



ENGINEERING. INNOVATION.

DIGITAL ASSET MANAGEMENT

2023



TECHNOLOGY AND SERVICES

ENGINEERING. INNOVATION. **AUTOMATION.**

DATA CAPTURE



Laser Scanning and
Data Management

SOFTWARE SOLUTIONS



Advanced Modeller



Vision

DIGITAL ASSET MANAGEMENT



Vision:
Remote Visual Inspection



Vision:
Strategic Planning

SERVICES



Design
& Engineering



Project Delivery



Construction



LASER SCANNING AND DATA MANAGEMENT

RAPID AND EFFICIENT DIGITISATION

Complete As-Built Digitisation of Asset Heavy Industries •

Accelerated digitisation of critical infrastructure •

Foundation for digital technology strategy •

Big data leveraged for transformation of digital operations •

Rapid data collection technology •

Capability to digitise the largest and most complex asset •

GD i developed survey workflow •

Strong base of highly experienced Engineering Surveyors •



VISION

DIGITAL ASSET MANAGEMENT

WEB-BASED VISUALISATION WORK CONTROL AND EXECUTION CENTRE

Single source of truth for asset lifecycle information •

Integrated planning tool •

Collaboration centre •

Streamlined and optimised operations •

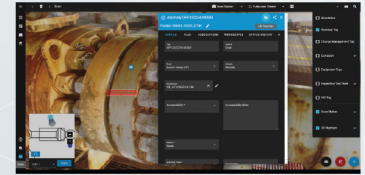
Customisable platform capabilities •

Web based with unlimited users •

INTEGRITY MANAGEMENT



- ▶ ANOMALY MANAGEMENT
- ▶ INSPECTION TEST POINTS
- ▶ INSPECTION/REPAIR /FM WORKFLOW

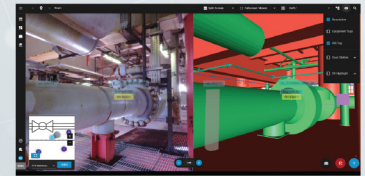


INTEGRITY MANAGEMENT • • •
Anomaly Management

INSPECTION TOOLS



- ▶ CORROSION TAGGING
- ▶ DAMAGE ASSESSMENT
- ▶ INSPECTION REPAIR

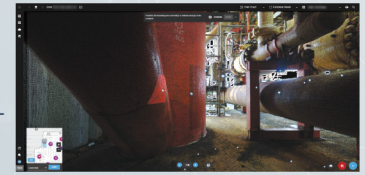


INSPECTION TOOLS • • •
Damage Assessment

ARCHIVE



- ▶ VIEW HISTORIC SCAN DATA
- ▶ ASSET LIFECYCLE AUDIT TOOL
- ▶ RETAIN CRITICAL ASSET KNOWLEDGE



DATA HOSTING • • •
Point Cloud Viewer

DATA HOSTING



- ▶ AS-BUILD 3D MODELS
- ▶ POINT CLOUD
- ▶ HD PHOTOS



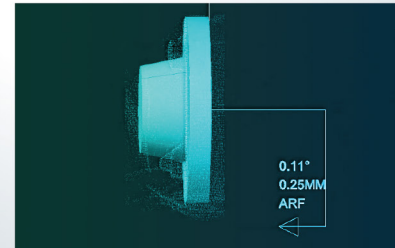
DATA HOSTING • • •
3D Model



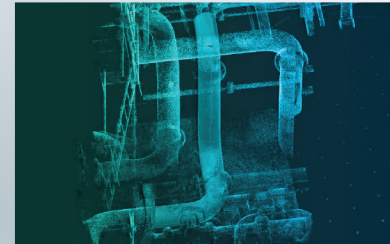
ADVANCED MODELLER

AUTOMATED ENGINEERING

- Automated Intelligent Design Tools – First Time Fit
- Innovative and pioneering
- Reduced cost and time
- Reduced human factors
- Increased quality



