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7th Utilities GIS Conference, Kampala, Uganda

Power of GIS in improving revenue collection for Utilities

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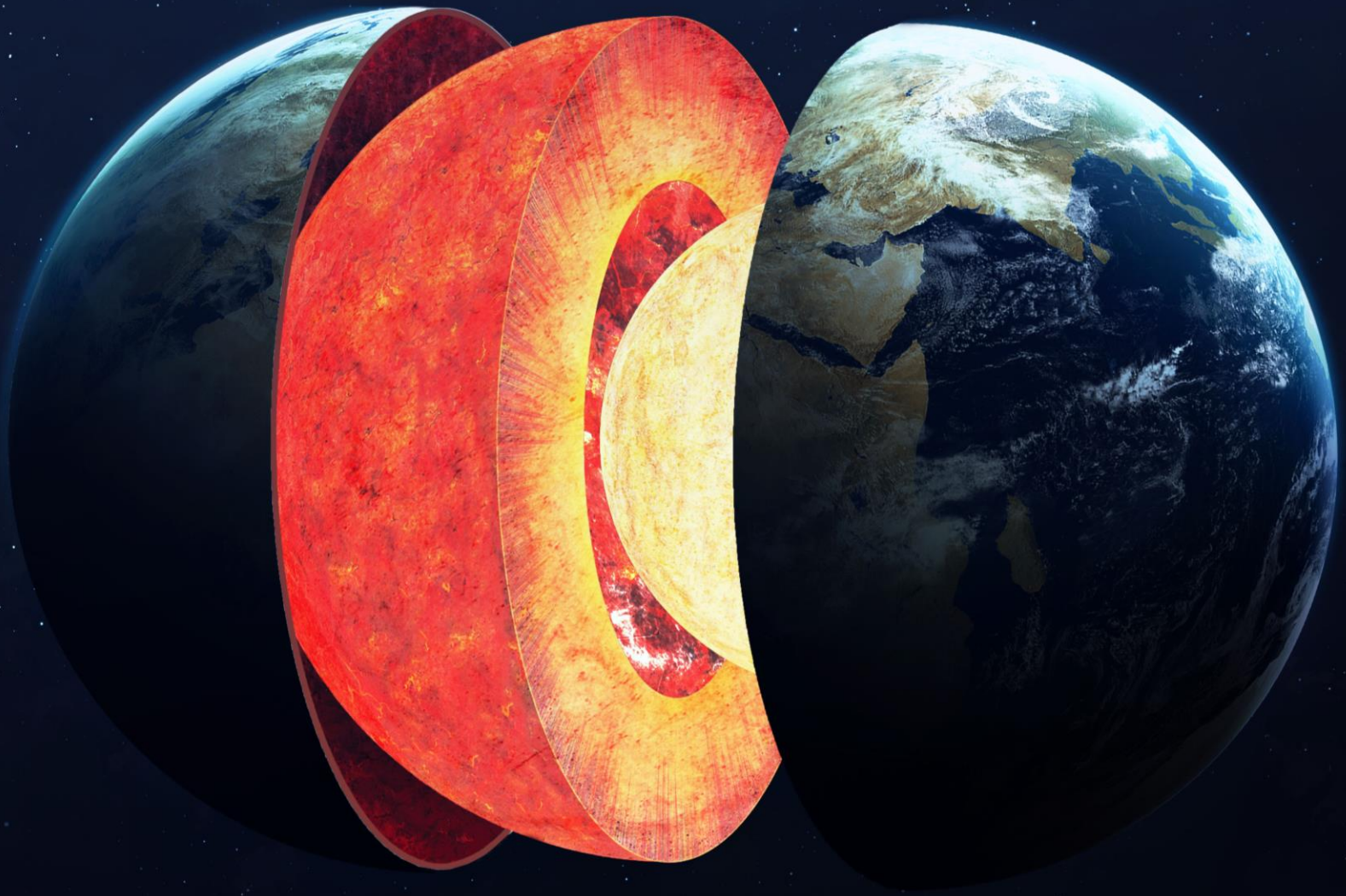


Outline

- Corporate Presentation
- Automating Field Based Workflows
- Integration of GIS and Billing System
- Underground Mapping
- Training and Capacity Development

Applications of GIS in Utilities

- A utility is a service that is used by the public. This can be electricity, water, or petroleum.
- GIS provides mapping, analytics and viewing capabilities for different assets.
- GIS also helps to maintain, manage, analyze, and publish utilities network models, maps, and related information.

Key Drivers

- Field Efficiency
- Asset Management
- Reduction of Non-revenue Water (NRW)
- Data Management
- Network planning/Roll out/Expansion
- Regulatory & Policy Requirements

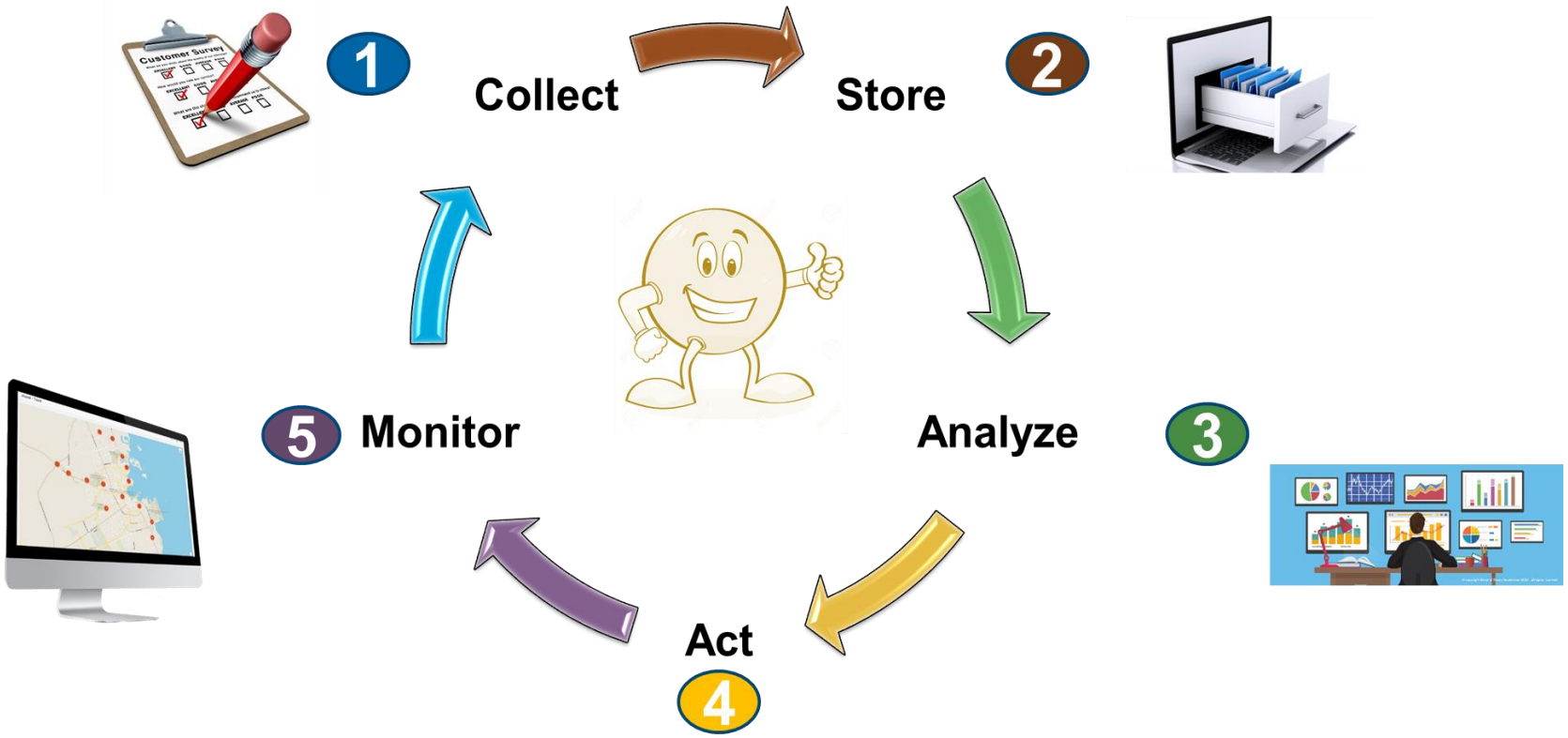
Automating Field Based Workflows using Mobile MapWorks

Introduction

- Enhanced field workflows enables utility companies to work more efficiently and effectively.

- Leads to increased currency and accuracy of enterprise records and delivers increased operational insight across the business.

Asset Management Process



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Current Scenario

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Key Challenges

- Disconnected incident mapping, utilities mapping & site inspection workflows.
- Inaccurate Location information
- Outdated Asset databases.
- Complicated data acquisition tools.
- Limited internet connectivity in remote areas.

