The GeoLink Mapping System is a fully integrated, flexible GPS/GIS field mapping and vehicle tracking system specifically designed to provide users with the industry's most cost-effective and powerful GPS/GIS mapping tools available. The GeoLink Core Module serves as the host license and provides all basic data collection, editing, GIS translation, and data quality assurance functions.

The patented GeoLink system is comprised of a suite of modules which may be configured with the Core Module for advanced field mapping and tracking versatility. The Core Module provides the following user-driven capabilities:

**Data Collection Functions**

Utilizing a variety of GPS receivers, the Core Module provides complete operator functionality including automatic control for the recording of GPS position and time while simultaneously providing the ability to record descriptive data for mapping.

**Real-Time Display for Navigation and Ground Verification**

- A "live" trace of the GPS path of travel is shown as part of the map display.
- A vector based background map showing previously mapped areas may be displayed and overlaid with GPS position data.
- A grid overlay may be developed and displayed with background maps to assist in navigation or ground verification.
- Real-time display of GPS parameters brings GPS down to earth through a user-friendly interface.

**Attribute Data Collection**

- At any point during the field mapping session, the operator may use pre-programmed pull down menus to enter descriptive information (in a user-defined environment) for any geographic point, line, or polygon.
- Function keys can be programmed using powerful macros to simplify attribute text and numeric entry.
- Pre-set tables or "Picklists" increase attribute data collection efficiency.
- Operator prompts inform users to enter specific data.

**Data Management/Editing Functions**

**GPS and Attribute Data Editing**

- Allows the operator to interactively edit position and attribute information as well as select or convert the datum and projection of the translated data.
- Provides complete file viewing and plotting capabilities for evaluation.
GeoLink Mapping System
Operating Features

Real Time Display

Live Map
- Cursor shows current position
- Trace shows previous path
User selected background map
- ERDAS, ARC/INFO, AutoCAD, Intergraph, GeoLink (GLM)
Map window automatically centers
Digital Status display
- Latitude/longitude/altitude
- GPS Date/Time
- Speed and heading
- Satellites in view
- Satellites in use
- Satellite Signal Strength
- GPS positioning mode
- GeoLink data collection mode
- Data source/destination
- Horizontal uncertainty (Selected versions)
Previous attribute text
GPS receiver communication

Editing Capabilities

Translate map data to various formats
View map files
Select all screen colors
On-screen editing:
- Add/move/delete points
- Add/move/delete nodes
- Add/move/delete/edit att. text
Change attribute types
Change attribute assignments
Utilize background map files while editing
Point and click mouse support
Change datum, projection, and units
Attribute editing through word processor
Position data filtered to eliminate:
- Points too close
- Nodes too close
- Excessive velocity
- Excessive acceleration
- Unwanted GPS positioning mode

Attribute Entry

Full keyboard available for data entry
12 standard F-keys are programmable
the 12 Shift F-keys, 12 Alt F-keys, and 12 Ctrl F-keys
Expansion keyboards (Optional)
Voice input (Optional)
Digital camera (Optional)

Auxiliary Data Input

Auxiliary data can automatically be acquired by serial communication with plus external digital measurement devices such as:
- Pollutant monitors
- Radiometers
- Laser Rangefinders
- Depth Sounders
- Programmable data acquisition systems

View Map Capability

Zoom Features:
- Extent
- Size
- Factor
- Window
Pan control for screen centering
Auto centering of GPS position
Distance measurement
Foreground displayed attribute control
Background displayed attribute control

Plotting Capability

Plot to standard or selectable scale
Output to file, Serial, or Parallel port
Printers/plotters supported:
- Epson
- Okidata
- NEC Pinwriter
- Hewlett Packard Laser Jet
- Hewlett Packard Paint Jet
- Hewlett Packard HPGL
- Houston Instrument DM/PL
- Postscript devices

Attribute Feature Types

Point
Line (arc, polyline)
Polygon (area)

Extended Attribute Feature Types

Averaged Point
Point Offset
Line Offset
Polygon Label Offset

Function key definitions may include fixed text plus embedded operator prompts for specific information, assignment to specific database field, and feature type. For more flexibility, auxiliary keypads are available from GeoResearch with 35 up to 256 keys, all programmable, which can be connected through the parallel printer port and will not block printer operation.