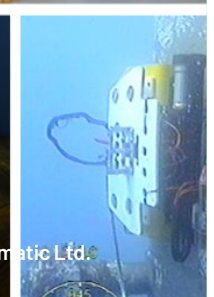
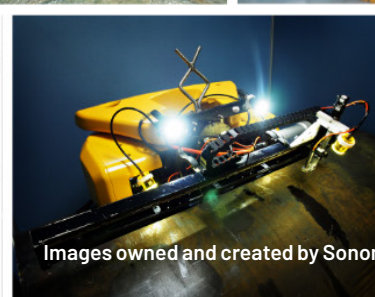
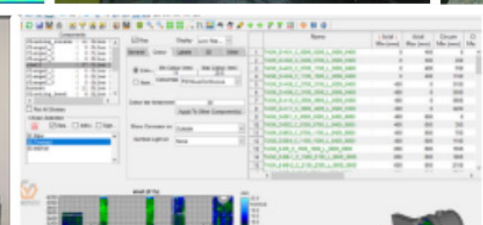
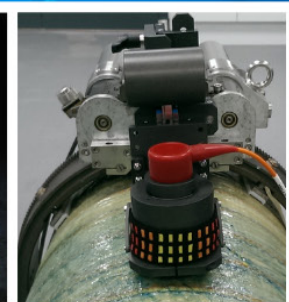
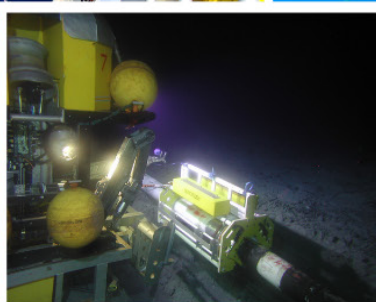
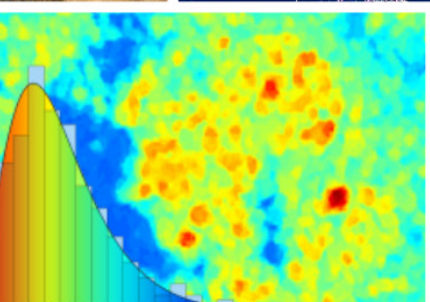
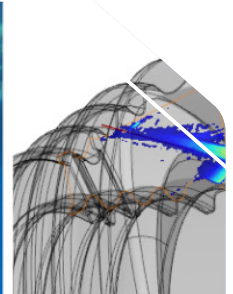
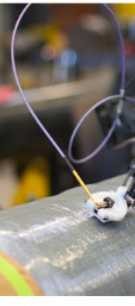