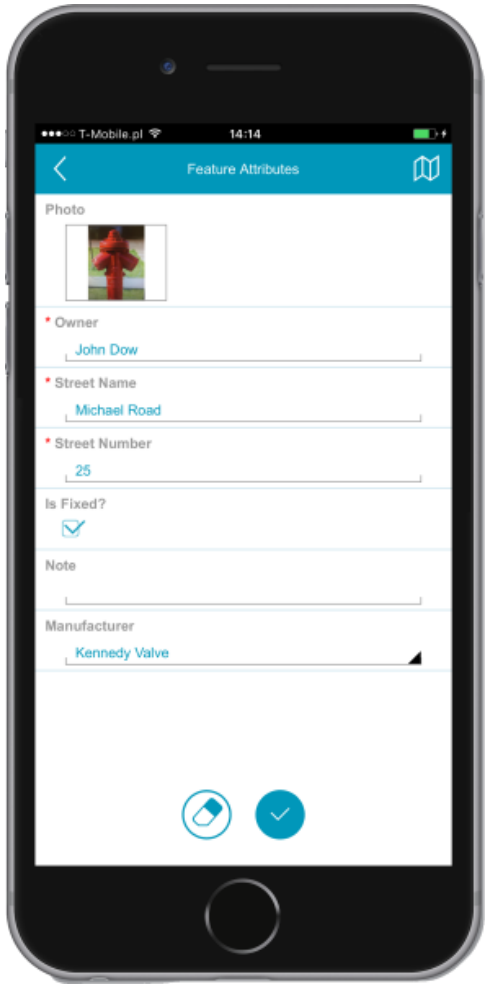
We need a solution that…

- ✓Is easy to use & maintain
- ✓Works with or without internet
- ✓Allows seamless capture of asset location
- ✓Enables capture of ancillary data types like photos, documents and videos

Mobile MapWorks App

✓**Mobile *app*** for field personnel and crews, supporting a variety of field-based workflows against enterprise GIS data.

✓Fully **configurable** to suite variety of utility companies field-based data acquisition workflows.



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Capabilities

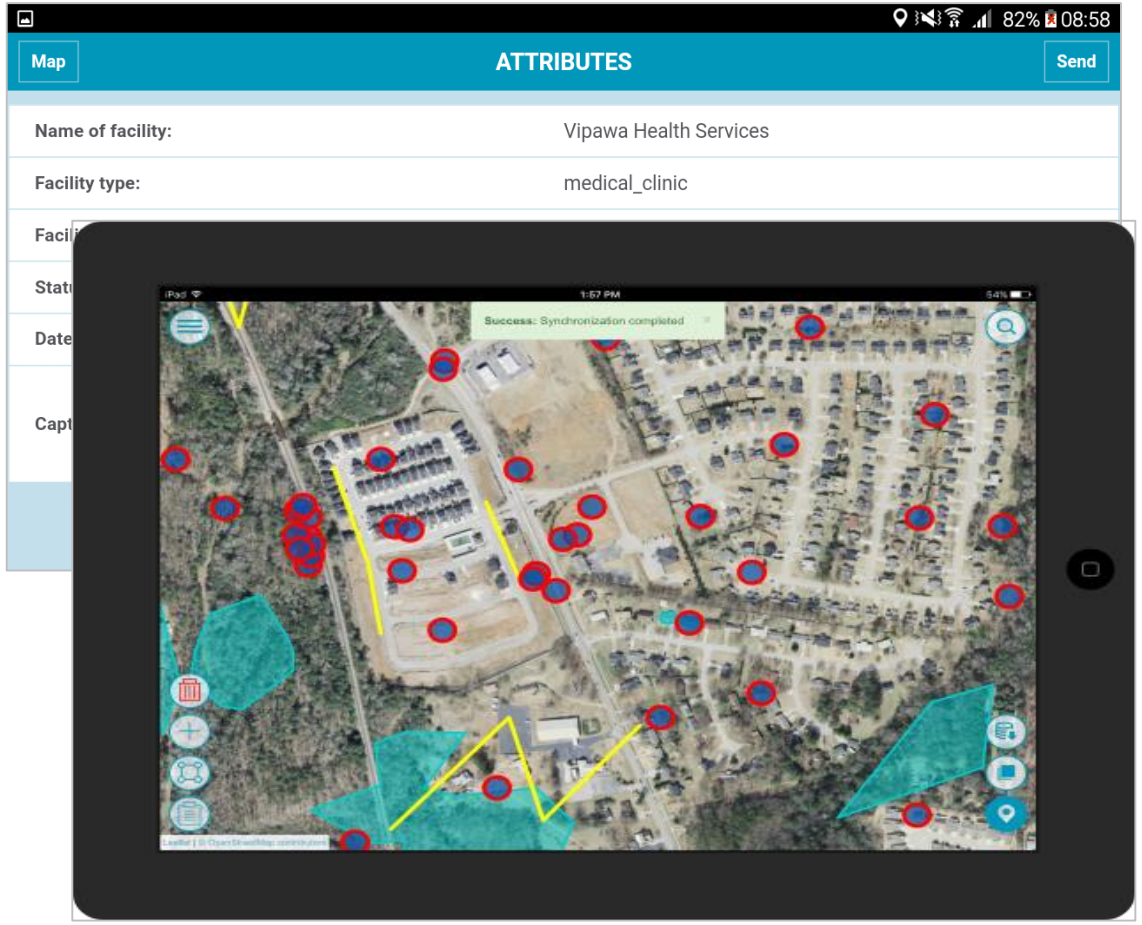
✓Collect data and submit in **real time**

