# CAPABILITY STATEMENT

## INTEGRITY SERVICES

## THE PURPOSE

This document is composed to assist our clients and the supply chain to understand our group operating structure along with a high-level understanding of the benefits, services and specialist packages associated with our integrity and engineering capabilities.

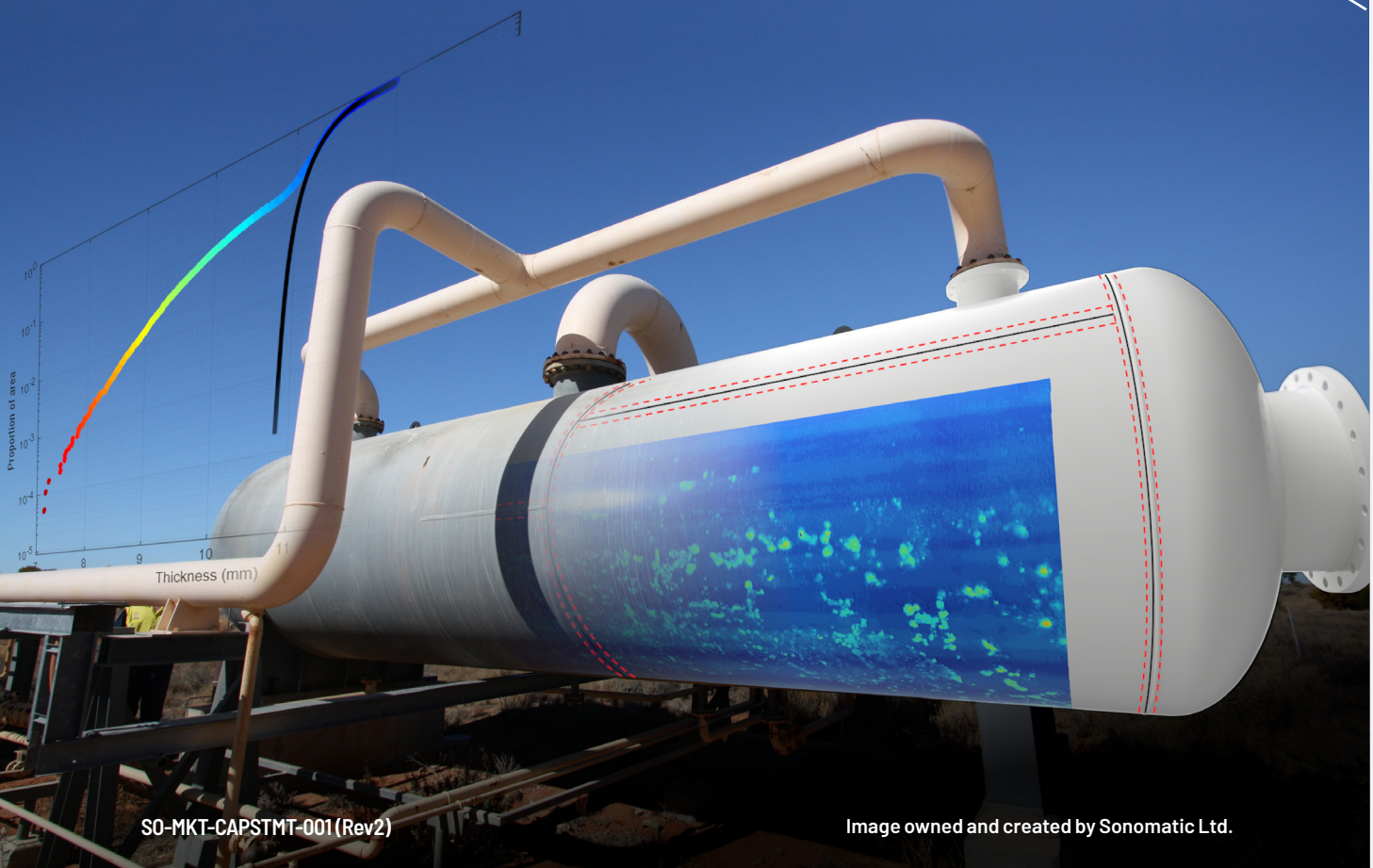





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# WHO WE ARE

Sonomatic is part of a group of companies, an international consortium that delivers a comprehensive range of asset integrity, inspection, maintenance and specialist access services across a wide range of industries and sectors.