# CAPABILITY STATEMENT

## INTEGRITY SERVICES SOUTH EAST ASIA & INDIA

### THE PURPOSE

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



# WHO WE ARE



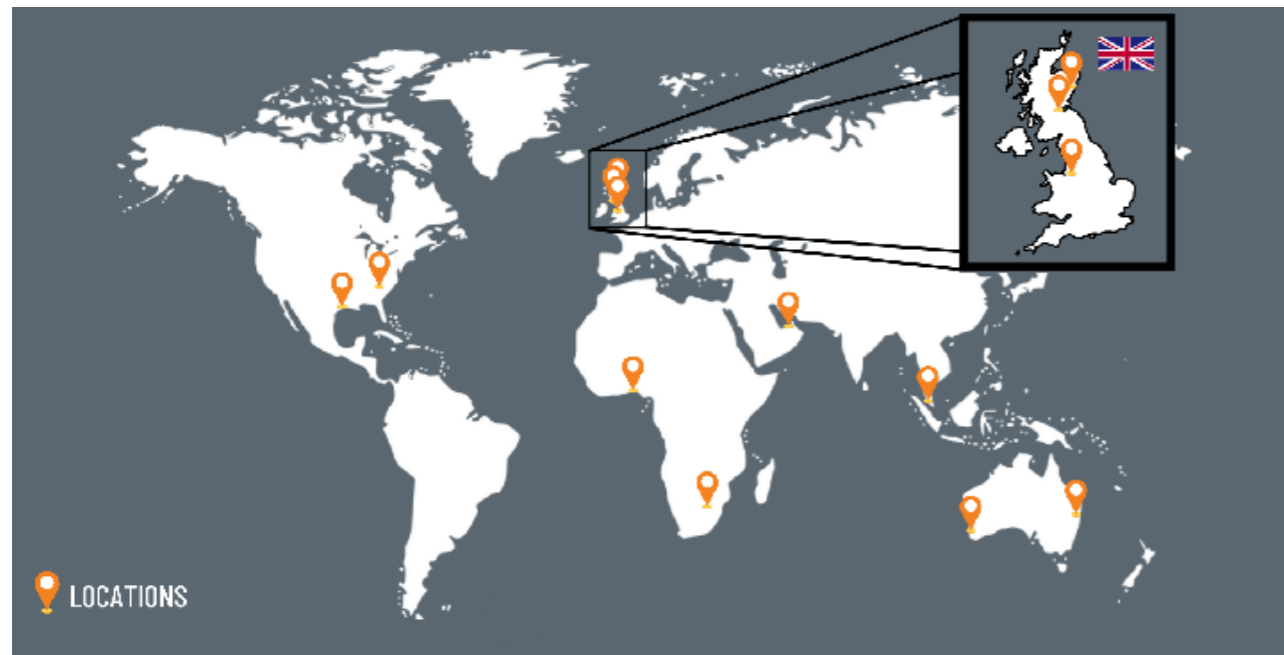
Sonomatic, Geo Oceans, Blue Ocean Marine Services and Vertech form part of the CWL group. When combined, they complement each other's strengths to provide a wide range of services and specialist packages tailored to the needs of each client. No matter what the scope, CWL Group offer the very best engineering, integrity management, alternative access, ROV, AUV and NDT services, all within one group.



Sonomatic operates as the advanced and subsea specialist inspection arm of the CWL Group. 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 integrity services packages that directly meet the needs of our clients.

Combining our field and integrity service team's knowledge, we can support specialised integrity projects and operational integrity support throughout your asset's life cycle.

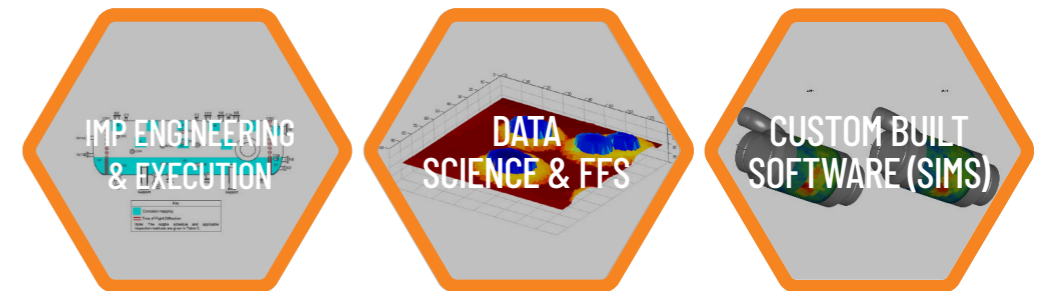
## GLOBAL FOOTPRINT



# 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



# SEA INTEGRITY SERVICES

Sonomatic South East Asia (SEA) Integrity Services provide operational support and integrity services for our clients to maximise the production and life of their assets. We achieve this by combining years of experience in this field with specialised engineering, planning, execution, data analytics, statistical methods and custom software development. Our new SEA HQ allows us to service the region with a local interface and execution team for our clients.

