

Geospatial Solutions for the Utilities Industry

Information to Support Business Decisions

The utility industry face considerable challenges in providing UK customers high-quality, cost-effective and efficient services – governmental legislation, industry regulations, sustainable development to name a few.

Where are all the network operators assets? What and where are the risks from vegetation encroachment and flood? Accurate geospatial data can help answer questions like these.

Highly accurate geo-information can provide powerful desktop solutions to help utility companies make key business decisions concerning the planning, protection and management of their assets and services.

Infoterra continues to work with utility companies to support these challenges from network and vegetation mapping to flood modelling.

Major utility operators are increasingly recognising the importance of holding detailed records and information about all their assets. The accuracy of Infoterra's geospatial data allows operators to carry out precise site surveys straight from the desktop, as well as build models for risk assessment.

Asset Location

Geospatial data provides the ability to precisely locate all assets, perform site assessment and identify key influences, by analysing a real-world view of an operational network.

Infoterra's aerial photography and height data, including 3D mobile laser mapping, can provide detailed data of sub-stations, water sewerage & gas plants, and networks, so planning and risk management can be maximised.

Also, mapping the precise location of powerline poles, water mains and manhole locations, together with accurate ground profiling and height of buildings/vegetation, delivers information needed to make business decisions based on powerline safety/resilience and vegetation encroachment, as well as water flow/pressure.

Vegetation Management

Position and extent of vegetation growth and root information is vital for ensuring a continued safe and reliable supply. Regulations specify the clearance between a powerline and vegetation, so by using accurate mapping the planning teams can

rapidly identify priority areas for vegetation cutting, thereby ensuring effective and efficient management. Also by calculating the root zones, from tree height and canopy size, water companies can estimate the risk to underground pipe systems.

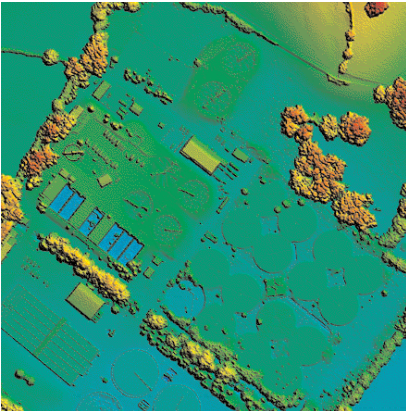


Flood Risk Management

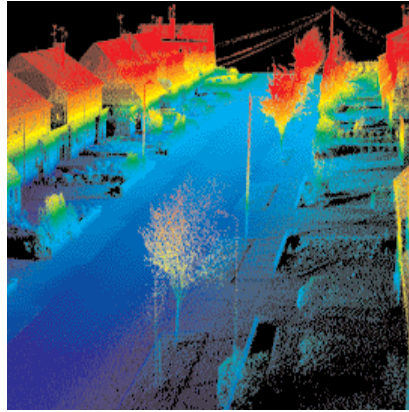
Following recent floods in the UK, reports propose that utility companies have the responsibility of planning for major flood events, with the aim of protecting and managing the delivery infrastructure.

To support this management, Infoterra supplies terrain and lidar height data (buildings and vegetation) which is a cost-effective method of obtaining accurate data of a network area for flood modelling and risk analysis. Also, 3D mobile laser mapping delivers accurate details of road/kerb heights, gully positions, as well as a true 3D visualisation of a plant or facility.

Using Infoterra's precise height data can significantly assist the assessment of risk down to property level.



Digital Surface Model



3D mobile laser mapping



Powerline network mapping

Data Acquisition and Processing

Infoterra uses the latest imaging and lidar technology to capture accurate geospatial data and deliver a comprehensive range of services.

- Aerial photography
- Ground surveys
- Terrestrial laserscanning
- 3D mobile laser mapping
- Digital surface & terrain models
- Lidar height data of buildings & vegetation (+/-150mm vertical accuracy)
- Hyperspectral & thermal survey
- Asset location & vegetation mapping

Mobile Laser Mapping

Rapid Surveyor™, Infoterra's new mobile mapping system, creates a highly accurate 3D representation of the built/natural environment, capturing features such as building façades, bridges, road drainage features & vegetation data. With a 360° field of view, 200,000 measurements per second and a relative spatial accuracy of 25mm rmse, the data captured is highly detailed and precise.

GIS Application Development

Infoterra has a team of highly experienced consultants to assist with:

- business requirement capture
- GIS solution planning
- integration of spatial data, including CAD & GIS
- system testing & compliance
- compliance with system development standards
- application design/build including specific toolkits
- GIS software independence
- data conversion/cleansing

Project Examples

- EDF Energy - high-voltage overhead line network and adjacent vegetation mapped to support vegetation management
- E.ON Central Networks – mapped precise powerline pole locations, pole heights, span lengths and the exact network length

- National Grid – lidar height data identified buildings of 5+ storeys for water pressure study
- Northumbrian Water - lidar height data allowed sophisticated flood modelling and accurate topological analysis
- Severn Trent Water Authority – sewerage flood modelling used lidar height data
- Yorkshire Water - lidar height data enabled risk assessment of urban flooding

Infoterra is committed to providing geospatial solutions to support utility project success.

All the geo-information you need.

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