TECHNICAL SPECIFICATIONS

DATA LOGGER	Panasonic CF30 PC or similar
RADAR CONTROL UNIT	3 DAD MCH FastWave synchronized
NUMBER OF CHANNELS	40
ANTENNA FREQUENCY	200 and 600 MHz
ANTENNA POLARIZATION	Horizontal (HH) and Vertical (VV)
TRANSVERSAL SAMPLING	Full configuration (2 DML + 1 DCL): 6 cm
POSITIONING	Survey wheel GPS or TOTAL STATION (not included)
COLLECTION SPEED	Up to 15 Km/h in full configuration
POWER CONSUMPTION	100 Watt
BATTERY OPERATING TIME	> 8.0 h
DAD - Connection to Data Logger	Ethernet LAN
SIZE ON GROUND	Length: 2.02 m Width: 2.10 m
WEIGHT full configuration	228 Kg
SURVEY PATH WIDTH	1.84 meter
ENVIRONMENT	Rain proof

SOFTWARE SPECIFICATIONS

PROCESSING SOFTWARE	GRED 3D Utilities Stream, including: Automatic and manual data processing Propagation velocity estimation (hyperbola fitting) 2D/3D representation Data fusion for different frequency Interactive 2D data inspector GPS location Irregular volume representation B-scan view C-scan view Colors scale/palette GPS markers view Insert targets function
OUTPUT DATA	Automatic data transfer into CAD maps

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UTILITY
MAPPING

STREAM EM

the vehicle towed radar solution for extensive 3D utilities mapping

IDS introduces STREAM technology:
massive arrays of multi-frequency, multi-polarized antennas
setting new standards for accuracy and productivity.

Making possible what was only a dream

IDS INGEGNERIA DEI SISTEMI

IDS: The leader in multi-frequency and multi-channel Ground Penetrating Radar

G0201S20

STREAM EM

APPLICATIONS

Massive antenna array solution for extensive 3D mapping of utilities

BENEFITS

- Boosts productivity without reducing accuracy
- Doesn't block traffic (can be towed at up to 15 km/h)
- Modular structure: can be reconfigured for mapping sidewalks and difficult areas
- Adaptable to other applications with suitable kits (archaeology, environmental, road/runaway)
- Easily transportable (dismounted, the equipment packs into a van)

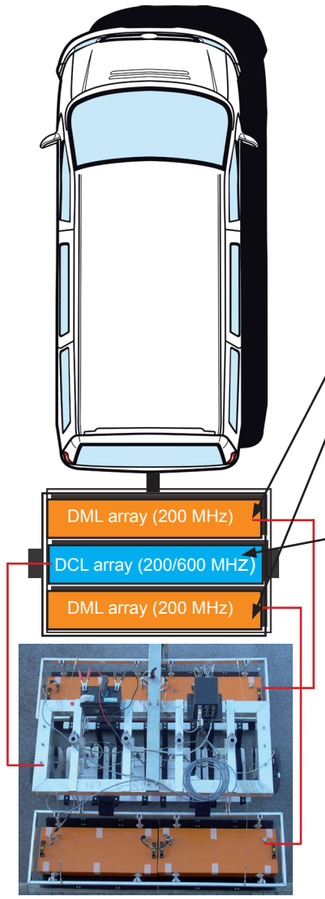
Why STREAM-EM is the unique answer for extensive utility mapping:

STREAM is the ultimate IDS technology making possible what was only a dream until now.Think of mapping all the underground utilities in large areas of dozens or hundreds km². Traditional single-frequency or manually operated GPRs simply don't permit this, while other existing vehicle towed GPRs do not assure an acceptable level of utilities detection.STREAM EM has been conceived to cover tens of hectares/day while maintaining the quality of utilities detection provided by the internationally renowned RIS MF Hi-Mod. This is possible thanks to:

- a massive array of 40 antennas ensuring an unsurpassed sampling density
- a collection speed of 15 km/h requiring only longitudinal scans
- use of both antenna polarizations for optimal detection of both main pipes and junctions at the same time
- low and intermediate frequency antennas to detect deep and shallow pipes

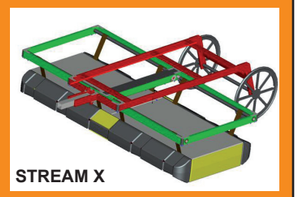
FEATURES AND COMPOSITION

Stream EM offers the highest detection performance thanks to the following capabilities



2x200 MHz DML arrays for detecting main pipes along the road (6 cm. transversal sampling; VV polarization)

STREAM-X: the DML arrays can be extracted from the STREAM-EM to be used in the STREAM-X configuration for archaeology or environment surveys



4 dual frequency 200+600 MHz antennas (DCL array) for the detection of shallow and deep junctions (HH polarization)

MF Hi-Mod: the DCL array can be extracted from the STREAM-EM to be used in the MF Hi-Mod configuration for mapping sidewalks and areas with difficult accessibility

SOFTWARE

GRED 3D Utilities STREAM is an advanced processing software specifically designed for the easy and efficient interpretation of Stream-EM data. Key features:

- Automatic target recognition: an automatic tools help the operator locate pipes and cables
- 2D and 3D tomography for an immediate visualization of pipes and cables
- Automated transfer to CAD/GIS: the pipes and cables can be automatically transferred to CAD or GIS maps

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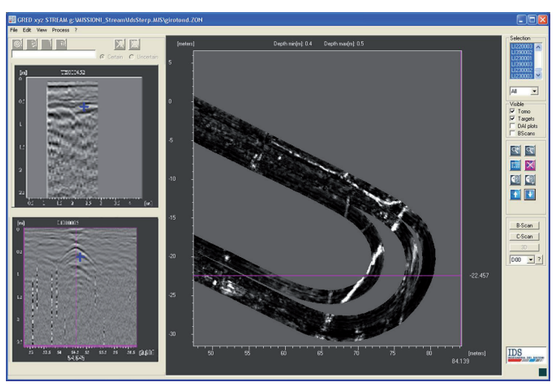

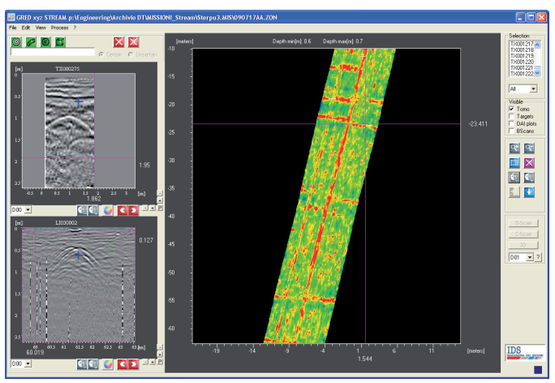

GRED3D Utilities Stream:
Tomographic and Radar map showing junctions