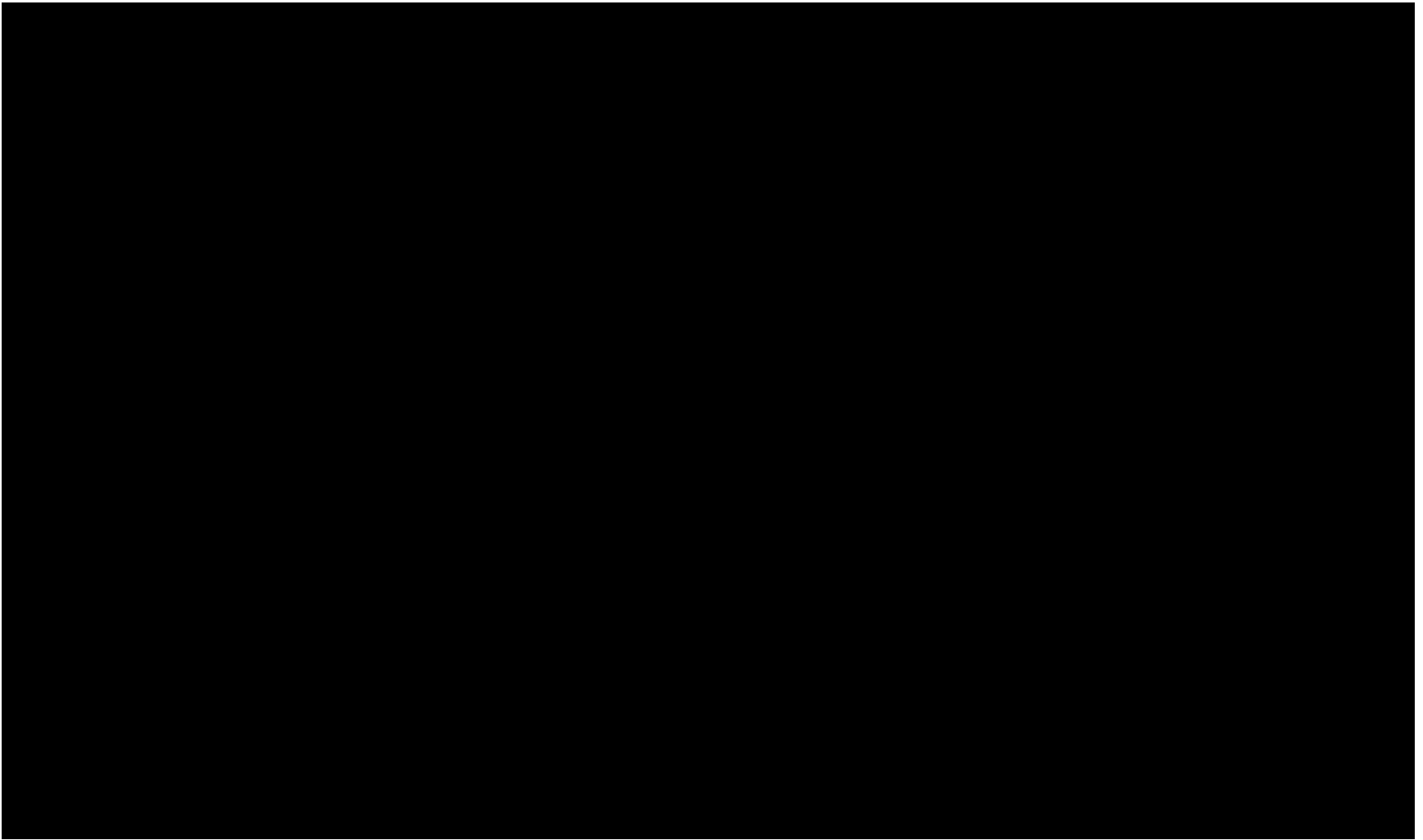




Asset Management for Oil & Gas Industry

prepared for: SEASC 2017

15th August 2017



Value throughout the Project Life Cycle



Integrated services to combine geotechnics, survey and subsea services in a cost-effective and sustainable way.



Site Characterisation

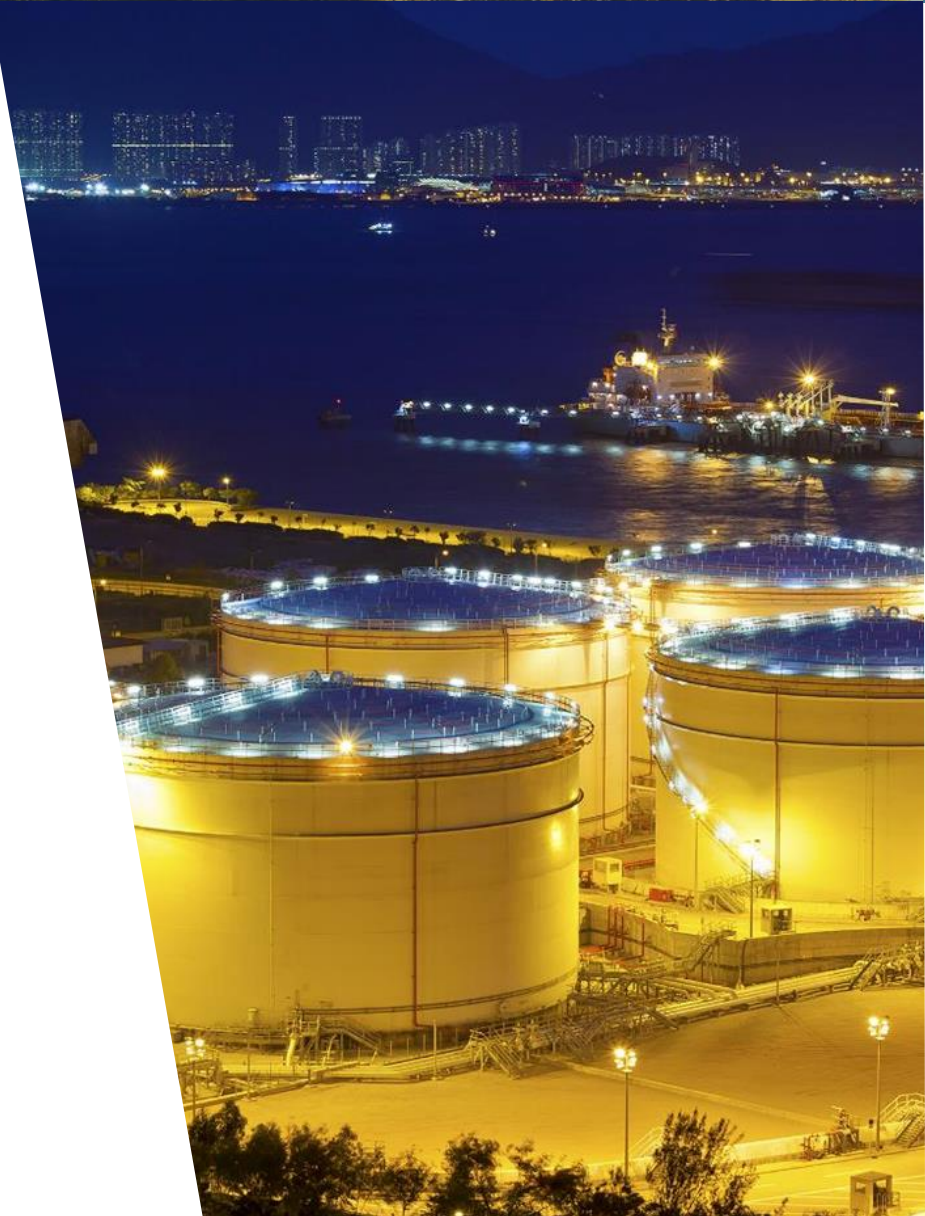


Asset Integrity



Asset Integrity services maximise the ability of an asset

to perform its required function **effectively**
and efficiently, whilst safeguarding life
and the environment.



