ABYSS

MACHINE LEARNING – COMPUTER VISION - ROBOTICS

TOPSIDES® UK 2021

Automated Corrosion Detection, Classification, And Mapping With Machine Learning

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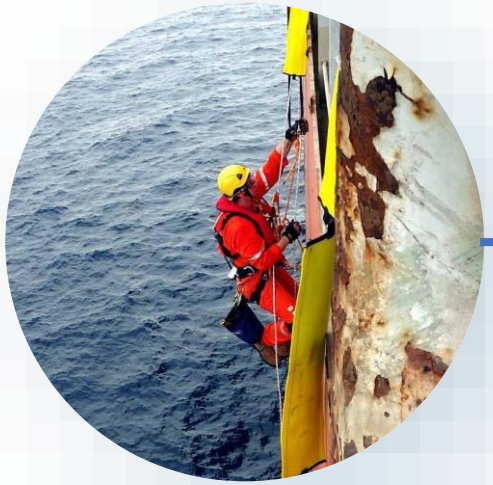
30th November 2021

Abyss Solutions

Using our proprietary Machine Learning, Computer Vision and Field Robotics based technology we reduce OPEX and improve safety for critical infrastructure in oil and gas, water, transport, maritime, and defense sectors.

Fabric Maintenance: Today

Surface corrosion inspection & remediation (“Fabric Maintenance”) is manual, ineffective and subjective, increasing industry costs & risks.



Visual inspections are costly, inefficient, subjective and provide incomplete asset coverage.

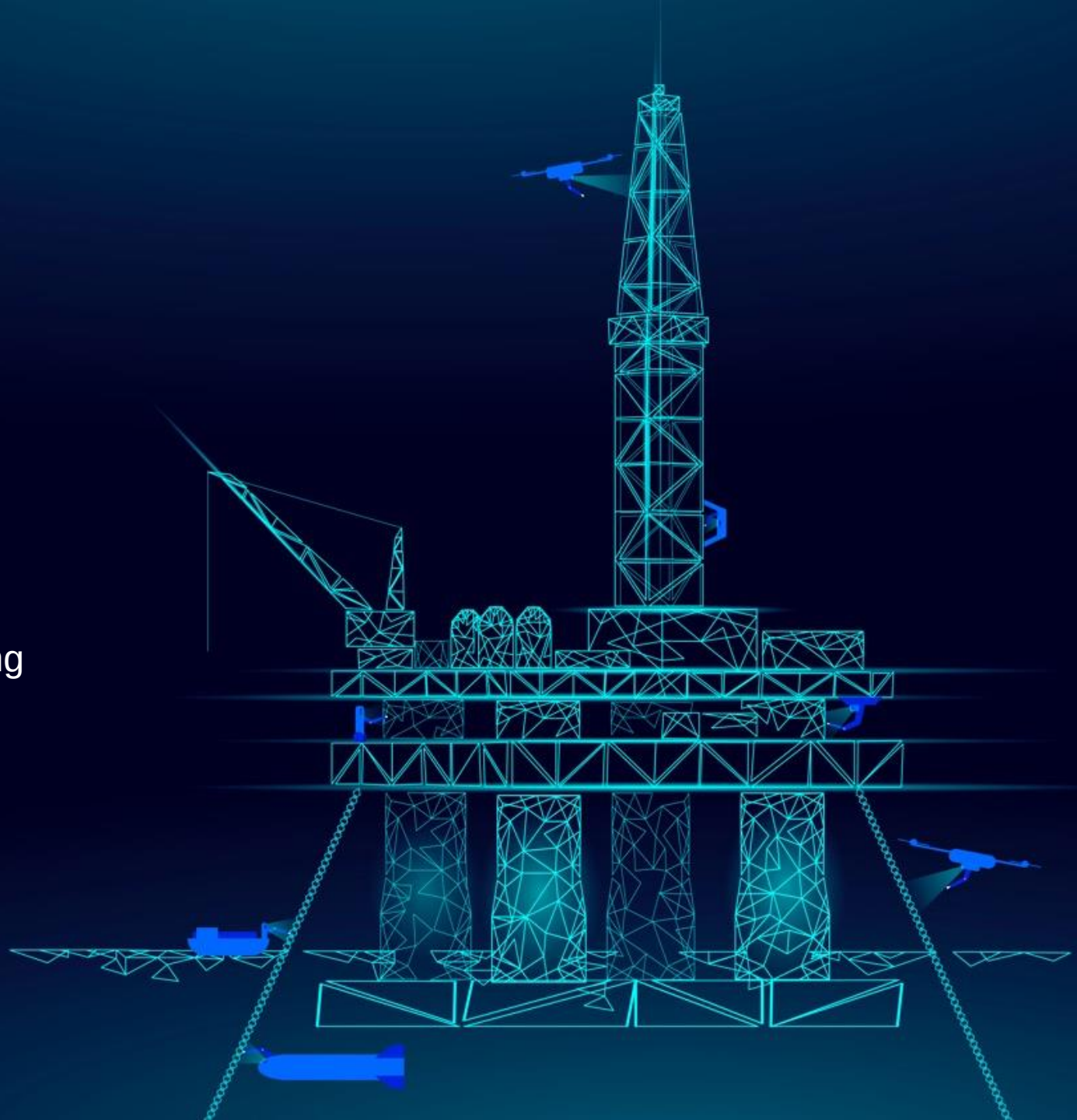
Inspection results are pooled in a database, manually processed to guide maintenance.