Tie-in Point Fitting



Pipe Builder



Point Cloud Cropping



VISION: REMOTE VISUAL INSPECTION



**WORLD'S FIRST ACCREDITATION
FOR REMOTE VISUAL INSPECTION
USING POINT CLOUD DATA AND
PHOTOGRAPHIC IMAGES**

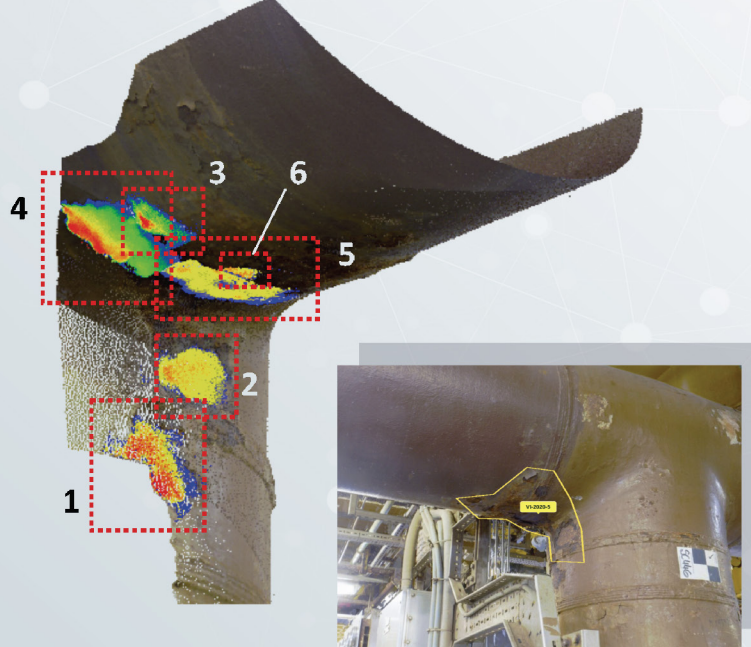
REMOTE VISUAL INSPECTION

Reduced inspection activity on site •

Remotely ascertain external condition •

Increase onsite inspection efficiency by up to 40% •

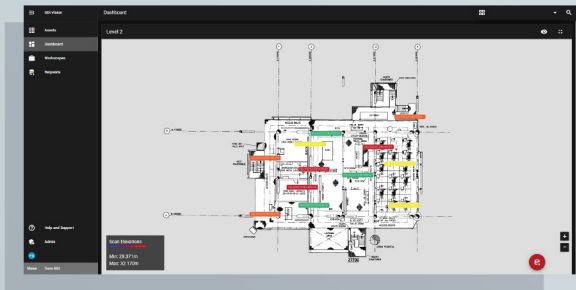
Accredited by UKAS against the requirements of ISO/IEC 17020 •



No.	Assessment	3D View	Profile
4	<p>3.5mm</p> <p>Total area: 99cm² Max width: 81mm x Max length: 123mm Max height: 4.2mm</p> <p>0.0mm</p>		
5	<p>0.0mm</p> <p>Total area: 122cm² Max width: 79mm x Max length: 182mm Max. depth: 4.2mm</p> <p>-4.2mm</p> <p>0.0mm</p>		
6	<p>-7.1mm</p> <p>Total area: 12cm² Max width: 30mm x Max length: 46mm Max. depth: 7.1mm</p>		



VISION: STRATEGIC PLANNING

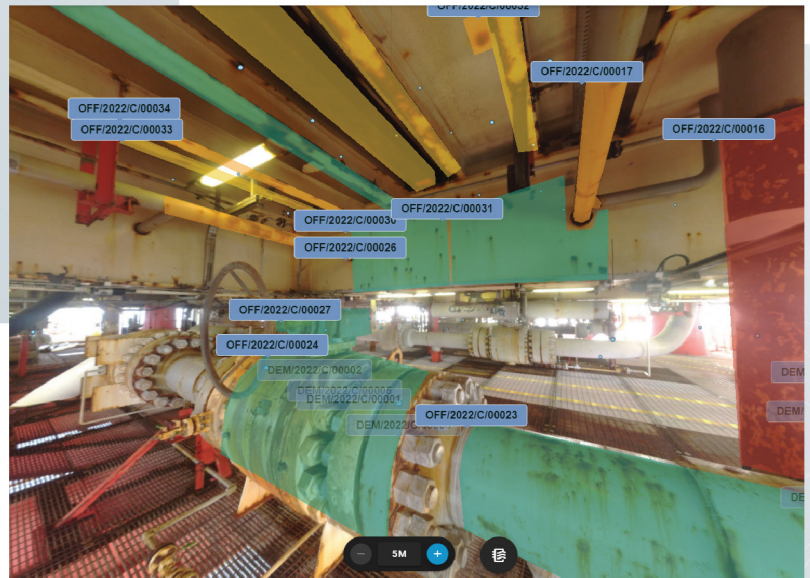


AUTOMATED DESKTOP CONDITION ASSESSMENT

- Intelligent remote condition assessment tools
- Campaign enabler
- Reduce personnel on site
- Integrated inspection reporting

INTEGRATED STRATEGIC PLANNING

- Fully defined long term remedial plans
- Plotted in a working environment
- Constraints identified
- Tailored to COP, asset strategy, budget, resource profile