AUAV · GEO OCEANS · ROTOTECH · SONOMATIC · SONOMATIC RAIS · VERTECH

PRESSURE DYNAMICS · UNITED FLUID POWER · aps · ABSEIL ACCESS · REMO · FOTOTERRA SONOMATIC

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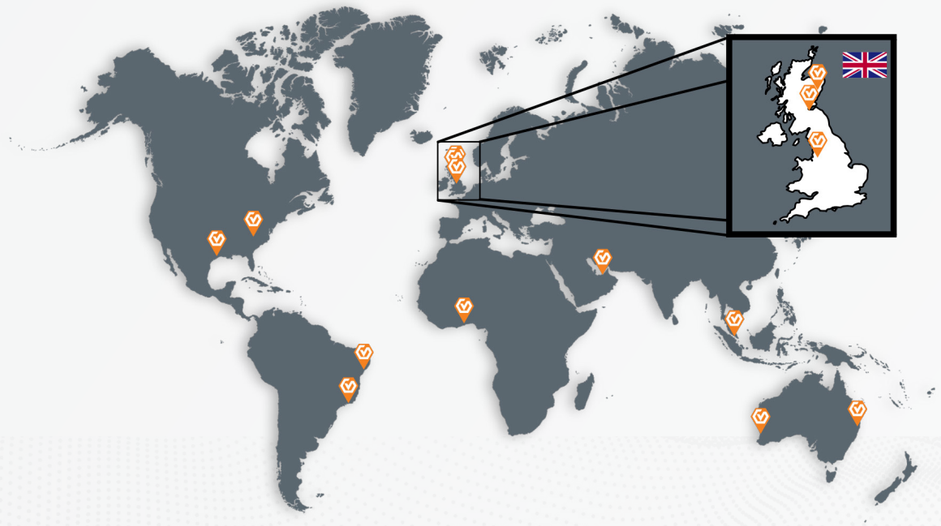
SONOMATIC

Sonomatic specialise in the design, development and application of Non-Destructive Testing (NDT) inspections. Since the company's formation in the 1980s, we have combined these NDT processes with integrity engineering capabilities to provide fully integrated inspection packages that directly meet the needs of the client.

Bringing innovative bespoke inspection solutions to the market through in-house development of equipment, software and robotics, Sonomatic resides as the global leader for ROV-deployed subsea inspection and Non-Intrusive Inspection (NII) technologies.

Our team is committed to providing accurate, proactive inspection and engineering solutions that enable clients to manage the integrity of newly constructed assets and make informed decisions crucial to the safe continued operation of maturing ones.

## GLOBAL FOOTPRINT



# WHAT WE DO

Sonomatic provide integrity engineering and NDT services at every stage of a project's life cycle. NDT subject matter experts assess each scope of work individually to ensure that the inspection solution(s) will meet the desired deliverables. If a unique solution is required, our R&D department can design and manufacture inspection technologies and scanners that will exactly meet our client goals. Our integrity service offerings provide industry leading inspection and engineering evaluations of the inspection data to enable recommendations for repeatable inspection programmes.

## INTEGRITY SERVICES










## SUBSEA










## ONSHORE/ TOPSIDE










## RESEARCH & DEVELOPMENT







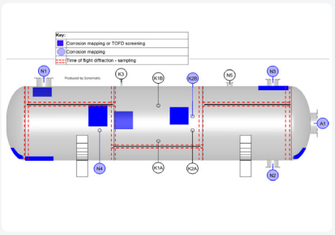


# INTEGRITY SERVICES

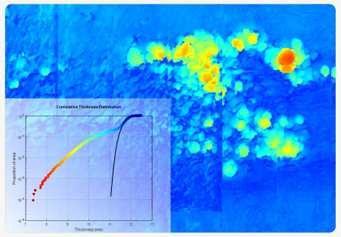
Sonomatic's integrity services team strives to maximise the value of inspection data in the context of integrity management and provide operational support and integrity services for our clients to enhance the production and life of their assets. We achieve this by combining years of experience in this field with specialised engineering, mathematical analysis, and custom software developments. With headquarters in the UK, Australia, and South East Asia (SEA), we can service regions with a local interface and execution team for our clients. Our Integrity Services Group covers the broad range of Asset Integrity Management requirements such as Written Scheme of Examination (WSE), Non-Intrusive Inspection (NII), Fitness for Service (FFS), Failure Investigation, Risk Based Inspection (RBI), and Asset Life Extension and Project Management/Consultancy. Sonomatic has pioneered the formal industry approach for NII and has developed practical statistical methods for analysis of inspection data as well as inspection planning through simulation. Sonomatic is well-positioned to support the integrity management sector in its inevitable transition to increased data-driven decision making. Our Integrity Service Group strives to ensure maximal value for our clients, driving down the cost of Integrity related OPEX.

