

KNOW WHERE TO DIG

UTILITY LOCATING



Know where to dig with MALÅ Utility Locating solutions

To avoid causing any serious damage by excavating or cutting in the wrong place, it's vital to obtain precise and reliable information about the location before starting a project. This involves mapping the location to determine what lies beneath the surface. By taking these precautions you can prevent the risk of utility strikes, which can be very dangerous, costly and cause huge time delays.

MALÅ's GPR solutions are specifically developed to map underground metallic and/or non-metallic utilities such as pipes, cables, conduits and ducts.

Thorough sub-surface investigations with MALÅ Utility Solutions:

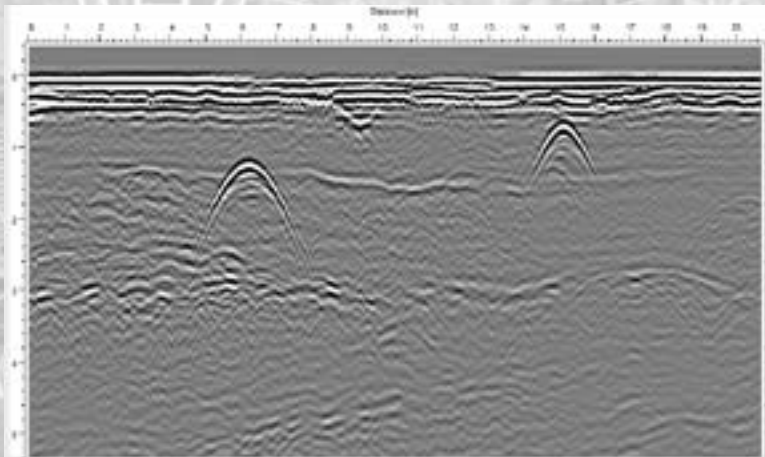
▶ **COST-SAVINGS**

- Efficient projects - exact utility location information
- Avoid the risk of utility strikes
- Invest for the future with accurate sub surface maps
- No need to restore excavated ground due to faulty maps
- Utility solutions adapted to your needs from simple "mark as you go" to advanced processing of data for complex projects

▶ **SAFETY**

- Avoid work-place related injuries

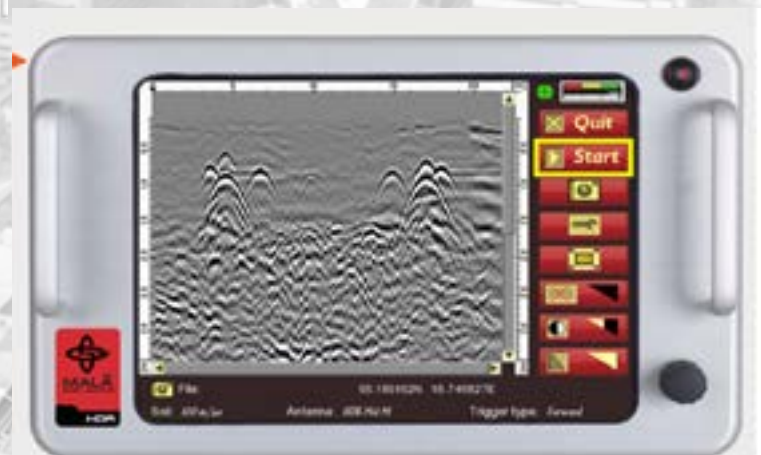
Utility Data examples











1. 2D GPR data from a utility locating project with MALÅ Easy Locator. Hyperbolas represent the pipes and cables in the ground.

The peaks of the hyperbolas indicate the location at various depths (e.g. 0.8 and 1.2 m) of the buried objects. Precise excavation based on the accurate information is thus possible.