Business Drivers and Our Clients needs as we understand them



Growing energy demand



Increasing HSE requirements



Need to reduce costs

Intelligent Industrial Operations require Asset Integrity Solution that meets:

- Key business drivers
 - Improve availability of assets (downtime reduction)
 - Increase output
 - Compliant with local HSE regulations
 - Increases operational efficiency
 - Cost effective to meet cost reductions
- Global IT standards
 - Accessible anywhere, anytime through cloud-based technology
 - One global solution
 - Based on standards and open architecture
 - Compliant with data security and IRM standards

Intelligent Industrial Operations

Improvements through reliability and efficiency



Pipeline Inspections



Predictive Asset Maintenance

Oil & Gas Industry Digital Technology Trend

Despite the fall in crude oil prices, most companies in the oil and gas industry plan to invest the same amount or more in digital technologies now and in the future.

Mobility, infrastructure and collaboration technologies currently represent the biggest investment areas across the oil and gas industry. Over the next three to five years, investments are expected to increase in big data and the Industrial Internet of Things (IIoT) / automation.

The key reason companies are investing in digital technologies is to improve operational efficiency.

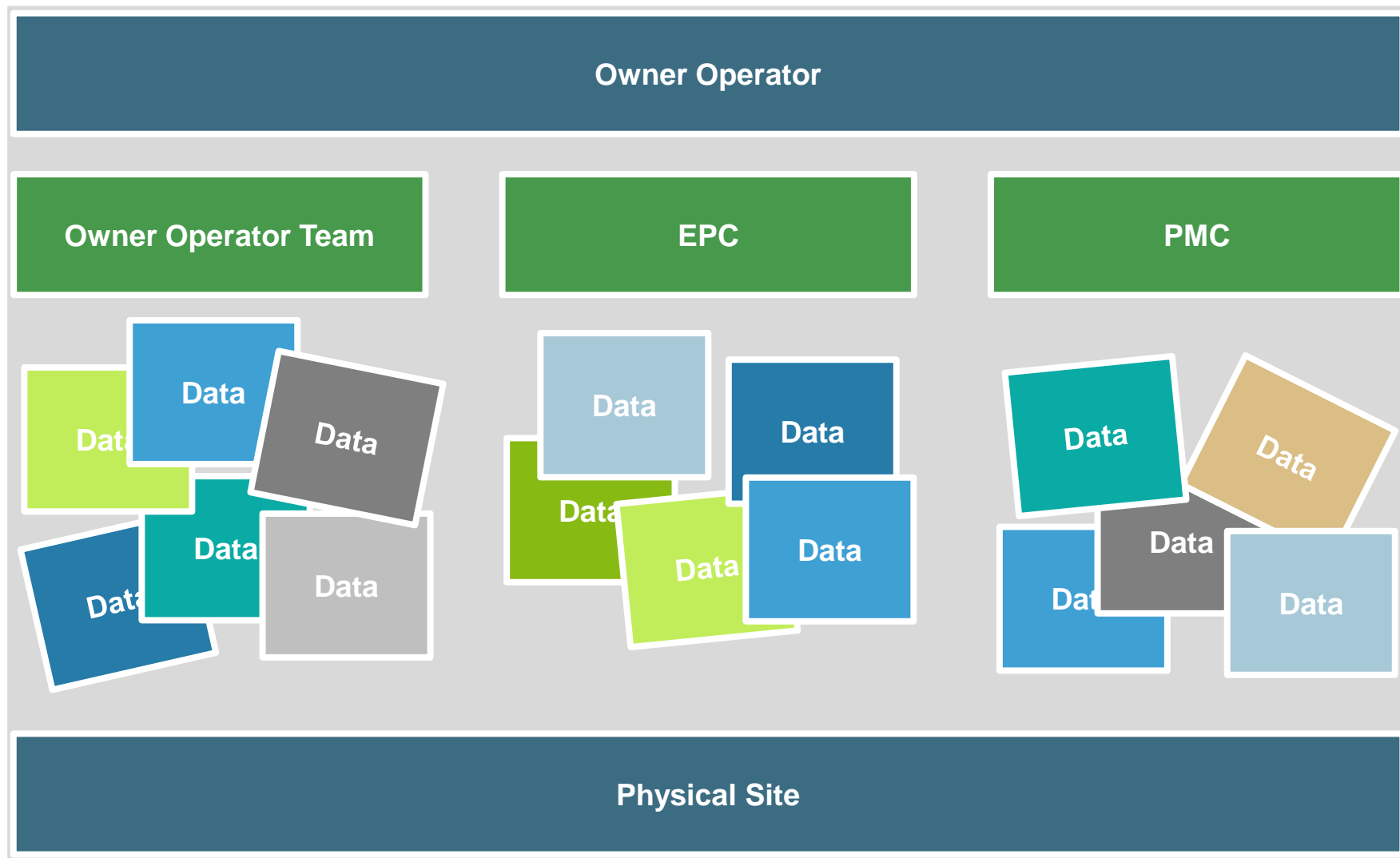
Digital technologies that enable people and assets are considered most important.

To get the most value from digital technologies, several barriers need to be overcome.

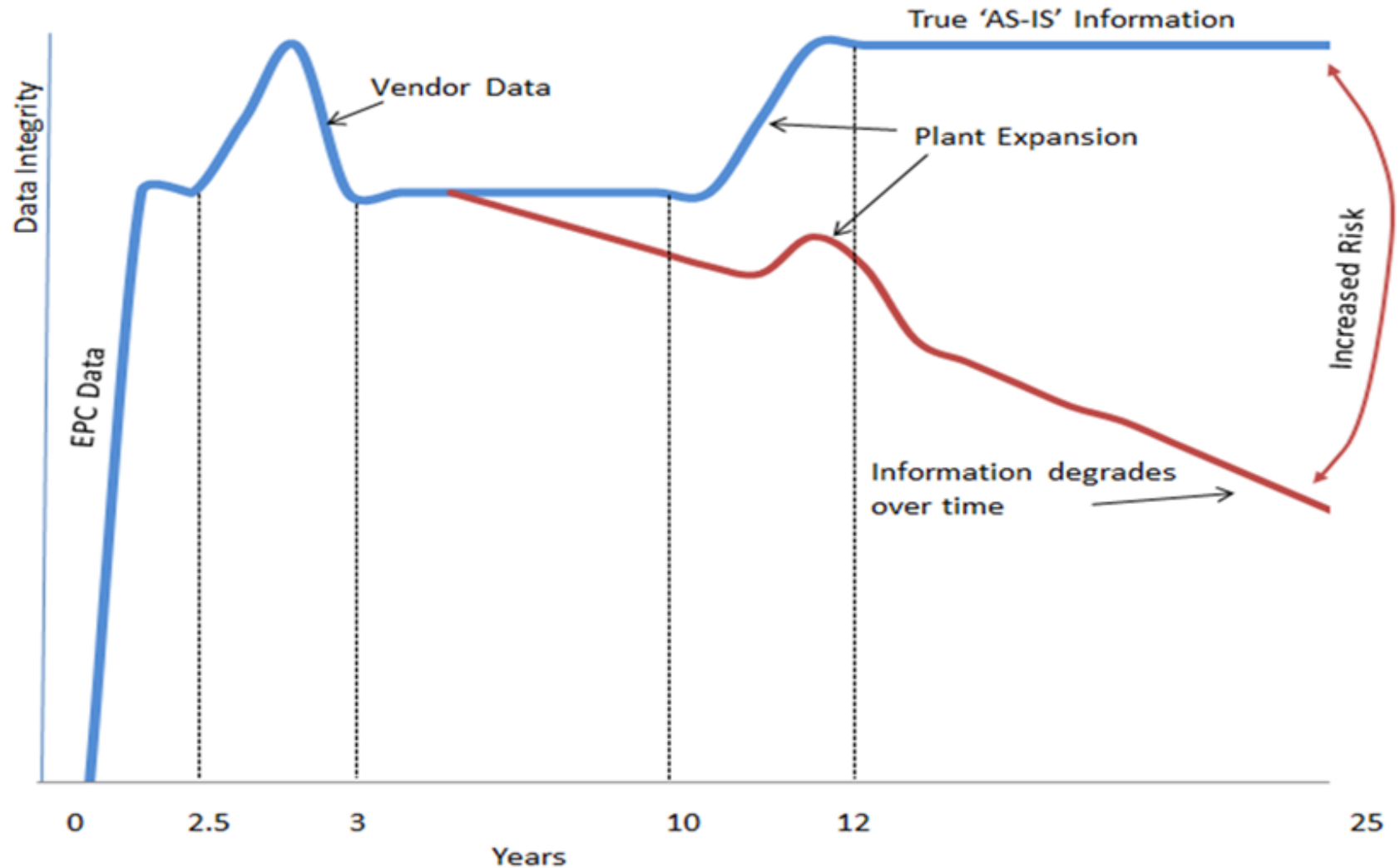
The top two identified were:

- 1) workflows and processes that create bottlenecks and
- 2) physical and cyber security concerns.

