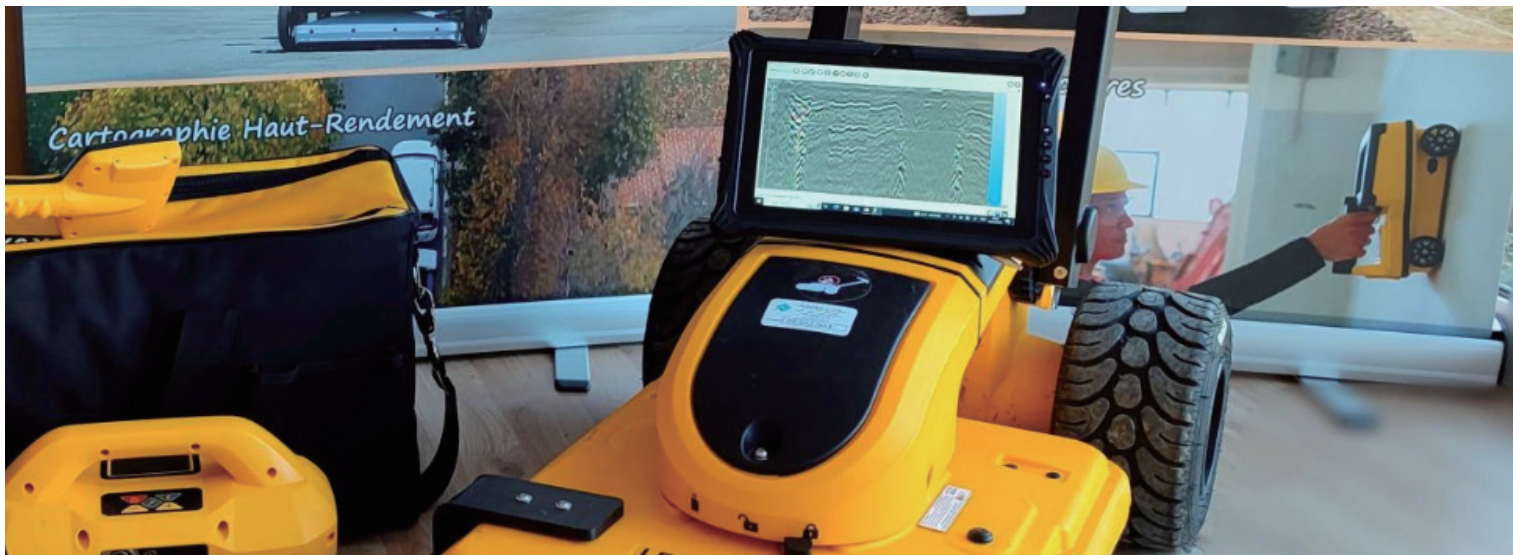


## Surveying and Mapping Industry



### Emdoor EM-I10A Empowers ASTELLOG's IDS Stream DP Solution for High-Efficiency GPR Detection

**100%**

Real-time  
data viewing

**35%**

Improved  
detection efficiency

**80%**

Enhanced  
outdoor stability

**8 hours**

Extended  
duty cycle

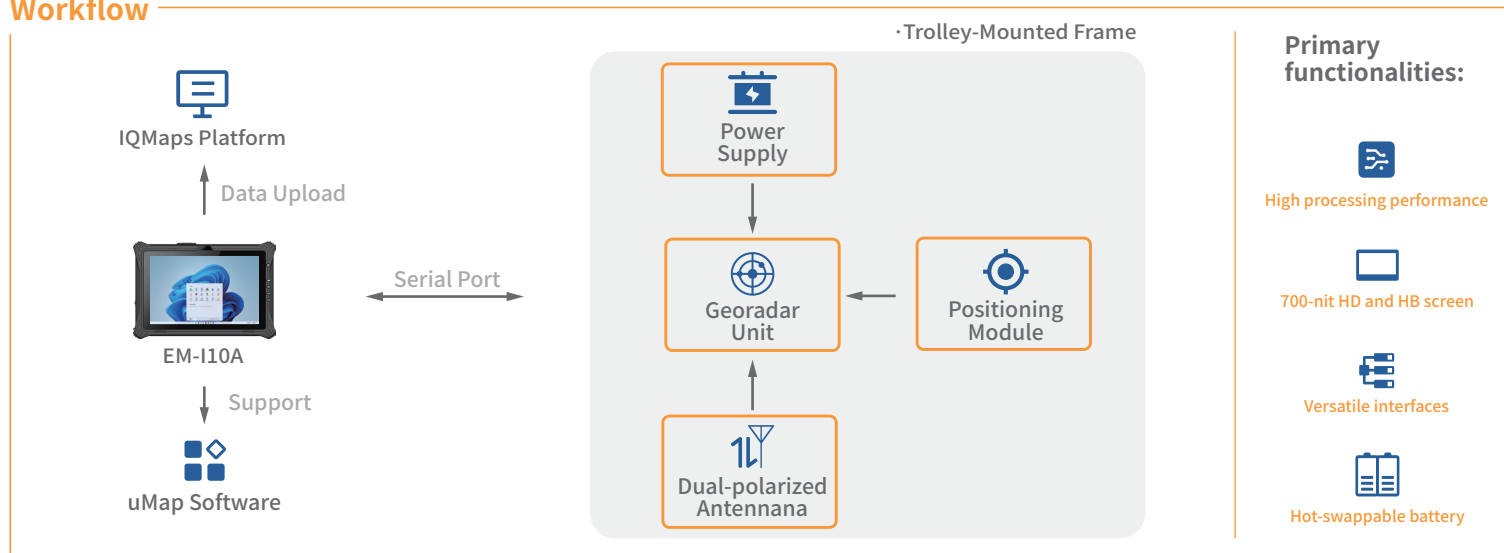
#### Summary

The IDS Stream DP, developed by IDS GEORADAR, is a high-precision 3D ground-penetrating radar (GPR) system mounted on a trolley, featuring a multi-channel, array-based, and dual-polarized design. As a distributor of IDS GEORADAR solutions, ASTELLOG integrates the EM-I10A rugged tablet into the DP system, enabling seamless data collection, evaluation, and sharing under various conditions. To date, the system has been widely adopted in surveying and mapping, engineering surveys, and geological investigations.