2. High quality GPR data seen on a MALÅ Easy Locator Controller

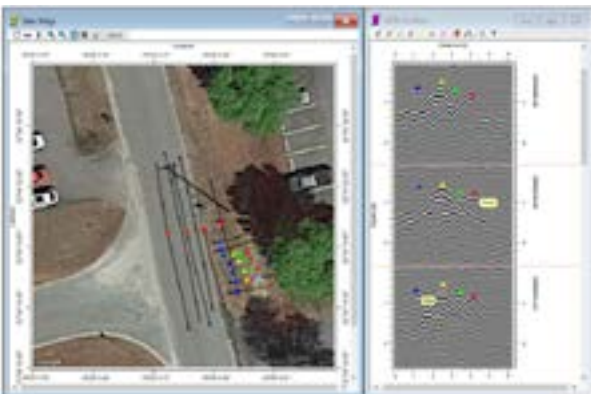


PRODUCT FINDER - THE MALÅ UTILITY SOLUTION FOR YOUR NEEDS

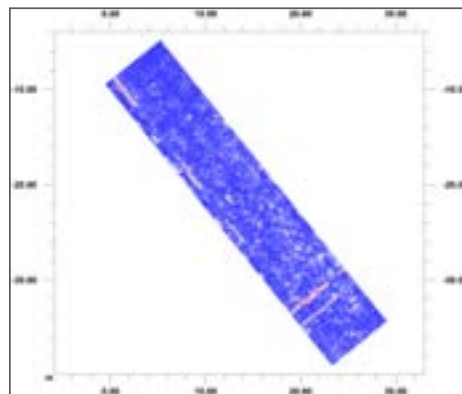
	 MIRA 8 hand-pushed	 MIRA 8 towed	 MIRA 16 vehicle / or towed	 EL HDR	 EL PRO	 EL PRO WR HDR	 GX	 CX
Map and/or mark out utilities	●	●	●	●	●	●	●	○
Concrete investigations	○	○	○	○	○	○	●	●
Array/Large-scale mapping system	●	●	●	○	○	○	○	○
Small scale mapping system/Easy operation	○	○	○	●	●	●	●	●
Area under investigation	Urban & Rural	Urban & Rural	Urban & Rural	Urban	Urban & Rural	Urban & Rural	Urban & Rural	
Type	Hand-push	Vehicle mounted	Vehicle mounted	Cart-based	Cart-based	Cart-based	Cart-based /Towed	
Usage on Side-walks	●	●	○	●	●	●	●	
Usage on Roadways	●	●	●	●	●	●	●	
Usage Off-road	●	●	●	RTC ¹	RTC ¹	RTC ¹	●	
Other applications:								
- Archaeology	●	●	●	○	○	○	○	○
- Small-scale archaeology	●	●	●	○	●	●	●	○
- Forensics	●	●	●	○	○	○	●	●
- Geology	●	●	●	○	○	○	●	○
- Sinkholes	●	●	●	○	○	○	○	○
Post Processing/Visualization software:								
- rSlicer (included)	●	●	●	○	○	○	○	○
- Object Mapper (optional)	○	○	○	●	●	●	●	●
- GPR-SLICE SW (optional)	●	●	●	●	●	●	●	●
Display of post processing in 3D grids with: -3D Vision SW	○	○	○	○	● ²	○	● ²	● ³

1) Rough Terrain Cart (RTC) 2) Optional 3) Included

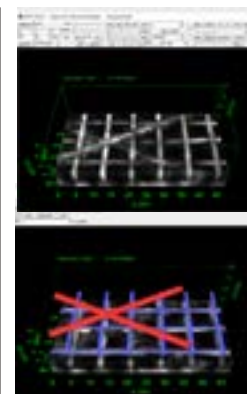
Post-process Utility Data Examples



1. Object Mapper 2018 visualization software.
Data collected utilizing the MALÅ EL PRO. Identified utilities are marked in different colors according to the type of buried pipe or cable. The utilities are then plotted and matched to a satellite image (Google Maps), as seen on the left.



2. rSlicer visualization software
Processed MIRA utility data. At 1.1 m, visible features, analyzed and interpreted as drain-pipes.



3. GPR-SLICE Software.
3D visualization of rebar and post tension cables in concrete structure.

Customer utility projects

Astacus



Large-scale utility locating

- **Company**
Astacus AB, Engineering company, Sweden/India
- **Challenge**
Investigating and preparing a heavily trafficked bus and tube carriage depot for construction of a pump station
- **Utility Solution**
 - MALÅ MIRA GPR (16-channels, 400 MHz)
Carrier vehicle with frame solution
MIRAsoft (Data collection SW)
rSlicer (Data Processing SW) & Customer SW
- **Result**
Identified location of e.g conduits, near surface water, underground electricity shafts, subsurface grease pits and concrete slabs within the upper 2m ground. Updated and accurate maps based on the data from the GPR survey enabled the efficient continuation of the pump construction project.

More information: www.guidelinegeo.com/case-stories



Utility locating

- **Company**
Power company, USA
- **Challenge**
To expand a power sub-station. The “as-builts” indicated a 230 kV line emanated from the building directly at 90 degrees from the foundation. In addition to the high voltage the line was also cooled with a dielectric fluid containing hazardous materials.
- **Utility Solution**
A geotechnical firm was contracted to perform borings and staked out the proposed bring locations. Conventional EM was rendered ineffective due to the inability to direct connect or induce a signal on the line. MALÅ GPR solution was chosen.
- **Result**
GPR data was collected over the entire area on a prescribed grid and successfully designated a line at 45 degrees from the building. As well a geotechnical boring stake was place exactly over the line! Vacuum excavation confirmed the GPR data.

Power company



Contact us to discuss Utility Locating Solutions for your needs

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www.guidelinegeo.com/utility-locating