FINDAR Forensics GPR

For decades, GPR has been a part of many high profile police investigations; searching the backyards of serial killers for bodies and the ongoing search for Jimmy Hoffa's body. The early GPR systems used in these cases were expensive, complicated to use and required an expert to collect and process the data.

There is a need to get GPR technology into local police organizations so it is readily available for routine investigations, not just high profile cases. Many current cases and cold cases could be solved if a critical piece of evidence could be found; bodies, weapons, caches of drugs and money, and hidden bunkers are a few types of physical evidence that could close a decades-old case.

FINDAR is a forensics-specific GPR system developed after several years of collaboration between police organizations and Sensors & Software. It is readily used by investigators at a price point within reach of most police departments' budgets. With FINDAR, digging is targeted to specific areas of interest, rather than random searches with shovels and backhoes. Simple to use with on-the-spot answers, FINDAR is especially useful when a time-limited search warrant has been issued.

EKKO_Project V2

EKKO_Project V1 was released in 2012 as the flagship program for organizing, plotting, editing, processing, interpreting and reporting on GPR data collected with Noggin, pulseEKKO PRO and Conquest systems.
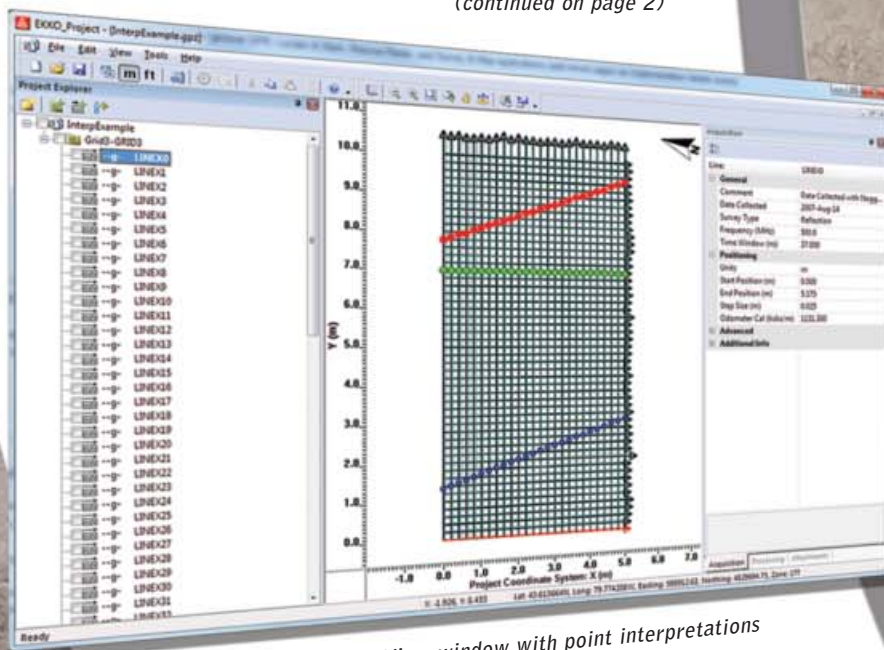
MapView window with point interpretations

EKKO_Project V2

(continued from page 1)

EKKO_Project now delivers many new features that make GPR data analysis and management even easier.

MapView Window: New to EKKO_Project Base, grid and geo-referenced lines are displayed in the MapView Window. The grid location is automatically calculated relative to the world coordinates and plotted on a map with a north arrow. Any fiducial markers added during data acquisition or data interpretations created in post-processing with the Interpretation Module also appear on MapView. These maps provide a powerful way to visualize the relationship between features of interest.

Multiple grids collected with GPS can also be displayed simultaneously in their correct orientation with respect to one another .

SliceView Module: SliceView displays the GPR data collected in a grid as a series of depth slices cutting into the subsurface. Each depth slice is a map of the GPR signal strength at a specific depth; typically the stronger the GPR reflector (target), the more intense the colour.

Large volumes of data can be plotted and viewed quickly to assist in interpreting the orientation and lateral extent of buried objects. If GPS data is available, depth slices can be plotted on Google Earth to show the actual location of the survey. Grid data can also be exported as 3D files for visualization in Voxler, GRD files for Surfer and CSV files for other visualization software.