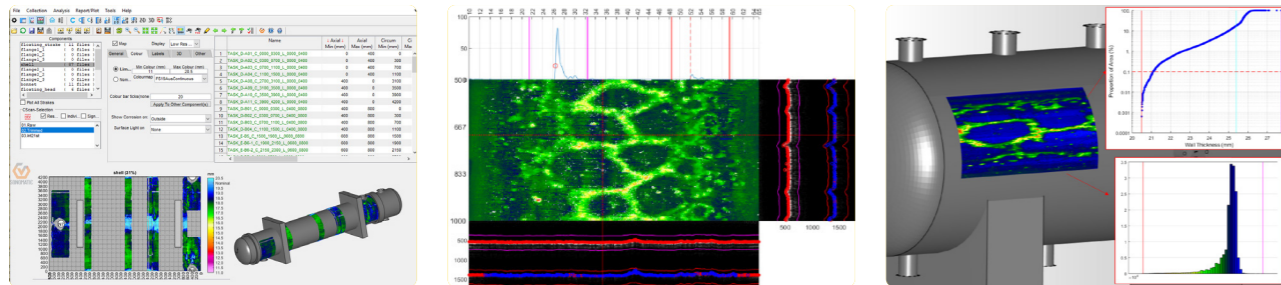
We provide support for the evaluation of your previous inspection campaigns right through to the engineering and execution of your next campaign. Our services don't end with the completion of the inspection campaign, our Integrity Services Group covers the broad range of Asset Integrity Management requirements such as Fitness for Service (FFS), Failure Investigation, Risk Assessment, Asset Life Extension and Project Management, and Consultancy. Our specialists can also define a repair scenario with recommendations that identify the best course of action, highlight the repair costs, and lay out the associated risks that will meet your business' deliverables. Our Integrity Service Group strives to ensure our clients have minimal interfaces and the latest inspection technology in the market, driving down the cost of Integrity related OPEX.

## KEY OFFERINGS

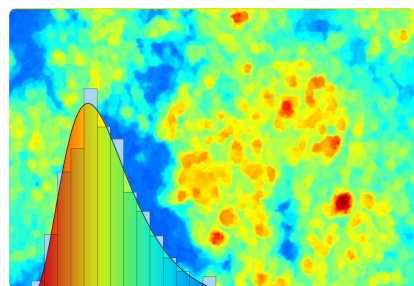
### FULLY INTEGRATED INTEGRITY MANAGEMENT PACKAGE



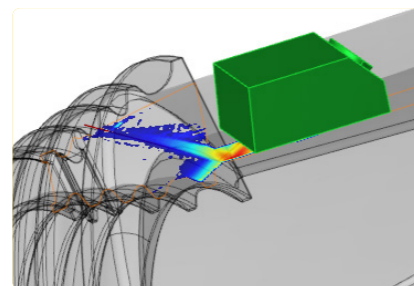
### SONOMATIC INTEGRITY MANAGEMENT SOFTWARE - SIMS



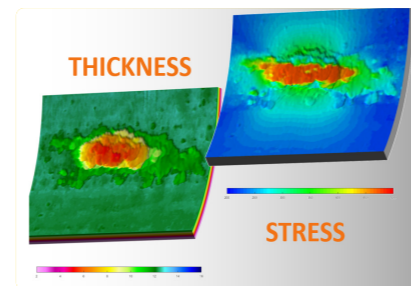
### DATA SCIENCE



### INSPECTION MODELLING

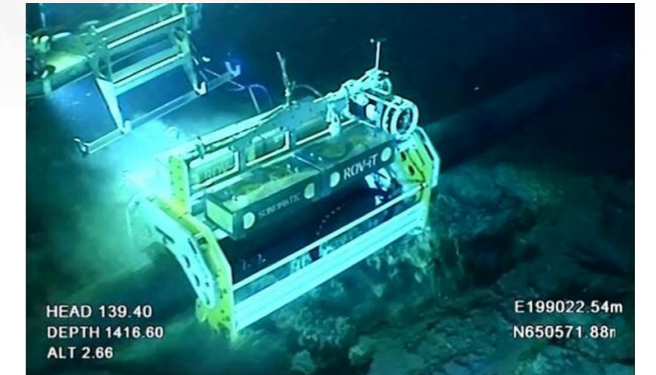
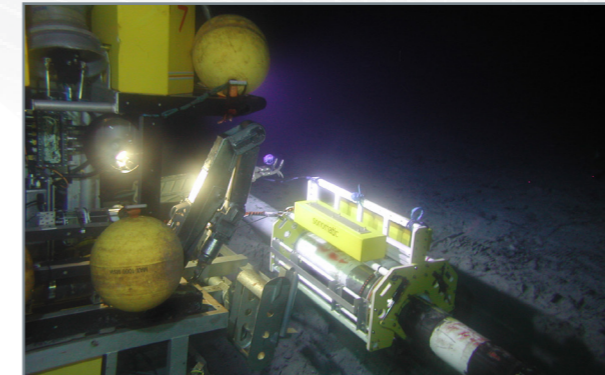