## KEY OFFERINGS

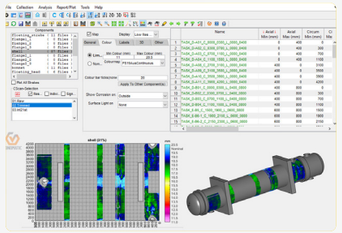
### FULLY INTEGRATED NII PACKAGE

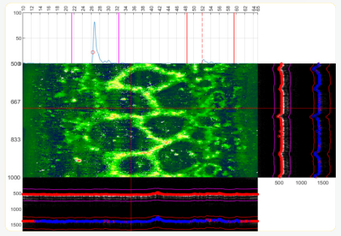


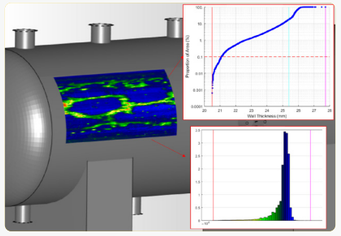


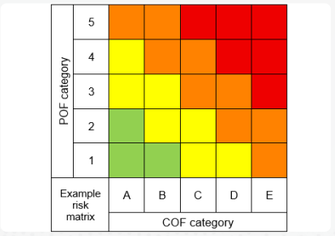
### SONOMATIC INTEGRITY MANAGEMENT SOFTWARE - SIMS



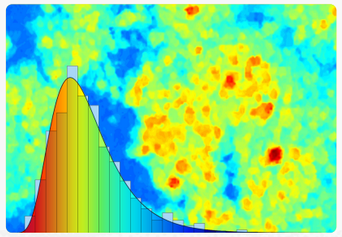




### FULLY INTEGRATED INTEGRITY MANAGEMENT PACKAGE



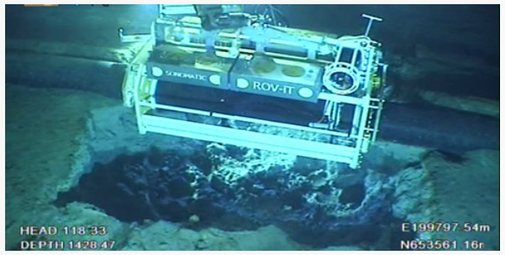




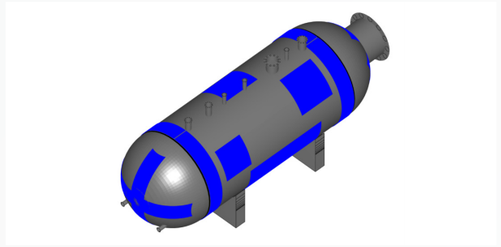
# CASE STUDIES

## KEY SONOMATIC SUCCESS STORIES




### DEEPWATER PIPELINE INSPECTION

Sonomatic were engaged by an operator to carry out a deepwater inspection in SEA. Performed at 1400m below sea level, at that time, it was the deepest inspection in the world. The data acquired equated to 9.5% of the total length of the line but was adequate to allow Sonomatic to statically extrapolate the results to determine the condition of the overall line.



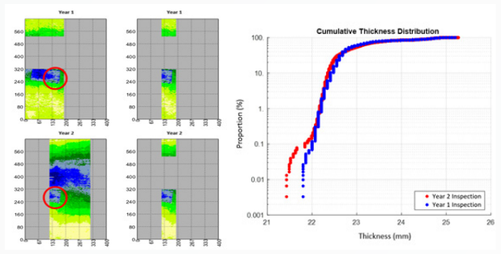
### INTEGRITY SUPPORT

Sonomatic has delivered integrity support to a client on a flexible and ongoing basis for over 10 years including providing support with updating RBIs, writing WSEs, undertaking NII projects, undertaking FFS assessments, and writing procedures. We work closely with our client to ensure requirements are rapidly adapted to and met.



