GIS for Telecom

“An Enabling Technology & Integrated Approach”

Telecom Industry GIS Solutions (March 2012)

© 2012 Esri Northeast Africa

This document contains commercial or financial information or trade secrets are confidential and exempt from disclosure to the public without approval from Esri NeA.
Introduction

Solving the many business problems of a telecommunications company requires a good understanding of where your network assets, facilities, and customers exist today and where they will be tomorrow. In an industry that changes so rapidly, the capability to find, manage, and analyze data quickly and effectively makes a strategic difference.

Geographic Information System (GIS) is a technology that allows you to capture, manage, analyze, and display spatial data for use in solving complex problems.

GIS enables telecommunication professionals to integrate maps and information to make better decisions. From planning and maintaining network infrastructure to administering mobile telephone coverage, managing existing customers, and finding new ones, GIS users rely on location-based data to find the answers. GIS allows carriers to keep track of customer mobility and trends in the staggering bandwidth requirements driven by entertainment and Internet services. Viewing information on a map makes it quicker and more intuitive than relying on spreadsheets and other tabular data.

ESRI Northeast Africa (esri NeA) the first ESRI branded company in the Middle East and Africa realizes the vital role the telecommunications operators play in telecommunications business to ensure reliable communications media with appropriate quality of service; from this perspective esri NeA presents several telecommunications solutions that enable telecommunications operators to coordinate business priorities and network assets throughout their lifecycle, increase revenue, reduce costs, and accelerate speed to market for new telecommunication products.
Geo-Centric Approach

Geo-Centric refers to the use of the spatial component to build the Geospatial infrastructure inside the enterprise to reach more effective and intelligent business decisions.

Geospatial Infrastructure

Geospatial Infrastructure is a spatial backbone for any telecommunications enterprise; this geospatial foundation backbone is composed of a unified GIS data model upon which a set of GIS Web Services are built representing the global functions used among the enterprise; this geospatial foundation backbone is built in Service-Oriented Architecture (SOA) infrastructure that is implemented using industry standards (i.e. XML and SOAP). The geospatial infrastructure provides with;

Collaboration; with networks, databases, and expert systems from any supplier to automatically collects, aggregates, correlates, and distributes information from the various databases, planning tools, and management systems within the telecommunications enterprise.

Key Features

- Integration with CRM systems.
- Integration with Data Warehouses.
- Integration with Fault Management systems.
- Integration with other systems.

Foundation; This Geospatial SOA Infrastructure is an integration platform available for consumption by the systems used in the departments of any telecommunications enterprise; it facilitates spatial enabling of these legacy systems through seamless integrations serving these legacy systems with map component.

Key Features

- Address Finder; determines the latitude and longitude coordinates for street addresses.
- Map Image; provides access to a wide variety of dynamic maps.
- Place Finder; ranks a candidate list of place names and associated latitude/longitude coordinates for a given input place name.
- Spatial Query; lets you perform spatial queries and proximity searches.
- Wireless Location; locates a registered cellular phone on a network.
**System Suites**

➢ **NOC**

Visualizes and reports network faults (i.e. down sites) and alarms. The Fault Module visualizes the affected service/coverage areas (network outage). The Fault Module receives the faults information from a legacy system on regular basis through adaptors; this way, the faults is always up-to-date.

➢ **Customer Care**

Provides call center operators an instant view of customer location, nearby facilities, requests for service, and signal quality. It dramatically reduces service request turnaround times by integrating historical network and customer data with a trouble ticket system. Moreover, it can be used to deliver fast, integrated Call Center information over the corporate Intranet with both Marketing and Engineering staff.

➢ **Geo-Marketing**

Allow marketers to segment consumer, business statistics geographically to provide input to capacity planning apps and direct targeted marketing campaigns. In addition to get quick customer profiles asking geographic questions such as: where is the customer? What is the distance to nearest store? when do we plan to have coverage at this location?
Engineering
Visualize transmission links between network element locations. Ability to show network complaints (e.g. dropped call, network busy, no signal, and weak signal), network coverage, affected service/coverage areas (network outages). In addition to different KPIs geographically represented on map, drive test results and Follow-up/Escalate on network complaints.

Asset Mngmt.
Visualizes a geographic documentation of network element locations (e.g. MSC, BSC, and BTS) which is captured from the various underlying legacy systems of the operator; also, the Asset Management Module links the various elements (e.g. BTS/SITE) with the included equipment (e.g. Transceiver, Power Amplifier, Antenna...). All the included equipment’s have their manufacturer, vendor, and contractor data maintained.

Fiber Management.
Geo-enabled tools to find the fiber toutes to serve the customer location and assess the revenue return on build out to that new customer location. In addition, managing the network by visualizing the network elements and updating the network connectivity.
➢ **Broadband Coverage**

End users can visualize the current and planned broadband coverage and the available speeds at the different regions. Service providers can analyze the coverage and view the results as reports or map charts so that they can plan and take decisions for their future expansions.

➢ **Location Based Services**

A set of services can be provided to the end users (individuals and corporate) at their mobile devices based on their locations. End users can find locate nearest services, find friends and receive advertisements with offers from stores near to his location. That means a better service for the end user and more revenues for operators as well.