#### Client Overview

Based in Brittany, France, ASTELLOG specializes in the integration of geosensing and imaging solutions for soil and structural analysis. The company provides customers worldwide with high-quality surveying hardware and software solutions, along with comprehensive technical support. Its offerings include IDS GEORADAR solutions for real-time 3D mapping of underground utilities and Vivax-Metrotech systems for underground pipeline inspection, positioning it for strong market potential and growth.

#### Workflow



## Challenge

Stream DP, newly launched by IDS GEORADAR, is the multichannel GPR array solution for real-time 3D mapping of underground utilities. It integrates IDS revolutionary EsT technology which significantly enhances antenna detection accuracy, and adopts a new hardware design for a more compact and maneuverable body. Additionally, the Stream DP, with uMap software for data acquisition and IQmaps for post-processing, has been designed for higher productivity and greater efficiency.

A robust IT infrastructure is essential to support the uMap software and IQmaps platform. To create a more comprehensive solution, ASTELLOG seeks to equip the IDS Stream DP with suitable terminal devices that allow field staff to effortlessly collect, evaluate, and share critical data.

However, in real-world applications across various fields such as mapping, engineering surveying, and geological surveying, regular consumer terminals can no longer meet the requirements. Whether in terms of processing power, display performance, endurance, or rugged durability, ASTELLOG is in urgent need of a highly reliable, stable, and high-performance terminal device to ensure rapid integration with IDS Stream DP for efficient and smooth on-site detection.



## Solution

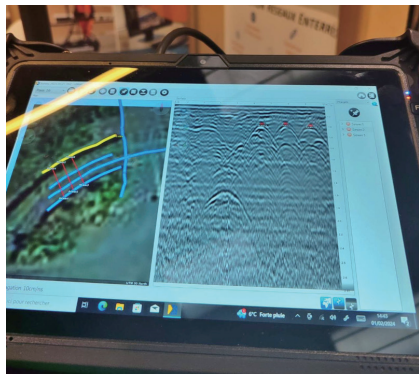
To address these issues, ASTELLOG selected Emdoor's rugged tablet, the EM-I10A, as the on-site terminal for IDS Stream DP, enabling field operators to make quick and informed decisions by delivering real-time visualized detection data.

The EM-I10A, coupled with uMap software, is deployed above the joystick on the Stream DP trolley with a vehicle-mounted accessory and

connects to the GPR main unit via a serial port.

During the detection process, IDS Stream DP transmits control instructions to the GPR unit via the EM-I10A. The dual-polarized antenna then emits radar waves into the ground and receives waves from the ground, after which the unit samples the signals, performs A/D conversion, and utilizes radical EsT technology to capture high-resolution data by precise signal control and optimal noise rejection. Finally, the detection data is displayed and stored in uMap where operators can view B-Scan 2D profiles and C-Scan 3D slice maps in real time and upload relevant data to the IQmaps platform.

In addition, the Stream DP is equipped with a positioning module and a power supply. The former is compatible with multiple positioning methods such as GPS and TPS, allowing users to seamlessly switch between project files to accommodate various complex scenarios, while the latter ensures a stable and reliable operation of the GPR main unit.



## Benefits

### Efficient Data Collection, Smart Operation

The EM-I10A is powered by the 12th generation Intel® Core™ processor and integrates the exclusive uMap acquisition software for real-time detection and collection of massive radar data. Collaborating with the IQmaps platform through 4G LTE and Wi-Fi 6, the system bridges the operation and management sides to facilitate field GPR data analysis and processing. This not only marks a significant breakthrough in data collection but also enhances the efficiency and smart management of the detection process.

### Seamless Integration, Versatile Interface Compatibility

The compact size and stable mounting structure of the EM-I10A allow it to be easily mounted as an industrial-grade field application terminal on the trolley frame. It is also equipped with multiple I/O ports and utilizes a highly reliable serial connection with the GPR unit to ensure stable, high-speed data transmission and precise command control.

### Real-time Data Visualization

The EM-I10A's 10.1-inch high-resolution, high-brightness screen offers an intuitive and efficient way to access radar data and detailed underground imagery. By monitoring real-time B-Scan 2D profiles and C-Scan 3D slices, operators can make quick, well-informed decisions on-site. Additionally, stylus support enhances operational flexibility and portability.

### Portable, Rugged, and Uninterrupted in Operation

The EM-I10A, tested and certified to MIL-STD-810 and IP65 standards, is tough enough to withstand accidental drops and impacts. It also features a large hot-swappable battery paired with a built-in small battery to ensure non-stop surveying performance.

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The Emdoor's EM-I10A is a key part of our IDS Stream DP solution. Its rugged, tri-proof design ensures reliable georadar operation in diverse environments. Moreover, its capabilities in data collection, processing, and visualization have driven a significant breakthrough in efficiency, performance, and data management.

— ASTELLOG Representative

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