for = > 2 minutes or longer (e.g. translations, trunking problems, etc.)
- A transport cable failure that isolates a central office from the E911 network; (Local switch to the E911 tandem) transport cable failure that isolates a PSAP from the E911 tandem;- A transport cable failure that results in the loss of 25% or more of the trunks/circuits (aggregate from an E911 tandem to the PSAPs served by that Tandem; A transport equipment failure that isolates a central office from the E911 network; A transport equipment failure that isolates a Public Safety Answering Point (PSAP) tandem.; or A transport equipment failure that results in the loss of 25% or more of the trunks/circuits (aggregate) from an E911 tandem to the PSAPs served by that tandem.
- Federal Government, equipment or facility affecting 5 or more military special communication, isolations of FAA location or air ground facilities.- State and local agencies interruptions seriously affecting service to police, fire departments, hospitals, press, military, PBS's

Service Quality Measurements:
Reporting Expectations And Report Format

Trouble Types	
	• Inside (Central Office) Dispatch - Out of Service
	• Outside Dispatch - Out of Service
	• Inside Dispatch – Degraded Service
	• Outside Dispatch – Degraded Service
	• No Access or No Trouble Found
	• NXXs not loaded properly by ILEC
	• NXXs not loaded properly by party other than CLEC/ILEC
	• All Other Troubles
	"Out of Service" means that the customer has no dial tone. "Dispatch" means that ILEC repair personnel must be dispatched to a location outside an ILEC building (to customer premises or other off-site facilities) to resolve the trouble.

Service Quality Measurements:
Reporting Expectations And Report Format

ATTACHMENT 3:

EXAMPLES OF REPORTS

The following report details examples of the two Reports for the first Measurement
Designation OP-1 (Average Completion Interval).

				AT&T	ILEC	Difference	Dispersion
OP-1 Average Completion Interval							
Company				0.00	0.00	0.00	
	Resold Residential Pots			*0.00*	*0.00*	*0.00*	
		New Service Installs		0.00	0.00	0.00	
			Geographic Scope 1	*0.00*	*0.00*	*0.00*	
			Volume Category 1	0.00	0.00	0.00	
			Volume Category 2	0.00	0.00	0.00	
			Volume Category X	0.00	0.00	0.00	
			Geographic Scope X	*0.00*	*0.00*	*0.00*	
			Volume Category 1	0.00	0.00	0.00	
			Volume Category 2	0.00	0.00	0.00	
			Volume Category X	0.00	0.00	0.00	
		Service Migrations		0.00	0.00	0.00	
			Geographic Scope 1	*0.00*	*0.00*	*0.00*	
			Volume Category 1	0.00	0.00	0.00	
			Volume Category 2	0.00	0.00	0.00	
			Volume Category X	0.00	0.00	0.00	
			Geographic Scope X	*0.00*	*0.00*	*0.00*	
			Volume Category 1	0.00	0.00	0.00	
			Volume Category 2	0.00	0.00	0.00	
			Volume Category X	0.00	0.00	0.00	
		Activity X		0.00	0.00	0.00	
			Geographic Scope 1	*0.00*	*0.00*	*0.00*	
			Volume Category 1	0.00	0.00	0.00	
			Volume Category 2	0.00	0.00	0.00	
			Volume Category X	0.00	0.00	0.00	
			Geographic Scope X	*0.00*	*0.00*	*0.00*	
			Volume Category 1	0.00	0.00	0.00	
			Volume Category 2	0.00	0.00	0.00	
			Volume Category X	0.00	0.00	0.00	
	Service X			*0.00*	*0.00*	*0.00*	
		New Service Installs		0.00	0.00	0.00	
			Geographic Scope 1	*0.00*	*0.00*	*0.00*	
			Volume Category 1	0.00	0.00	0.00	
			Volume Category ...	0.00	0.00	0.00	

Service Quality Measurements:
Reporting Expectations And Report Format

					AT&T	ILEC	ILEC Affiliates	Other CLECs
OP 1 Average Completion Interval								
Company					0.00	0.00	0.00	0.00
	Resold Residential Pots				*0.00*	*0.00*	*0.00*	*0.00*
		New Service Installs			**0.00**	**0.00**	**0.00**	**0.00**
			Geographic Scope 1		*0.00*	*0.00*	*0.00*	*0.00*
				Volume Category 1	0.00	0.00	0.00	0.00
				Volume Category 2	0.00	0.00	0.00	0.00
				Volume Category X	0.00	0.00	0.00	0.00
			Geographic Scope X		*0.00*	*0.00*	*0.00*	*0.00*
				Volume Category 1	0.00	0.00	0.00	0.00
				Volume Category 2	0.00	0.00	0.00	0.00
				Volume Category X	0.00	0.00	0.00	0.00
		Service Migrations			**0.00**	**0.00**	**0.00**	**0.00**
			Geographic Scope 1		*0.00*	*0.00*	*0.00*	*0.00*
				Volume Category 1	0.00	0.00	0.00	0.00
				Volume Category 2	0.00	0.00	0.00	0.00
				Volume Category X	0.00	0.00	0.00	0.00
			Geographic Scope X		*0.00*	*0.00*	*0.00*	*0.00*
				Volume Category 1	0.00	0.00	0.00	0.00
				Volume Category 2	0.00	0.00	0.00	0.00
				Volume Category X	0.00	0.00	0.00	0.00
		Activity X			**0.00**	**0.00**	**0.00**	**0.00**
			Geographic Scope 1		*0.00*	*0.00*	*0.00*	*0.00*
				Volume Category 1	0.00	0.00	0.00	0.00
				Volume Category 2	0.00	0.00	0.00	0.00
				Volume Category X	0.00	0.00	0.00	0.00
			Geographic Scope X		*0.00*	*0.00*	*0.00*	*0.00*
				Volume Category 1	0.00	0.00	0.00	0.00
				Volume Category 2	0.00	0.00	0.00	0.00
				Volume Category X	0.00	0.00	0.00	0.00
	Service X				*0.00*	*0.00*	*0.00*	*0.00*
		New Service Installs			**0.00**	**0.00**	**0.00**	**0.00**
			Geographic Scope 1		*0.00*	*0.00*	*0.00*	*0.00*
				Volume Category 1	0.00	0.00	0.00	0.00
				Volume Category ...	0.00	0.00	0.00	0.00

AT&T Performance Incentive Plan

Version 2.0

Introduction

It is well recognized that a meaningful system of self-enforcing consequences for discriminatory ILEC performance is critically important to the protection of the public's interest and the rapid and sustainable development of a competitive local telecommunications market. Incumbent LECs have strong business incentives and means to maintain their current monopolies through the delivery of inadequate and unlawful levels of operations support for CLECs. Thus, an appropriate system of self-enforcing consequences is absolutely necessary to assure that the competitive local telecommunications markets envisioned by the 1996 Act will be able to develop and survive.

In order to be effective, prompt enforcement of appropriate consequences must be assured. Because of the extensive delays inherent in the adjudication and appeals process, CLECs cannot rely solely upon the legal/regulatory process to obtain appropriate remedies for discriminatory ILEC performance. Furthermore, the consequences must provide ILECs with incentives that exceed the benefits it may derive by inhibiting competition, and such consequences must be immediately imposed upon a demonstration of poor ILEC performance. The objective is to set the incentives in amounts that encourage ILECs to take proactive steps to prevent its performance from becoming non-compliant and, when it does reach that level, to correct its performance failures promptly.

It is beyond dispute that any system of self-enforcing consequences must be based upon an underlying set of performance measurements that cover the full panoply of ILEC activities upon which CLECs must rely to deliver their own retail service offerings. The Act requires that these activities, which touch upon every aspect of the business relationship between incumbents and CLECs, must be provided in a non-discriminatory manner. Thus, the interconnection agreements between incumbents and CLECs should ideally serve as a source for performance measurements. However, experience in Kentucky and elsewhere has proven that CLECs have generally been unable to individually negotiate, or even arbitrate, a sufficiently robust set of performance measurements.[1] For that reason, the first step in constructing a system of self-enforcing consequences must include careful consideration of the adequacy of the underlying measurement set. At a minimum, the performance measurements must supply each CLEC with reliable data on the incumbent's performance for that CLEC. Such data must be sufficiently discrete (as to the processes monitored) and detailed (to isolate and compare only comparable conditions) so as to permit a CLEC to enforce the terms of its interconnection agreement with the incumbent. In addition, the underlying performance measurement system should demonstrate quality implementation of the following characteristics:

— A comprehensive set of comparative measurements that monitors all areas of support (i.e., pre-ordering, ordering, provisioning, maintenance & repair and billing) without preference to any particular mode of market entry

— Measurements and methodologies that are documented in detail so that clarity exists regarding what will be measured, how it will

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[1] As a starting point, the CLEC industry generally supports the measurement areas as documented in Local Competition Users Group (LCUG) – Service Quality Measurements

be measured and in what situations a particular event may be excluded from monitoring (such exclusions must also be tracked and reported)

— Sufficient disaggregation of results, so that only the results for similar operational conditions are compared and, particularly, so that the averaging of results will not mask discrimination[2]

— Pre-specified and pro-competitive performance standards exist. This includes identifying reasonably analogous performance delivered by the incumbent to its own operations[3] or, when such comparative standards are not readily identifiable, then absolute minimum standards for performance (benchmarks) are established[4]

— Sound quantitative methodology is used to compare CLEC experiences to analogous incumbent support[5]

— The overall performance measurement system is subject to initial and periodic validation, in order to assure that the performance

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(SQMs), Version 7.0, August 28, 1998.

[2] The importance of sufficient disaggregation is more fully discussed in Attachment A.

[3] Analogous performance must be broadly interpreted and consider not only retail operations of the incumbent but also operations of affiliates. Often the incumbent's asserted lack of analogous performance relies upon very narrow (and inappropriate) interpretation of the term "analogous" to mean "precisely identical" rather than "similar in key aspects." Furthermore, if the incumbent delivers different levels of performance to an affiliate and its the retail operations, the CLEC experience should be compared to the better of the two.

[4] In all cases, benchmarks must provide an efficient competitor with a meaningful opportunity to compete.

[5] As a general rule, when benchmarks are employed, statistical comparisons of the measured result for the CLEC to the benchmark are not appropriate. Typically, the standards state a minimum performance level that is required to support effective competition and the minimum success level that must be demonstrated to attain the benchmark. Thus, the typical form of the standard is, for example, "95% installed within 3 days." Note that in the preceding example a 5% deviation from the benchmark is permitted and, as a result, the potential for random variation of the performance is fully addressed. Any further accommodation of variation, as would occur if statistical procedures were employed, would effectively "double count" forgiveness of variability.

results which form the foundation for all decisions regarding the quality of the performance delivered by the ILEC are correct representations of the CLECs' marketplace experience.

It is critical that a performance measurement system incorporating all of the above characteristics exist before applying an incentive plan, because a robust and independently audited performance measurement system is a prerequisite to any effective system of self-enforcing consequences.[6]

Objectives of the Plan

A system of self-enforcing consequences must fully implement the following objectives:

— Consequences must be based upon the quality of support delivered on individual measures to individual CLECs

— Total consequences, in the aggregate, must have sufficient impact to motivate compliant performance without the need to apply a remedy repeatedly

— The imposition of financial consequences must be prompt and certain, and consequences should be self-executing so that opportunities for delay through litigation and regulatory review are minimized

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[6] For example, business rules for individual performance measurements may provide for automatic exclusions of data points from the calculation. If such provisions are made, however, the exclusions must be according to clearly defined rules and the number of data points excluded for each submeasurement and for each CLEC should be reported on a monthly basis.

