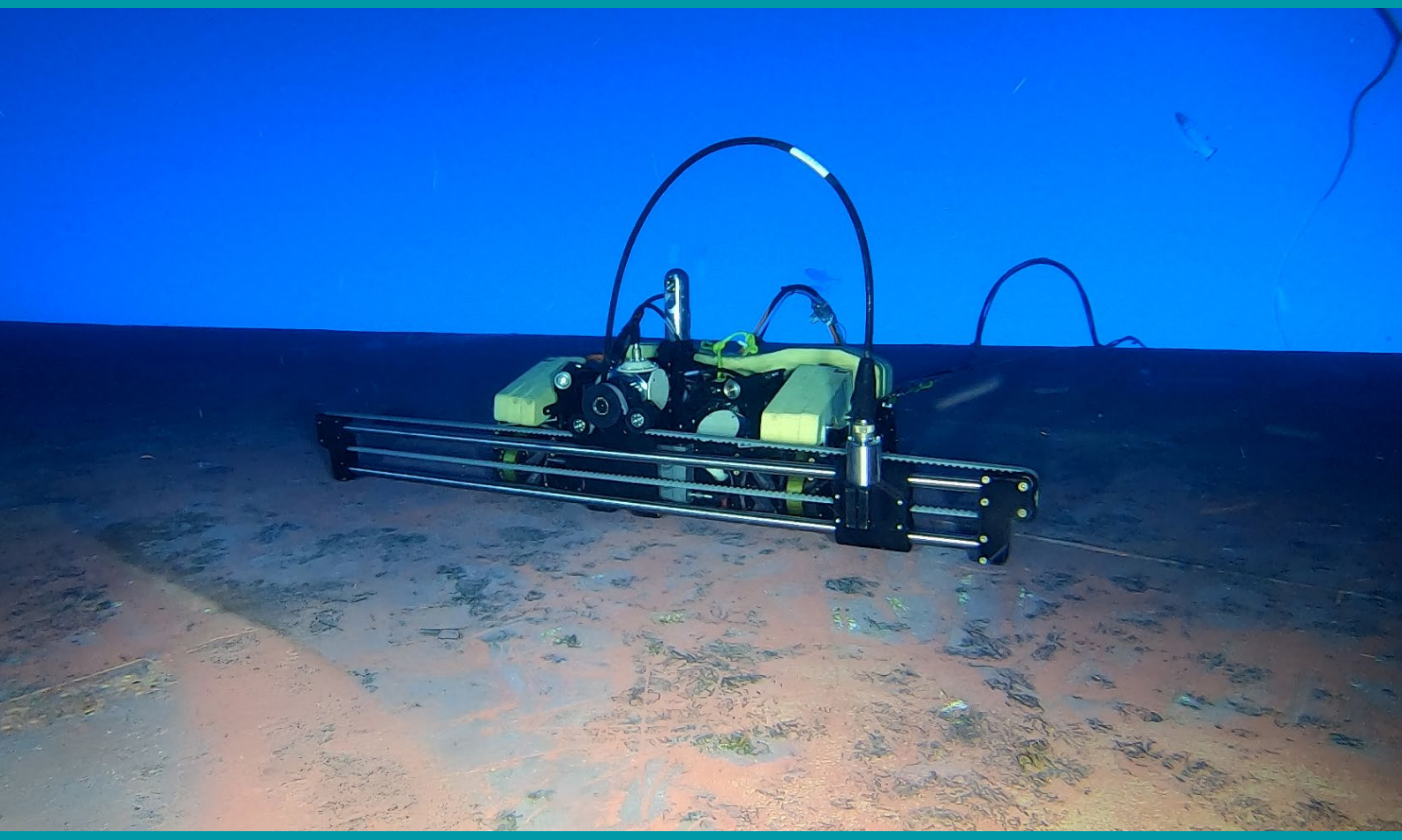
TSC SUBSEA

ORCA™

Deck-launched robotic crawler for in-service hull inspection above and below the waterline.