The process can lead to unnecessary painting/repairs & missed problem areas, which can result in costly structural repairs. **Reactive Maintenance regime**.

Increased risk of unplanned shutdowns and unnecessary planned shutdowns due to missed repairs.

Abyss Fabric

Automated corrosion analytics using machine learning and computer vision to lower costs and risks for Fabric Maintenance programs.

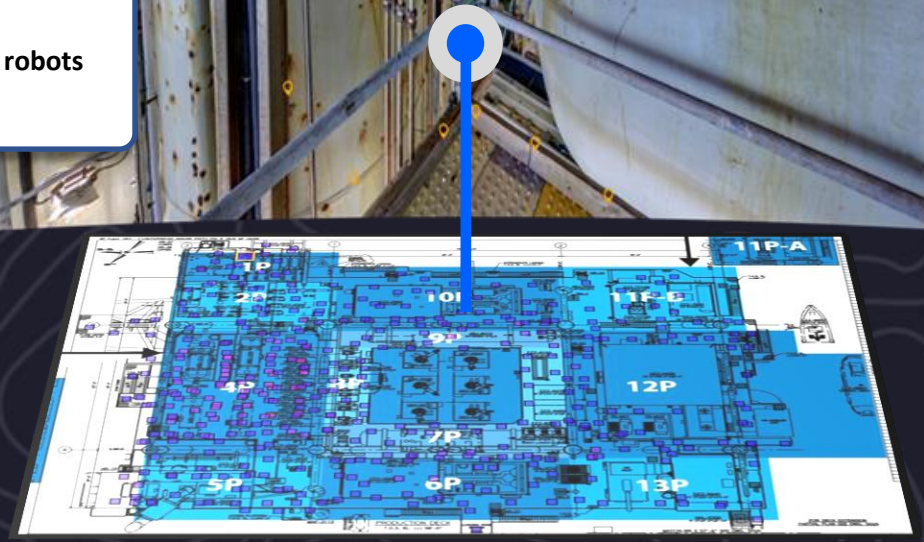


Comprehensive Capture

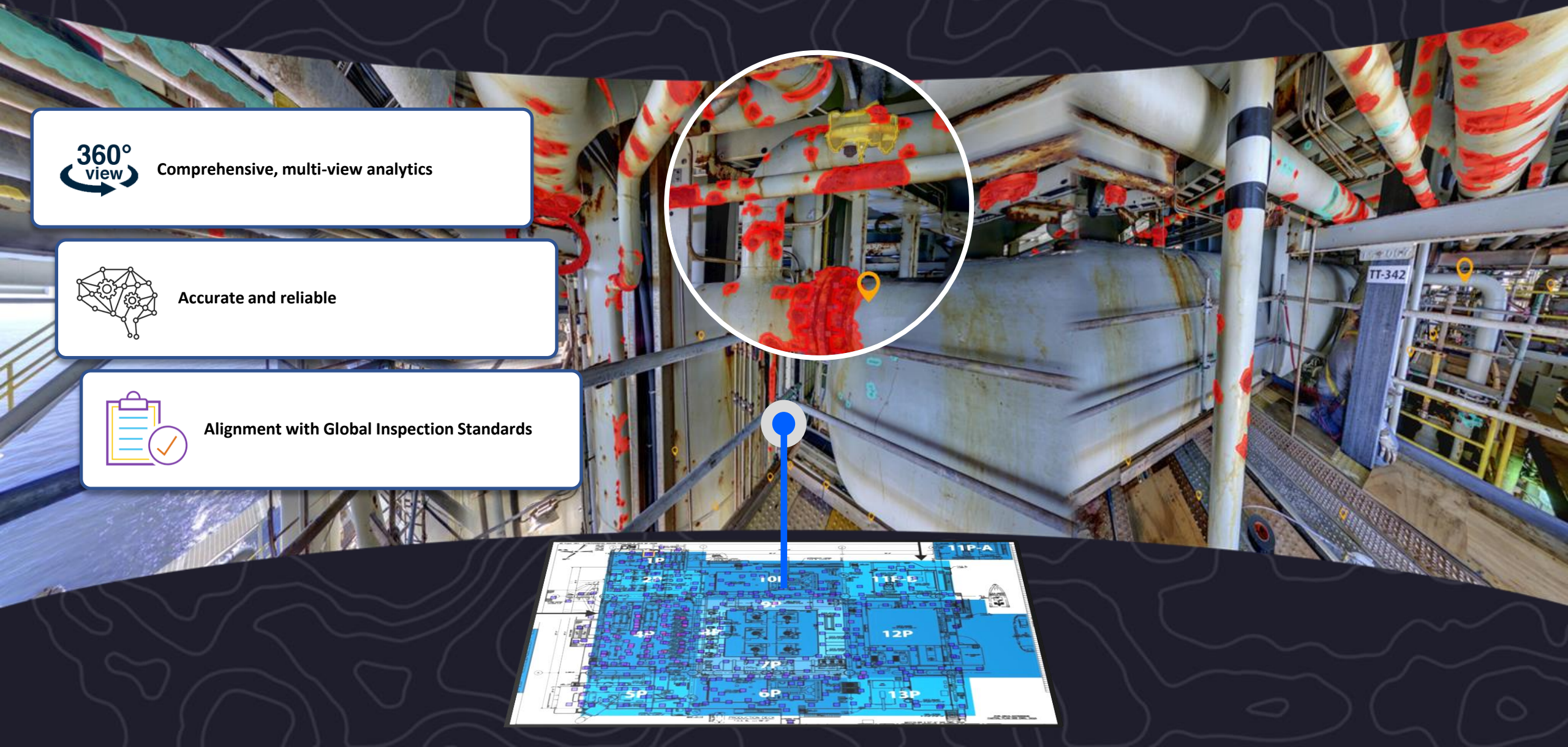
Low-cost vision systems

High Precision Vision and 3D Scanners

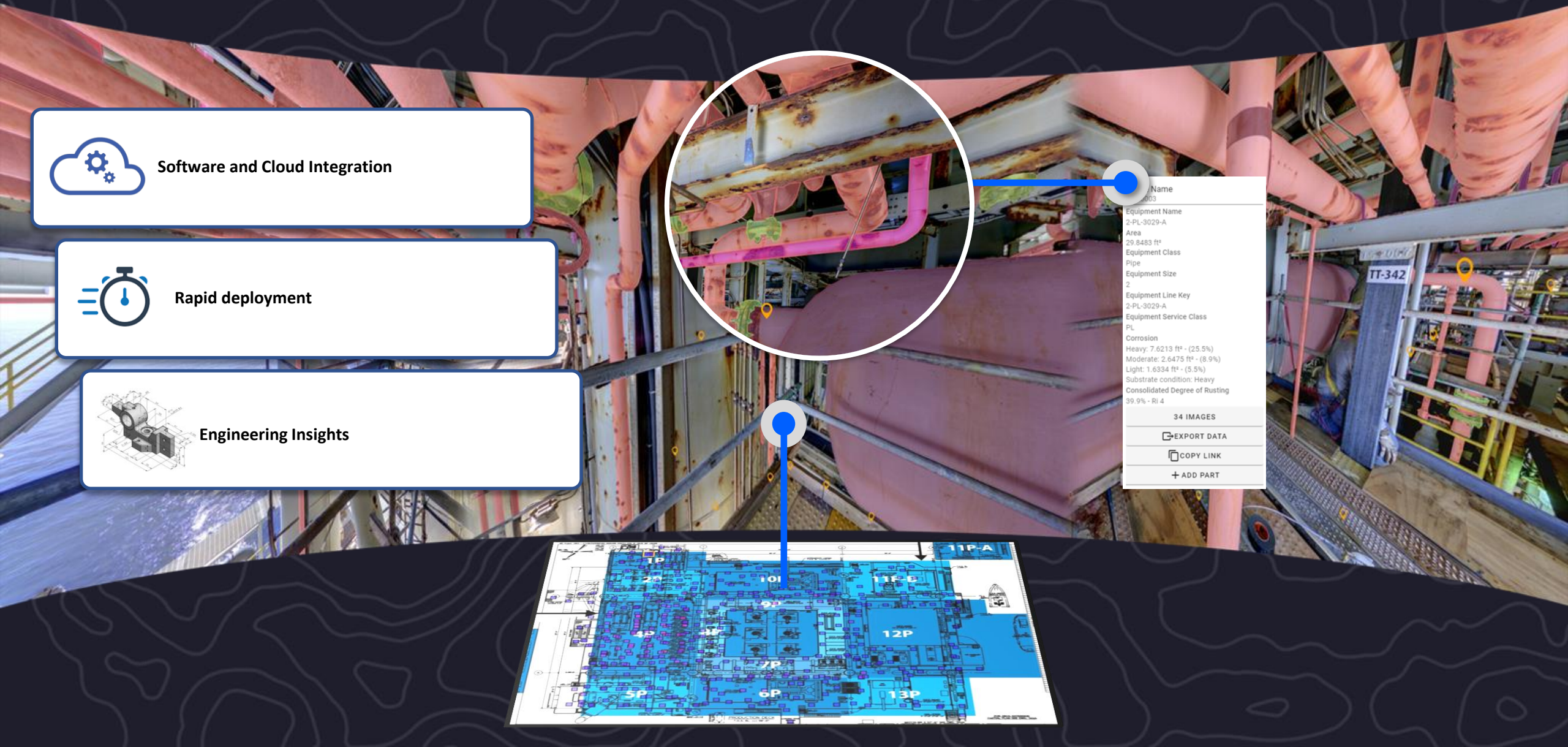
Unmanned inspection and maintenance robots