— Consequences must escalate as the basis for concluding that a performance failure exists becomes more substantial and/or the performance repeatedly fails to meet the applicable standard

— Additional consequences must apply when non-compliant performance is provided to CLECs on an industry-wide basis

— Exclusions from consequences must be minimized and the exclusions that are provided for must be monitored and limited to assure they do not mask discrimination

— Incumbents must have minimal opportunities to avoid consequences through such means as liability caps, offsetting credits, or a requirement that CLECs must demonstrate an ILEC's intent to harm

— Potential "entanglement" costs must be minimized so that, for example, access to mitigation measures for the incumbent does not become a means to revert to the legal/regulatory process and delay the application of consequences that should be self-enforcing

Structure of Consequences for Discriminatory ILEC Performance

Consequences operating on two tiers are proposed. The first tier addresses the consequences for non-compliant performance delivered to an individual CLEC. The second addresses the consequences for non-compliant performance delivered to the CLEC industry as a whole. In general terms, Tier I provides a form of non-exclusive liquidated damages payable to individual CLECs. Tier II, by contrast, incorporates what can be characterized as regulatory fines that are necessary when the ILEC's performance affects the competitive market – and consumers -- as a whole.

The total amount of Tier I payments (which are only an estimate of the CLECs' actual damages) is unlikely to provide the ILEC with sufficient incentives to take the actions necessary to eliminate its monopoly. Rather, an ILEC may decide to treat such payments as the price for retaining its monopoly and voluntarily incur them as a cost of doing business. Moreover, the harm that results when the ILEC provides discriminatory support for the CLEC industry in the aggregate has a major impact not only on CLECs but also on the operation of the competitive marketplace in general, which directly affects all Kentucky consumers of telecommunications services. Thus, it is appropriate to establish incentives to prevent this type of harm from occurring (or continuing), and both Tier I and Tier II are necessary and complementary elements of an effective system of consequences. Together, they work in tandem to achieve the goals of the Act.

Tier I

A Tier I consequence should be payable to an affected CLEC whenever any performance result indicates support delivered by the ILEC to an individual CLEC fails to meet or exceed the applicable performance standard.[7] The first step in establishing Tier I consequences is to define the rule for determining if performance for a particular period "passes" or "fails" and, if it fails, whether additional consequences are warranted. Defining "pass/fail" rules requires that the underlying measurements be mapped into one of two classes:

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[7] In the course of establishing Tier I consequences, the rights of an individual CLEC to pursue actual damages must be retained. However, if a CLEC sought to pursue a claim for actual damages, it would be reasonable to offset the damage award by any Tier I payments it received from the ILEC for the same time period and performance areas. In addition, a CLEC must retain the right to waive Tier I claims and pursue its individually negotiated contract remedies (if and only if the claims and remedies are not mutually payable.).

(1) those for which the performance standard is parity with analogous incumbent LEC performance results, and

(2) those for which the performance standard is an absolute level of required performance (otherwise known as a benchmark)

The differentiation is important because when parity is the standard, statistical procedures are usually necessary to draw conclusions regarding compliance. In such situations (which should apply to the vast majority of cases), two separate data sets are compared – one for the CLEC and one for the ILEC. Each data set is characterized by a mean and standard deviation. Statistical tests are used to draw a conclusion regarding the likelihood that the data sets with the observed means and standard deviations were drawn from the same population (in this case a support process for CLECs with the same quality and/or timeliness as that employed for the ILEC). The proper test further allows determination that parity does not exist, but it does not quantify "how far out of parity" the process is when parity is not indicated.[8]

In contrast, when a benchmark serves as the performance standard, measurement establishes a performance failure directly and assesses the degree to which performance departs from the standard. As explained below, the detailed mechanism for determining a performance failure differs for each of these types of measurement standards, but the principle governing the application of the Tier I consequence is consistent: the consequence escalates with increasing evidence and level of non-compliant performance.

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[8] Clearly, however, when all other factor are held constant, increased statistical confidence is directly correlated (monotonic) with larger differences in the two sample

Tier I Business Rules for Parity Measurements

1. Use the Modified z-Statistic to Determine Compliance

The determination of whether performance is compliant (i.e., equal to or better than the appropriate standard) is based on the calculation of the modified z-statistic (z).[9] The calculated modified z-statistic is then compared to the cumulative normal distribution table to determine if parity exists.[10] For any such decision rule, the probability of an erroneous decision is known. For example, if the critical value is −3.00 and parity actually exists, the probability of saying it is not is 0.13%.

2. Use Permutation Analysis for Small Samples

Permutation analysis is employed for small data sets (those with 30 or fewer observations in one of the data sets to be compared) to create a probability distribution as an alternative to the cumulative normal distribution.[11] By

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means being compared and therefore is a reasonable indication of how different ILEC performance was for itself versus that of the CLEC in the period of observation.

[9] See: Local Competition Users Group - Statistical Tests for Local Service Parity, February 6, 1998, Version 1.0 for documentation of the calculation and use of the modified z-statistic, which is included as Attachment B.

[10] The modified z-statistic computation provides for the CLEC mean to be subtracted from the ILEC mean. Thus, a negative z-statistic critical value presumes that worse performance exists when the CLEC mean becomes larger than the ILEC mean. For example, worse performance exists when the order completion interval for the CLEC exceeds that for the ILEC. Thus a negative z-statistic critical value is appropriate. On the other hand, for a metric like "% completed within x days", worse performance for the CLEC occurs when the metric result is smaller for the CLEC vis-à-vis the ILEC. In this case a positive z-statistic critical value is appropriate.

[11] See Attachment C for a description of the procedural steps for performing permutation analysis. Again, BST and the CLECs generally concur that permutation analysis is appropriate for data sets of this size.

mutual agreement, permutation analysis can also be employed for larger data sets.

3.   Use the Balancing Critical Value

The threshold level to determine whether or not a performance failure exists is established by balancing Type I and Type II error.[12]   This balance point is a function of the size of the CLEC data set (assuming the ILEC data set is very large) and the extent to which the means for the two data sets differ (assuming that both data sets are normally distributed). Simulation comparing relatively small data sets (as would be likely for a CLEC) to a much larger data set (as would likely exist for an ILEC) demonstrates that the balancing of Type I and Type II error can reasonably be expected to occur in the range of 25% for "samples" with fewer than 100 data points but is about 5% for samples with 1000 data points.[13] The statistical methodology developed by AT&T and Ernst & Young in Kentucky is an appropriate method for calculating the critical values which depend on the sample size and balances Type I and Type II error probabilities for each given submeasure. Furthermore, the definition of the alternative hypothesis required to perform the balancing is fundamental to the applicability of the method. AT&T

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[12]The key consideration is balancing the probability of drawing erroneous conclusions -- either that performance is "bad" when it is actually "good" (Type I error) or that performance is "good" when it is actually "bad" (Type II error). The former error adversely impacts ILECs and the latter adversely impacts CLECs. Unfortunately, reducing the likelihood of one type of error increases the likelihood of the other type of error occurring. Thus the best means to create an equitable outcome for all parties is to balance the Type I and Type II error.

[13] See Response to Question 3 contained in AT&T Ex Parte filed in CC Docket 98-56 dated July 13, 1999.

proposes a value of 0.25 for the parameter δ and appropriately corresponding values for ε and ψ.[1415]

4. Increase Consequences as the Confidence in a "Non-Parity" Conclusion Increases

An appropriate means to take increased confidence into consideration is to provide for higher amounts of monetary consequences as the confidence in the "non-parity" conclusion increases. This is justified because (all other factors held constant) as the difference in the mean performance for the CLEC compared to the ILEC becomes larger, the absolute value of the modified z-statistic also becomes larger for the sample in the time period of interest. Thus, it is appropriate that the performance consequence should escalate based upon the calculated value of the modified z-statistic.

5. After a Failed Parity Test the Consequences Should Escalate and Vary Continuously with Severity of Failure

A parity failure is established for a submeasure by comparing the measured value of the modified z-statistic (z) to the balancing critical value (z*) appropriate for the submeasure's sample size during the given monthly period. Once a submeasure failure is obtained, the calculated remedy should be a continuous function of severity of the failure as measured by the magnitude of the modified z-statistic. In this way small changes in severity lead to small changes in consequences thus assuring that mathematically chaotic behavior is avoided at step thresholds. However, to incent the ILEC appropriately, the change in consequences should increase with each unit of

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[14] Statistical Techniques For The Analysis And Comparison Of Performance Measurement Data. Submitted to Kentucky Public Service Commission (LPSC) Docket U-22252 Subdocket C

severity. This form of consequences as a function of severity is most simply accomplished by the use of a quadratic function of the ratio of the measured modified z score to the balancing critical value (z/z^*). Fixing the value of the quadratic or its slope at three points completely determines the function.

Table 1

Range of modified z-statistic value (z)	Performance Designation	Applicable Consequence ($)
greater than or equal z^*	Compliant	0
less than z^* to $5z^*/3$	Basic Failure	
less than $5z^*/3$ to $3z^*$	Intermediate Failure	$a(z/z^*)^2 + b(z/z^*) + c$
less than $3z^*$	Severe Failure	25,000

Table 1 shows the applicable consequences for each Tier I parity submeasure failure for each CLEC. In this table z^* is the (negative) balancing critical value for the submeasure, and the coefficients of the smooth consequence function are:

a = 5625
b = -11250
c = 8125.

Note that the smooth consequences formula is an explicit function of the ratio of the modified z-statistic and the balancing critical value (z/z^*). This means that the dollar amount does not depend on the number of observations but only on the degree of violation. If we had 100 times as

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[15] See Attachment D for a further discussion of this position.

many observations, with means and standard deviations staying the same, both z and z* will increase by a factor of 10 and the consequences will be unchanged. Note also that both basic and intermediate failures are defined and may occur in the smooth region of the formula. The plan retains these designations to allow for classification of performance for more general performance monitoring such as compliance testing, if needed.

A graph of the applicable consequences as a function of the measured modified z-statistic is given in Attachment G in Figure G-1. The attachment also contains a small step tabulation of the function that approximately represents it in Table G-1.

Examples

Three hypothetical examples of consequence calculations are given in the matrix below.

Example	z*	z	Performance	Consequence
1	-2.00	-1.80	Compliant	$0
2	-2.50	-3.33	Basic Failure	$3,125
3	-3.00	-6.00	Intermediate Failure	$8,125
4	-3.50	-12.00	Severe Failure	$25,000

In example 1 the hypothetical balancing critical value for the submeasure is calculated to be −2.00 on the basis of sample size and equal type I and type II error probabilities. The observed value of the modified z-statistic, based on ILEC and CLEC performance for that submeasure, is −1.80. The ILEC is compliant for this submeasure and no consequences are due to this CLEC.

