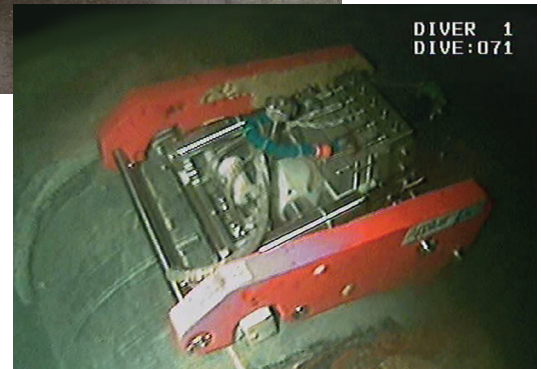
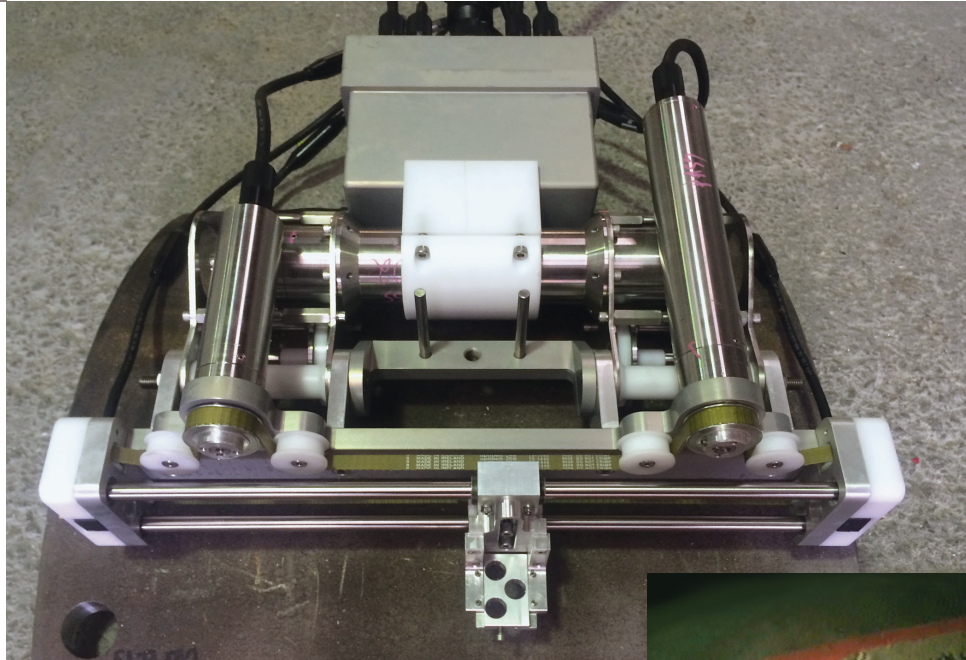


Subsea Ultrasonic Inspection (SUI)

Subsea pipeline inspection tool



Applus RTD Australia have designed and developed a Non-Hydraulic automated inspection scanner to perform Ultra high resolution ultrasonic weld (TOFD) and corrosion inspection (C-scan) of subsea assets.

The design is light, easy and practical to install either by diver or simple ROV hook up with most ROV suppliers.

There is a need to perform inspection of certain pipelines and assets to monitor performance of the welds and material whilst in operation. For example the validation of intelligent pigging data. This inspection requires ultra high resolution imaging of the underlying material for corrosion, material loss and pitting.

Inspection resolutions of 1.0mm on both X & Y axes provide high quality data.