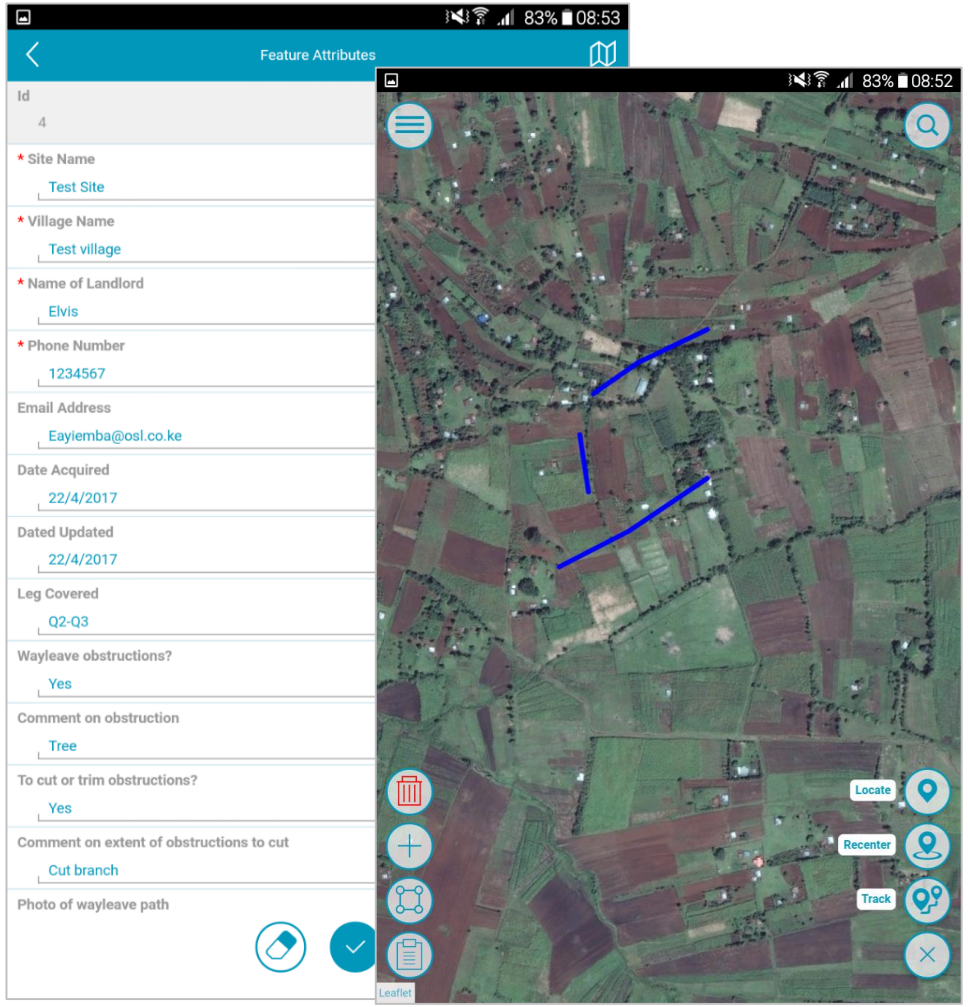
✓Use **basemap** of your choice

✓Use **device GPS** for **location** of features and for data capture

✓**Capture** and submit **Photos, Videos, Docs**

Integrated Maps & Forms





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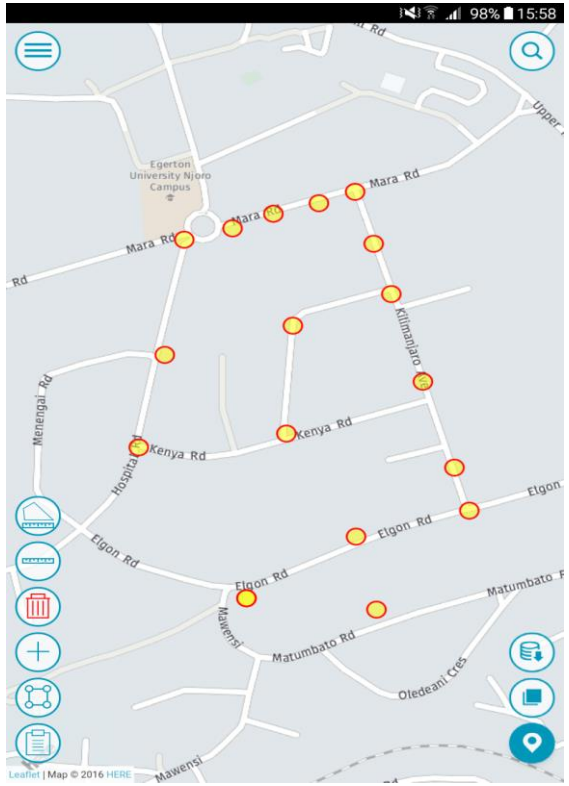
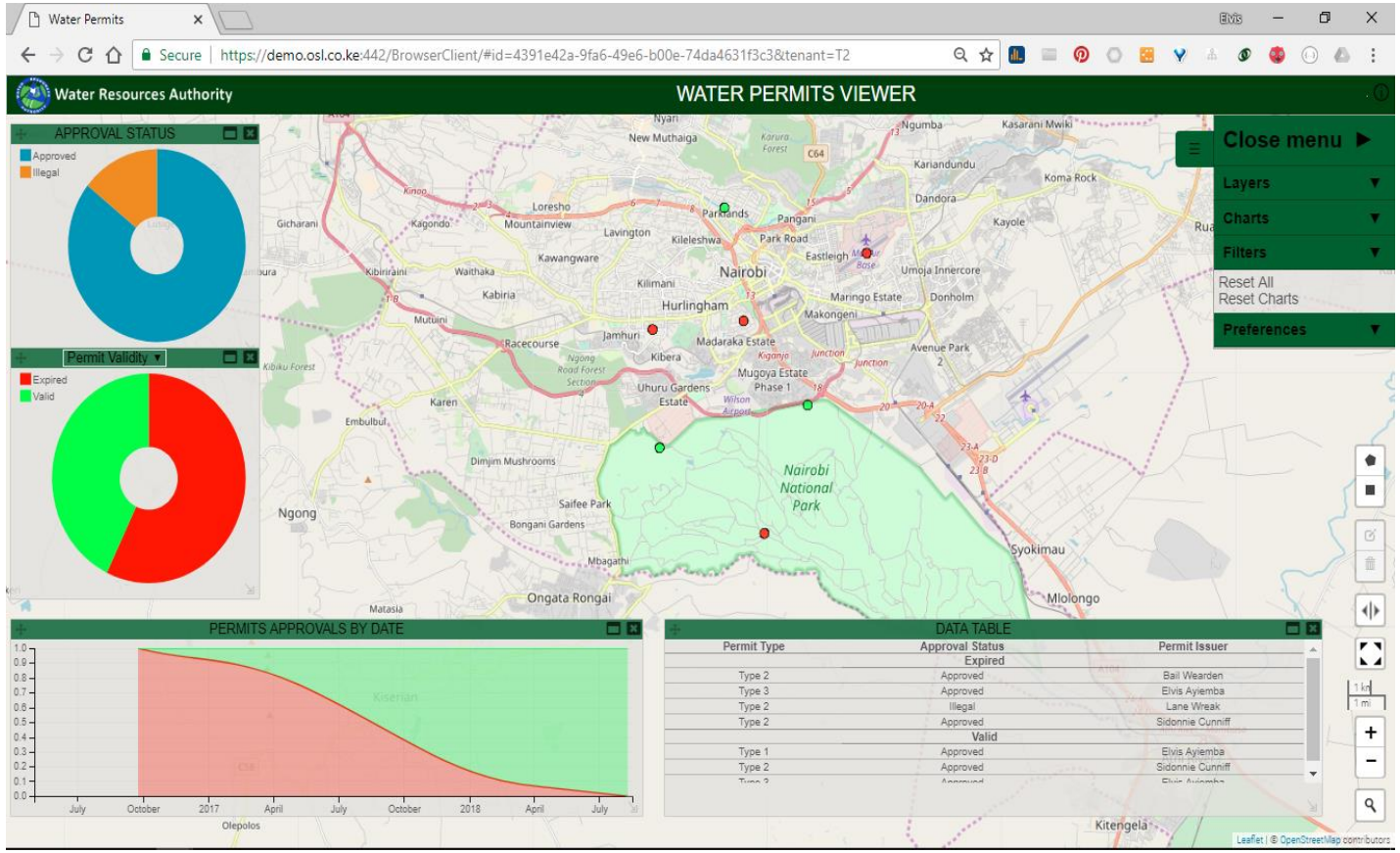
Integrated Dashboards





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Additional Functionality

✓ **Interoperability**

✓ **Robust Security**

✓ **Configurable to different workflows**

Key Benefits

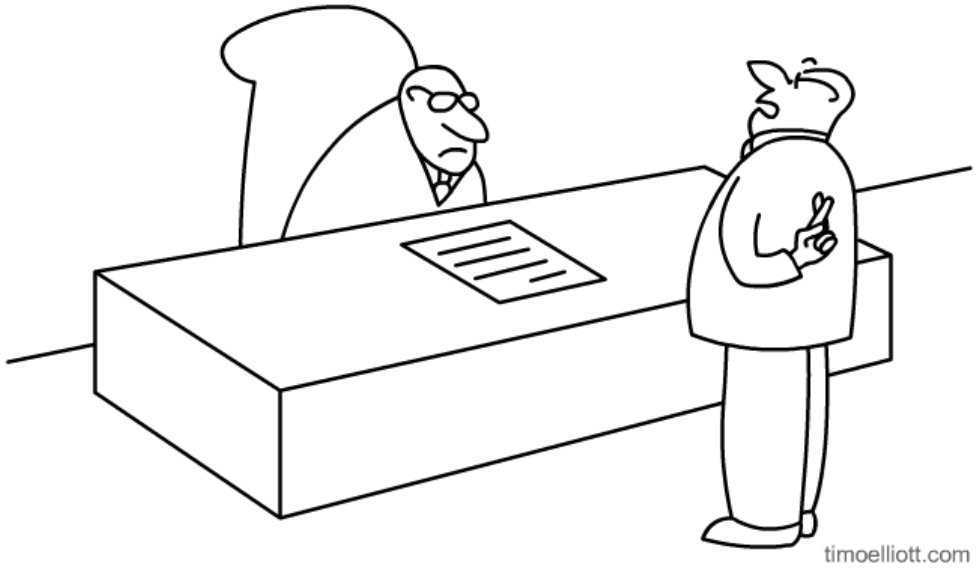
✓ **Enhanced Productivity:**

Equip your engineers and field personnel with the right tools and data for each task and enable reliable data to be returned directly from the field.

Key Benefits

✓ **Improve Data Quality:**

Remove duplicative processes and apply integral validation at the time of capture to deliver records that are more accurate and complete.



"Yes sir, you can absolutely trust those numbers"

Key Benefits

✓ **Accelerate Information Flows:**

Remove redundant and disconnected processes to reduce latency in enterprise records.

Summary

✓Utility companies can use Mobile MapWorks to **streamline field-based data acquisition** workflows.

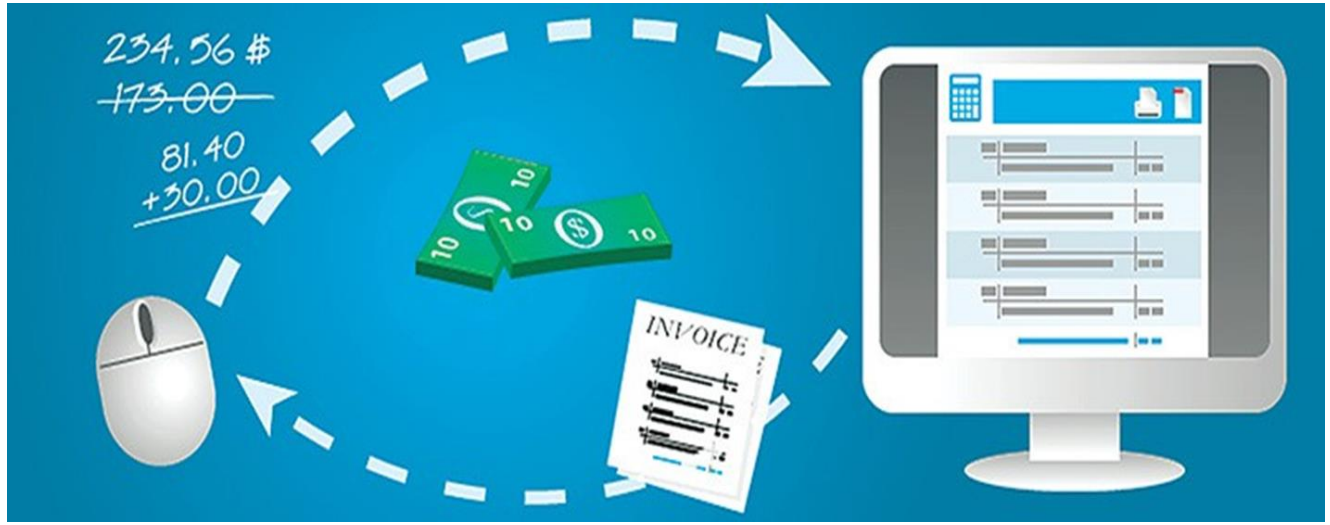
✓Mobile MapWorks on **consumer-grade** devices **cuts down costs** associated with acquiring separate mobile data collection devices.

✓Mobile MapWorks provides a **simple** and **intuitive user interface** enabling field personnel to work conveniently.

GIS Integration with Billing Systems

Introduction

- In order to improve service delivery there's need to re-engineer parts of the Utilities architecture concerning asset management and service provision in order to meet the current market demands.