Example 2 shows a balancing critical value calculated to be −2.50. Furthermore in this example, the measured value of the modified z-statistic is −3.33. This is a Basic Failure and the consequence is calculated to be $3,125 by the formula in Table 1.

In example 3, although the hypothetical balancing critical value is −3.00, the measured value of the modified z-statistic is well below this at −6.00. According to the range of modified z-statistics in Table 1 this is an Intermediate Failure. The same smooth formula is used to calculate the remedy amount as $8,125.

The final example 4 shows a balancing critical value of −3.50, but a very poor measured value of the modified z-statistic of −12.00. According to Table 1 this is classified as a Severe Failure and generates a consequence of $25,000. This is the largest consequence for which the ILEC would be liable for this submeasure this month to this CLEC.

Tier I Business Rules for Benchmark Measurements

1.   Use a "Bright Line" Test for Benchmark Measurements

A benchmark is set to define the level of performance that is judged essential to permit competition to develop on a going-forward basis. As such, the benchmark level is at the lower range of what a viable competitive support process should be capable of delivering on a routine basis. Indeed, to assume otherwise would imply that the benchmark would not be achieved on a routine basis. In all events, because even the most tightly controlled process will produce performance outside the expected range, some margin of error is typically provided for the incumbent. Thus, the limiting performance is expressed as "B% meet or exceed the benchmark" where "B%" is a proportion figure set less than 100% in order to account for random variation considerations. Accordingly, a performance failure should be declared if the calculated performance is not equal to the "B%" level. For example, if the calculated result for a month was 94.5% of all orders completed within 3 days but the benchmark was 95% within 3 days, then a

performance failure occurred. No subsequent application of a statistical test is appropriate.

2. Apply an Adjustment for Small Data Sets When Necessary

Because some measurement results may be calculated using small data sets, some adjustment is warranted. This need arises because the benchmark proportion for a particular measure with few underlying data points may be practically impossible to attain unless the ILEC always performs perfectly. The metric discussed in the prior paragraph can be used to illustrate the point: if only ten orders were completed in the month, then compliance would occur only if all 10 orders were (correctly) completed within three days. One order taking longer than 3 days would mean that, at best, the performance result would be 90% within 3 days, i.e., a failing performance level.

This situation is addressed through application of the following table[16]:

Table 2

CLEC Data Set Size	Benchmark Percentage Adjustments for Small Data Sets (Applicable to Data Sets < 30)		
	85.0%	90.0%	95.0%
5	80.0%	80.0%	80.0%
6	83.3%	83.3%	83.3%
7	85.0%	85.7%	85.7%
8	75.0%	87.5%	87.5%
9	77.8%	88.9%	88.9%
10	80.0%	90.0%	90.0%
20	85.0%	90.0%	95.0%
30	83.3%	90.0%	93.3%

3.   Increase Consequences for Increasingly Poor Performance

As with measurements that are judged against a parity standard, those
compared to a benchmark standard should be subject to additional
consequences as the performance becomes increasingly worse compared to
the benchmark. The escalation is as follows (Note that "B" in Table 3, is the
Benchmark Percentage as determined from Table 2):

Table 3

Range of Benchmark Result (x)	Performance Designation	Applicable Consequence ($)
Meets or exceeds B%	Compliant	0
Meets or exceeds (1.5B-50)% but worse than B%	Basic Failure	$d[x/(100\text{-}B)]^2 + eB[x/(100\text{-}B)^2]$ $+ f[B/(100\text{-}B)]^2 + g$
Meets or exceeds (2B-100)% but worse than (1.5B-50)%	Intermediate Failure	
Worse than (2B-100)%	Severe Failure	25,000

In Table 3 the quantity x is the actually measured proportion and the
coefficients are given by:

$$d = 22500$$
$$e = -45000$$
$$f = 22500$$
$$g = 2500$$

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[16] The table can be expanded to include all possible data set sizes from 1 upward.

A graph of the applicable consequences as a function of the measured benchmark result, x, for B = 95% is given in Attachment G in Figure G-2. The attachment also contains a small step tabulation of the function that approximately represents it in Table G-2.

Example:

As an example of this consequence calculation, consider a benchmark with a proportion B = 95%. Now if the measured performance is 93%, the first and second columns show that this is a Basic Failure. Plugging this 2% failure of the 95% benchmark proportion into the quadratic equation of the third column in the table gives a calculated consequence of $6,100 for this submeasure and CLEC.

Table 3 is applicable for any benchmark expressed as B% proportion better than L level, and all benchmarks may be easily expressed in this form.

Additional Tier I Business Rules Applicable to All Measurements

1. Increase Consequences for Chronic Performance Failures

Regardless of the type of measurement (parity or benchmark), if performance fails to achieve the Compliant level in consecutive reporting periods, then additional consequences should apply. The recommended treatment for chronic failures is to assess a chronic failure over-ride in the third consecutive month of non-compliant performance. When the chronic failure override applies, a consequence equal to a "Severe Failure" ($25,000 per chronic failure per month) should apply until such time as performance for the specific measurement result is again classified as Compliant.[17]

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[17] Alternatively, it is possible to institute consequences for repeated failures as early as the second consecutive month of failure. The amount of the consequence under such a

2. No Additional Protection of the ILEC is needed through Forgiveness Mechanisms or Mitigation Methods

Properly calibrated performance measures and balancing the probabilities of statistical errors eliminate any need for additional forms of protection for incumbents with respect to considerations of random variation.[18] Moreover, a procedural cap such as the one described below should allay any fears that additional protections are necessary for the ILEC.[19]

Tier II

Tier II consequences are intended to enhance the the ILEC's incentives to provide performance that complies with its statutory obligations. Tier I consequences only compensate individual CLECs who actually receive discriminatory treatment from the ILEC. Tier II consequences are designed to counterbalance   the ILEC's incentive to damage not just individual firms but the competitive marketplace itself. Thus, the two types of consequences are complementary, and both are necessary to achieve the intended results.

The applicability of Tier II consequences should be determined using the aggregate data for all CLECs within a particular submeasurement result and

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structure would escalate more gradually. See Attachment A, Table A of MCI Worldcom and AT&T Joint Remedies Proposal Ex Parte filed in CC Docket 98-56, filed June 2, 1999.

[18] See Attachment E for further discussion of random variation and the inappropriateness of providing further mitigation if Type I and Type II error is balanced as recommended in this proposal.

[19] Because the rationale for providing consequence offsets is the possibility of random variation, there is no justification for applying offsets to measurements that are monitored through the use of benchmarks. As explained above, random variability impacts are fully cared for in the structure of the benchmark standard, by permitting in advance a percentage of performance "misses."

disaggregation.[20] Except as noted below, identical business rules and measurements should be utilized as for Tier I. Thus, virtually the same data and computational processes can be utilized for both tiers. The differences are highlighted below and are due largely to a reduction of the consequence threshold below the balancing critical value. The smaller threshold is recommended because higher consequences are proposed, so the confidence in the decision to apply a consequence should be greater.

Because Tier II consequences reflect harm to the public interest in a competitive marketplace, consequences under Tier II, unlike Tier I payments, should be paid to a public fund identified by the Commission and may be used for competitively neutral public purposes.[21]

Tier II Business Rules for Parity Measurements.

The same business rules apply under Tier II to the aggregate (or pooled) data of the individual CLECs as are employed for the individual CLEC data under Tier I, except a smaller consequence threshold is used.[22] As a result, the applicable consequence table (Table 1 above) is modified as follows:

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[20] Each occurrence counts equally in this calculation. Thus, the individual results for individual CLECs are not averaged together; rather the performance for all CLECs is pooled for each submeasurement result. Thus the pooled data analysis effectively creates a "super CLEC" for the purposes of determining Tier II consequences.

[21] Thus, under Tier II, individual CLECs are not compensated.

[22] Alternative methodology exists for determining Tier II consequences. See, for example, the June 2, 1999 Joint AT&T and MCI ex parte filing made with the FCC in CC Docket 98-56.

Table 4

Range of modified z- statistic value (z)	Performance Designation	Applicable Consequence ($)
greater than or equal $5z^*/3$	Indeterminate	0
less than $5z^*/3$ to $3z^*$	Market Impacting	$n [a(z/z^*)^2 + b(z/z^*) + c]$
less than $3z^*$	Market Constraining	n25,000

Here z^* is the balancing critical value for the given submeasure aggregated over all the CLECs, and the coefficients of the smooth consequence function are again:

$a = 5625$

$b = -11250$

$c = 8125.$

The quantity n is the market penetration factor explained below.

A graph of the applicable consequences as a function of the measured modified z-score (z) is given in Attachment G in Figure G-3. The attachment also contains a small step tabulation of the function that approximately represents it in Table G-3.

Tier II Business Rules for Benchmark Measurements

The same business rules apply under Tier II to the aggregate (or pooled) data of the individual CLECs as are employed for the individual CLEC data under Tier I, except that consequences do not apply until the pooled CLEC performance results degrades to a point that is equivalent to an intermediate

failure designation at the Tier I level. As with parity measures, the applicable consequences are adjusted to reflect the broader consequences of poor performance for the entire CLEC industry and the concomitant effects on the market and consumers.

Table 5

Range of Benchmark Result (x)	Failure Designation	Applicable Consequence ($)
Meets or exceeds (1.5B-50)%	Indeterminate	0
Meets or exceeds (2B-100)% but worse than (1.5B-50)%	Market Impacting	$n \{d[x/(100\text{-}B)]^2 + eB[x/(100\text{-}B)^2]$ $+ f[B/(100\text{-}B)]^2 + g\}$
Worse than (2B-100)%	Market Constraining	n25,000

For Table 5, x is the actually measured proportion and the coefficients are again given by:

$$d = 22500$$
$$e = -45000$$
$$f = 22500$$
$$g = 2500$$

The quantity n is the market penetration factor explained below.

A graph of the applicable consequences as a function of the measured benchmark result, x, for B = 95% and n = 10 is given in Attachment G in Figure G-4. The attachment also contains a small step tabulation of the function that approximately represents it in Table G-4.

Establishing the Value of "n" for Tier II

For both Tier II tables (Tables 4 and 5), the value for "n" should be determined based upon the most recent data for the state and company under consideration (in this caseKentucky) relating to resold lines (Table 3.1) and UNE loops (Table 3.3) as reported in the most recent Report of Local Competition published by the FCC.[23] In effect, "n" is a multiplier for the Tier II consequence amount that takes into account, in general terms, the extent of competitive penetration within the state.[24]

Table 6

Lines provided to CLECs/Total ILEC and CLEC Lines	Value of "n"
more than 50%	0
more than 40% to less than or equal 50%	1
more than 30% to less than or equal 40%	2
more than 20% to less than or equal 30%	4
more than 10% to less than or equal 20%	6
more than 5% to less than or equal 10%	8
0% to less than or equal 5%	10

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[23] If a company is not explicitly identified, then the aggregate result for the state would be utilized

[24] The calculation for a particular ILEC and state would be based on the most current data reported to the FCC and be as follows: (resold lines + UNE loops)/(total switched lines).

Thus, as competition becomes established, the size of the applicable Tier II consequence is reduced to zero if the ILEC no longer provides a majority of the local lines to the CLECs in its serving area.