### FITNESS FOR SERVICE (FFS)



# CASE STUDIES

## KEY SONOMATIC SUCCESS STORIES

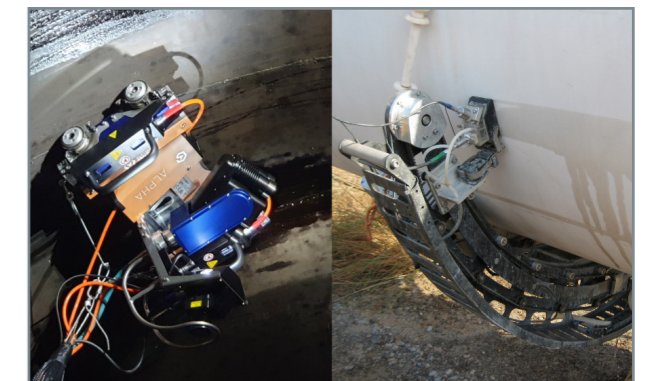
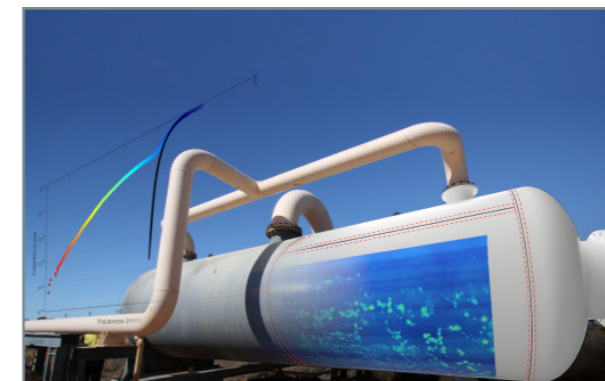


### FEASIBILITY STUDY & EXECUTION PLAN

Sonomatic identified the integrity threats to our Clients asset, recommending the optimum techniques for detecting the known threats and deployment methods to be used for the campaign. The subsea work scope was developed along with the inspection execution strategy and plan to ensure the Integrity Management Plan update and the required asset life extension study were carried out successfully.

### 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.



### NON-INTRUSIVE INSPECTION

Sonomatic were engaged to complete NII for 13 vessels in lieu of internal inspection across two gas processing facilities. The Integrity Team completed NII assessment and workscope development in accordance with HOIS-RP-103 and successfully executed inspection work through our Specialised Field Services Division. A detailed evaluation of the achieved NII demonstrated the required level of assurance and provided recommendations for ongoing monitoring. Significant cost and safety benefits were realised through the complete avoidance of scheduled turnarounds.

### NON-INTRUSIVE INSPECTION & RDVI

Sonomatic is the primary author of HOIS-RP-103, the Recommended Practice for Non-Intrusive Inspection of Pressure Equipment. We apply our expertise in this space to write operator-specific strategies for NII. This capability extends to an integrated NII-RDVI strategy through collaboration with Vertech's Remote Digital Visual Inspection (RDVI) specialists. We help operators realise significant savings by implementing long-term NII-RDVI strategies early in the project lifecycle. This includes influencing vessel design to optimise the overall use of NII or RDVI.

# SERVICES

## 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.

## SUBSEA INTEGRITY SUPPORT

We can provide formal justification for externally applied sampling inspection of piggable and unpiggable pipelines. This includes the design of key inspection requirements through the simulation of proposed inspection strategies against expected degradation scenarios, as well as a detailed evaluation of the achieved inspection and estimates for the overall line condition.

Sonomatic also provides support for In-Line-Inspection (ILI) verification using externally applied inspections. Sonomatic has built the case for the continued operation of several subsea pipelines based on the verification of a small number of the deepest reported anomalies.

## INTEGRITY MANAGEMENT SERVICES

Our integrity services bring together all aspects to ensure safe and sufficient asset operation as well as optimizing 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 Assessment (RBI, QRA), Fitness for Service (Level 1 to Level 3 of finite element analysis), 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 & Materials Assessment (materials selection and corrosion risk assessment), NACE Direct Assessment for challenging pipelines, Project Management and consultancy.