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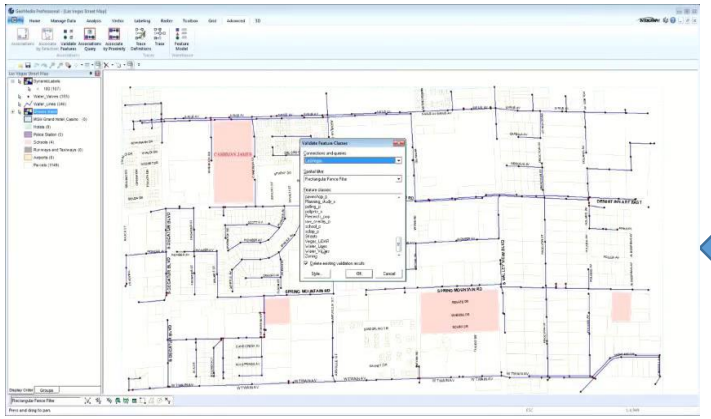
Why the Need to Integrate

- Bridging Disparate Data Sources .
- Difficulty in obtaining critical information for making informed Decisions.
- Inability to respond to customer needs

Integration Overview



Desktop GIS

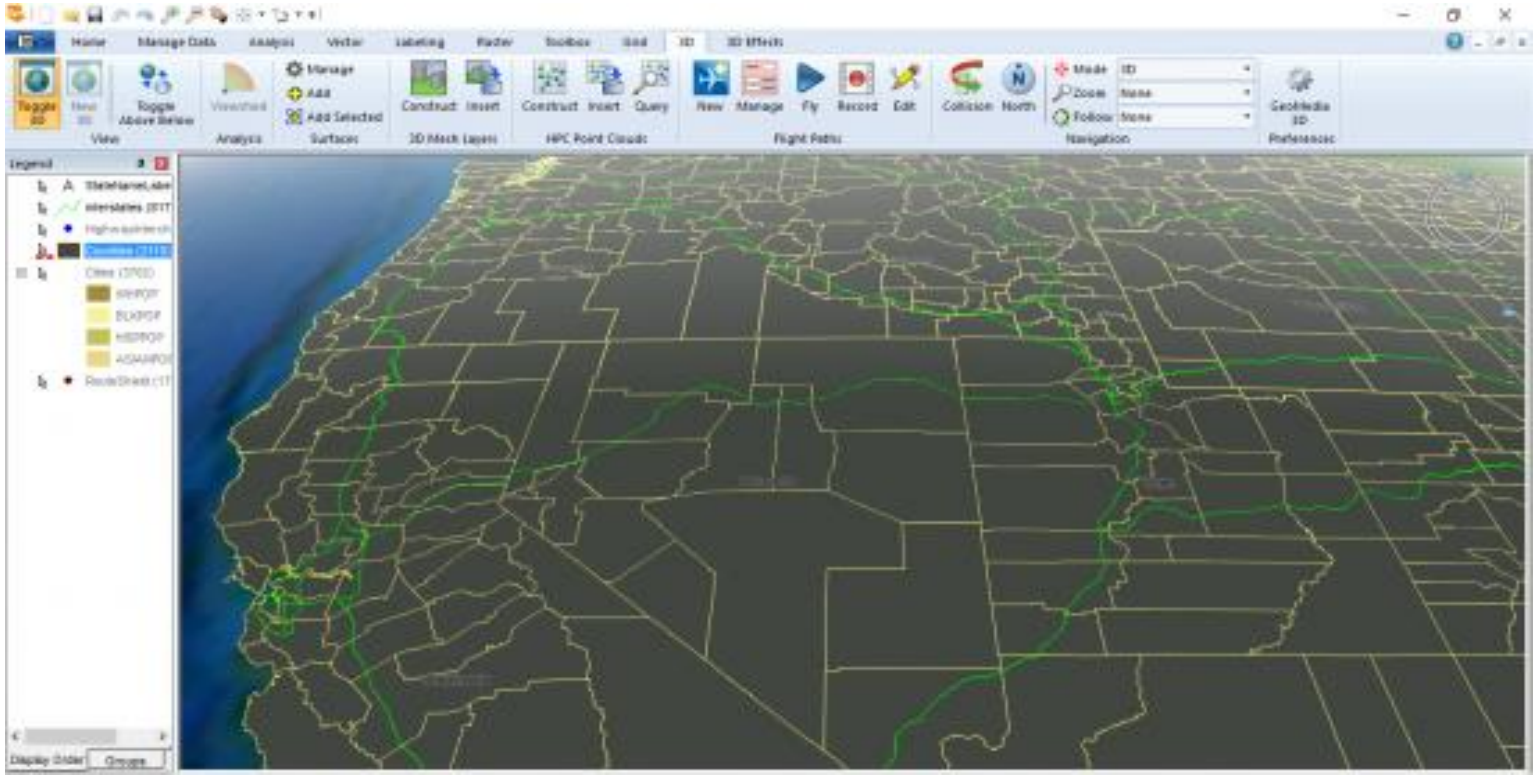
Smart M.App

Billing System Database

Integrator

GEO Database

Desktop GIS



The desktop GIS is used for managing spatial data including assets location, infrastructure, publishing data as well as spatial analysis

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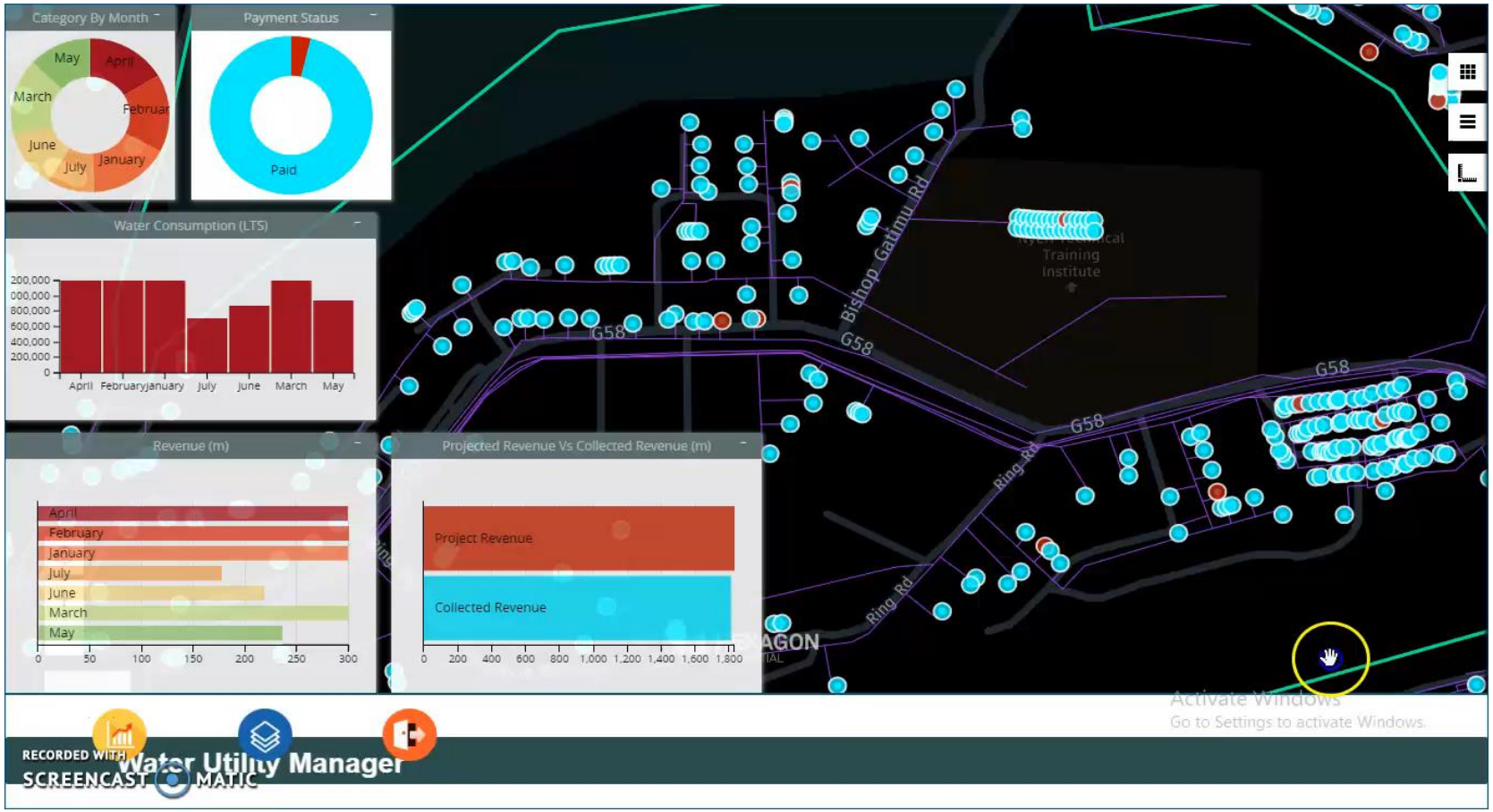
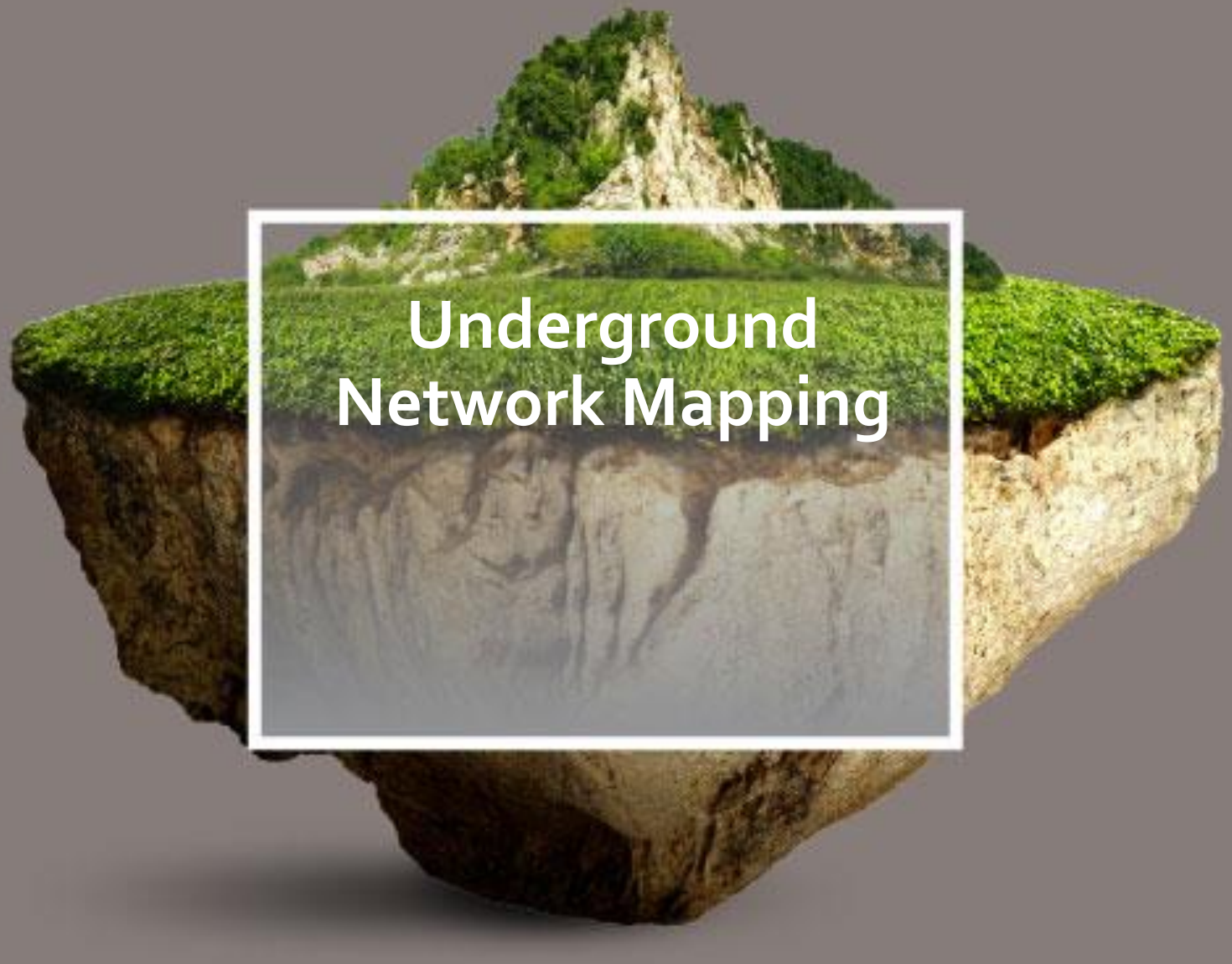
Smart M.App