Other Considerations

1.   Procedural Caps May Be Useful If Properly Implemented

In the course of early state consideration of consequence plans, regulators and incumbents expressed concern regarding the possible size of payments that an incumbent might be required to pay. In response, proposals were made to cap incumbents' potential liability. As a threshold matter, it should be noted that this concern reflects a tacit acknowledgement that the performance delivered by the incumbents has to date been largely non-complaint. Moreover, to the extent that any cap is considered at all, the very important difference between absolute and procedural caps must be recognized. As shown below, if the Commission establishes any caps at all, they should be purely procedural and not place an absolute limit on the potential consequence payments due from the ILEC.[25]

The difference between procedural and absolute caps is significant. Absolute caps should be avoided entirely. First, such caps provide an ILEC with the means to evaluate the cost of market share retention through delivery of non-compliant performance. Second, absolute caps send the signal that once the ILEC's performance deteriorates to a particular level (i.e., reaching the absolute cap) then further deterioration is irrelevant.[26]

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[25] In this regard, it should be noted that the main purpose of any system of incentives is to have an ILEC accept its legal responsibility to perform at appropriate levels and not pay any consequences at all.

[26] Similarly, the use of weightings for individual performance measurements to determine the amount of consequences should also be avoided. Any weighting process is inherently subjective and thus arbitrary. Moreover, use of weightings may inappropriately influence the market entry mode selected by a particular CLEC. It is far superior to permit the

Procedural caps, on the other hand, establish a preset level at which the ILEC could seek regulatory review of the consequences that are due; however, the cap would not automatically absolve an ILEC of liability for a consequence. Procedural caps, therefore, avoid both of the problems of absolute caps. They do not provide ILECs with the opportunity to evaluate the "cost" of retaining share through non-compliance. Likewise, they do not absolve an ILEC from consequences for unchecked performance deterioration.

To the extent a procedural cap is employed, it should be tailored to achieve the following:

(1) A meaningful level of consequences must be available before the procedural cap applies;

(2) The procedural cap should apply on a rolling twelve-month period and not to individual months;

(3) The procedural cap should not apply to Tier I consequences for the CLECs but only Tier II consequences.[27] No other caps should be applicable.

(4) To the extent that a procedural cap is exceeded, the ILEC must pay out consequences up to the procedural cap and put the amount in excess of the cap in an escrow account that earns a minimum interest rate as approved by the Commission;

(5) The Commission shall decide whether and to what extent the amount in excess of the procedural cap should be paid out. The ILEC

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market to determine which measures are most important by seeing what functions customers need from CLECs, and that CLECs in turn need from the ILEC.

[27] As noted above, Tier I consequences principally act as a form of liquidated damages. Thus, there is no justification for capping such consequences whether for an individual CLEC or for the CLEC industry as a whole.

should pay out any amount in excess of the cap, including accrued interest, according to Commission order.

The level of the procedural cap must be set high enough that meaningful incentives are immediately payable without intervention of the Commission. To permit otherwise would effectively prevent the performance consequences from being self-enforcing. It is reasonable to expect that any procedural cap should be proportionate to the size of the local market at issue. It is therefore recommended that, if a procedural cap is adopted, that it be determined from the estimated dollar amount that the ILEC stands to retain in monopoly based revenues.[2829]

2.   Other Provisions Protect ILECs From The Impact Of Extraordinary Events

The cut of a single cable may result in higher trouble rates and longer mean times to repair over a short period of time. This is referred to as clustering. While clustering may in fact occur, there is no particular reason to believe that any such events would result in disproportionate impacts on the ILECD or even the CLECs. Furthermore, there may be other events demonstrably beyond the control of the ILEC that may affect its service quality differently from the CLECs'. This condition does not argue that automatic exclusion should be provided for an otherwise applicable consequence. Nevertheless, the ILEC should not be denied protection from extraordinary impacts not

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[28] See Affidavit of R. Glenn Hubbard and William H. Lehr on behalf of AT&T Corp. AT&T Exhibit _ before the Federal Communications Commission, Washington, D.C. 20544, in the matter of application by New York Telephone Company (d/b/a Bell Atlantic-New York). CC Docket no. 99-295.

[29] SBC in Texas has agreed to a $120M annual limit for consequences where 9M lines are in service

anticipated in the construction of the consequence plan[30]. As a result, if such events occur, the ILECshould be permitted to pursue relief according to the following:

(1) The ILEC should notify the Commission and any potentially affected CLEC(s), using written and verifiable means of notice, of the intent to pursue an exception. Such notification must be provided before the applicable consequence is payable; otherwise the ILEC waives its rights.

(2) All consequences not at issue under the exception petition must be immediately payable as provided for elsewhere in the plan. Those that are subject of the potential exemption shall be paid into an interest bearing escrow account no later than the due date applicable to the consequences that are at issue.

(3) No later than 15 calendar days following the due date of the consequences for which an exemption is sought, the incumbent shall submit to the Commission and all other affected parties all factual evidence supporting the exemption. To the extent the ILEC seeks proprietary protection of the information submitted, it shall employ a standard nondisclosure form, approved by the Commission, before the plan is put into operation. The ILEC may not rely upon the lack of the proprietary form as a basis to delay the submission to the Commission, nor may the incumbent

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[30] Root cause analysis should not defer payments of consequences. ILECs must be liable to pay any consequences for poor performance. Completion of root cause analysis must not be a prerequisite for the delivery of payments to either the CLEC(s) or to the designated Tier II fund. Root cause analyses tend to be time consuming to conduct. While root cause analysis is desirable for long range performance improvement purposes, it is antithetical to self-enforcing consequences. Finally, the provisions set forth in the immediately preceding section provide a procedural mechanism available to ILECs should after-the-fact root cause analysis indicate that a consequence was misapplied from the ILEC's perspective.

delay access to information by any CLEC that agrees to sign the standard nondisclosure form.

(4) By the later of 30 calendar days following notice by the incumbent or 15 calendar days following the ILEC's compliance with (3) above, interested CLECs shall file comments regarding the requested exemption. By mutual agreement, this period may be extended up to 15 calendar days.

(5) Following closure of the comment period provided in (4), if the ILEC and CLEC(s) have not reached a mutually agreeable settlement, the Commission shall either

 (a) render a decision regarding the requested exemption, or
 (b) seek further comment. The Commission shall render its decision regarding the exemption, which shall be binding on all parties, within 90 calendar days of the payment due date of the consequences at issue.

(6) Payout of the consequences shall be according to Commission direction and liquidate the entire escrow account, including accrued interest. In addition, the ILEC should be responsible for reimbursing reasonably incurred legal fees of the CLECs. Such amounts should be reimbursed in the following proportion:

 [1-(amount returned to the incumbent)]/total escrow balance at liquidation.

As discussed in Attachment F, other steps may be taken to address potential measurement correlation issues once actual data has been gathered under the performance measurement system.

3.   Additional Consequences Enforce the Operation of the Plan

Additional consequences should be applicable for other ILEC failures related to performance reporting. At a minimum, consequences for the following areas of non-compliance are appropriate:

Late performance reports - If performance data and associated reports are not available to the CLECs by the due day, the ILEC should be liable for payments of $5,000 to a state fund for every day past the due date for delivery of the reports and data. The ILEC's liability should be determined based on the latest report delivered to a CLEC.

Incomplete or revised reports - If performance data and reports are incomplete, or if previously reported data are revised, then the ILEC should be liable for payments of $1,000 to a state fund for every day past the due date for delivery of the original reports.

Inability to access detailed data - If a CLEC cannot access its detailed data underlying the ILEC's performance reports due to failures under the control of the ILEC, then the ILEC should pay the affected CLEC $1000 per day (or portion thereof) until such data are made available.

Interest on late consequence payments - If the ILEC fails to remit a consequence payment by the 15th business day following the due date of the data and the reports upon which the consequences are based, then it should be liable for accrued interest for every day that the payment is late.   A per diem interest rate that is equivalent to the ILEC's rate of return for its regulated services for the most recent reporting year should apply.

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Attachment A

Sufficient Disaggregation Is Essential to Permit Detection of Discrimination

A meaningful system of performance consequences cannot operate without a high-quality system of performance measurements. This requires not only a robust system of performance measurements that monitors all key aspects of market entry and ILEC support but also that the results derived from such measurements are sufficiently discrete to permit meaningful comparisons.[31]

Sufficient disaggregation is absolutely essential for accurate comparison of results to expected performance. This is true regardless of whether parity or a benchmark serves as the performance standard. Inadequate disaggregation of results means that not all key factors driving differences in performance results have been identified, which in turn interjects needless variability into the computed results. Such an outcome has two adverse effects. First, the ability to detect real differences is reduced for parity measures, because the modified z-statistic employs only the incumbent's variance in the denominator, which will increase with inappropriate averaging of dissimilar results (thus causing the calculated z-statistic to be smaller). Second, benchmark standards may be more permissive, both in terms of the absolute standard and the percentage "miss" accepted (to the extent it is factually supported at all), if the factual data underlying them are averages of widely divergent processes. Accordingly, inadequately disaggregated data impose very lenient targets that result in a very low probability that performance requirements will be missed.

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[31] Although some incumbents have raised vague concerns that sufficient disaggregation of results may over-burden regulators, those concerns are unfounded for two reasons. First, careful advance specification of disaggregation requirements will reduce, rather than increase, regulatory burden and permit superior quality decision making. Second, if fewer performance results are desired, statistical procedures for re-aggregating disaggregated results provide a superior approach to reliance upon overly aggregated measurement results.

Only incumbents, such as BellSouth, have access to the highly detailed information regarding their retail performance necessary to determine the level of disaggregation that is required to permit apples-to-apples comparisons. Moreover, there are analytical procedures that allow factual conclusions to be made regarding how much disaggregation is "enough."[32] Indeed, in the limited instances where CLECs have been provided access to ILEC data and at least limited public disclosure of analysis was permitted, the facts showed both that ILECs have very detailed data and that very disaggregated results comparisons are necessary to avoid bias.[33] Establishing the appropriate level of disaggregation is not a "once-and-done" undertaking. Provision can be made to review, perhaps annually, the appropriateness of the disaggregation contained in the ILEC's performance measurement system. In this review process, an ILEC may demonstrate, through data it has collected pursuant to its performance measurement system, that the existing level of disaggregation is not providing any additional insight to an assessment of its performance quality and nondiscrimination. In that same review process, individual CLECs should also be permitted to request additional disaggregation.[34] The party requesting a change should have the burden of showing why the proposed change is appropriate provided that all parties have equal access to detailed data necessary to support the proposal.

There should not be any presumption that additional disaggregation creates a burden, for either the ILEC or this Commission. For all incumbents in

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[32] For example, regression procedures may provide a workable methodology for establishing the extent of disaggregation required to make accurate comparisons.
[33] See AT&T Ex Parte filed July 20, 1999 in CC Docket 98-56.
[34] In such cases, the requesting CLEC should be required to make its request for further disaggregation to the incumbent LEC at least three months before initiation of the review process.

general, additional disaggregation (once correct implementation is validated) simply involves repetitive computation – a task readily and quickly accomplished by today's computers. Such a small and largely one-time effort is a small price to pay for the vastly improved capability to protect the prospects for competition in Kentucky.