AutoCAD DXF File Output: Demand from locators, engineers and construction managers to integrate GPR observations into existing drawings has now been answered with AutoCAD-compatible DXF files. GPR line paths, fiducials, point and polyline interpretations are saved as separate layers for easy import into AutoCAD software. Files can also be read by Geographical Information System (GIS) programs.

EKKO_Project operates in Windows 7/8 and makes data organization, plotting, editing, processing and reporting a breeze; it is a must for any GPR practitioner.
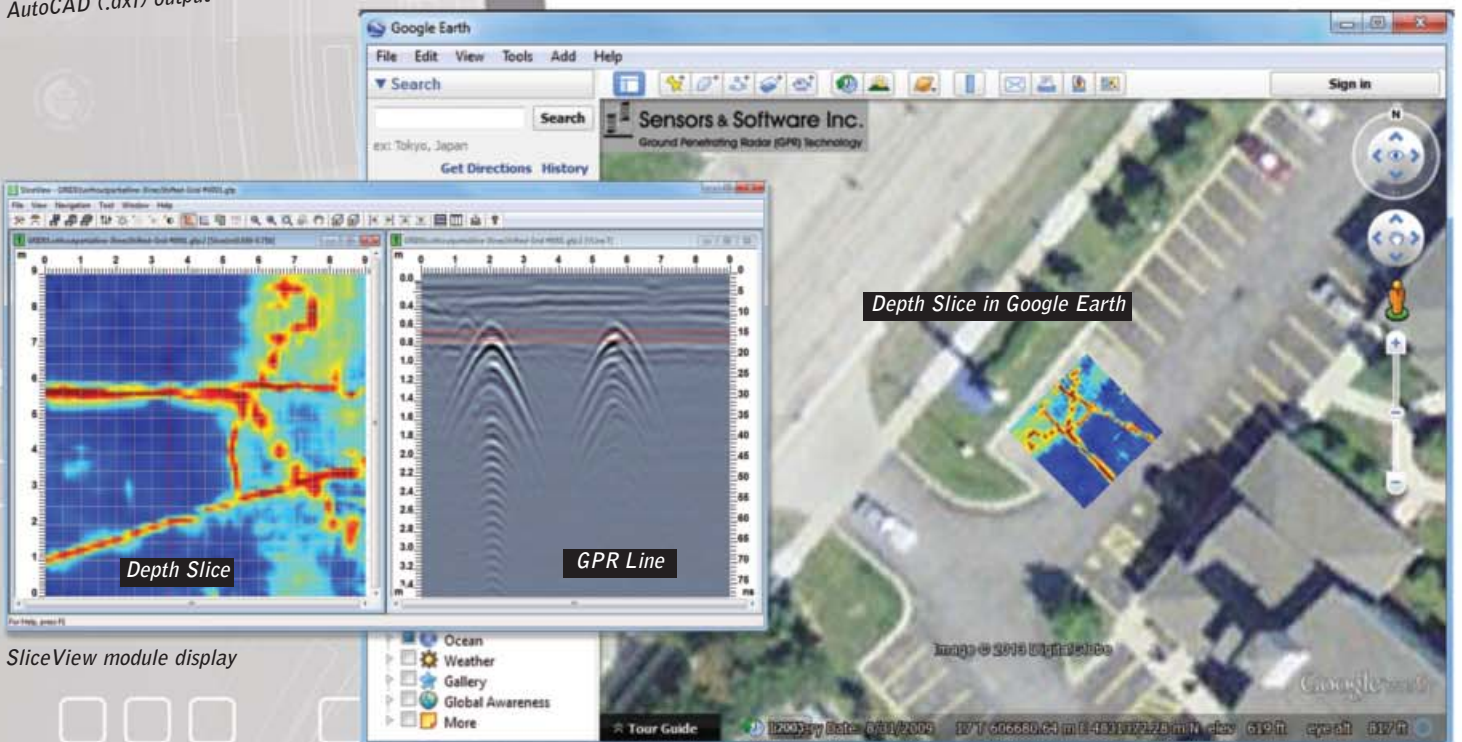
For existing software owners, affordable upgrade paths are available. Contact our sales department or one of our local representatives for more information.