### APPLICATION OF NII AT A GAS PLANT

Sonomatic assessed more than 100 pressure vessels at a gas plant for a major oil and gas client. Sonomatic performed NII assessments and Sonomatic integrity staff visited the site along with their technicians to collaborate on the work scope development to ensure that recommended inspection areas were both representative of potential degradation threats and attainable by the inspection. In total, 80% of assessed vessels were suitable and inspected using NII. This significantly reduced the planned shutdown and resulted in production savings of approximately £4 million per module.




### ADDED VALUE FROM REPEAT INSPECTIONS

Using specialist statistical analysis, Sonomatic adds value to repeat inspections by providing in-depth data comparisons. Where an inspection indicated a significant change in the wall thickness, Sonomatic's proprietary SIMS software allowed advanced data analysis to highlight an external feature, aiding scan alignment. The improved results showed no change to the extent of degradation across the repeated area, and a minor reduction in the absolute minimum. SIMS allows Sonomatic to store comparison data in one project, meaning future inspections can be easily added and compared.

# SERVICES

## NON-INTRUSIVE INSPECTION (NII)

NII is a safe and viable alternative to conventional internal visual inspection (IVI) that, when executed effectively, offers an equivalent or improved level of assurance to IVI, provides significant cost benefits and eliminates the need for Confined Space Entry (CSE).

As key authors of the HOIS recommended practice for NII, published as HOIS-RP-103, Sonomatic is a global leader in the implementation of NII. We are uniquely positioned to offer fully integrated NII, including comprehensive planning and evaluation services as well as comprehensive NDT capabilities. Our integrity services group has a strong track record of successful NII delivery, with extensive experience in assessments for suitability, workscope development, on site execution, and evaluation for more than 1000 pressure equipment items worldwide.

Sonomatic can support NII at any level from a one-off individual vessel to full asset reviews. We have also provided bespoke training courses to give clients the confidence to use NII.

## INSPECTION SUPPORT

Sonomatic provide integrity support to both subsea and topside inspection campaigns. The specific application is driven by the client's needs but our regular inspection support work includes: providing formal justification for externally applied sampling inspection pipelines, verification of ILI data against UT data, statistical evaluation of inspection data, comparisons of repeat inspection campaigns to calculate the most representative corrosion rates and 3D modelling of inspection results.

## SONOMATIC INTEGRITY MANAGEMENT SOFTWARE (SIMS)

SIMS has been developed in-house specifically for improving the effectiveness of NII delivery through realisation of a digital twin for pressure equipment condition. This software aims to close the gap between inspection and integrity-related activities in NII by streamlining NII workscope development, data collection, data analysis, statistical analysis and NII evaluation.

The digital twin is used throughout the NII process and inspection, allowing accurate recording of inspection locations, data and results. This ensures conformance to the scope, increases reliability, ensures repeatability and provides an intuitive way to access the data. Inspection data can be displayed on the asset model providing improved visualisation and reporting of inspection results for the asset. SIMS also makes this data available for detailed interrogation, facilitating efficient statistical analysis and NII evaluation. Long terms benefits of SIMS include effective data management and detailed comparison of repeat inspection data sets.




## INTEGRITY MANAGEMENT SERVICES

Our integrity services bring together all aspects to ensure safe and sufficient asset operation as well as optimising the asset life. Our teams work with our clients to ensure that, where required, all aspects of an integrity management program are addressed; be it onshore or offshore. Our integrity services include Root Cause Analysis and Failure Investigation, Risk Based Inspection (RBI) and production of Written Scheme of Examination (WSE), API 579 Fitness for Service (Level 1 to Level 3 finite element analysis), EEMUA 159 tank assessment, Asset Life Extension (remaining life strategy and life cycle costing), Defect Assessment (corrosion, gouges, dents, ovality, wrinkles, cracks etc.), Audits (compliance audit and system effectiveness audits or gap analysis), Corrosion and Materials Assessment (materials selection, damage threat assessment and corrosion study), NACE Direct Assessment for challenging pipelines, Project Management, training, and consultancy.

In the UK, we are UKAS accredited to act as the competent person for the purposes of PSSR in accordance with ISO/IEC 17020 and other statutory requirements, giving clients full assurance of safe and legal operations.