Attachment B

Local Competition Users Group

Statistical Tests for Local Service Parity

February 6, 1998
Membership: AT&T, Sprint, MCI, LCI, WorldCom

Version 1.0

Executive Summary

The Local Competition Users Group has drafted 27 Service Quality Measurements (SQMs) that will be used to measure parity of service provided by incumbent local exchange carriers (ILECs) to competitive local exchange carriers (CLECs). This set of measures includes means, proportions, and rates of various indicators of service quality. This document proposes statistical tests that are appropriate for determining if parity is being provided with respect to these measurements.

Each month, a specified report of the 27 SQMs will be provided by the ILEC, broken down by the requested reporting dimensions. The SQMs are to be systematically developed and provided by the ILECs as specified. Test parameters will be calculated so that the overall probability of declaring the ILEC to be out of parity purely by chance is very small. For each SQM and reporting dimension reported, the difference between the ILEC and CLEC results is converted to a z-value. Non-parity is determined if a z-value exceeds a selected critical value.

Introduction

Purpose

The Local Competition Users Group (LCUG) is a cooperative effort of AT&T, MCI, Sprint, LCI and WorldCom for establishing standards for the entry of new companies (competitive local exchange carriers, or CLECs) into the local telecommunications market. A key initiative of the LCUG is to establish measures of parity for services provided by incumbent local exchange carriers (ILECs). In short, parity means that the support ILECs provide on behalf of the CLECs is no lesser in quality than the service provided by the ILECs to their own customers.

The LCUG has drafted a document listing service quality measurements (SQMs) that must be reported by the ILECs to insure that CLECs are given parity of support. The SQM document has been submitted to the FCC and made available to PUCs in all 50 states and is pending approval by many of these regulatory agencies. This document has been drafted to describe statistical methodology for determining if parity exists based on the measurements defined in the SQM document.

Service Quality Measurements

The LCUG has identified 27 service quality measurements for testing parity of service. These are:

Category	ID	Description
Pre-Ordering	PO-1	Average Response Interval for Pre-Ordering Information
Ordering and Provisioning	OP-1	Average Completion Interval
	OP-2	Percent Orders Completed on Time
	OP-3	Percent Order Accuracy
	OP-4	Mean Reject Interval
	OP-5	Mean FOC Interval
	OP-6	Mean Jeopardy Interval
	OP-7	Mean Completion Interval
	OP-8	Percent Jeopardies Returned
	OP-9	Mean Held Order Interval
	OP-10	Percent Orders Held $> = 90$ Days
	OP-11	Percent Orders Held $> = 15$ Days
Maintenance and Repair	MR-1	Mean Time to Restore
	MR-2	Repeat Trouble Rate
	MR-3	Trouble Rate

	MR-4	Percentage of Customer Troubles Resolved Within Estimate
General	GE-1	Percent System Availability
	GE-2	Mean Time to Answer Calls
	GE-3	Call Abandonment Rate
Billing	BI-1	Mean Time to Provide Recorded Usage Records
	BI-2	Mean Time to Deliver Invoices
	BI-3	Percent Invoice Accuracy
	BI-4	Percent Usage Accuracy
Operator Services and Directory Assistance	OSDA-1	Mean Time to Answer
Network Performance	NP-1	Network Performance Parity
Interconnect / Unbundled Elements and Combos	IUE-1	Function Availability
	IUE-2	Timeliness of Element Performance

The Service Quality Measurements document describes the importance of each measure as an indicator of service parity. The SQM document also describes reporting dimensions that will be used to break each measure out by like factors (e.g., major service group).

Why We Need to Use Statistical Tests

The Telecommunications Act of 1996 requires that ILECs provide nondiscriminatory support regardless of whether the CLEC elects to employ interconnection, services resale, or unbundled network elements as the market entry method. It is essential that CLECs and regulators be able to determine whether ILECs are meeting these parity and nondiscriminatory obligations. In order to make such a determination, the ILEC's performance for itself must be compared to the ILEC's performance in support of CLEC operations; and the results of this comparison must demonstrate that the CLEC receives no less than equal treatment compared to that the ILEC provides to its own operations. Where a direct comparison to analogous ILEC performance is not possible, the comparative standard is the level of performance that offers an efficient CLEC a meaningful opportunity to compete.

When making the comparison of ILEC results to CLEC results, it is necessary to employ comparative procedures that are based upon generally accepted statistical procedures. It is important to use statistical procedures because all of the ILEC-CLEC processes that will be measured are processes that contain some degree of randomness. Statistical procedures recognize that there is measurement variability, and assist in translating results data into

useful decision-making information. A statistical approach allows for measurement variability while controlling the risk of drawing an inappropriate conclusion (*i.e*, a "type 1" or "type 2" error, discussed in the next section).

Basic Concepts and Terms

Populations and Samples

Statistical procedures will permit a determination whether the support that the ILECs provide to CLECs is indistinguishable from the support provided by the ILECs to their own customers. In statistical terms, we will determine whether two "samples", the ILEC sample and the CLEC sample, come from the same "population" of measurements.

The procedures described in this paper are based on the following assumption: *When parity is provided, the ILEC data and CLEC data can both be regarded as samples from a common population of possible outcomes.* In other words, if parity exists, the measured results for a CLEC should not be distinguishable from the measured results for the ILEC, once random variability is taken into account. Figure 1 illustrates this concept. On the right side of the figure are histograms of two samples. In this illustration, the ILEC sample contains 200 observations (data values) and the CLEC sample contains 50. Note that the two histograms are not exactly alike. This is due to sampling variation. The assumption that parity exists implies that both samples were drawn from the same population of values. If it were possible to observe this population completely, the population histogram might appear as shown on the left of the Figure. If the samples were indeed taken from this population, histograms drawn for larger and larger samples would look more and more like the population histogram. Figure 1 shows that even when parity is being provided, there will be differences between the samples due to sampling variability. Statistical tests quantify the differences between the two samples and make proper allowance for sampling variability. They assess the chance that the differences that are observed are due simply to sampling variability, if parity is being provided.
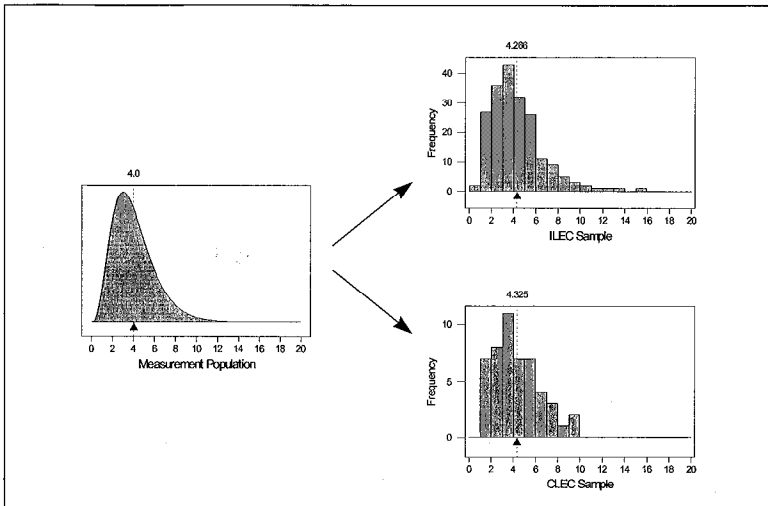
Figure 1.

Measures of Central Tendency and Spread

Often, distributions are summarized using "statistics." For the purpose of this paper, a "statistic" is simply a calculation performed on a sample set of data. Two common types of statistics are known as measures of "central tendency" and "spread."

A measure of central tendency is a summary calculation that describes the middle of the distribution in some way. The most common measure of central tendency is called the "mean" or "average" of the distribution. The mean of a sample is simply the sum of the data values divided by the sample size (number of observations). Algebraically, this calculation is expressed as

$$\bar{x} = \frac{\sum x}{n},$$

where x denotes a value in the sample and n denotes the sample size. The mean describes the center of the distribution in the following way: *If the histogram for a sample were a set of weights stacked on top of a flat board placed on top of a fulcrum (a "see-saw"), the mean would be the position along the board at which the board would balance.* (See Figure 1.) The mean in Figure 1 is indicated by the small triangle at approximately the value "4" on the horizontal axis.

A measure of spread is a summary calculation that describes the amount of variation in a sample. A common measure of spread is a called the "standard deviation" of the sample. The standard deviation is the typical size of a deviation of the observations in the sample from their mean value. The standard deviation is calculated by subtracting the mean value from each observation in the sample, squaring the resulting differences (so that negative and positive differences don't offset), summing the squared differences, dividing the sum by one less than the sample size, then taking the square root of the result. Algebraically, this calculation is expressed as

$$\sigma = \sqrt{\frac{\Sigma(x - \bar{x})^2}{n - 1}} \ .$$

While the notion of mean and standard deviation exists for populations as well as samples, the mathematical definition for the mean and standard deviation for populations is beyond the scope of this paper. However, their interpretation is generally the same as for samples. In fact, for very large samples, the sample mean and sample standard deviation will be very close to the mean and standard deviation of the population from which the sample was taken.

<center>Sampling Distribution of the Sample Mean</center>

In Figure 1 we showed the positions of the means of the population and the two samples with triangular symbols beneath the distributions. If we sample over successive months, we will get new ILEC samples and new CLEC samples each and every month. These samples will not be exactly like the one for the first month; each will be influenced by sampling variability in a different way. In Figure 2, we show how sets of 100 successive ILEC means and 100 successive CLEC means might appear. The ILEC means can be thought of as being drawn from a population of sample means; this population is called the "sampling distribution" of these ILEC means. This sampling distribution is completely determined by the basic population of measurements that we start with, and the number of observations in each sample. The sampling distribution has the same mean as the population.

Figure 2 illustrates two important statistical concepts:

1. The histogram of successive sample means resembles a bell-shaped curve known as the Normal Distribution. This is true even though the individual observations came from a skewed distribution.
2. The standard deviation of the distribution of sample means is much smaller than the standard deviation of the observations themselves. In fact, statistical theory establishes the fact that the standard deviation on

the population of means is smaller by a factor $\sqrt{n}$, where n is the sample size. This effect can be seen in our example: the distribution of the CLEC means is twice as broad as the distribution of the ILEC means, since the ILEC sample size (200) is four times as large as the CLEC sample size (50).
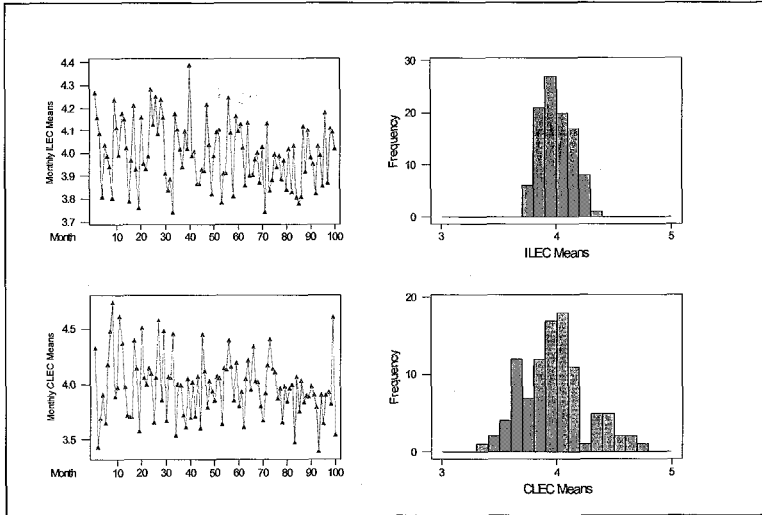

Figure 2.