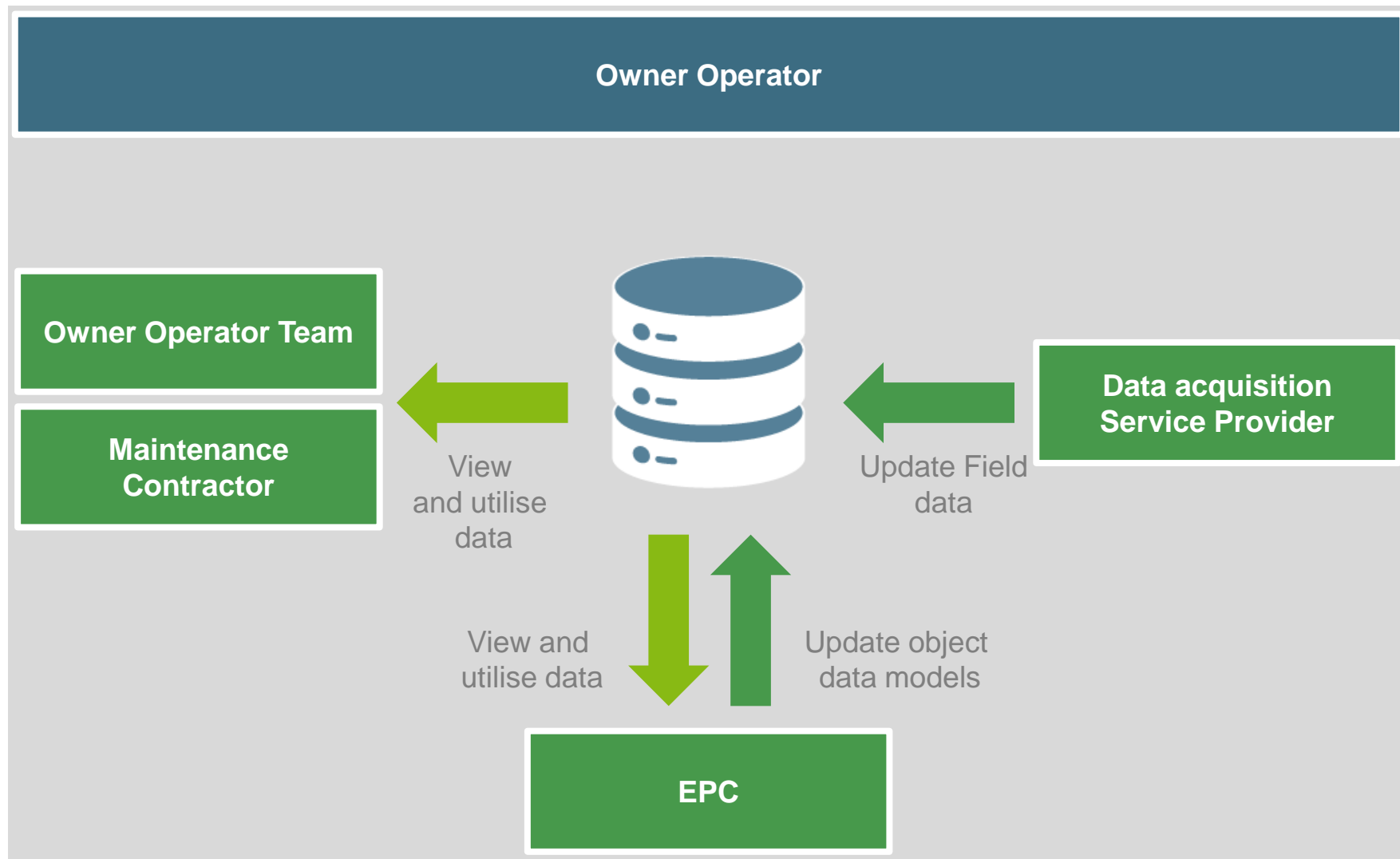
Current situation: transactional driven information and data silos



Asset Reality vs. Asset Information



Solution: SITE-SPOT a Single Point Of Truth for field data



Life-of-field digital asset management services for greenfield and brownfield sites.

We offer dimensional control of structures, 3D asset modeling, centralised data management and web-based 3D visualisation, enabling facility managers to access up-to-date asset information and to streamline installation and maintenance operations.

Land Asset Integrity







Visual Asset Management

Visual Asset Management (VAM)

The purpose of VAM is to

- Visually capture the surrounding environment
- Recreate the surrounding in a virtual world
- Enable measurements to be taken
- Provide access to information
- Enable information analysis & decision making

Components:

- Spherical Images and 360° Video
- Digital Visualisation platform
- 3rd party data integration (optional)
- Information Sharing Options

Benefits:

- Risk Mitigation
- Increased Safety
- Operational Cost and Downtime Reduction
- Enhancement of Collaboration
- Assists compliance with regulatory requirements



Visual Asset Management



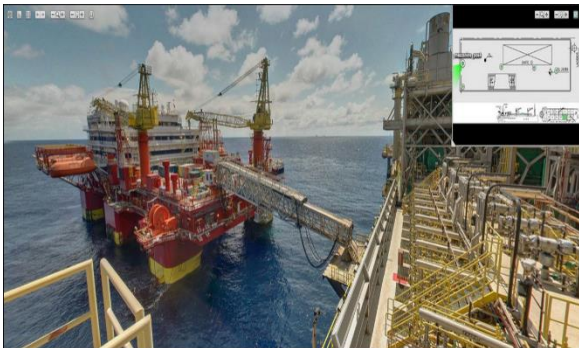
Asset Visualisation

- Single Panoramic Images
- 50 – 100MP resolution
- Walkthrough / Flythrough
- Asset Tagging



Visual Inspection

- Stereo Panoramic Images
- 100 – 500MP resolution
- Visual Inspection
- Measurement Capability

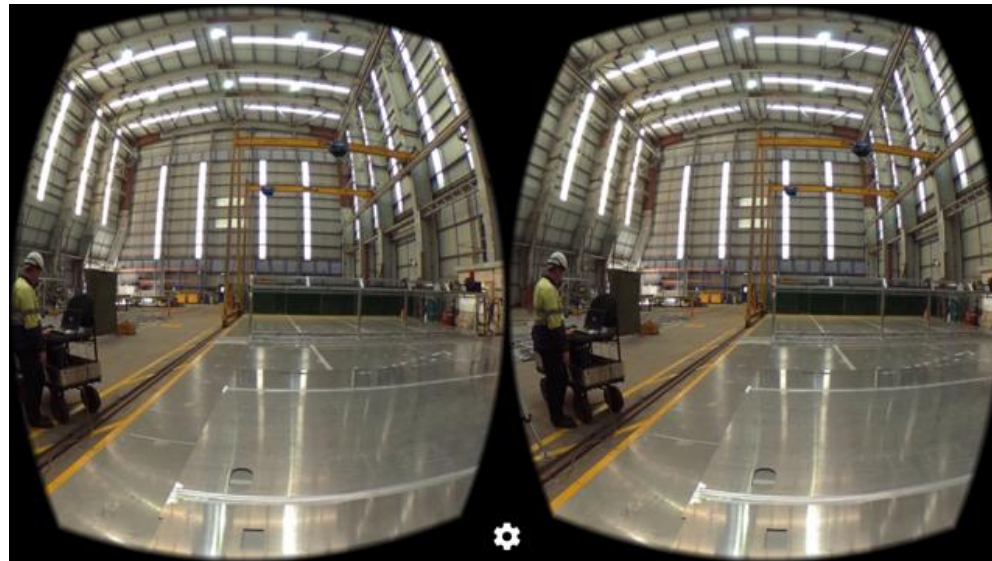
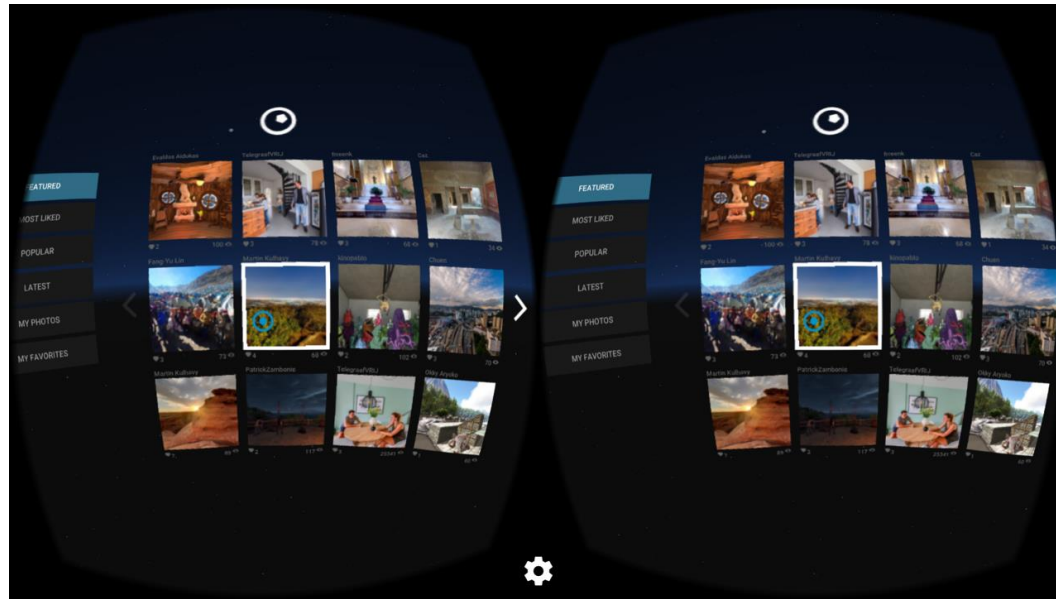