- Quantitative hull inspection above and below the waterline in a single deployment.
- Coating-friendly Mecanum omnidirectional wheels for precise, multi-directional movements.
- Topside deck or ROV launched – no need for a support vessel or divers.

www.tscsubsea.com

ORCA™

Enabling Smarter Hull Integrity Management

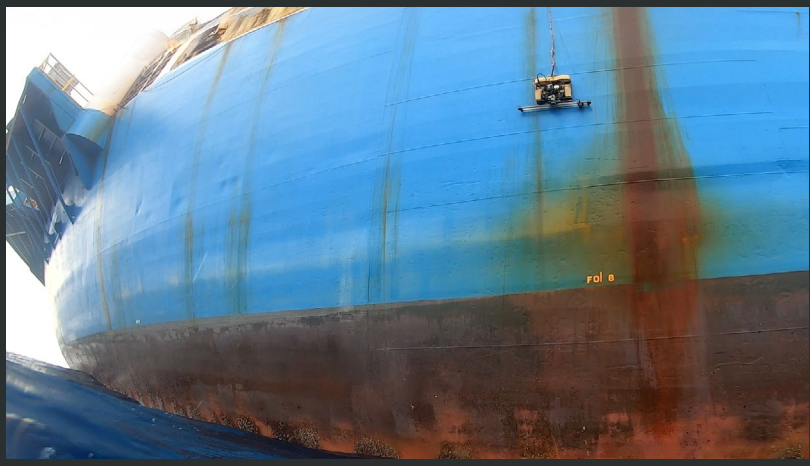
ORCA is TSC Subsea's advanced magnetic robotic crawler, deployed as part of our in-service hull inspection solution. Operating above and below the waterline while vessels remain in service, ORCA helps maximise availability and minimise unplanned downtime.

It delivers high-resolution corrosion mapping and wall thickness measurements with sub-millimetre accuracy, transforming the efficiency and quality of hull inspection.

By performing underwater hull integrity assessments without taking the vessel out of service, ORCA reduces dry-docking time and enables better maintenance planning.

Launched directly from the deck, ORCA eliminates the need for divers, ROVs, and additional vessel hire. This reduces costs and improves safety by keeping personnel out of hazardous underwater environments.

Powered by our proprietary Acoustic Resonance Technology (ART), this advanced inspection service delivers significant cost savings for ship operators, fleet managers, and vessel owners.



Deck-launched ORCA performing in-service hull inspection.

Magnetic adhesion enables inspection of underside hull surfaces.

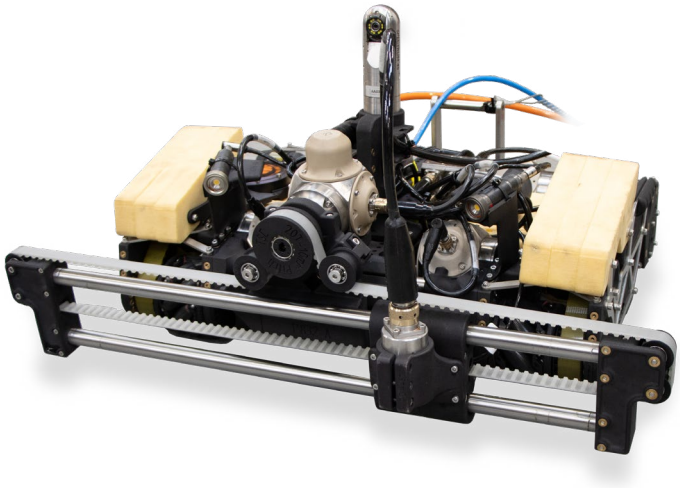
FEATURES

- Magnetic, programmable scan patterns, large-area robotic crawler.
- Topside deck or ROV launched – no need for a support vessel or divers.
- Bird's-eye view camera for close visual inspection (CVI) and accurate positioning.
- Coating-friendly Mecanum omnidirectional wheels for precise, multi-directional movements.
- Full inspection above and below the waterline, including the splash zone.
- Variable resolution to suit client requirements and maximise efficiency.

ACOUSTIC RESONANCE TECHNOLOGY (ART)