## INSPECTION DATA ANALYTICS

Data-driven decision making is playing an increasing role in integrity management. Sonomatic is recognised as an industry leader in the development and application of statistical analysis of inspection data. Our approaches facilitate integrity decisions based on the best possible knowledge of the equipment's condition and an understanding of measurement uncertainty. Sonomatic played a key role in the development of the HOIS Recommended Practice for Statistical Analysis of Inspection Data, HOIS12(R8). We continue to innovate our analytical approaches, ensuring the benefits of advances in inspection and monitoring technologies are fully realised in practice.

## INTEGRITY OPERATIONAL SUPPORT

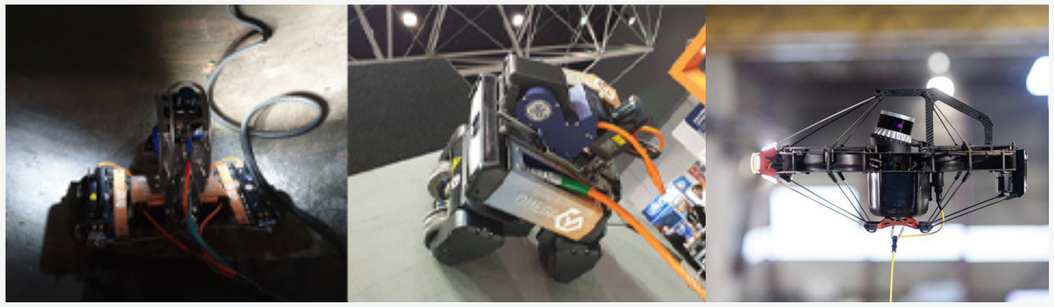
Sonomatic provides asset integrity support through our specialised team, giving our clients access to cutting edge industry knowledge. Our team will assist our clients in the planning, engineering and execution of their future inspection campaigns. We can review subsea integrity reports and operating parameters to optimise Integrity Management Programmes (IMP), ensuring design life and maximised production requirements are met. Our engineering service ensures the correct inspection techniques are being executed and your inspection campaigns are optimised.

# OTHER SERVICES

## RII

RII is the use and application of Remote Internal Inspection systems to internally inspect equipment without the need for Confined Space Entry (CSE). The Sonomatic RII Division is the amalgamation of cutting-edge technology, multi-skilled site-based crews and a technically experienced management team. This strong foundation has allowed us to become the pathfinders of this emerging industry, setting the standard for others who follow.

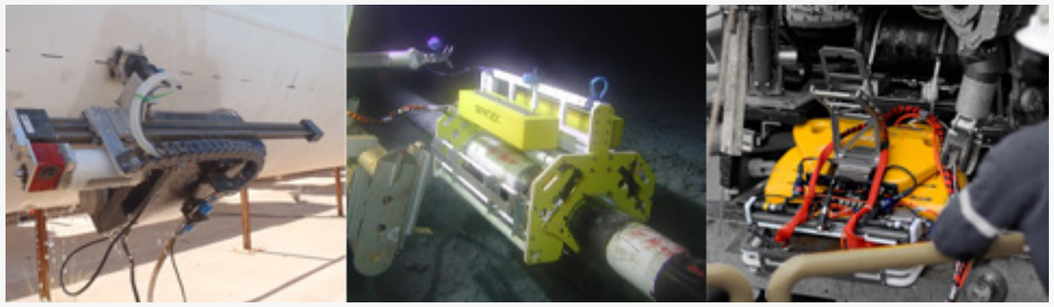
Our staff expect excellence from themselves and each other, which has led to the RII team being known throughout the industry as the service provider of choice. Across the whole of Sonomatic, we pride ourselves on executing and delivering high-profile, technically challenging scopes due to our commitment to innovation, the best people and our absolute client focus.



## INSPECTION SERVICES

Sonomatic Field Services delivers both topsides and subsea advanced NDT. Sonomatic has a strong capability in the research and development of advanced NDT techniques, equipment design and delivery of advanced inspections. Our Integrity Team and Inspection Division work closely together to design and execute effective inspection solutions for a given combination of expected damage and integrity management requirements.

In the UK, Sonomatic RAIS's UKAS accredited Inspection Team provides a complete package of in-service inspection services, from producing inspection plans, execution of the inspection, assessing the results and providing competent recommendations. All delivered by knowledgeable and experienced inspection engineers with experience drawn across a wide range of industries. Our engineers are trained and certified to internationally recognised standards such as API, ASME, EEMUA and other industry codes, enabling them to competently inspect piping systems, pressure vessels, tanks, and other critical equipment on both onshore and offshore assets including Top Teir COMAH sites.



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