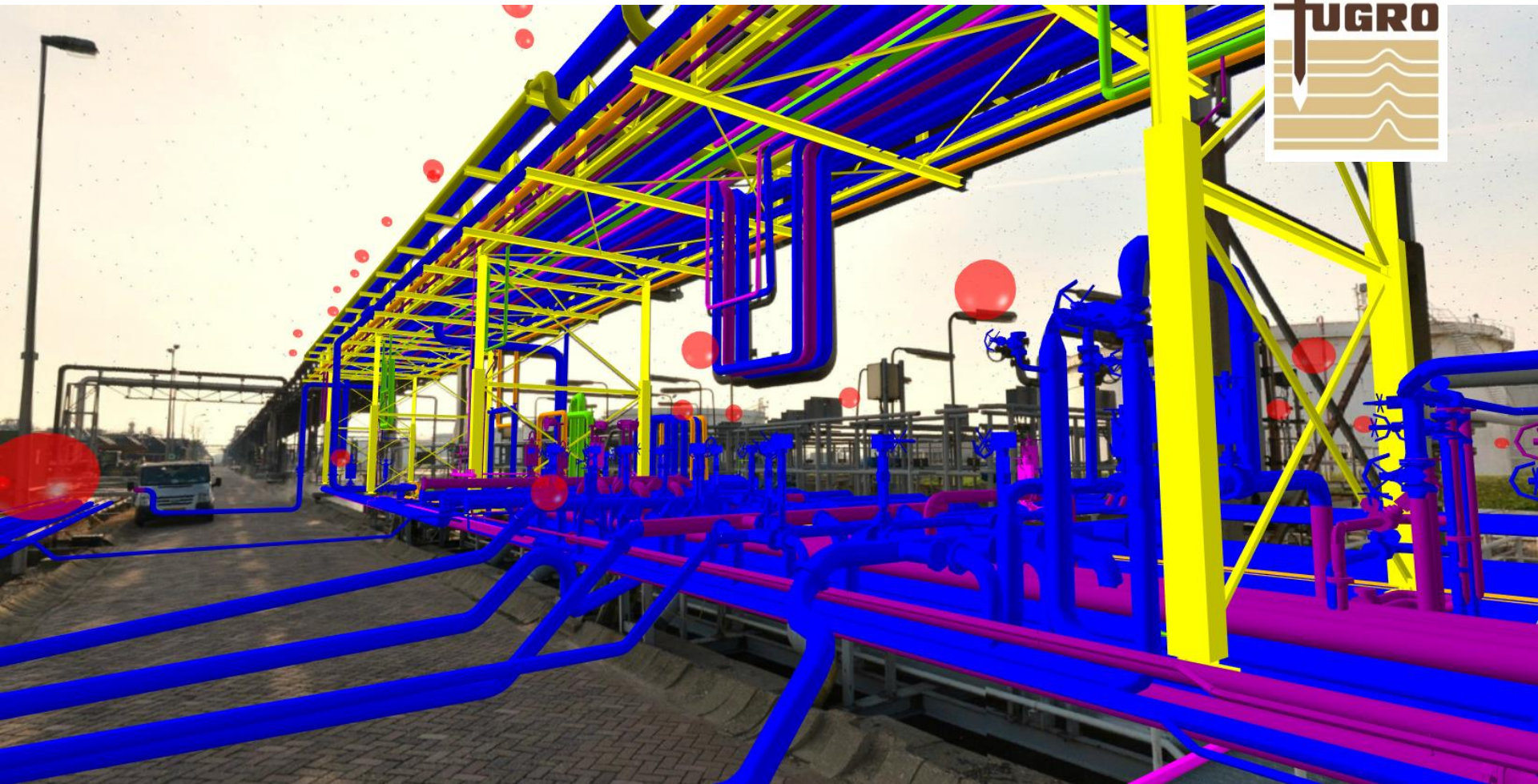
Demonstration

- Complete VAM solution
- Standalone or Web-hosted

*Interactive Images; click to open sample files
Internet connection required*

Virtual Reality





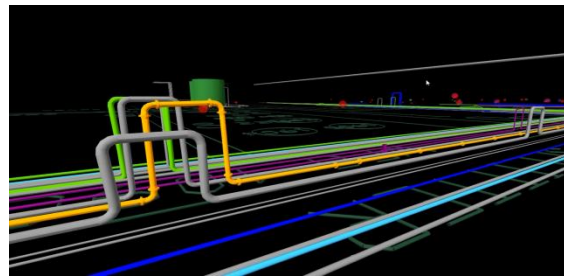
3D Digital Asset Management

Fugro Site-SPOT – focal point for all available field data

3D digital asset information service providing centralised management of all available field data