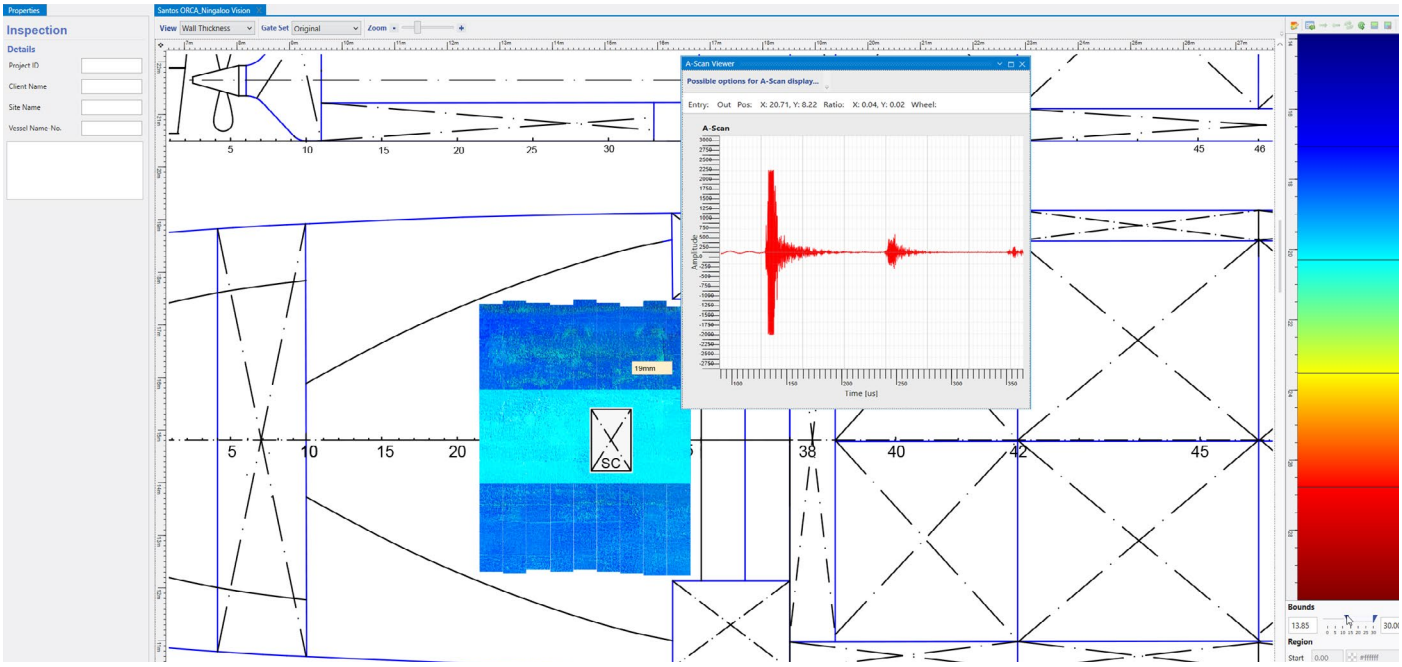
ART and Ultrasonics (PAUT) both use ultrasound, but ART operates at lower frequencies and offers a wider bandwidth, enabling improved penetration through coatings compared to conventional phased array methods.

- Validated by Lloyd's Register for through coating ultrasonic thickness measurement of ship hull steel.
- ART is a non-contact method that is more tolerable to surface conditions and marine growth compared to standard UT.
- Capable of obtaining wall thickness data through typical marine and antifouling coatings, with an accuracy of ±0.22 mm.
- Corrosion mapping of external and internal surfaces.
- Detect coating disbondment and degradation.
- Geometry measurements for assessing dents, gouging and other anomalies.



INTEGRATED HULL MAPPING AND DEFECT ANALYSIS

Advanced inspection software delivers real-time visualisation and automatically stitches scan data into a single hull map. Built-in defect recognition and analysis identify corrosion, coating degradation, and structural anomalies. CAD models can be imported to overlay inspection data, enabling rapid navigation from a high-level overview to detailed assessment at specific locations.



ART Stitched Corrosion Mapping Data

ORCA SPECIFICATIONS

Depth rating	500 m (1640 ft) (customisable on request)
Standard umbilical length	80 m (262 ft) (customisable on request)
Standard scan width	1200 mm (47 in) (customisable on request)
Longitudinal Scanning	5.5 m (18.0 ft) radius to flat plate
Circumferential Scanning	2 m (6.6 ft) radius to flat plate
Adhesion	Potted magnets in each of the four wheels
Drive wheels	Coating-friendly Mecanum omnidirectional wheels
Cameras	FHD resolution, with pan, tilt, and zoom
Operating temperature	–20 °C to +45 °C (–4 °F to +113 °F), deck and subsea
Minimum data collection step	1 mm (0.04 in) radial / 1 mm (0.04 in) axial
Inspection speed	5 minutes per square metre (50 × 50 mm resolution)
Launch methods	Topside deck, or ROV

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