It is common to call the standard deviation of the sampling distribution of a statistic the "standard error" for the statistic. We shall adopt this convention to avoid confusion between the standard deviation of the individual observations and the standard deviation (standard error) of the statistic. The latter is generally much smaller than the former. In the case of sample means, the standard error of the mean is smaller than the standard deviation of the individual observations by a factor of $\sqrt{n}$.

The Z-test

Our objective is to compare the mean of a sample of ILEC measurements with the mean of a sample of CLEC measurements. Suppose both samples were drawn from the same population; then the difference between these two sample means (*i.e.*, $DIFF = \bar{x}_{CLEC} - \bar{x}_{ILEC}$) will have a sampling distribution which will

(i) have a mean of zero; and

(ii) have a standard error that depends on the population standard deviation and the sizes of the two samples.

Statisticians utilize an index for comparing measurement results for different samples. The index employed is a ratio of the difference in the two sample means (being compared) and the standard deviation estimated for the overall population. This ratio is known as a z-score. The z-score compares the two samples on a standard scale, making proper allowance for the sample sizes.

The computation of the difference in the two sample means is straightforward.

$$DIFF = \bar{x}_{CLEC} - \bar{x}_{ILEC}$$

The standard deviation is less intuitive. Nevertheless, statistical theory establishes the fact that

$$\sigma^2_{DIFF} = \frac{\sigma^2}{n_{CLEC}} + \frac{\sigma^2}{n_{ILEC}},$$

where is the standard deviation of the population from which both samples are drawn. That is, the squared standard error of the difference is the sum of the squared standard errors of the two means being compared.[35]

We do not know the true value of the population because the population cannot be fully observed. However, we can estimate given the standard deviation of the ILEC sample ($_{ILEC}$).[36] Hence, we may estimate the standard error of the difference with

$$\sigma_{DIFF} = \sqrt{\frac{\sigma^2_{ILEC}}{n_{CLEC}} + \frac{\sigma^2_{ILEC}}{n_{ILEC}}} = \sqrt{\sigma^2_{ILEC} \left[\frac{1}{n_{CLEC}} + \frac{1}{n_{ILEC}} \right]}$$

If we then divide the difference between the two sample means by this estimate of the standard deviation of this difference, we get what is called a "z-score".

$$z = \frac{DIFF}{\sigma_{DIFF}}$$

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[35] Winkler and Hays, *Probability, Inference, and Decision.* (Holt, Rinehart and Winston: New York), p. 370.

[36] Winkler and Hays, *Probability, Inference, and Decision.* (Holt, Rinehart and Winston: New York), p. 338.

Because we assumed that both samples were in fact drawn from the same population, this z-score has a sampling distribution that is very nearly Standard Normal, *i.e.*, having a mean of zero and a standard error of one. Thus, the z-score will lie between ± 1 in about 68% of cases, will lie between ± 2 in about 95% of cases, and will lie between ± 3 in about 99.7% of cases, always assuming that both samples come from the same population. Therefore, one possible procedure for checking whether both samples come from the same population is to compare the z-score with some cut-off value, perhaps + 3. For comparisons where the values of z exceed the cutoff value, you reject the assumption of parity as not proven by the measured results. This is an example of a statistical test procedure. It is a formal rule of procedure, where we start with raw data (here two samples, ILEC measurements and CLEC measurements), and arrive at a decision, either "conformity" or "violation".

Type 1 Errors and Type 2 Errors

Each statistical test has two important properties. The first is the probability that the test will determine that a problem exists when in fact there is none. Such a mistaken conclusion is called a type one error. In the case of testing for parity, a type one error is the mistake of charging the ILEC with a parity violation when they may not be acting in a discriminatory manner. The second property is the probability that the test procedure will not identify a parity violation when one does exist. The mistake of not identifying parity violation when the ILEC is providing discriminatory service is called a type two error. A balanced test is, therefore, required.

From the ILEC perspective, the statistical test procedure will be unacceptable if it has a high probability of type one errors. From the CLEC perspective, the test procedure will be unacceptable if it has a high probability of type two errors.

Very many test procedures are available, all having the same probability of type one error. However the probability of a type two error depends on the particular kind of violation that occurs. For small departures from parity, the probability of detecting the violation will be small. However, different test procedures will have different type two error probabilities. Some test procedures will have small type two error when the CLEC mean is larger than the ILEC mean, even if the CLEC standard deviation is the same as the ILEC standard deviation, while other procedures will be sensitive to differences in standard deviation, even if the means are equal. Our proposals below are designed to have small type two error when the CLEC mean exceeds the ILEC mean, whether or not the two variances are equal.

Tests of Proportions and Rates

When our measurements are proportions (*e.g.* percent orders completed on time) rather than measurements on a scale, there are some simplifications. We can think of the "population" as being analogous to an urn filled with balls, each labeled either 0(failure) or 1(success). In this population, the fraction of 1's is some "population proportion". Making an observation corresponds to drawing a single ball from this urn. Each month, the ILEC makes some number of observations, and reports the ratio of failures or successes to the total number of observations; the ILEC does the same does the same for the CLEC. The situation is very similar to that discussed above; however, rather than a wide range of possible result values, we simply have 0's (failures) and 1's (successes). The "sample mean" becomes the "observed proportion", and this will have a sampling distribution just as before. The novelty of the situation is that now the population standard deviation is a known function of the population proportion[37]; if the population proportion is p, the population standard deviation is $\sqrt{p(1-p)}$, with similar simplifications in all the other formulas.

There is a similar simplification when the observations are of rates, *e.g.*, number of troubles per 100 lines. The formulas appear below.

Proposed Test Procedures

Applying the Appropriate Test

Three z-tests will be described in this section: the "Test for Parity in Means", the "Test for Parity in Rates", and the "Test for Parity in Proportions". For each LCUG Service Quality Measurement (SQM), one or more of these parity tests will apply. The following chart is a guide that matches each SQM with the appropriate test.

Measurement (Corresponding LCUG Number)	Test
Preordering Response Interval (PO-1)	Mean
Avg. Order Completion Interval (OP-1)	Mean
% Orders Completed On Time (OP-2)	Proportion
% Order (Provisioning) Accuracy (OP-3)	Proportion
Order Reject Interval (OP-4)	Mean
Firm Order Confirmation Interval (OP-5)	Mean
Mean Jeopardy Interval (OP-6)	Mean
Completion Notice Interval (OP-7)	Mean
Percent Jeopardies Returned (OP-8)	Proportion
Held Order Interval (OP-9)	Mean

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[37] Winkler and Hays, *Probability, Inference, and Decision.* (Holt, Rinehart and Winston: New York), p. 212.

% Orders Held ≥ 90 Days (OP-10)	**Proportion**
% Orders Held ≥ 15 Days (OP-11)	**Proportion**
Time To Restore (MR-1)	**Mean**
Repeat Trouble Rate (MR-2)	**Proportion**
Frequency of Troubles (MR-3)	**Rate**
Estimated Time To Restore (MR-4)	**Proportion**
System Availability (GE-1)	**Proportion**
Center Speed of Answer (GE-2)	**Mean**
Call Abandonment Rate (GE-3)	**Proportion**
Mean Time to Deliver Usage Records (BI-1)	**Mean**
Mean Time to Deliver Invoices (BI-2)	**Mean**
Percent Invoice Accuracy (BI-3)	**Proportion**
Percent Usage Accuracy (BI-4)	**Proportion**
OS/DA Speed of Answer (OS/DA-1)	**Mean**
Network Performance (NP-1)	**Mean, Proportion**
Availability of Network Elements (IUE-1)	**Mean, Proportion**
Performance of Network Elements (IUE-2)	**Mean, Proportion**

Test for Parity in Means

Several of the measurements in the LCUG SQM document are averages (*i.e.*, means) of certain process results. The statistical procedure for testing for parity in ILEC and CLEC means is described below:

1. Calculate for each sample the number of measurements (n_{ILEC} and n_{CLEC}), the sample means ($\bar{x}_{ILEC}$ and $\bar{x}_{CLEC}$), and the sample standard deviations ($_{ILEC}$ and $_{CLEC}$).

2. Calculate the difference between the two sample means; if *larger* CLEC mean indicates possible violation of parity, use $DIFF = \bar{x}_{CLEC} - \bar{x}_{ILEC}$, otherwise reverse the order of the CLEC mean and the ILEC mean.

3. To determine a suitable scale on which to measure this difference, we use an estimate of the population variance based on the ILEC sample, adjusted for the sized of the two samples: this gives the standard error of the difference between the means as

$$\sigma_{DIFF} = \sqrt{\sigma_{ILEC}^2 \left[\frac{1}{n_{CLEC}} + \frac{1}{n_{ILEC}} \right]}$$

4. Compute the test statistic

$$z = \frac{DIFF}{\sigma_{DIFF}}$$

5. Determine a critical value c so that the type one error is suitably small.

6. Declare the means to be in violation of parity if $z > c$.

Example:

| c: | 3.58 | Critical value for the test |

ILEC			CLEC			Test	
n	mean	variance	n	mean	variance	z	Violation
250	4.038	1.9547	50	5.154	23.2035	5.15	YES!

Test for Parity in Proportions

Several of the measurements in the LCUG SQM document are proportions derived from certain counts. The statistical procedure for testing for parity in ILEC and CLEC proportions is described below. It is the same as that for means, except that we do not need to estimate the ILEC variance separately.

1. Calculate for each sample sample sizes (n_{ILEC} and n_{CLEC}), and the sample proportions (p_{ILEC} and p_{CLEC}).

2. Calculate the difference between the two sample means; if *larger* CLEC proportion indicates worse performance, use $DIFF = p_{CLEC} - p_{ILEC}$, otherwise reverse the order of the ILEC and CLEC proportions.

3. Calculate an estimate of the *standard error for the difference* in the two proportions according to the formula

$$\sigma_{DIFF} = \sqrt{p_{ILEC}(1 - p_{ILEC})\left[\frac{1}{n_{CLEC}} + \frac{1}{n_{ILEC}}\right]}$$

4. Hence compute the test statistic

$$z = \frac{DIFF}{\sigma_{DIFF}}$$

5. Determine a critical value c so that the type one error is suitably small.

6. Declare the means to be in violation of parity if $z > c$.

Example:

| c: | 3.58 | Critical value for the test |

ILEC			CLEC			Test	
num	den	p	num	den	p	z	Violation
5	250	2.00%	7	40	17.50%	6.50	YES!

Test for Parity in Rates

A rate is a ratio of two counts, *num/denom*. An example of this is the trouble rate experience for POTS. The procedure for analyzing measurements results that are rates is very similar to that for proportions.

1. Calculate the numerator and the denominator counts for both ILEC and CLEC, and hence the two rates $r_{ILEC} = num_{ILEC}/denom_{ILEC}$ and $r_{CLEC} = num_{CLEC}/denom_{CLEC}$.

