

# SUCCESS STORY

## COMPLETION OF RISER SPOOL PIPELINE INSPECTION

### THE PURPOSE

This document is composed to assist our clients and the supply chain to better understand our capabilities and experience within the Subsea NDT sector.



# SONOMATIC

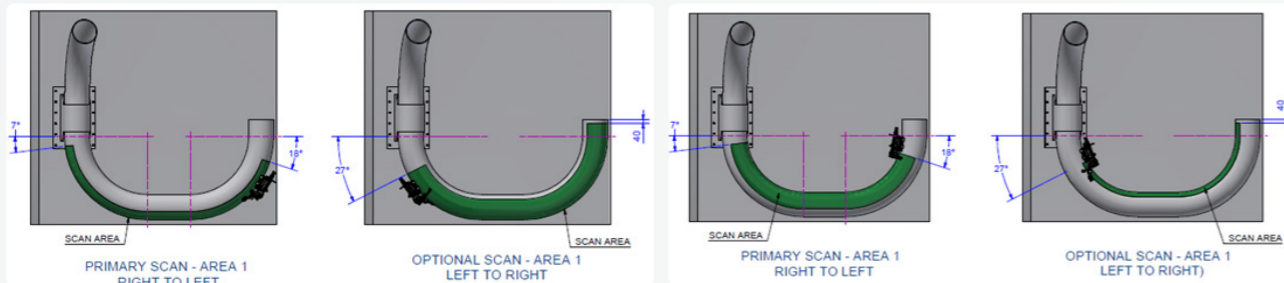


# PROJECT DESCRIPTION

In 2010, Sonomatic inspected a subsea water injection (WI) riser base spool for a valued client, focusing on point thickness readings in areas with restricted access. At the time, the tight 6 o'clock region limited the use of automated tooling. Fast forward to 2024, the client sought a more comprehensive inspection after evidence of corrosion emerged in a downstream section of the pipeline. They prioritised a remote inspection approach using an ROV vessel to minimise carbon footprint.



To meet this challenge, Sonomatic's Engineering Design & Development group (E2i) identified Sonomatic's Stingray scanner as the ideal tooling platform for adapting to the client's needs. The Stingray was modified to allow ROV deployment, inspection around bends, and access to the constrained 6 o'clock region.



## CHALLENGES

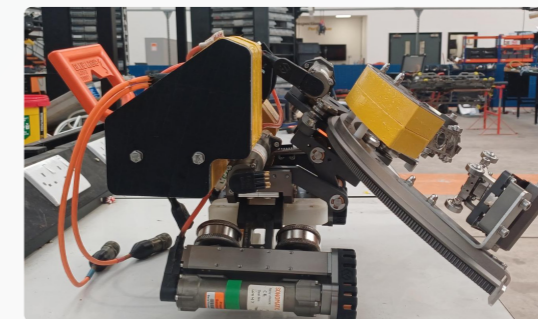
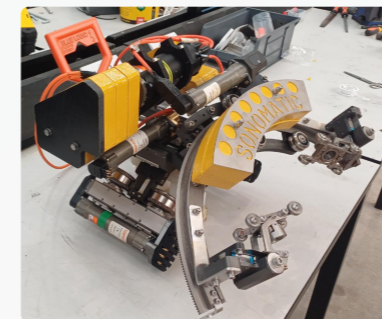
The project posed several technical and operational challenges:

- 1. Access Constraints:**  
The 6 o'clock region of the spool remained a critical area, requiring innovative solutions to ensure inspection coverage.
- 2. Scanner Development:**  
Modifications to the Stingray scanner included a redesign of the inspection head to achieve maximum coverage of corrosion-prone areas. The scanner was tailored to collect data from 1 o'clock through 7 o'clock on the extrados of bends and, if necessary, perform a full 360° scan by inspecting the intrados.
- 3. Probe Protection:**  
The design needed a mechanism to protect the inspection head during deployment and retrieval, enabling the probe assembly to be raised and lowered as required.
- 4. Field Testing:**  
A full onshore Factory Acceptance Test (FAT) with a dedicated pipe sample mimicking the offshore section was essential. Minor adjustments were made during testing to address lessons learned.
- 5. Offshore Conditions:**  
Adverse weather in the North Sea during November and marine growth on the spool section caused delays but required adaptive problem-solving.