Web-based 3D view of your site stored in the Single Point Of Truth database

Up-to-date data available to all stakeholders for streamlining plant operations



Functionality

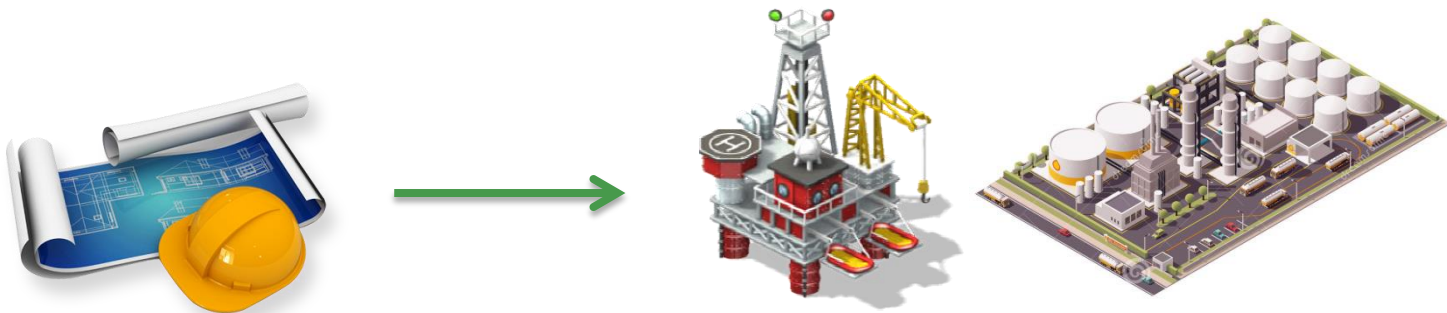
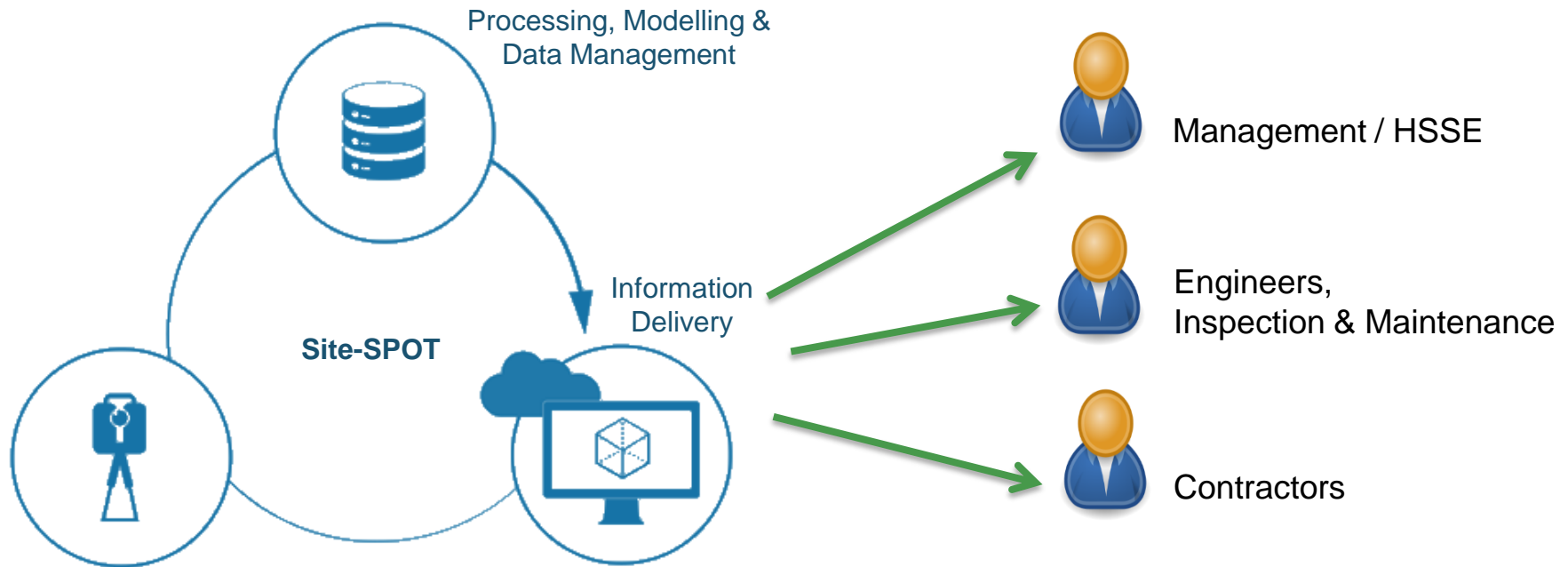
- Easy to use web interface
- 3D fly-through
- Quick search of data
- Distance Measurements
- Query Tools
- Reporting Tools
- Fully Customizable to meet any client-specific needs

Benefits

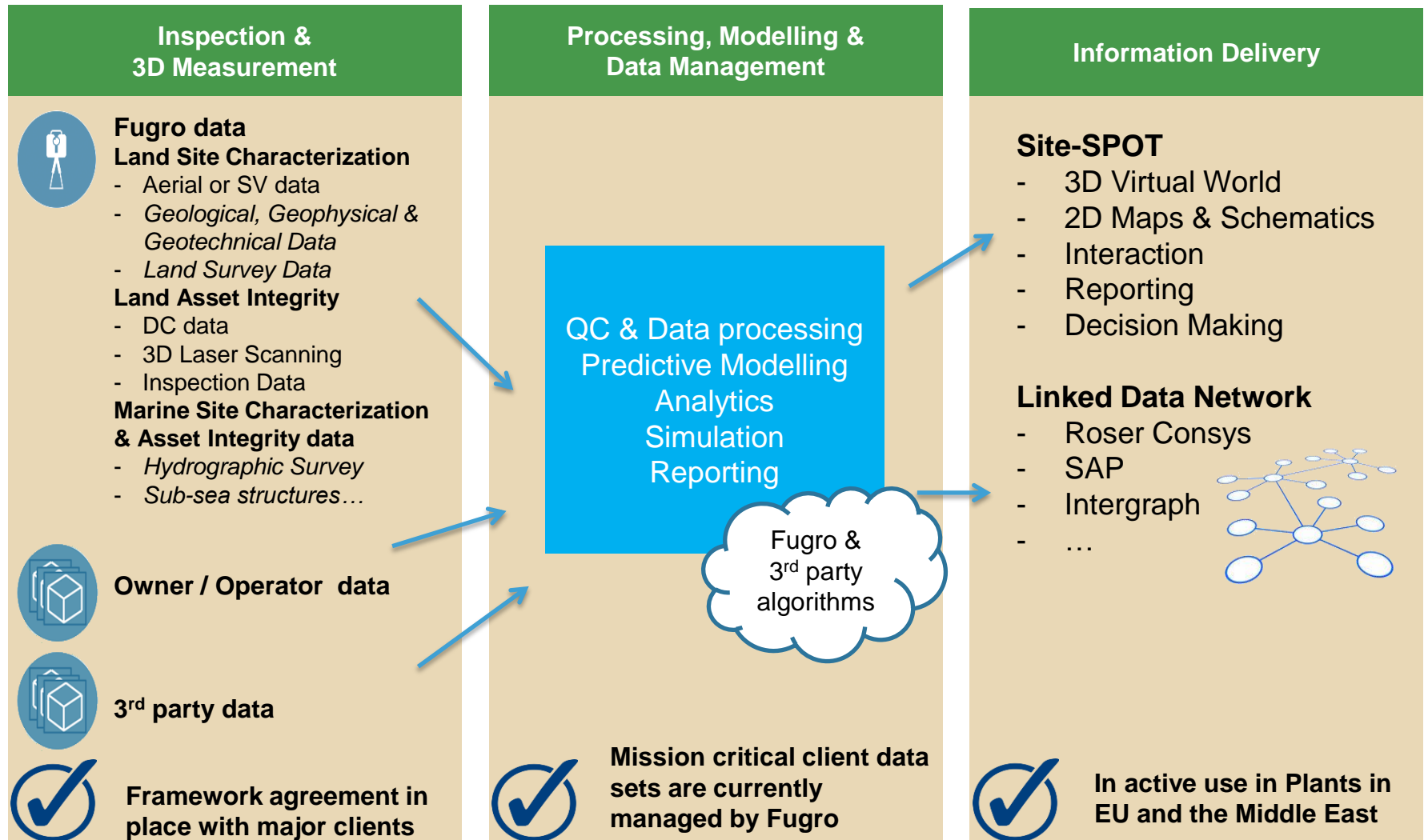
- Up-to-date data with quick & easy access to all*
- Free-flow communication
- Maintenance Time & Cost Reduction
- Increased production due to shorter turnaround times
- Reduced risk