2. Calculate the difference between the two sample rates; if *larger* CLEC rate indicates worse performance, use $DIFF = r_{CLEC} - r_{ILEC}$, otherwise take the negative of this.

3. Calculate an estimate of the *standard error for the difference* in the two rates according to the formula

$$\sigma_{DIFF} = \sqrt{r_{ILEC}\left[\frac{1}{denom_{CLEC}} + \frac{1}{denom_{ILEC}}\right]}$$

4. Compute the test statistic

$$z = \frac{DIFF}{\sigma_{DIFF}}$$

5. Determine a critical value c so that the type one error is suitably small.

6. Declare the means to be in violation of parity if $z > c$.

Example:

c:	3.58	Critical value for the test

ILEC			CLEC			Test	
num	den	rate	num	den	rate	z	Violation
250	610	0.409836	34	30	1.133333	6.04	YES!

Attachment C

Permutation Analysis Procedural Steps

Permutation analysis is applied to calculate the z-statistic using the following logic:

1. Choose a sufficiently large number T.

2. Pool and mix the CLEC and ILEC data sets

3. Randomly subdivide the pooled data sets into two pools, one the same size as the original CLEC data set (n_{CLEC}) and one reflecting the remaining data points, (which is equal to the size of the original ILEC data set or n_{ILEC}).

4. Compute and store the Z-test score (Z_s) for this sample.

5. Repeat steps 3 and 4 for the remaining T-1 sample pairs to be analyzed. (If the number of possibilities is less than 1 million, include a programmatic check to prevent drawing the same pair of samples more than once).

6. Order the Z_s results computed and stored in step 4 from lowest to highest.

7. Compute the Z-test score for the original two data sets and find its rank in the ordering determined in step 6.

8. Repeat the steps 2-7 ten times and combine the results to determine

   P = (Summation of ranks in each of the 10 runs divided by 10T)

9. Using a cumulative standard normal distribution table, find the value Z_A such that the probability (or cumulative area under the standard normal curve) is equal to P calculated in step 8.

10.   Compare Z_A with the desired critical value as determined from the critical Z table. If $Z_A >$ the designated critical Z-value in the table, then the performance is non-compliant.

Attachment D

**Statistical Demonstrations of Non-Parity are Sufficient: Notes on
"Competitive Significance"**

Some incumbents have proposed that, when comparing the CLEC data set to
the ILEC data set for a particular performance measurement result, a lack of
parity should not be declared unless both the performance difference is
statistically significant <u>and</u> the difference has "competitive or economic
significance." This notion is contrary to FCC's interpretation of the terms of
the 1996 Act (the Act). The FCC has found that the term
"nondiscriminatory" as used in the Act is a more stringent standard than the
"unjust and unreasonable discrimination" standard set forth in other
provisions of the Communications Act.[38] Thus, the term "nondiscriminatory
access" means that: (1) the quality of performance must be equal among all
carriers requesting the support, and (2) where technically feasible, the
support must be no less in quality and timeliness than that which the
incumbent provides to itself.[39]

Some ILECs have also argued that, as the number of data points underlying
the computed performance result increases (all other factors held constant),

[38] See FCC Docket No. 96-98, Implementation of the Local Competition Provisions in
the Telecommunications Act of 1996, First Report and Order released August 8, 1996, ¶
217, 859 ("Local Competition Order").

[39] Local Competition Order, ¶315 (access must be provided on terms that are "equal to
the terms and conditions under which the incumbent LEC provisions such elements to
itself"); Second Order on Reconsideration, Implementation of the Local Competition
Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98 (released
December 13, 1996) ¶9 (OSS access "must be equal to" the access that the ILEC provides
to itself); FCC CC Docket No. 97-137, In the Matter of Ameritech Michigan Pursuant to
Section 271 of the Communications Act of 1934, as amended, To Provide In-Region
InterLATA Services in Michigan, Memorandum Opinion and Order released August 19,
1997 ("Ameritech Michigan Order"),¶139 ("BOC must provide access to competing
carriers that is equal to the level of access that the BOC provides to itself . . . in terms of

smaller differences in means will be statistically significant. This statement is true; nevertheless, as explained in the text, the consequences defined by this plan do not increase with the number of data points. Therefore, the statistical test and z-score have achieved their exact purposes by *identifying unequal performance* and increasing consequences with *severity* of failure. Furthermore, the term "discriminatory" under the Act should not be confused with direct and provable competitive injury. The language of the Act does not permit the incumbent to discriminate against a CLEC by showing that no specific competitive harm was experienced by the CLEC.[40] Moreover, as a theoretical matter, although statistical science can be used to evaluate the impact of different choices of alternative hypothesis in the balancing methodology, there is not much that an appeal to statistical principles can offer in directing specific choices. These specific choices are best left to telephony experts.

These judgements should consider the financial impact (on the CLECs) of violations of various degrees. As a first approximation, the ILEC has data, generated by its routine management procedures, that could be used to calibrate the effect of various violations. The Commission should require the ILEC to produce evidence, relating to its management procedures, that would help the Commission understand what deviations from target performance routinely signal the need for correction.

It is certainly not sufficient to consider only the resulting critical values or error probabilities.

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quality, accuracy and timeliness"); ¶166 (ILEC "must provide competing carriers access to such OSS function equal to the access that it provides to its retail operations").
[40] Indeed, requiring a CLEC to demonstrate the specific anticompetitive consequences of an ILEC performance failure would effectively render these new protections into mere reiterations of Section II of the Sherman Act. Long experience under antitrust law shows how difficult and protracted such a requirement is in practice.

Attachment E

Mitigation for Potential Impacts of Random Variation is Unnecessary When Type I and Type II Error is Balanced

Random variation is differences in the expected output (or result) of a process that cannot be entirely explained as a result of differences in the inputs to the process. Said another way, running the very same process multiple times using exactly the same key inputs may not (and likely will not) produce exactly the same outcomes. The differences in the outcomes are "explained" as random variation.

There is little debate that the support processes that incumbents utilize to support CLECs tend to be complex and that a variety of factors influence the quantity and quality of the support delivered. As a result, provided the necessary steps have been taken to disaggregate measurement results sufficiently to account for factors correlated with different outcomes, random variation should be accommodated. In doing so, a reasonable balance needs to be struck between (1) protecting the ILEC from consequences that are a result of random variation, and (2) protecting competitors from the adverse effects of discrimination by the ILEC.

As discussed above, the first step in mitigating the effects of random variation is to minimize the risk of making an incorrect decision. In this situation, the two potential incorrect decisions are (1) declaring performance compliant when it is actually discriminatory and (2) declaring performance non-compliant when it is actually within acceptable limits. If these two probabilities are balanced, then, the consequences for "false" failures conceptually offset the consequences for undetected failures. Otherwise stated, the small remedy payment by the ILEC under falsely declared non-

compliance is conceptually balanced with the market losses experienced by the CLECs due to falsely declared compliance.

Some regulators have expressed concerns, in light of what they consider to be sizable consequences necessary to motivate compliant ILEC performance and the inability to precisely balance risk, that additional mitigating factors should be instituted. Unfortunately, virtually all the mechanisms discussed are designed to protect the incumbent at the expense of the protecting the competitive process. The following mechanisms have been proposed, but each suffer from serious flaws.

a. Credits for "Better than Required" Performance Permit Gaming

This approach to mitigation is misguided and has the potential to cause extreme harm with little upside potential. In this flawed approach to mitigation, consequences for failed performance could be negated if the incumbent provides "better than required" performance at a different time (or for a different measurement) and thus earns a "credit." For example, the incumbent could deliver bad performance in one area and offset the consequence through performance credits "earned" in a separate but unrelated area or through credits for compliant performance previously (or subsequently) delivered. In all cases, such credits provide incumbents extensive opportunities to "game the system." Credits give ILECs the opportunity to deliver highly variable results that swing between very good and extremely poor performance and still be absolved of any consequence. Likewise, incumbents have the opportunity to temporarily provide compliant performance and then discriminate with impunity. In either case, the CLECs' position in the marketplace compared to the incumbent is harmed. Moreover, because CLECs only learn of "better" performance after the fact (in a performance report), they cannot take practical advantage of such

performance. Thus they get no benefit that offsets the real harm they and their customers have actually suffered.

b. Absolute Caps On Liability Are Unwarranted

There is no logical or practical basis to set an absolute limit on any incumbent's liability under any consequences plan, especially for Tier I type consequences. Such consequences are intended to compensate CLECs for actual harm they have sustained as a result of documented poor performance. Thus, there should never be a limit on this type of consequence. Moreover, to the extent that Tier II consequences become especially large, it may be appropriate to establish a procedural cap to provide an opportunity to assess whether the calculated consequence for an incumbent's market-affecting behavior should be limited.

Attachment F

Addressing Measurement Overlap And Correlation

Measurement overlap occurs when one or more measurements effectively measure the same performance. If two measurements overlap, then consequences should attach to only one of them. Note, however, a measurement addressing timeliness and a measurement addressing quality for the same area of performance do not overlap. Also, it should be noted that, given the care taken in defining measurements in LCUG SQM Version 7.0, there are no obvious areas of significant measurement overlap

Measurement correlation is different from measurement overlap. Measurement correlation occurs when one or more measurement results move at the same time. The direction of movement need not be the same. That is, one may improve (e.g., quality) while another deteriorates (e.g., timeliness). As such, measurement correlation does not automatically argue for adjustment to the measurements eligible for consequences. Indeed, an incumbent that is intentionally and pervasively discriminating would be capable of showing a high degree of correlation among all measurement results both within and across months – all results would be deteriorating.

If there are reasons to believe that measurements are somewhat overlapping and correlation is suspected, the solution is not to immediately eliminate one or both measurements. Rather the potentially superior approach is to create "families" for the purpose of applying consequences. Each measurement "family" would be eligible for only a single consequence. Whether and to what degree a family is eligible for a consequence would be determined by the worst performing individual measurement result within the family for the month under consideration. Thus, use of measurement families eliminates

the possibility of consequence "double jeopardy"[41] without making any advance value judgement regarding the usefulness of individual measurements.

Use of measurement families has the potential for significant harm for an otherwise effective consequence plan due because: (1) inappropriate grouping can mask areas of discrimination by placing non-overlapped measurements in the same family; and, (2) by reducing eligible measurements, without adjusting the per measurement consequence, the overall plan incentives are diminished. As a result, establishment of measurement families must be approached with extreme caution and sparingly used. At least the following conditions must be imposed.

> (1) measurements that address separate support functionality may not be placed in the same family;
>
> (2) measurements that address different modes of market entry may not be placed in the same family;
>
> (3) measurement families may not be used as a means to avoid disaggregation detail;
>
> (4) measurements that address (a) timeliness, (b) accuracy, and (c) completeness may not be placed within the same family;
>
> (5) measurement families, to the extent used, must be identical across all CLECs;
>
> (6) even if correlation can be demonstrated, measurement families must not be used to combine otherwise independent measurements of a deficient process; and,

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[41] If the measurements in the family are truly overlapping and correlated they point to the same conclusion (incidents of failure and severity). Measurement families thus treat the incumbent preferentially: either the measurements are effectively the same and only one consequence applies or they were inappropriately grouped and the incumbent avoids one or more consequences that should have been incurred.

