

CLIENT
SECTOR
ASSET
DATE
OBJECTIVE
SERVICES

GLOBAL OPERATOR
OIL & GAS, UKCS
PIPELINE
2025
ESTIMATE PIPELINE CONDITION, REMAINING LIFE AND RECOMMEND CORROSION MITIGATIONS
INTEGRITY ASSESSMENT, SOFTWARE AS A SERVICE (ALERT)

Accurate Predictive Modelling of Corrosion Saves over £1 million

THE CHALLENGE

A global upstream operator, managing late-life assets in the North Sea, faced a strategic decision following a revised COP date for one of its offshore platforms. A Pipeline transporting produced fluids between two installations, was scheduled for an Inline Inspection (ILI) in 2025. With COP advanced to the end of 2027, the operator sought to reassess the necessity of this costly inspection, aiming to reduce spend while ensuring pipeline integrity through to decommissioning.

SOLUTION AND IMPACT

Imrandd deployed its proprietary data analytics platform, ALERT, to perform a full corrosion modelling and integrity assessment of the pipeline. Drawing on over a decade of operational and microbial data, ALERT enabled high-resolution, day-by-day prediction of internal corrosion, including CO₂ corrosion.

KEY OUTCOMES:

ACCURATE PREDICTIVE MODELLING

ALERT, calibrated to real process and environmental data, provided detailed forecasts of future wall thickness loss under various scenarios. The analysis confirmed that, under typical conditions with maintained inhibition and pigging, internal corrosion rates were negligible (as low as 0.01 mm/year), supporting the feasibility of ILI exemption.

QUANTIFIED MIC RISK

The absence of operational pigging since 2020 was identified as a driver of MIC risk, with modelled rates reaching 1.76 mm/year. Imrandd simulated multiple operating scenarios, showing that reinstating pigging could dramatically reduce MIC rates and extend pipeline life safely to COP.

DATA-DRIVEN INTEGRITY MANAGEMENT

Using a combination of ALERT's modelling, historic ILI data, and microbial testing, a defensible case was made to regulators for exemption from the 2025 ILI. This was contingent on key controls being reinstated, including weekly pigging and ongoing inhibitor injection.

VALUE AND COST SAVINGS

The ALERT-driven approach enabled the operator to confidently defer a scheduled ILI run, delivering immediate cost savings estimated more than £1 million. Additionally, the study minimised disruption, reduced HSE risk, and focused integrity management efforts on operational controls rather than invasive inspections.

CONCLUSION

This project demonstrates the power of predictive analytics in modern asset integrity management. By leveraging Imrandd's ALERT software, the global operator transitioned from scheduled interventions to a proactive, condition-based strategy, delivering cost efficiencies and maintaining safety in a critical late-life asset.