## 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, provide significant cost benefits and eliminates the need for Confined Space Entry (CSE).

## SONOMATIC INTEGRITY MANAGEMENT SOFTWARE (SIMS)

SIMS has been developed in-house specifically for improving the effectiveness of NII delivery through the 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.

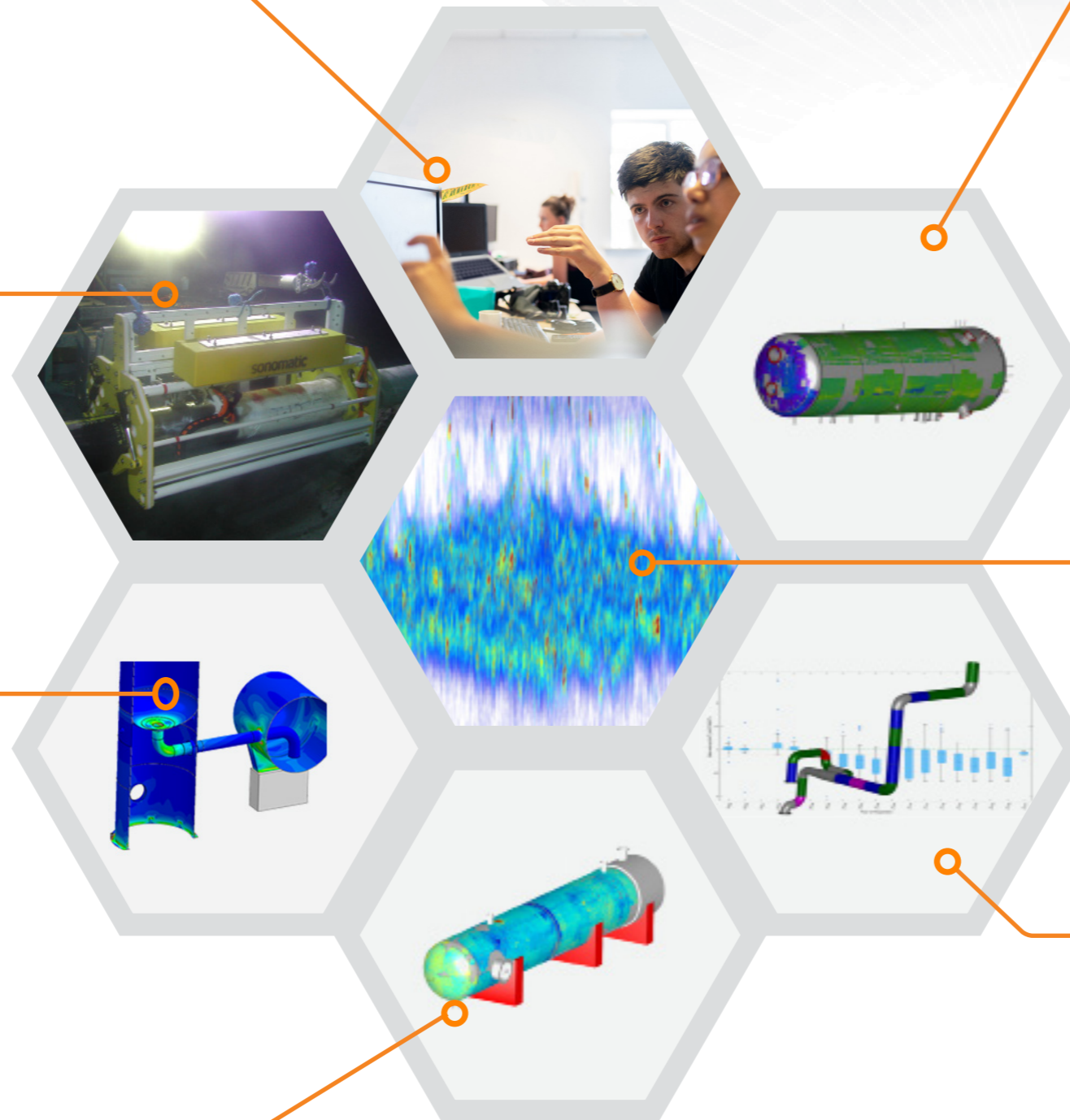
A parametrically defined model of the asset is central to linking the key phases of NII. The itemised inspection workscope can be displayed on a 2D or 3D representation of the vessel. The model is used throughout the inspection, allowing accurate recording of inspection locations, data and results. This 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.