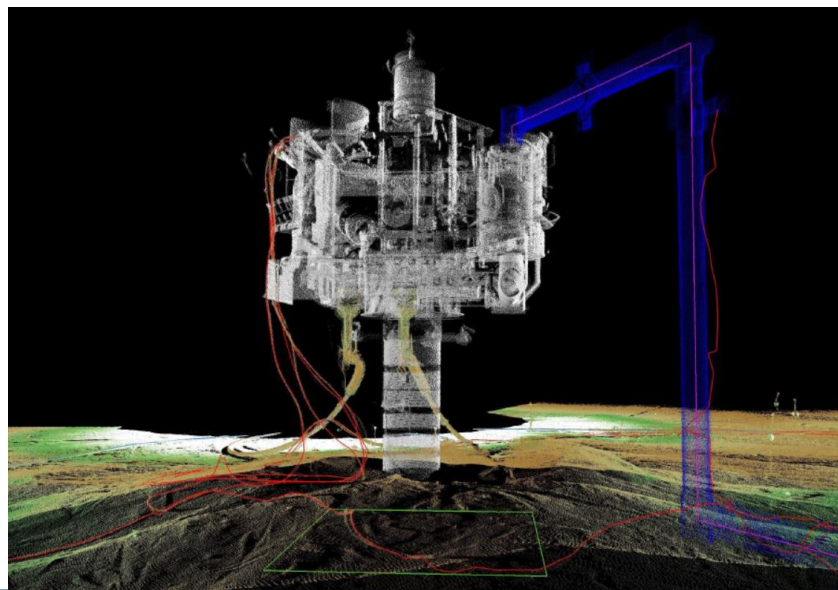
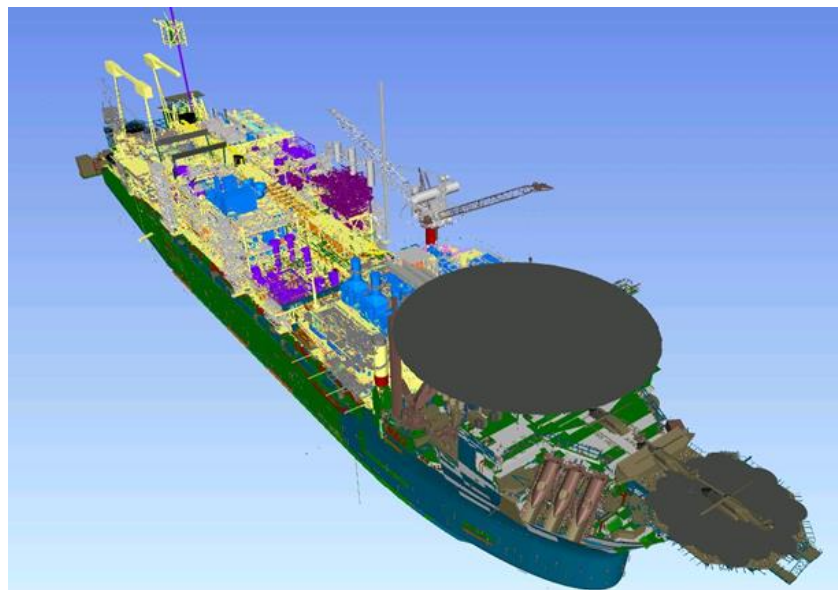
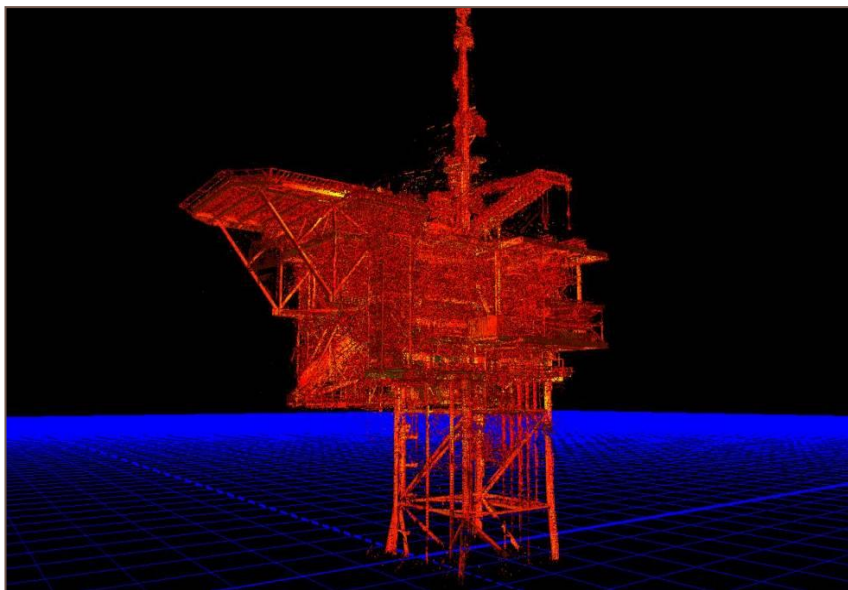
Practical Applications

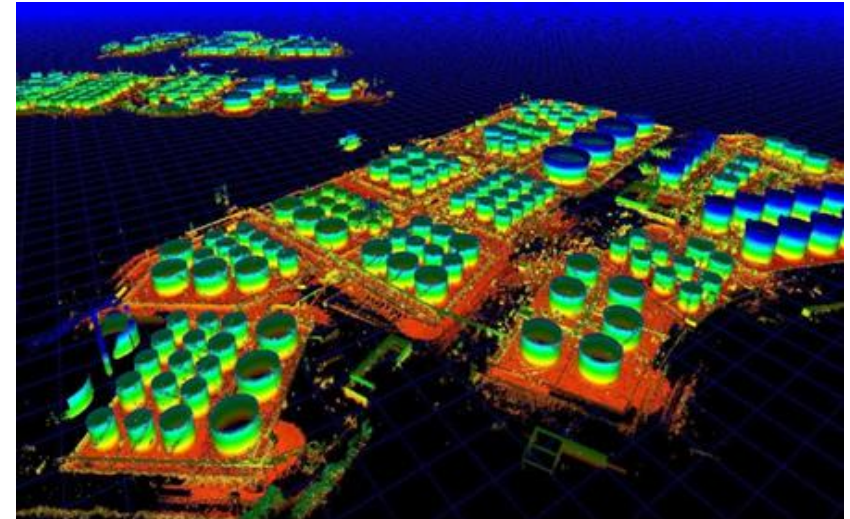
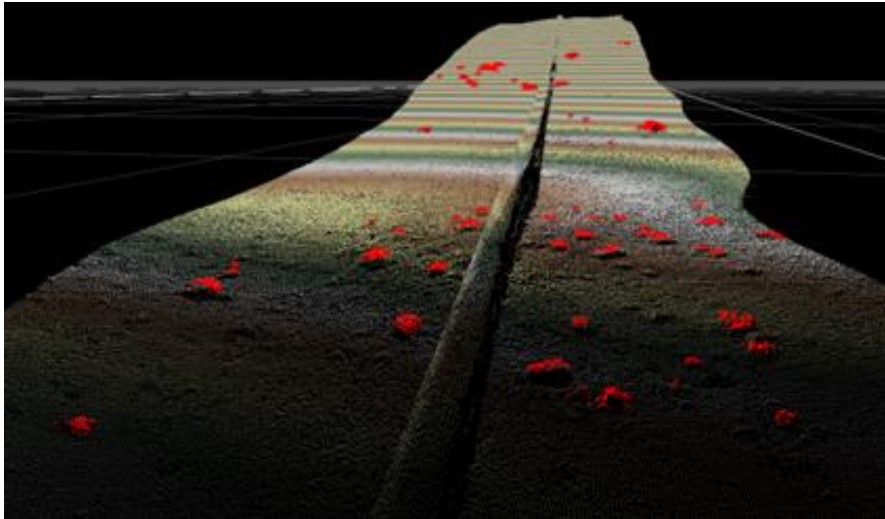
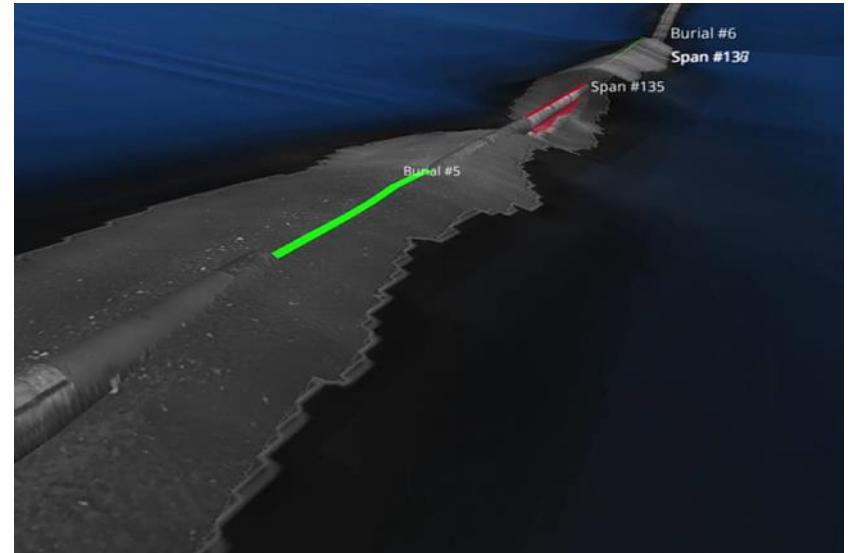
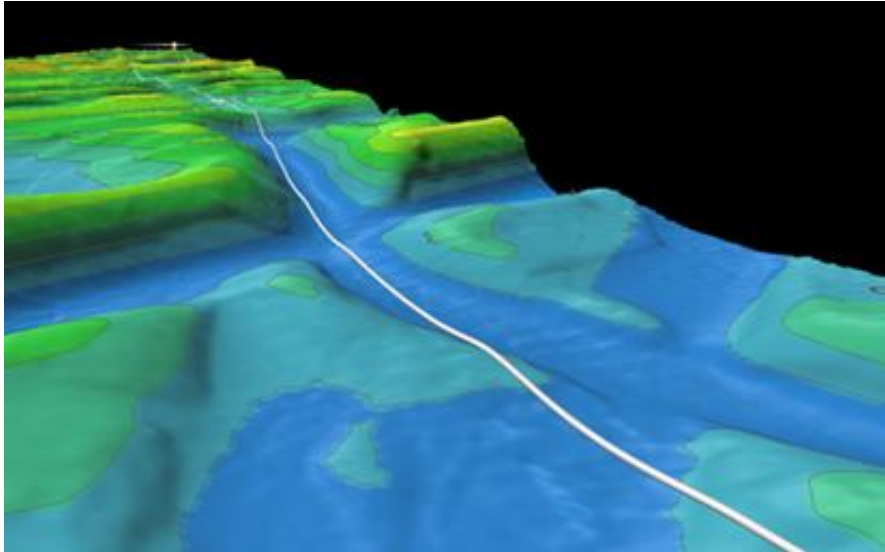
- Remote Collaboration
- Virtual Site Inductions
- Asset management
- HSSE Compliance tracking
- Scaffolding planning
- Shutdown & Maintenance planning
- Work Permitting

