



R2S

How Digital Tools and Process Change Improve Safety and Efficiency for Oil & Gas Operators

Effective anomaly management is crucial for the safe and reliable operation of oil and gas facilities. However, many O&G operators face challenges such as limited resources, competing priorities, and a lack of proactive maintenance or inspection programs, which can result in a backlog of integrity issues. This backlog can increase the risk of equipment failure, safety incidents, and environmental incidents.

To address this, integrity and operations managers must prioritize items in the backlog based on their risk and criticality to the operation. They need to develop a plan to address the backlog, allocate resources efficiently, and ensure that the work is completed within budgetary and operational limitations. A systematic and structured approach is necessary to minimize the risk of incidents and downtime.

Challenge

This case study highlights the challenges faced by a North Sea operator with over 7,500 anomalies recorded across three large brownfield offshore assets. The integrity team identified inefficiencies in the planning process, which led to a growing backlog of integrity work. To improve the recording and remediation of issues, they used the Design Thinking methodology to interrogate their processes and procedures.

The team identified digital tools, supported by process change, as a way forward.

The solution involved integrating the anomaly records with R2S, which added a spatial element to enable planners to visualize the data contained in the system. By revealing the spatial relationships between anomalies, planners could group them by addressable type and schedule accordingly, avoiding rework. Previously, planning was based on severity and risk ratings alone. The spatial information allowed planners to plan remediation activities by area or system, adding more dimension to the planning process.

Solution & Results

After developing R2S digital twins from laser scan data collected by a partner, AIS worked with the operator to build an integration with the CMMS Maximo, containing their live anomalies.

AIS interrogated Maximo to find the exact locations of all existing anomaly data. For new records, the integration is designed to pull data into R2S and place it automatically in the correct location. The tags are color-coded and dynamically change depending on their state in Maximo.

From these tags, AIS developed new filtering tools in the latest R2S version to enable enhanced interrogation of the anomaly data, guided by the operators' integrity managers.

Overall this allowed the asset to move from a point based anomaly remediation planning to an area/ module based approach.

Before R2S



~15 minutes per anomaly to understand it's real-world location

With R2S



~2 Seconds per anomaly to understand it's real-world location

Summary

In summary, this case study shows how digital tools and process change can help O&G operators manage their backlog of integrity issues efficiently, improving safety and reliability while minimizing the risk of incidents and downtime. By integrating anomaly records with a spatial element, planners can easily visualize data, plan remediation activities efficiently, and avoid rework. The use of digital twins, integration with anomaly management systems, and filtering tools can streamline the process of managing anomalies and improve decision-making by integrity managers.

R2S

Unlock faster prioritization and minimize the risk of downtime with R2S and effective process change. Don't let a backlog of integrity issues cost you time and money. Take action now!

