Geography of Local Exchange Carriers

Order of geographic features by level of detail, starting with the most basic building block:

A Central Office point is associated with a location (V & H, which stands for vertical and horizontal coordinates) and a unique 11 character CLLI Code. A Central Office (CO) is the facility where subscriber's lines are joined to switching equipment. This connects subscribers to each other for local and long distance service. The Central Office actually delivers the dial tone to the subscriber's phone equipment. A Central Office Code may also be referred to as an NXX code.

- **CLLI Code** – (pronounced 'silly code'- Common Language Location Identifier) – A wire center is assigned an 8 character CLLI Code; a Central Office Code or switches assigned to a specific wire center are assigned an 11 character code.

Characters	Description
1-4	Location Code (ie. Pittsburgh = PITZ)
5-6	State Abbreviation
7-9	Building Code
9-11	Switch Code

- **V&H Coordinates** – Vertical and Horizontal Coordinates are assigned to locate Central Offices or Rate Centers on a grid of North America. V&H Coordinates were designed by AT&T in 1957 by Jay K. Donald for the easy computation (by slide rule) of distances between telephone switching centers. The system is based on the Donald Elliptic Projection, a two-point equidistant projection covering the continental United States and Canada. These four digit coordinates have been in use since the late 1950s. Variations of +/- 1 unit for a given location can be found among various data sources due to rounding. One "coordinate" is approximately equal to one-third of a mile. This coordinate system is still found embedded in some telephone rate computation software. Since V&H coordinates are associated with NXX-NXX numbers, it is possible to calculate the approximate distance between where these numbers are used. The formula to calculate distances in V&H coordinates, as well as calculators and converters to latitude and longitude, can be found on the world wide web.

- The **North American Numbering Plan** (NANP) is the numbering plan for the Public Switched Telephone Network in the United States and its territories, Canada, Bermuda, and many Caribbean nations. NANP numbers are ten digits in length, and they are in the format:

NXX-NXX-XXXX

where N is any digit 2-9 and X is any digit 0-9. The first three digits are called the numbering plan area (NPA) code, often called simply the **area code**. The area codes are usually assigned to a discrete geographic area, except for some numbers such as 800 that transcend specific geographic boundaries. With overlay plans, more than one area code is assigned to a geographic area. The second three digits are called the **central office code** or **prefix** or **NXX**. The final four digits are called the **line number**.

A Wire Center point is the location where the telephone company terminates the local lines; this is usually the same as a Central Office, although a Wire Center may have one or more Central Offices. Each Wire Center is assigned a unique 8 character CLLI code (the first 8 characters of the 11 characters assigned to a Central Office).

Wire Center Serving Area polygon is the geographic area of an exchange area served by a single wire center.

Exchange Area polygon is the geographic area in which telephone prices and services are the same. This may also be referred to as a rate area. The concept of exchange is based on geography and regulation, not equipment. An exchange might have one or more Central Office and Wire Center. A subscriber in the exchange area could get service from any of the central offices within the Exchange Area. An Exchange Area Polygon has only one operating company (Local Exchange Company). The service area for a local exchange company can be defined by grouping exchange area polygons.

LATA polygon is the Local Access Transport Area, which is defined by grouping exchange areas. A LATA may cross state boundaries. Local telephone companies are permitted to offer local or long distance telecommunications services within these regions. It initially provided a basis for determining how the assets of the former Bell System were to be divided at divestiture.

An Area Code polygon is defined by grouping exchange areas. Each area in North America has a unique area code (the first three digits of a ten digit phone number).

Rate Center point– a geographically specified point used for determining mileage-dependent rates for PSTN (Public Switched Telephone Network) calls.