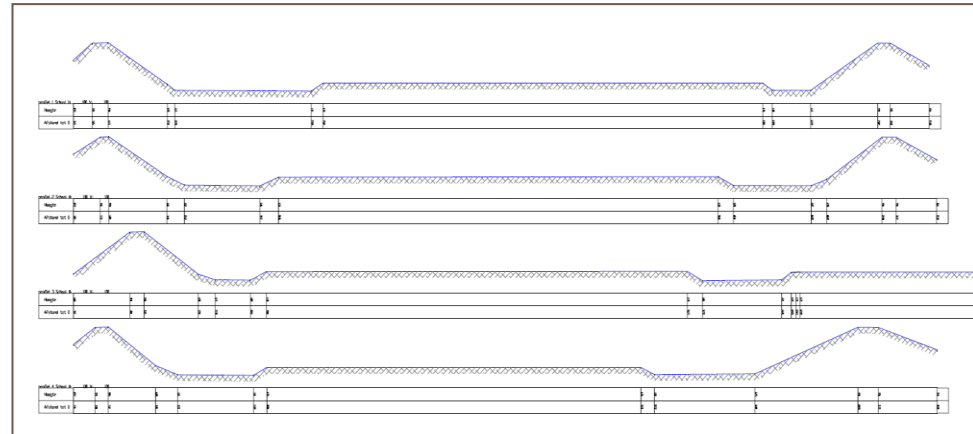
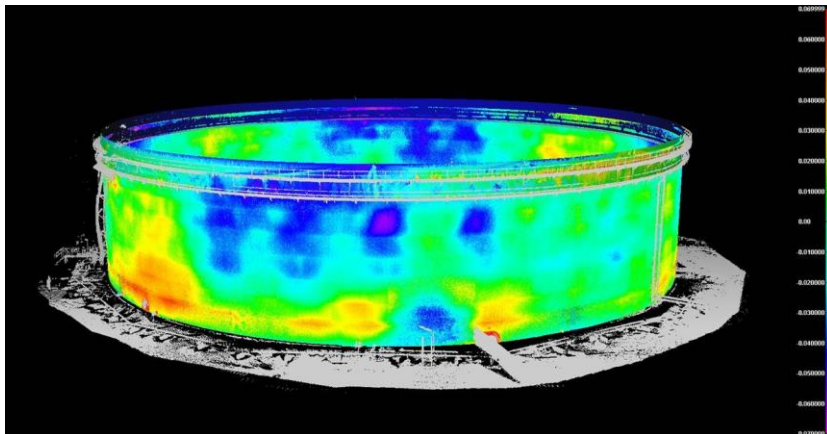
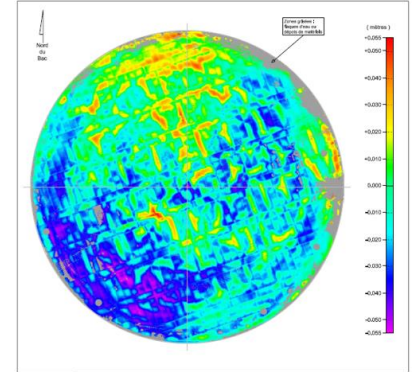
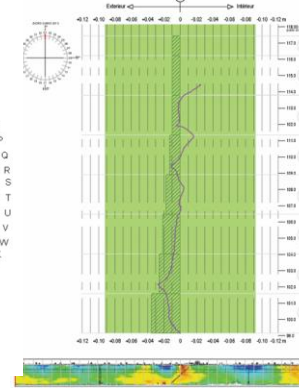
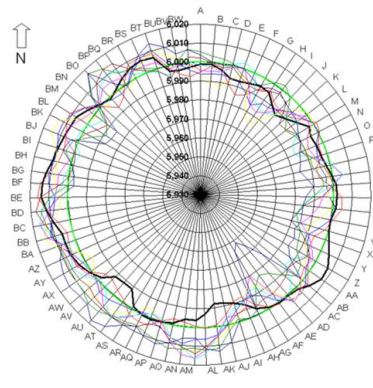
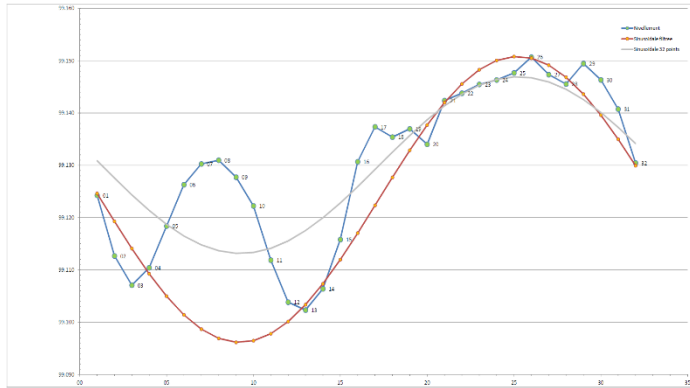
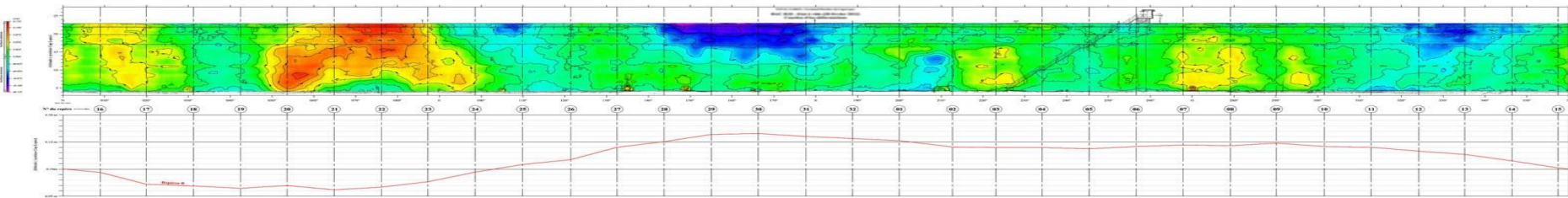