GPS path and point interpretations in Google Earth
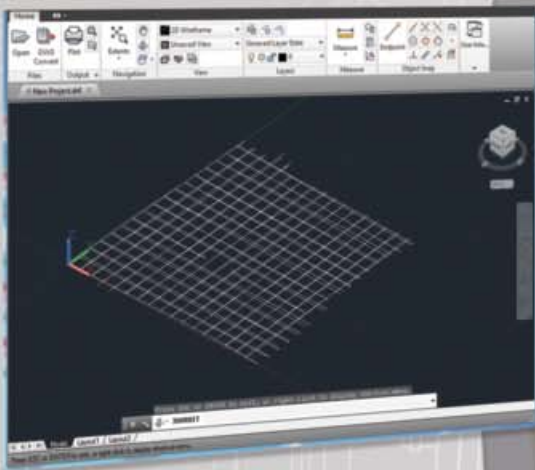

AutoCAD (.dxf) output

SliceView module display

Depth Slice

GPR Line

Depth Slice in Google Earth

FINDAR has two modes of operation: Line Scan and Grid Scan.

Line Scan Mode

Line Scan provides investigators with cross-section images of the subsurface. Strong reflectors and hyperbolic responses in the GPR survey lines reveal objects in the subsurface. The exact location and depth of objects are pinpointed by simply backing up the system while surveying.

Line Scan is most commonly used as a starting point for a search, allowing operators to quickly locate potential targets for detailed grid examinations. It is also useful in confined areas or sites with numerous natural or man-made obstructions.
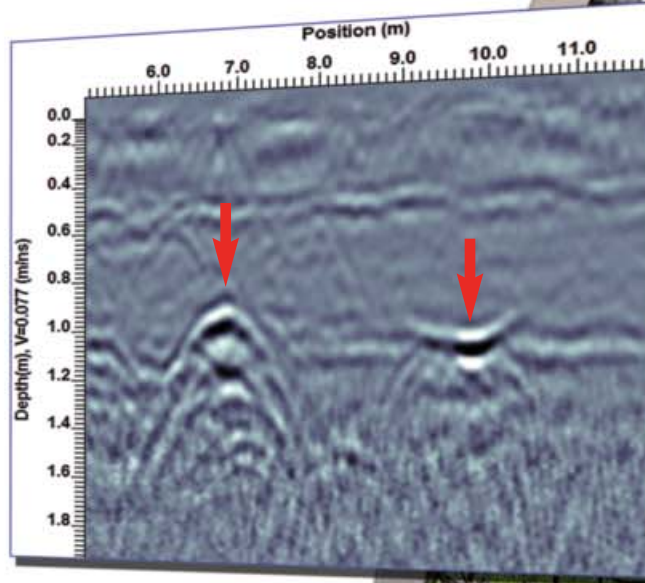
GPR Line showing two subsurface objects indicated by strong GPR reflections

FINDAR hardware

The FINDAR GPR sensor is based on the latest generation of the pulseEKKO model of GPR, a system with a 25 year proven track record in all types of applications. Other FINDAR features include:

- DynaQ, Sensors & Software's patented technology that provides the highest quality of data based on the collection speed
- Data collection is triggered every 0.02m (0.8 inch) by a direct drive odometer
- Powered with long life, readily-available standard gel-cell batteries
- Rugged fibreglass cart frame to prevent interference with the GPR signals
- Small, lightweight and collapses into a shipping case for easy transportation and storage

Grid Scan Mode

Grid scan is the recommended mode when a more open area like a backyard or field needs to be searched. Grid scan provides more data and therefore greater coverage and detail of the subsurface.

Pre-set parameters minimize set-up time and simplify the data collection process. Grid size, line spacing (based on target size) and display depth are the only inputs required. Grids sizes are 10x10, 20x20 or 30x30 foot (3x3, 5x5, 10x10 meter) and can be collected with a choice of 3 different line spacings: high resolution (0.5 ft or 0.1m), medium resolution (1 ft or 0.25m) or low resolution (2 ft or 0.5m). FINDAR always collects data down to 10 feet (3m) but the operator can decide the maximum depth to process in the field.

The user-friendly interface guides the operator to collect each line at the proper position, automatically stopping the collection when the preset line length is reached. FINDAR even has the ability to collect grid data around obstacles.