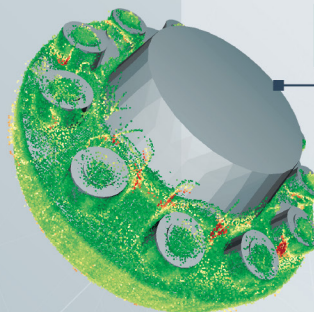
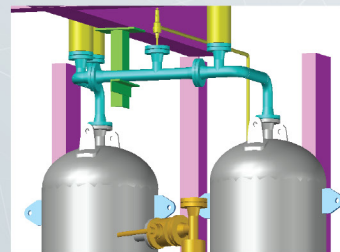
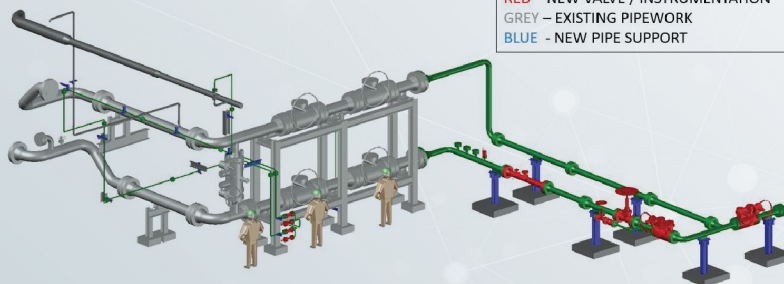




DESIGN & ENGINEERING

TAILORED ENGINEERING SOLUTIONS

- **Highly experienced, multi-discipline engineering capability**
 - Repair order and minor modifications
 - Piping design and engineering
 - Structural design and engineering
 - Multi discipline project teams
- **Part automated design workflows: Advanced Modeller**



ADVANCED MODELLER

- Technology-led approach
- Detailed design support
- Increased quality
- Reduced human factor
- Reduced time and cost



PROJECT DELIVERY & CONSTRUCTION



SPECIALIST CONSTRUCTION

- Multi discipline Rope Access Teams - IRATA accredited
- Strategic campaign planning and development
- Provision of equipment and materials

PROJECT DELIVERY

- Project **Management**
- Project **Engineering**
- Project **Planning**
- 3rd Party** Management



MULTI DISCIPLINE ROPE ACCESS TEAM



PLATERS



PIPEFITTERS



LIFTING
AND
RIGGING





CASE STUDIES

AT GLANCE

A North Sea operator managing brownfield oil and gas assets faced a critical need to accurately register deck penetrations throughout their facility. Historically, this process involved the costly mobilization of rope access teams and the use of external spreadsheets or databases to document the findings.

CHALLENGE



Repeated failures



Large volume



Difficult to identify



Lack of as-built data

SOLUTION

- GDİ leveraged the data set in Vision to do rapid identification, registration, and first pass condition assessment of all penetrations in the facility.
- This was achieved via rapid screening of levels to identify deck penetrations.
- Each location is then plotted in Vision and a first pass visual inspection conducted.
- Subsequently, all penetrations were accurately registered in Vision, with all key information meticulously recorded against each item, ensuring a fully integrated and accessible record of all penetrations.

Equipment Registration

DECK PENETRATION

OUTCOME

- 1 This represents a significant step change from traditional practices, which often involved the costly mobilization of rope access teams and personnel, using paper-based and spreadsheet-based approaches to register deck penetrations.
- 2 In contrast, our innovative approach leveraged the powerful data capabilities within Vision, enabling a highly accurate and efficient registration exercise to be conducted remotely, with the inclusion of a first-pass visual inspection.
- 3 This approach has resulted in a vast reduction in costs, with potential savings of up to 90%.
- 4 By adopting a comprehensive and modern working environment, we are able to deliver a streamlined and dynamic process, with the added benefit of detailed tagging and categorization of all penetrations.

AT GLANCE

North Sea Operator of brownfield oil and gas assets faced a number of challenges that were driving high cost of asset remediation and had massive impact on owners' confidence and control of critical drawings.

CHALLENGE



Accuracy of
critical drawings



Accelerating cost



Decreasing
confidence

SOLUTION

- GDi conducted a comprehensive data capture utilizing advanced technology.
- The resulting dataset was then leveraged to identify and categorize external conditions throughout the facility.
- Valuable data is presented within Vision, allowing for the creation and management of targeted remedial workscopes.

Condition Assessment

DIGITAL ASSET MANAGEMENT

OUTCOME

- 1 Generating a Long Term FM Plan which is:
 - fully resourced
 - risk-based
 - campaign-based
 - square meterage fully defined
 - access requirements fully defined
- 2 The resulting output is seamlessly transferred to the incumbent FM provider, who utilizes the powerful capabilities of Vision to manage FM workscopes from inception through to completion and close out.
- 3 This represents a significant step change from traditional practices, where operators would typically only review their FM scopes annually, resulting in a limited long-term view.
- 4 In contrast, our solution provides a comprehensive and dynamic working environment, featuring advanced area-based markup capabilities and eliminating the need for outdated spreadsheets and list views.



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