Situations where the inspection is commonly used:

- ⊕ Uncoated pipelines
- ⊕ Coated pipes
- ⊕ Straight runs of pipe where the general condition is required
- ⊕ Low areas where internal products may cause corrosion
- ⊕ Heat affected zone corrosion/erosion
- ⊕ Risers, caissons, conductors

Key features:

The scanner contains a platform to allow a number of inspection methods to be used, this is Ultra High resolution A,B & C-scan, Time of Flight, Vision and ACFM

- ⊕ High Resolution imaging of corrosion (1mm x 1mm)
- ⊕ Accurate location of flaws
- ⊕ Quick with real time results
- ⊕ Focussed imaging and wide band acoustic imaging through certain coatings

Inspection tasks and quality

- ⊕ High frequency ultrasonic wall thickness assessments
- ⊕ High resolution imaging of exterior and interior surfaces
- ⊕ Through coating residue imaging
- ⊕ Time of Flight inspection of weld volume
- ⊕ Depth measurement of indications and flaws
- ⊕ 500 mm axial scan length
- ⊕ Inspection diameter: 8" – 50"
- ⊕ Wall thickness - unlimited

Imaging:

The technique was developed by our Advanced NDT R&D group from experience and requests to improve on measurement accuracy and imaging quality. This method is a major step forwards in the assessment of subsea pipeline and asset performance and provide highly accurate measurement data.

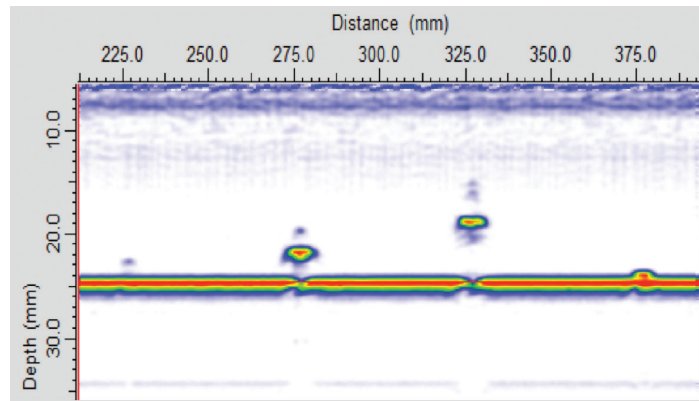
Applus RTD provides the following services as individual packages or combined to provide a total Asset Integrity Management programme.

- ⊕ **Advanced (non-intrusive) Inspection Services**
- ⊕ **Sub-sea Inspection Services**
- ⊕ **Engineering Design Solutions**
- ⊕ **Risk Based Inspection Planning**
- ⊕ **Inspection Management Services**
- ⊕ **In Service Inspection**
- ⊕ **Plant Life Management**
- ⊕ **Metallurgical Services.**

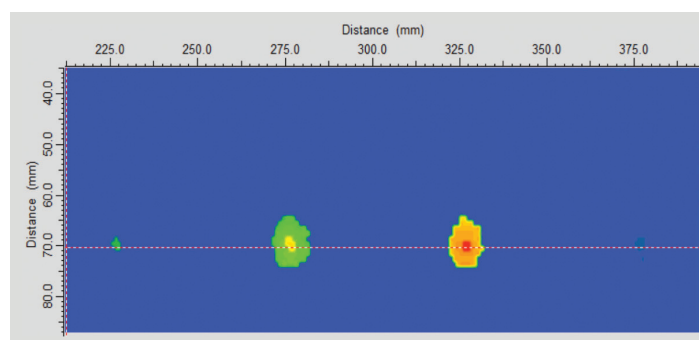
Importantly, **Applus RTD** can also call upon extensive in-house expertise and resources for advanced inspection and conventional NDT, providing a total capability for management of through life plant integrity.

Applus RTD, in collaboration with our local and international partners, has extensive experience in the application of these services to a wide range of industries including:

- ⊕ **Oil & Gas**
- ⊕ **Petrochemical**
- ⊕ **Refining**
- ⊕ **Ore Processing and Handling**
- ⊕ **Power Generation.**



Pipe wall B-scan image showing internal corrosion pits



Pipe C-scan area image



www.applusrtd.com.au

Head Office – Perth

94 Discovery Drive, Bibra Lake

Perth, Western Australia 6163

Telephone: +61 8 9410 9300 Facsimile: +61 8 9410 9380

Email: info.perth@applusrtd.com

Specifications subject to change without notice