FACILITIES INFRASTRUCTURE MAPPING

To remain competitive, today’s utilities require state-of-the-art technology to effectively handle their complex and varied resource data needs. From maintaining and updating complex off-plant equipment inventories, to recording present locations of all resources and mapping prospective utility right-of-ways, to navigation and dispatch of maintenance and repair crews, today’s utilities are choosing the technologies of GPS/GIS, and AM/FM.

Utilities are in need of this technology to accurately locate, monitor, and maintain the many thousands of individual facilities that they must be responsible for in normal business operations. In addition to digital system mapping and maintenance, utilities must use this technology for planning and mapping of new power line corridors, mapping electromagnetic fields around power lines, GPS/GIS based dispatch and monitoring of utility field crews, ongoing maintenance and inspection of distribution systems, mapping trimming requirements, and right of way inspections.

The GeoLink Mapping System has been chosen as an effective integrator of GPS and GIS or AM/FM systems by many of the major public and private utility companies in the United States, including Pacific Gas and Electric, Bell Atlantic, Southwestern Bell, Utah Power and Light, Florida Power and Light, Denton County Electric Cooperative, and many others.

Florida Power & Light currently uses the GeoLink Mapping System for accurate as-built facility mapping. GIS data is collected at pole locations using a set of pre-programmed GeoLink function keys for multiple attribute entry. To geographically position inaccessible poles, the GeoLink Mapping System was used with a handheld laser range finder and digital compass to "point and shoot" accurate facility positions from up to 1,500 feet away. With laser distance measuring equipment, numerous facilities can be recorded and attributed from a single GPS observation point, enhancing field productivity and simplifying GIS data entry.

Ameritech Services of Illinois used the GeoLink Mapping System on a Telephone Mapping and Facilities Infrastructure Mapping Project. The GeoLink Mapping System was used not only to map facilities and perform inventorying functionality, but to update existing landbase information in a growing wire center west of Chicago, Illinois. Field crews rely on outside-plant maps to orient themselves for maintenance, and for locating placement of the facilities. At the start of this project, it was assumed that the existing wire center maps were up to date. The project team quickly found that existing data was seriously outdated.

The project began by using the GeoLink Mapping System in a vehicle to accurately map the existing road network of the wire center. The wire center boundary is determined by the phone number prefix. The road network consisted of a variety of road types from 2070 Chain Bridge Road Suite 350 Vienna, Virginia 22182 TEL: (703) 448-5610 FAX: (703) 448-5611
After successful field data collection of the roadway network and the facilities, the GeoLink data was differentially corrected from base station data also collected with the GeoLink Base Station logging capability. All data was corrected to achieve a positional accuracy of 2-5 meters. The corrected data files were translated through the GeoLink Data Manager and output into a GIS format that was usable by Ameritech's Digital Mapping Division. New wire center maps could then be generated which display current development and placement of facilities.

The GeoLink Mapping System quickly created an accurate landbase, locating the facilities in their proper geographical position with appropriate attribution. Ameritech can now proceed one wire center at a time to update existing, outdated outside plant records. With this data in a GIS format, future cable runs can be planned based on areas experiencing new growth. Plans exist for using the GeoLink Mapping System on the field crews that actually place the facilities. With this approach, mapping and attribute recording of the facilities are done at the time of actual placement.