Smart M.Apps provide dashboards for the integrated datasets and thereby providing easy to configure and use Analytics

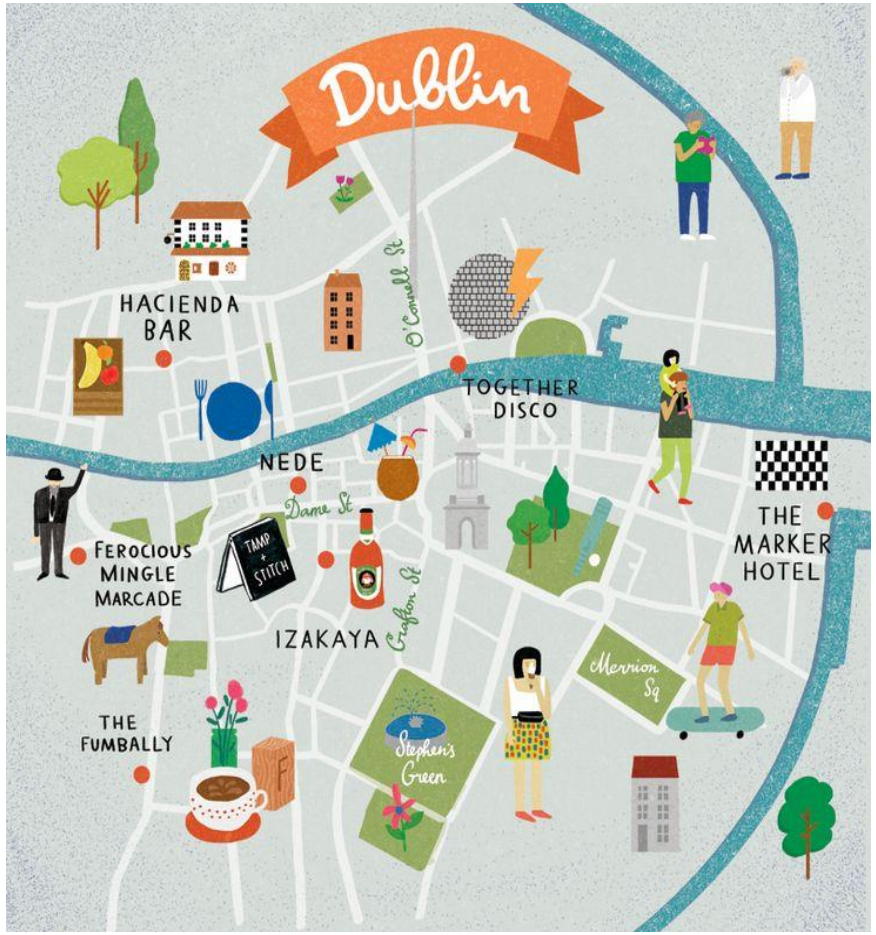
Advantages of Integration

- Simplified analysis of the utility network, distribution and service vulnerabilities from a geographic perspective.
- Increased interoperability between different systems and departments
- Better business process management
- Improves operational efficiency


Underground
Network Mapping

What is Mapping?

- Creation of maps
- Capturing the spatial location of features
- Graphic/symbolic representation



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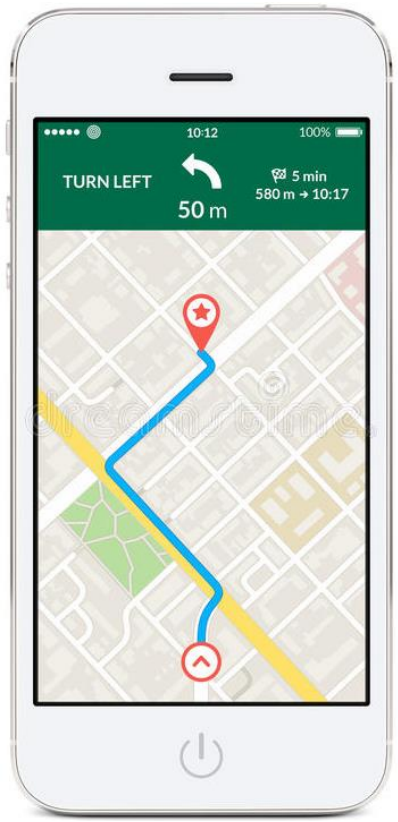
Spatial Mapping

- Mapping spatial data helps to place earth-related object data within a spatial context.
- Mapping can be a means of recording and storing information

Spatial Mapping

- Mapping **surface** features is easy.