Accurate Analytics

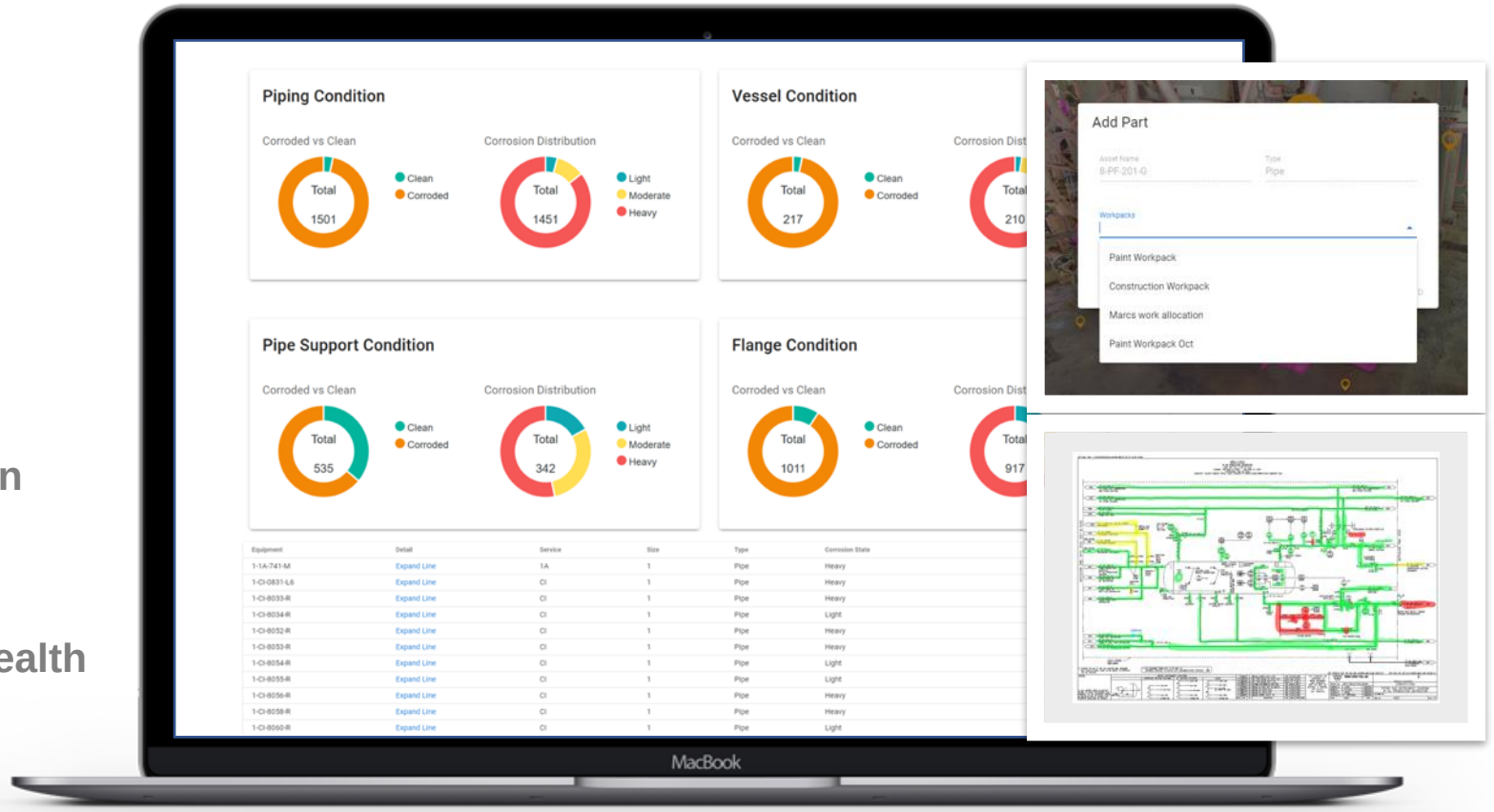


Intelligent Twin



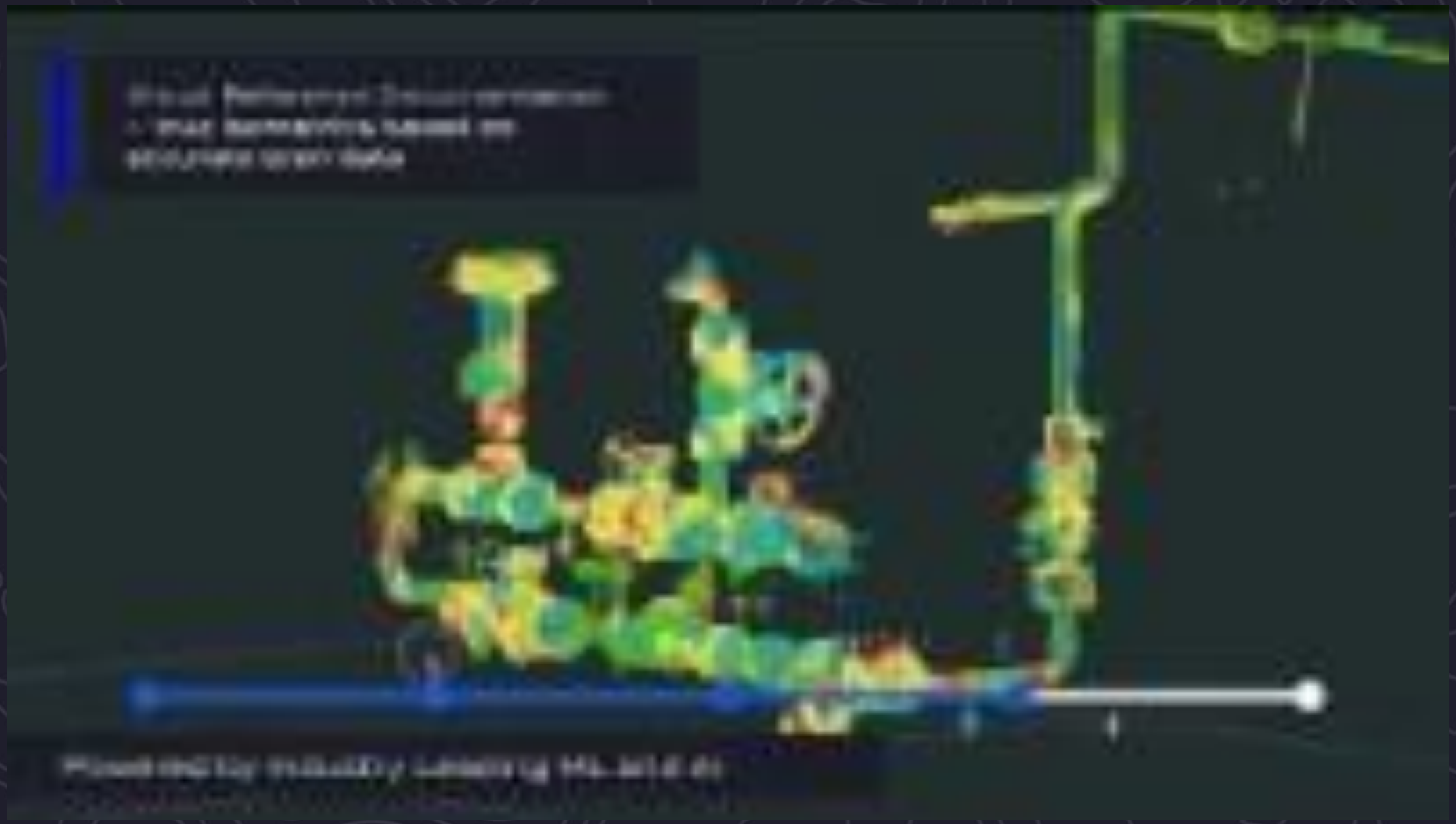
Abyss Fabric: Asset Integrity Management Dashboard

- **Web-based Decision-Making Software**
- **Live platform health dashboard**
- **Work pack creation, execution and completion**
- **Tracking ongoing remediation and asset health**
- **Updated equipment diagrams**