## 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 advanced inspection and monitoring technologies are fully realised in practice.

## PIPEWORK INSPECTION STATISTICAL ANALYSIS

Ageing facilities often have a wealth of under-utilised pipework inspection data. Sonomatic has developed analytical methods and custom software to gain insights from this historical inspection. We then use statistical simulations to test future inspection strategies against likely degradation scenarios based on this historical data. This drives the transition to more effective inspection strategies. Sonomatic has supported many ageing facilities with this approach and is experiencing increased interest from new facilities where early adoption can lead to significant through-life efficiency.



# CWL GROUP PARTNERS

## GEO OCEANS

Geo Oceans is a specialist provider of ROV inspection services and has developed asset deployed ROV technology to provide clients with reliable, safe and cost-effective alternatives to traditional manned inspection, commercial diving or work-class ROV inspection services. Geo Oceans regularly use this cutting-edge technology to complete facility deployed subsea surveys, asset inspections and ocean mapping throughout the globe for many of the largest oil and gas operators.

Geo Oceans works closely with CWL group partner, Sonomatic, to implement advanced NDT inspection solutions. Being able to draw on their thirty years of industry experience is an invaluable resource, allowing us to create bespoke NDT tools for our ROV.

Geo Oceans also works closely with Vertech to provide clients with industry-leading turnkey Class inspection services on assets under Lloyds Register, Bureau Veritas, ABS and DNV GL classification society guidelines.



## BLUE OCEAN MARINE SERVICES

Blue Ocean Marine Services utilise a wide range of autonomous technologies to plan and execute offshore surveys. With unrivalled experience in the deployment and management of unmanned survey platforms, they are uniquely positioned to deliver highly practical and cost-effective results. BOMS' systems are lightweight and easily portable, allowing teams to mobilise in a matter of hours. Once on site, their vehicles can be deployed directly from shore or the side of a vessel, eliminating the need for support vessels.

BOMS' Autonomous Unmanned Vehicles (AUVs) are equipped with the latest sensors, scanners and sampling systems, allowing their teams to complete highly detailed site appraisals, subsea inspections and regulatory compliance scopes. AUVs can also play a vital role in emergency response efforts such as an oil spill or natural disaster by gathering survey data that can assist emergency response crews.



# CONTACTS

## SONOMATIC

### South East Asia & India

Zach McCann - Region Manager  
T: +60 12 555 1569  
M: +61 404 797 670  
E: Zach.McCann@sonomatic.com.my

### South East Asia & India

Stuart Blumfield - Integrity Manager  
M: +60 128112447  
E: Stuart.Blumfield@sonomatic.com.my

### Australia & NZ

Alex Cesan - General Manager Australia & NZ  
T: +61 498 442 666  
E: Alex.Cesan@sonomatic.com.au

## VERTECH GROUP

### Craig Davies

Group Development Manager  
T: +61 429 222 409  
E: Craig.Davies@vertechgroup.com.au

### Donovan Rheeders

Project & Shutdown Manager  
T: +61 439 110 880  
E: Donovan.Rheeders@vertechgroup.com.au

### Bruce McKenzie

Department Manager - Integrity & Inspection  
T: +61 487 474 713  
E: Bruce.McKenzie@vertechgroup.com.au

## GEO OCEANS

### Nick Veitch

Managing Director  
T: +61 (8) 6168 7611  
E: Nick.Veitch@geooceans.com.au

### Iain Collin

Subsea Inspection Manager  
T: +61 (8) 6168 7611  
E: Iain.Collin@geooceans.com

## BLUE OCEAN MARINE SERVICES

### Keith Wallace

General Manager  
T: +61 409 557 002  
E: Keith.Wallace@blue-ocean.com.au

### Andy Mercer

Operations Manager  
T: +61 410 153 060  
E: Andy.Mercer@blue-ocean.com.au