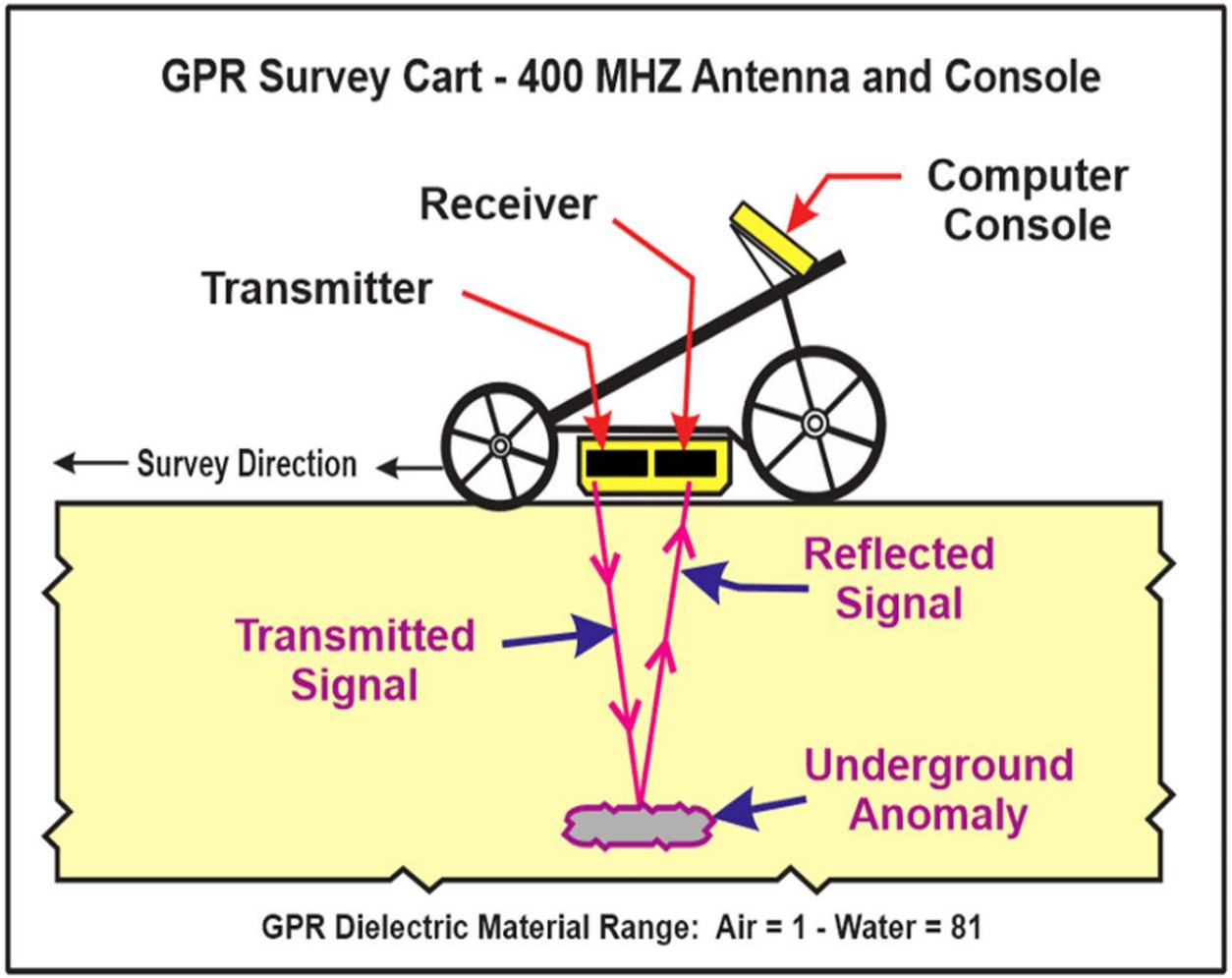
Main Challenge

- **Mapping of underground network**
  - ✓Undocumented
  - ✓Damage during construction works

Solution – Cable Locators/GPR

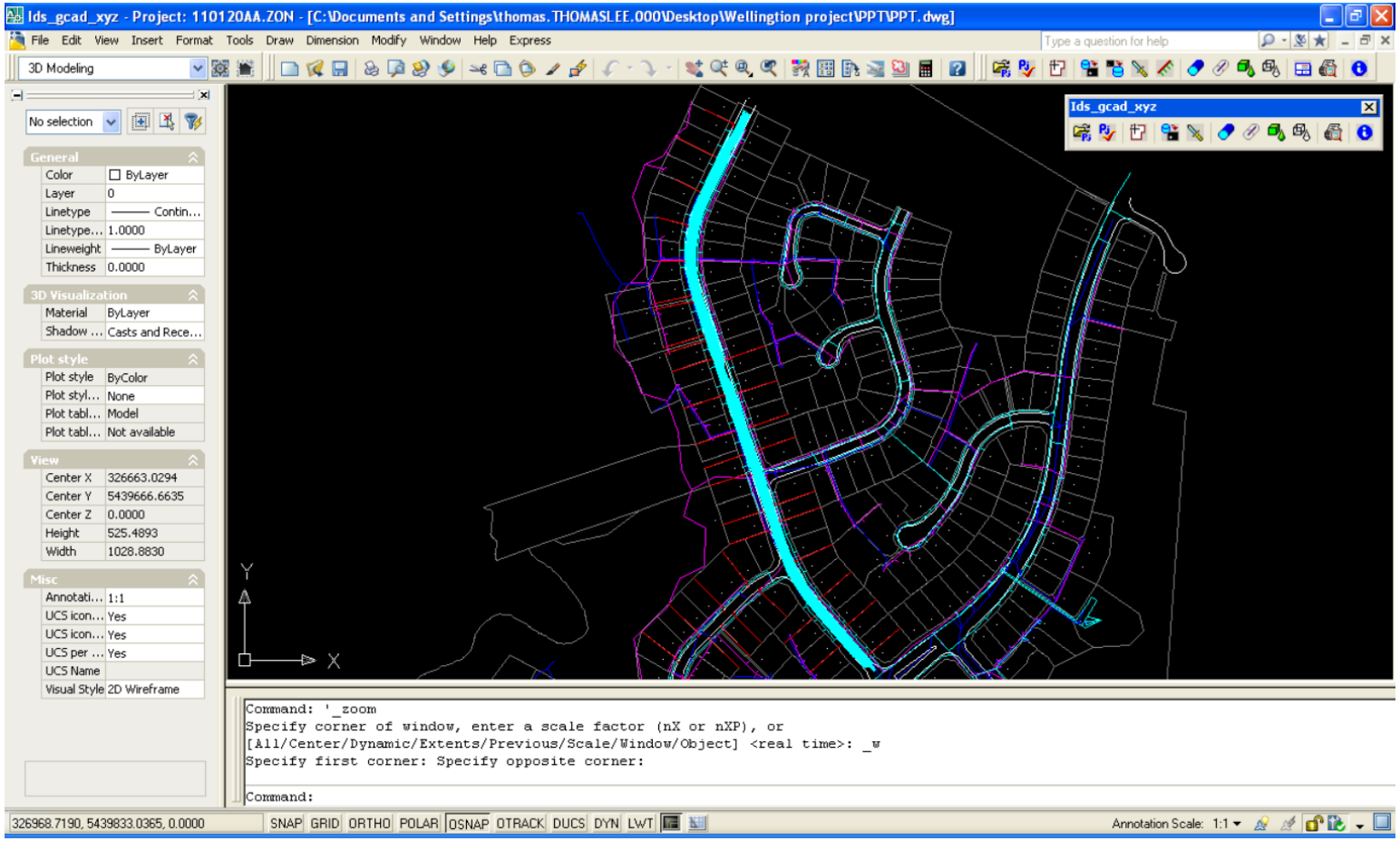
Basic Principle

- Uses Ground Penetrating Radar (**GPR**) Technology.
- **Radio signal** is transmitted into the ground and reflected signals are returned to the receiver and stored on digital media.
- GPR is combined with any positioning system for mapping and output of data in GIS format



Office Processing Software

- Office processing software to extract data in CAD or GIS.



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Cable Locators

Cable Locators – Stream C

- ❑A real time accurate **3D** reconstruction of the underground utility network is created in a **single scan**.
- ❑**Real-time automatic** detection of buried pipes and cables.
- ❑Real-time tomography on a GPS or total station assisted cartographic background.
- ❑Quickly produce subsurface GIS based digital maps when pipes, cables and buried objects are automatically transferred to CAD and GIS formats.
- ❑Max. Acquisition Speed of 6 km/h
- ❑Scan Width of up to 96 cm

One Vision Field Software

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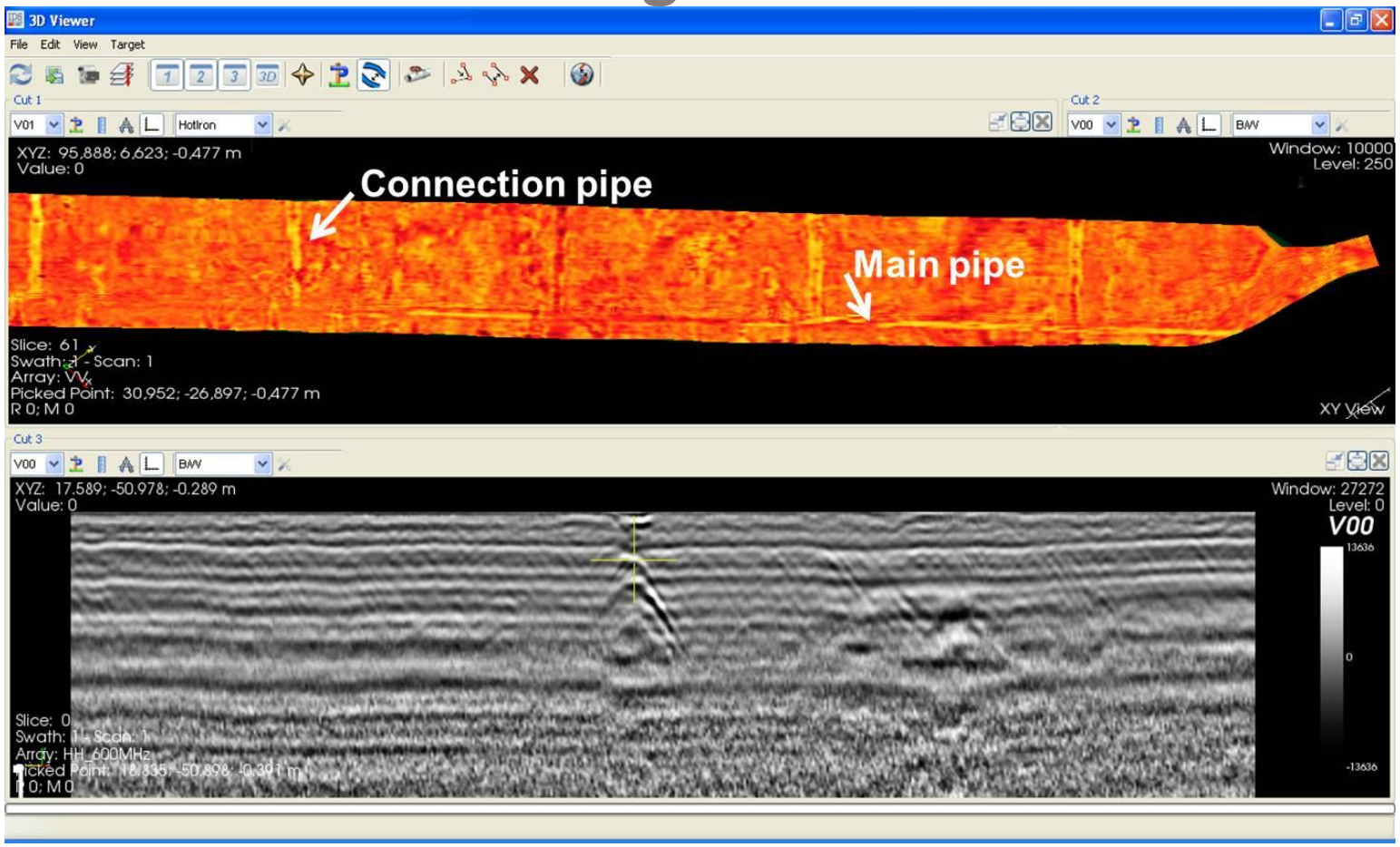
GRED HD CAD Processing Software