Line Scan mode used for reconnaissance and obstructed sites

FINDAR Forensics GPR

Depth Slices

Once grid collection is complete, the data is processed within minutes on the display (DVL) and presented as a series of depth slice images, each 4 inches (0.1m) thick, cutting deeper into the ground. Depth slices are maps of GPR signal reflectivity, revealing objects and disturbed areas within the grid. The images can be advanced manually or played as an animation to quickly review the data and reveal patterns.

The largest, high-resolution grid provides 12.6 million unique sample points of the subsurface. This detail allows investigators to search a site with one grid and target areas of interest or, quickly clear the area and move resources onto other leads.

Line Scan and Grid Scan data are saved by a simple button press. All data images are time-stamped for record-keeping and for presentation in reports or court proceedings.

Sensors & Software has worked with the Ontario Provincial Police to develop 1 day introductory and 5 day operator courses. Recognized by the Ontario Provincial Police Academy, these courses are now available to police agencies around the world.

Subsurface object

Grid Scan

Subsurface object

Depth Slices

GPR Line
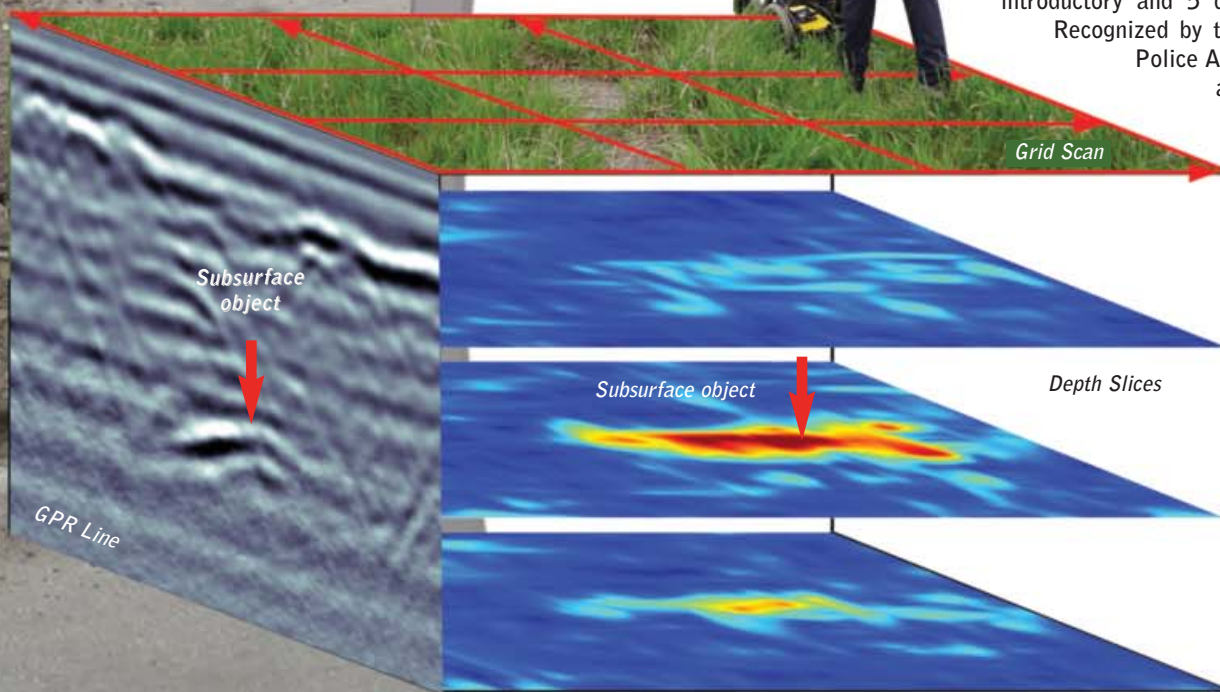
Please contact us or visit www.FINDAR.ca for more information about this new, innovative GPR solution for law enforcement.

CONEXPO 2014 Show Special

Las Vegas NV
March 4 - 8, 2014

Featuring Sensors & Software's GPR systems developed for locators, engineers and construction managers, our participation at CONEXPO 2014 will offer:

- Live demonstrations of LMX100, Utility SmartCart and Conquest
- Unique offers
- Special draws

Note: In 2014 we will not attend WoC. See you at CONEXPO, booth # 62920.

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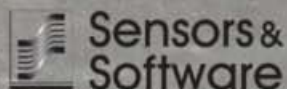
subsurface imaging solutions
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