Abyss Fabric Case Studies

Abyss Fabric Demo

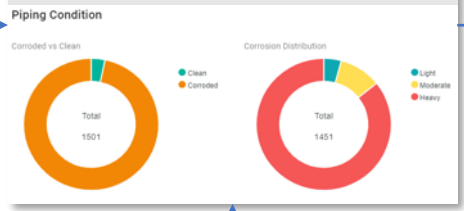


Case Study 1: Offshore Deployment

Verification through Inspection, NDT, X-ray, etc

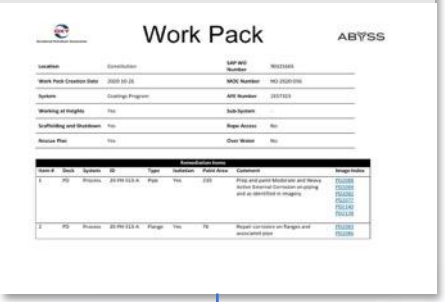
Analytics

Live Dashboard

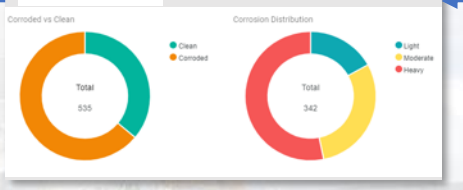


Work packs

Export

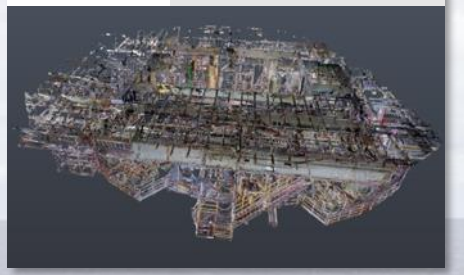


Close out



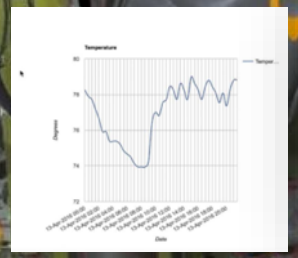
Remediation

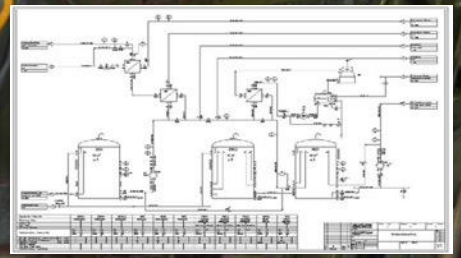
Data Collection



Smart re-inspection

Case Study 2: IOT Integration

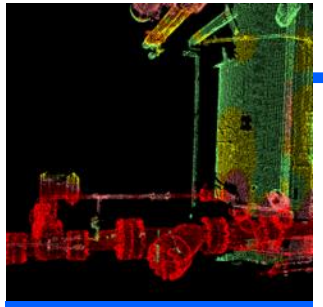




CAD Models | **3D Virtual Tours** | **Live readings** | **Equipment metadata** | **Connected Dashboards**

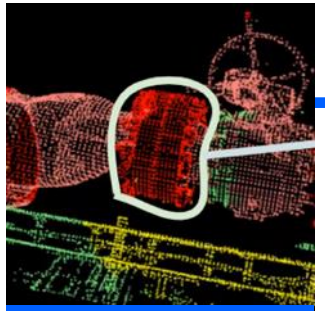
ID: 003-TI014