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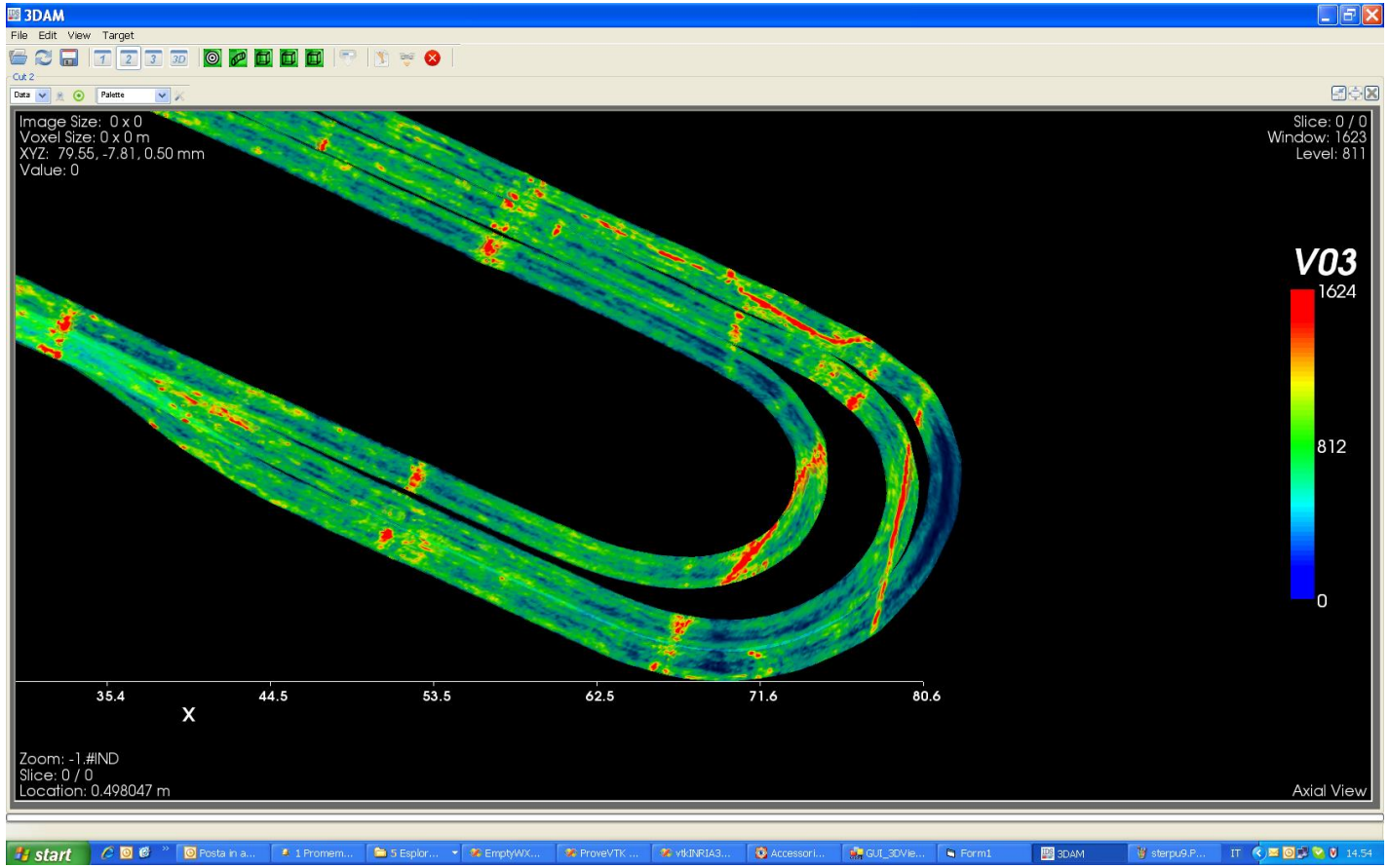
GRED HD CAD Processing Software



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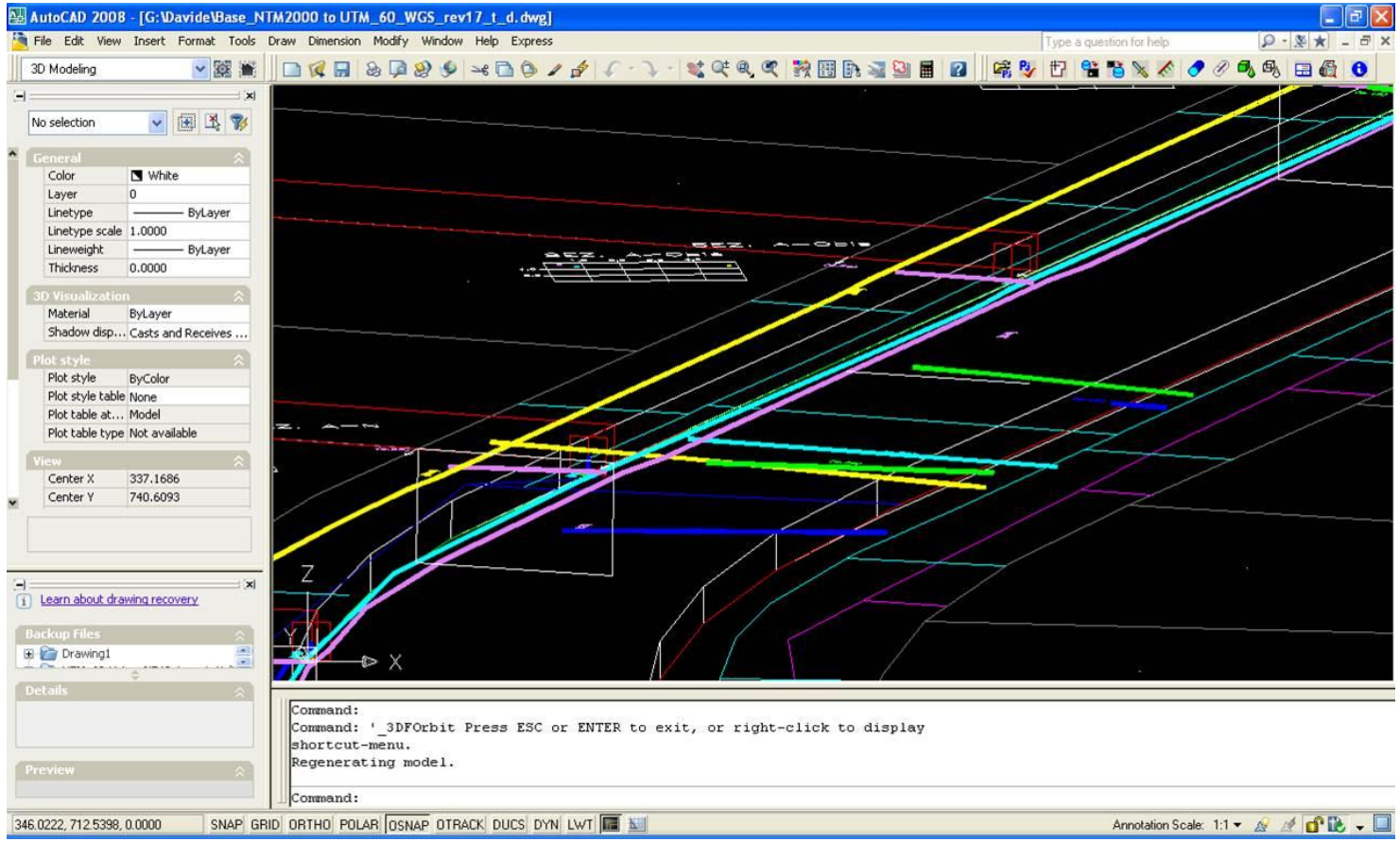