(7) establishment of measurement families must not reduce the maximum consequence payable by more than 10% without an offsetting increase in the basic, intermediate, and severe consequence payable per failed measurement.

To the extent new measurement families are proposed or a proposal is set forth to eliminate or modify and existing family, the advocate of the change should bear the burden of demonstrating compliance with the above minimum requirements. The consideration should be in a public forum where all interested parties participate, and in the event of a disagreement, the Commission should decide based upon the record established. Prospective changes of measurement families should not affect any prior determinations regarding consequences.

No proposal to establish measurement families should be considered until the consequence plan has been operational and produced at least six months of independently verified data.

Attachment G

Graphs and Tables of Consequence Functions

The consequences as a function of performance are completely calculable from the equations presented in Tables 1,3,4, and 5 of the text. In fact using the equations in these tables directly is the appropriate way to program the computer that will perform the calculations when the plan is implemented. However, in this attachment we give graphical representations of the consequences as a function of performance and also present the functions in tabular form. The latter may be used as a less accurate alternative to the equations in the text tables to look up the consequence amounts.

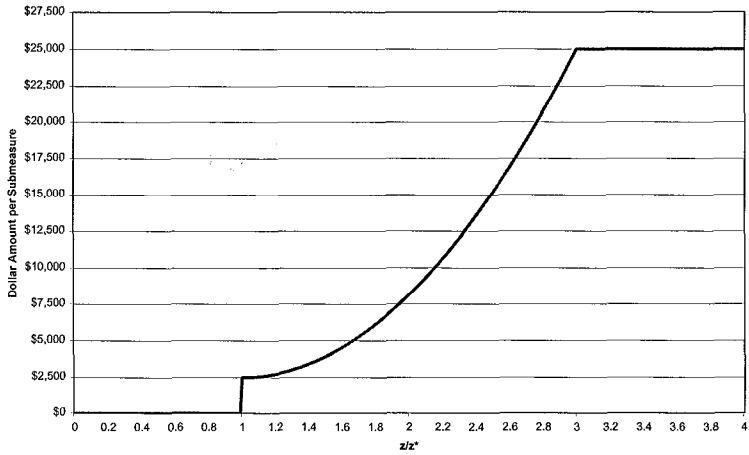**Applicable Consequences for Tier I Parity Submeasures**

Figure G-1

Table G-1 Applicable Tier I Consequences for Parity Submeasures

z/z*	Amount
0.0 or less	$0.00
0.1	$0.00
0.2	$0.00
0.3	$0.00
0.4	$0.00
0.5	$0.00
0.6	$0.00
0.7	$0.00
0.8	$0.00
0.9	$0.00
1.0	$2,500.00
1.1	$2,556.25
1.2	$2,725.00
1.3	$3,006.25
1.4	$3,400.00
1.5	$3,906.25
1.6	$4,525.00
1.7	$5,256.25
1.8	$6,100.00
1.9	$7,056.25
2.0	$8,125.00
2.1	$9,306.25
2.2	$10,600.00
2.3	$12,006.25
2.4	$13,525.00
2.5	$15,156.25
2.6	$16,900.00
2.7	$18,756.25
2.8	$20,725.00
2.9	$22,806.25
3.0 or more	$25,000.00

Applicable Consequences for Tier I (95%) Benchmark Submeasures
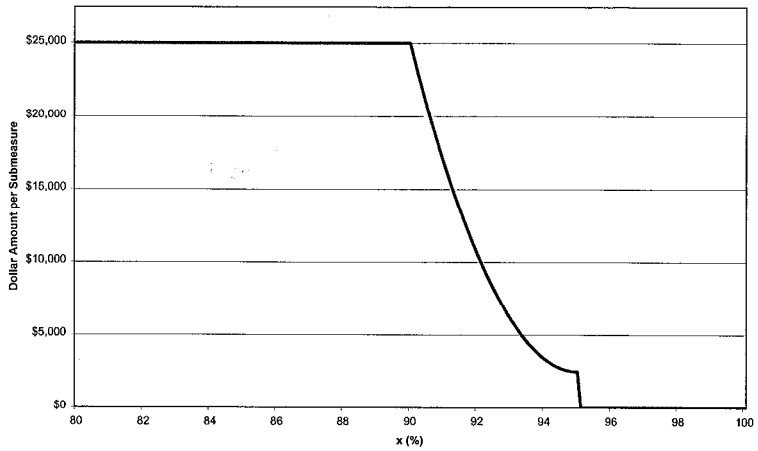
Figure G-2

Table G-2 Applicable Tier I Consequences for (95%) Benchmark Submeasures

x (%)	Amount
90.0 or less	$25,000.00
90.5	$20,725.00
91.0	$16,900.00
91.5	$13,525.00
92.0	$10,600.00
92.5	$8,125.00
93.0	$6,100.00
93.5	$4,525.00
94.0	$3,400.00
94.5	$2,725.00
95.0	$2,500.00
95.5	$0.00
96.0	$0.00
96.5	$0.00
97.0	$0.00
97.5	$0.00
98.0	$0.00
98.5	$0.00
99.0	$0.00
99.5	$0.00
100.0	$0.00

Applicable Consequences for Tier II Parity Submeasures (n=10)
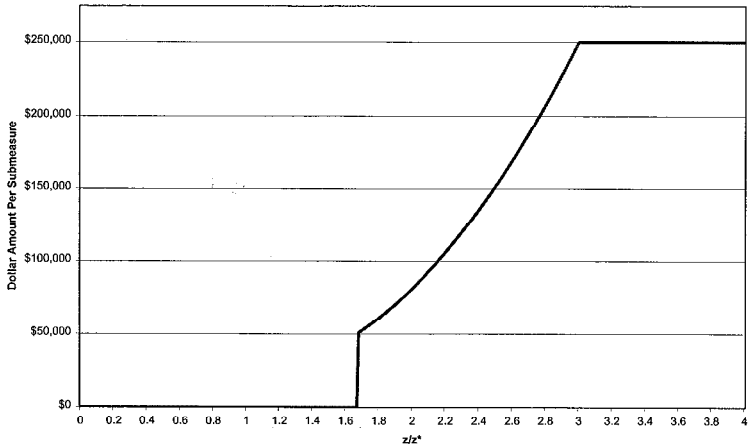
Figure G-3

Table G-3 Applicable Tier II Consequences for Parity Submeasures (n = 10)

z/z*	Amount
0.0 or less	$0.00
0.1	$0.00
0.2	$0.00
0.3	$0.00
0.4	$0.00
0.5	$0.00
0.6	$0.00
0.7	$0.00
0.8	$0.00
0.9	$0.00
1.0	$0.00
1.1	$0.00
1.2	$0.00
1.3	$0.00
1.4	$0.00
1.5	$0.00
1.6	$0.00
1.7	$52,562.50
1.8	$61,000.00
1.9	$70,562.50
2.0	$81,250.00
2.1	$93,062.50
2.2	$106,000.00
2.3	$120,062.50
2.4	$135,250.00
2.5	$151,562.50
2.6	$169,000.00
2.7	$187,562.50
2.8	$207,250.00
2.9	$228,062.50
3.0 or more	$250,000.00

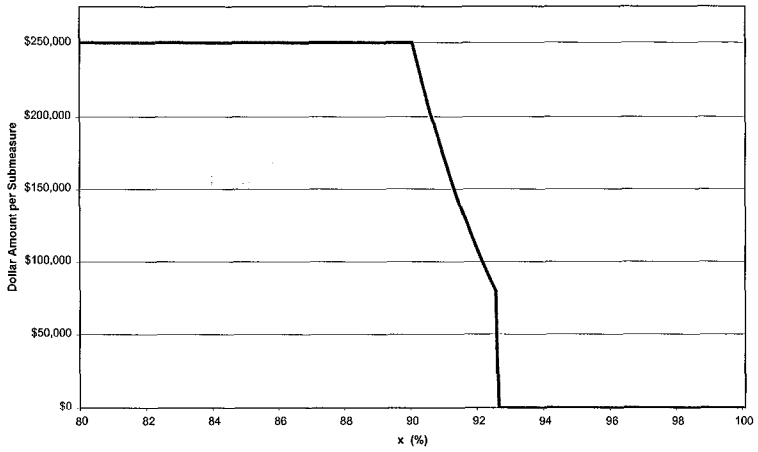Applicable Consequences for Tier II (95%) Benchmark Submeasures (n=10)

Figure G-4

Table G-4 Applicable Tier II Consequences for (95%) Benchmark
Submeasures (n = 10)

x (%)	Amount
90.0 or less	$250,000.00
90.5	$207,250.00
91.0	$169,000.00
91.5	$135,250.00
92.0	$106,000.00
92.5	$81,250.00
93.0	$0.00
93.5	$0.00
94.0	$0.00
94.5	$0.00
95.0	$0.00
95.5	$0.00
96.0	$0.00
96.5	$0.00
97.0	$0.00
97.5	$0.00
98.0	$0.00
98.5	$0.00
99.0	$0.00
99.5	$0.00
100.0	$0.00

BELLSOUTH/ATT RATES
ODUF/EODUF/ADUF/CMDS

DESCRIPTION	USOC	KY
ODUF/EODUF/ADUF/CMDS		
ODUF: Recording, per message	N/A	$0.0008611
ODUF: Message Processing, per message	N/A	$0.0032357
EODUF: Message Processing, per message	N/A	$0.004
ADUF: Message Processing, per message	N/A	$0.004
CMDS: Message Processing, per message	N/A	$0.004
ODUF: Message Processing, per magnetic tape provisioned	N/A	$55.68
EODUF: Message Processing, per magnetic tape provisioned	N/A	NA
ODUF: Data Transmission (CONNECT:DIRECT), per message	N/A	$0.0000365
EODUF: Data Transmission (CONNECT:DIRECT), per message	N/A	NA
ADUF: Data Transmission (CONNECT:DIRECT), per message	N/A	$0.001
CMDS: Data Transmission (CONNECT:DIRECT), per message	N/A	$0.001

NOTES:

If no rate is identified in the contract, the rate for the specific service or function will be as set forth in applicable BellSouth tariff or as negotiated by

Version 2Q00:8/10/00

BELLSOUTH/ATT RATES
ODUF/EDOUF/ADUF/CMDS

DESCRIPTION	USOC	KY
ODUF/EODUF/ADUF/CMDS		
ODUF: Recording, per message	N/A	$0.0008611
ODUF: Message Processing, per message	N/A	$0.0032357
EODUF: Message Processing, per message	N/A	$0.004
ADUF: Message Processing, per message	N/A	$0.004
CMDS: Message Processing, per message	N/A	$0.004
ODUF: Message Processing, per magnetic tape provisioned	N/A	$55.68
EODUF: Message Processing, per magnetic tape provisioned	N/A	NA
ODUF: Data Transmission (CONNECT:DIRECT), per message	N/A	$0.0000365
EODUF: Data Transmission (CONNECT:DIRECT), per message	N/A	NA
ADUF: Data Transmission (CONNECT:DIRECT), per message	N/A	$0.001
CMDS: Data Transmission (CONNECT:DIRECT), per message	N/A	$0.001

NOTES:

If no rate is identified in the contract, the rate for the specific service or function will be as set forth in applicable BellSouth tariff or as negotiated by