## INNOVATION

Innovation was at the heart of this project, driving the successful implementation of advanced inspection techniques:

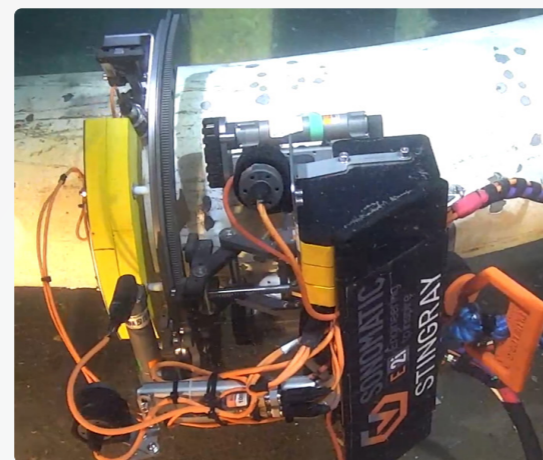
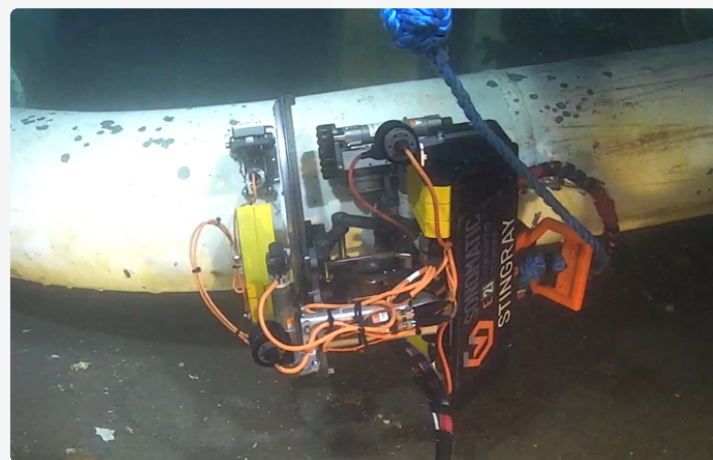
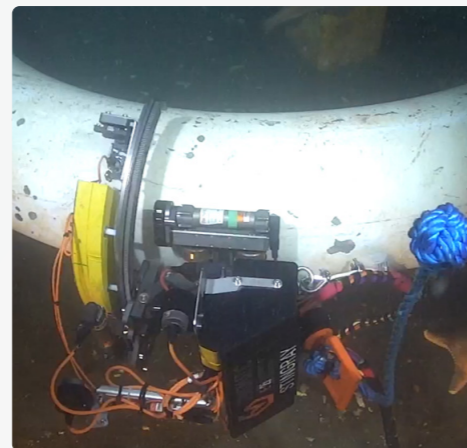
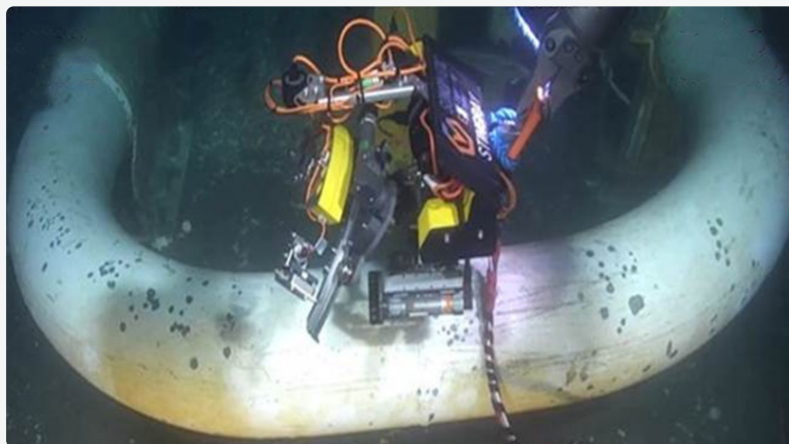
- Tooling Redesign:**  
E2i's redesign of the Stingray scanner included a specialised inspection head that could navigate tight bends and access constrained areas. This ensured comprehensive data acquisition even in the most challenging sections of the spool.
- Dynamic Probe Mechanism:**  
A lifting and lowering mechanism for the probe assembly was developed to protect sensitive components during deployment and retrieval, ensuring durability and reliability.
- Customised FAT Process:**  
By simulating offshore conditions with a dedicated pipe sample, the team ensured the tooling was fine-tuned before deployment, reducing risks during the offshore phase.
- Sustainability Integration:**  
The project's ROV deployment not only enhanced safety and efficiency but also aligned with the client's commitment to reducing their carbon footprint.



## OUTCOME

The project achieved its objectives, demonstrating Sonomatic's ability to overcome complex challenges and deliver innovative solutions. The Stingray scanner's modifications allowed for detailed corrosion mapping in the critical 6 o'clock region, providing the client with invaluable data to assess the spool's condition and make informed decisions on asset integrity.

Despite adverse weather conditions and marine growth delays, the team successfully completed the inspection, showcasing adaptability and resilience. The use of an ROV vessel not only minimised environmental impact but also enhanced operational efficiency, earning the trust and confidence of the client. This success reinforces Sonomatic's reputation as a leader in subsea inspection technology and its commitment to sustainable, cutting-edge solutions.



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