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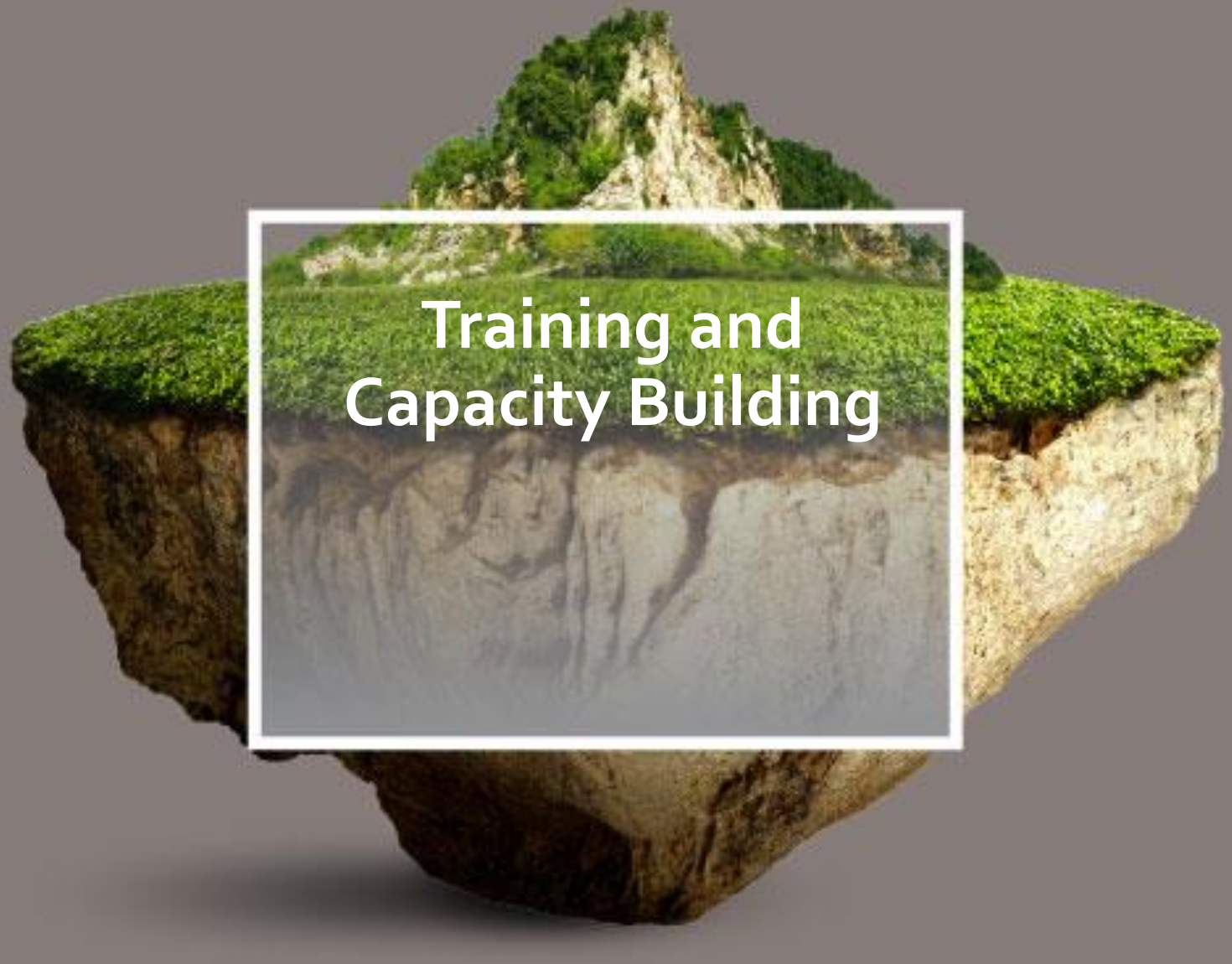


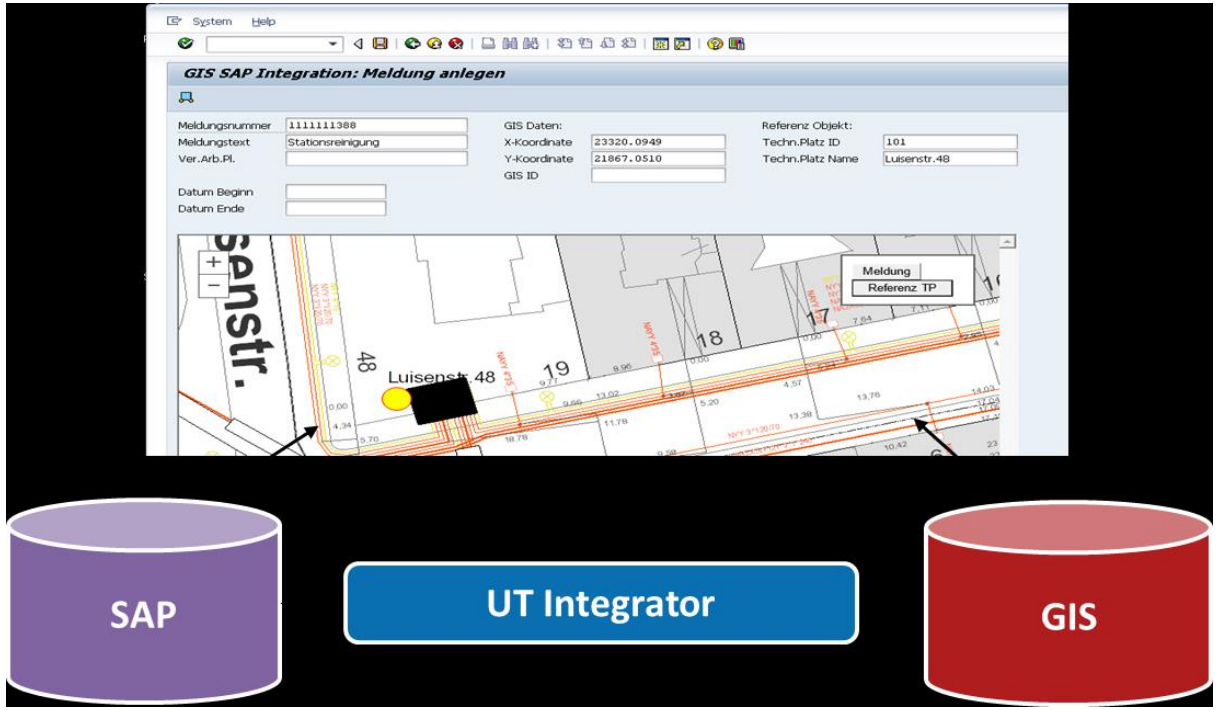
Training and Capacity Building

Why Train at Oakar Services

- Our training materials are customized to suit local needs;
- We have a reputation for excellence and service;
- We have extended technical support;
- We are constantly updating our course content;
- Our courses are driven by the practical needs of technical professionals and the industries in which they work. Our courses will provide you with practical tools and techniques that can be put to use immediately;
- We have highly skilled professional course instructors.

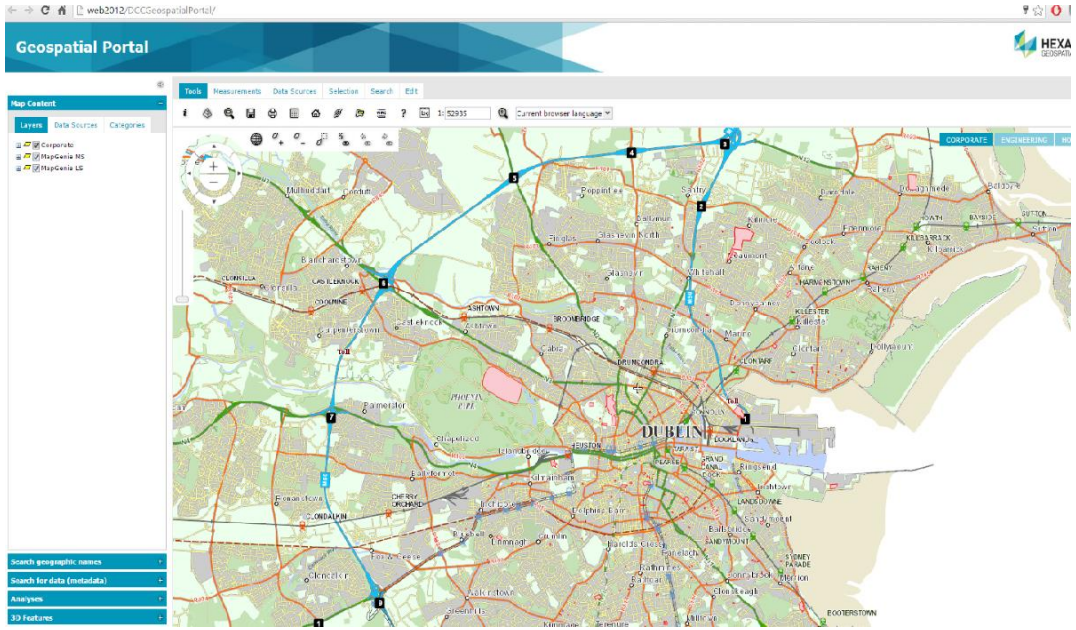
UT for ArcGIS Courses

- UT for ArcGIS Functionality Training
- UT for ArcGIS Administration Training
- UT for ArcGIS Server



Web GIS Courses

- Fundamentals of Web Mapping in GeoMedia WebMap
- Managing Workflows Using GeoMedia Smart Client
- Customized Training



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Training on GPS and Surveying

•Courses

- Introduction to GPS
- Mobile Mapping Using ArcPad
- Mobile Mapping Using MobileMapper Field Software)
- Total Station and Levelling Fundamentals

•Hardware Platform: Spectra Precision GPS Units

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Other Training Programmes

- Free Bi-Monthly Technical Trainings
- Evening Trainings
- Free Bi-Monthly Technology Seminars
- Monthly External trainings

Contact Us

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