PI: 62.57 degC
PIM360: Inspection Document
Engineering: CAD Model
Engineering: P&ID
Engineer: 3D View
ERM: Dashboard

Case Study 3: Robotics Deployment and Extended Analytics



ISO Standards

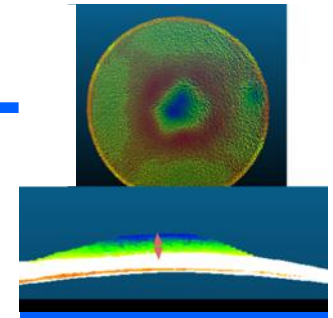
Align corrosion standards to existing standards: ISO 4628-3



Abyss Imaging

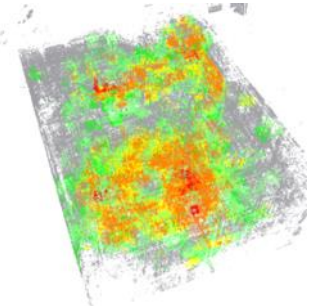
Integrate inspection grade sensors on any robotic platform

Unmanned robotic inspections



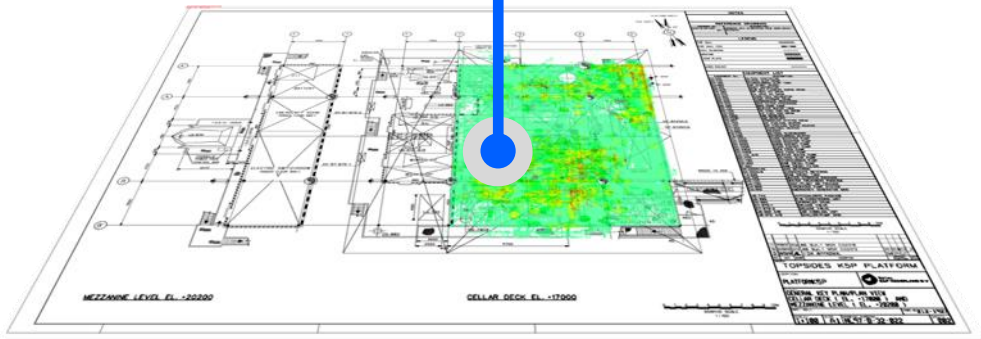
Precision measurements

Map every deformation and anomaly to the millimetre scale



3D paint review

3D paint analysis across the platform



Enabling unmanned platforms through autonomy

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