From Document-driven to Data-driven 3D Digital plant & asset management

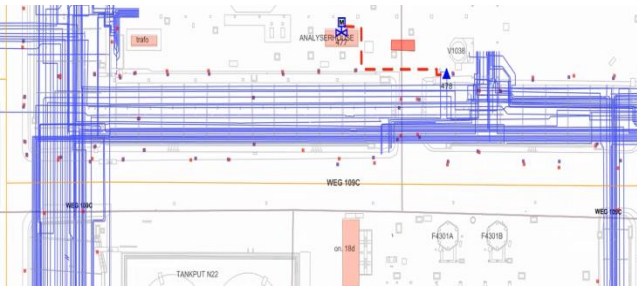


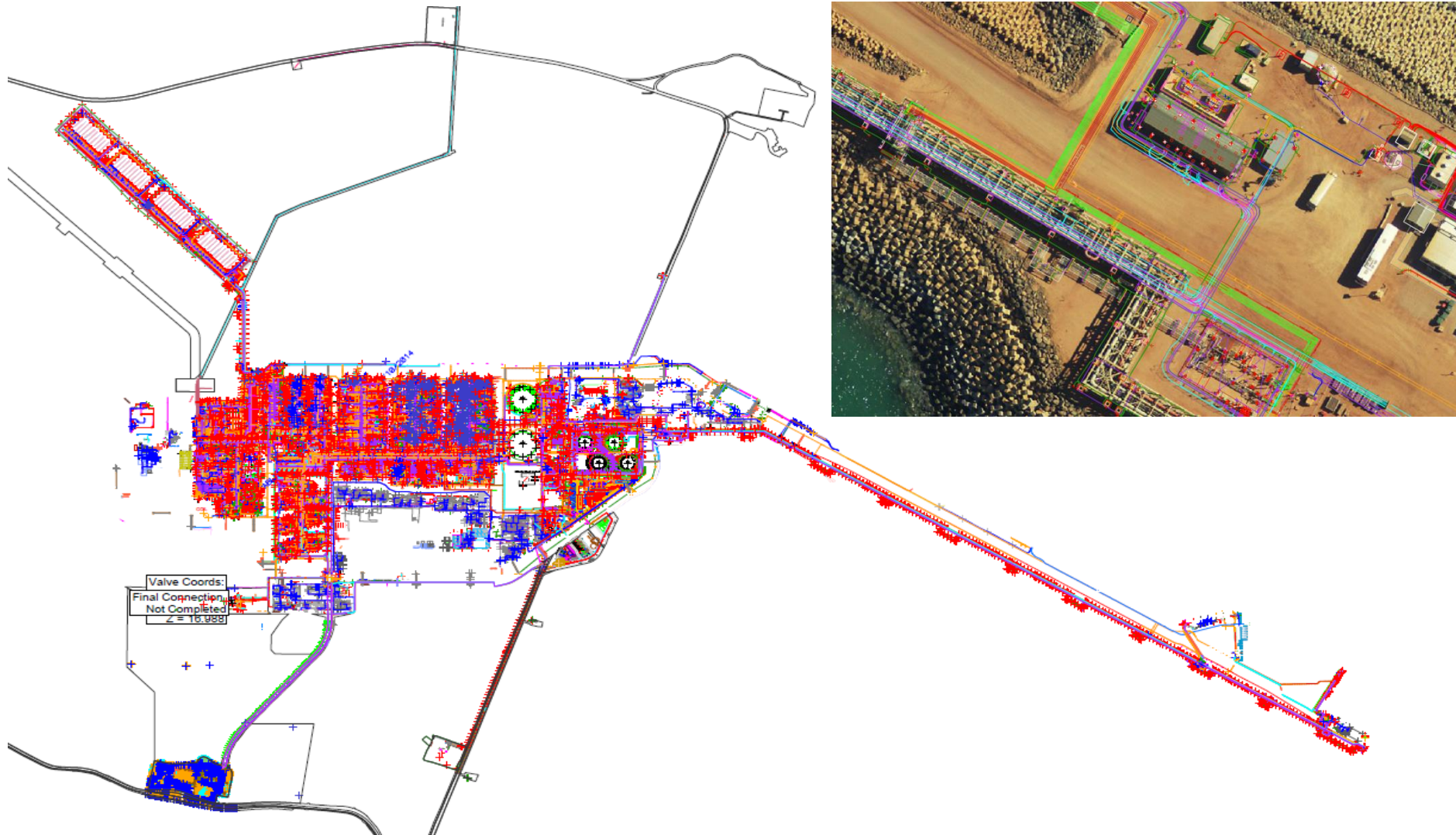








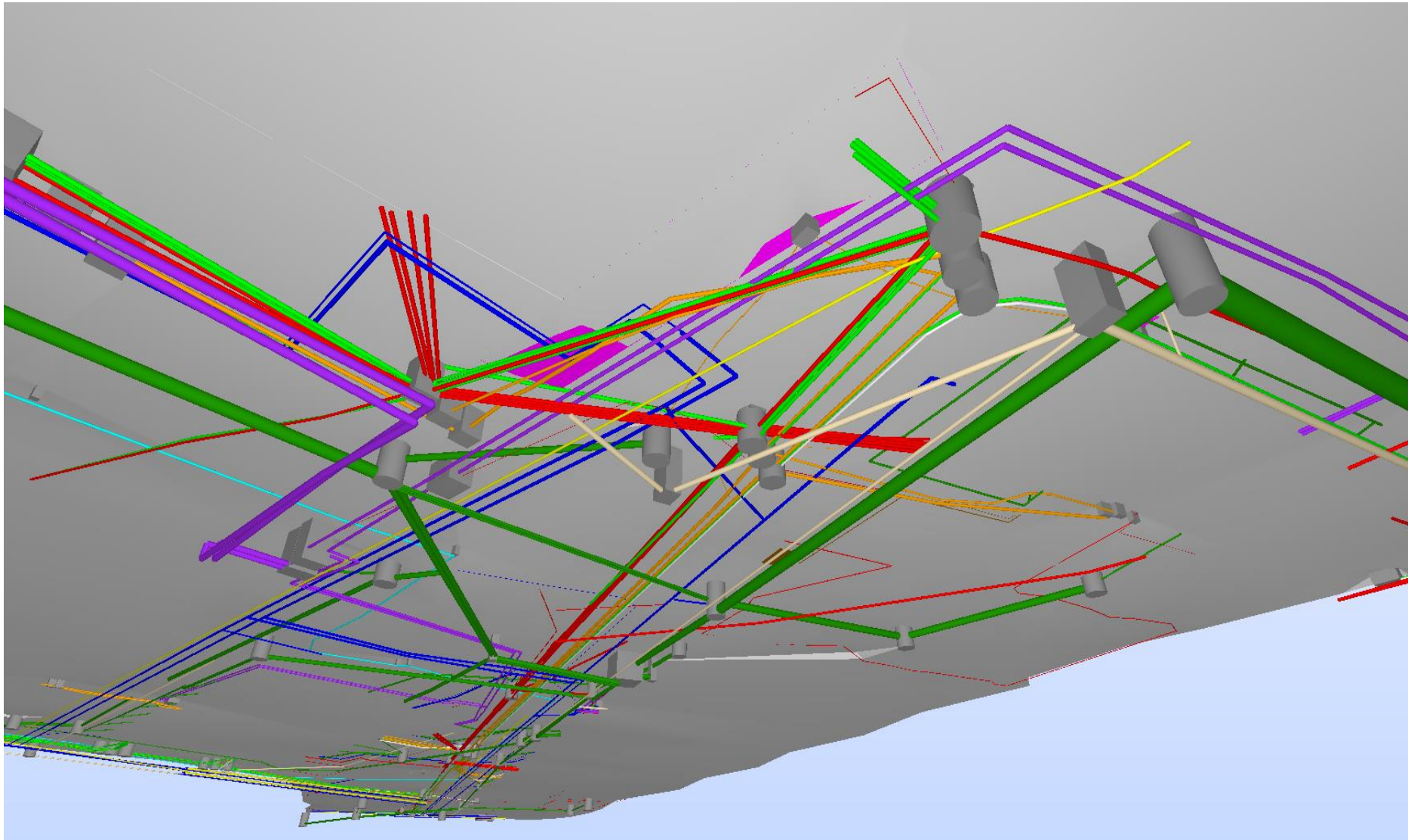




A complete CAD model of LNG plant UG services (as-built)



Fibre optic Cable Routes



BIM 3D model of sub-surface utilities

Augmented Reality



Q&A Session

