



ARISE GLOBAL PTE LTD

ADVANCED NDT & INSPECTION SERVICES





CONTENTS: What do we do?

Arise Global, a member of the Arise Global group of companies, is a Singapore-based operating service provider with focus on **Advanced NDT & Inspection Services**.

We guarantee our clients the highest-quality services according to the high standards we set for ourselves and constantly try to exceed.

Directly through its offices, and in partnership with selected business associates, we are able to provide the following services:

1. **Advanced NDT Services**
Services provided by the Arise Team
 - ◀ Acoustic Eye for inspection of heat exchangers, boilers, air coolers, etc.
 - ◀ LRUT for in-service pipe inspection under insulation.
 - ◀ Acoustic Emission for storage tanks and pressure vessels
 - ◀ Magnetic Flux Leakage MFL for tank bottom inspection
 - ◀ Pulsed Eddy Current/INCOTEST for detection of corrosion under insulation**Services provided through associates**
 - ◀ Robotic Tank Inspection for on-stream inspection of tank bottom
 - ◀ ACFM for inspection of any cracks in welds or materials
 - ◀ SRUT / CHIME for tank annular plate inspection & detection of corrosion under pipe supports
 - ◀ Vertiscan/E-Pit for boiler water wall tube inspection
 - ◀ Corrosion mapping of static equipment (piping, PVs & tanks) using rapid motion scanners RMS
 - ◀ RVI/CCTV using the advanced internal inspection cameras & crawlers
 - ◀ Phased Array for weld inspection
 - ◀ Time of Flight Diffraction for weld inspection
2. **Conventional NDT**
Services provided through associates
(RT, UT, MT, PT, VT, holiday detector & Vacuum box testing)
3. **Other Inspection Services**
Services provided by the Arise Team
 - ◀ Lifting Equipment Inspection, Certification & Training Services
 - ◀ Cathodic Protection (CP) Systems and other niche protection systems
 - ◀ Specialised Inspection and modified surveys methodologies**And other services provided through associates**

Arise Global successfully acquires AcousticEye's patented Acoustic Pulse Reflectometry Technology.

01Aug16

Arise Global



APR INSPECTION SYSTEM

Advanced Tube Integrity Inspection Technology

Arise Global introduces an advanced and innovative tool in the field of Non-Destructive Testing that uses Acoustic Waves to evaluate the integrity of tubes in heat exchangers, boilers, chillers, reactors etc.

Our technicians, with the help of a computerized inspection system and an-advanced software are able to detect internal tube flaws such as holes/leakages, blockages, erosions and pitting with a great deal of precision and speed(Less than 10 seconds per tube!). Monitoring your tubes condition will help you increase your productivity and efficiency

What is APR?

Acoustic Pulse Reflectometry is a technology dealing with propagation of specially designed acoustic waves in tubes. Changes in the tube cross-section generate reflections. Identifying and analyzing those reflections enable monitoring of the tube integrity. This analysis is based on the fact that every defect has its unique signature. This is schematically shown below along with a schematic of reflection signatures of typical flaws such as holes/leakages



WHY APR?

- **Fast: 10-20 times faster than any other inspection technology.**

The existing NDT techniques like Eddy Current testing, can take about 5 minutes to inspect tubes depending on the tube length, geometry & cleaning. However the APR system can inspect tubes in less than 10 seconds irrespective of their length.



Typical Applications

The APR Technology can provide inspection services to industries that have heat exchangers, boilers, chillers, reactors. Some of them are:

- Power Industry
- Petrochemical Industry
- Chemical Industry
- Sewage Treatment Industry
- Food and Beverage
- Air Conditioning(HVAC)
- Oil Refineries

- **Able to inspect complex tube formation: u-tubes, u-tube bends, fin fans, y & t joints.**

The main challenge faced by current NDT techniques is the physical probe being stuck in u bends, t joints of complex tube geometries. But, APR inspection is effective in these scenarios as sound waves are used as virtual probes.

- **Tubes of any material can be inspected: ferromagnetic and non-ferromagnetic materials.**

Current NDT techniques like Eddy Current Testing, RFT can be carried out for specific materials with specific properties. APR can inspect tubes of any material like plastic, graphite because the system makes use of sound waves as a probe.



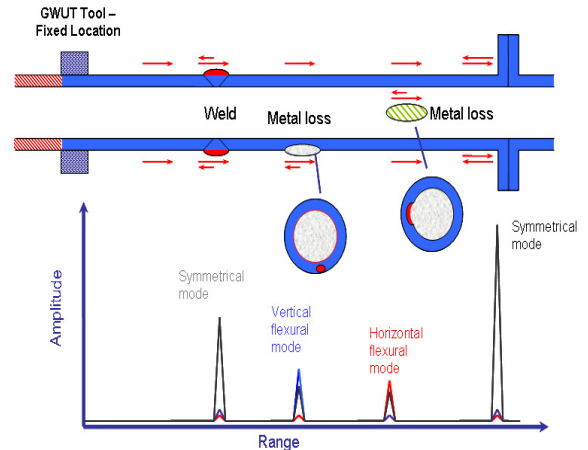
DUET System



Guided Wave Ultrasonic Testing (LRUT)

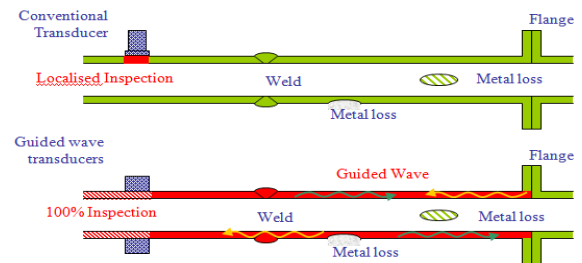
LRUT is primarily a screening tool. The aim of the inspection is to test long lengths of pipe rapidly from a single test point with 100% coverage of the pipe wall and to identify areas of corrosion.

How It Works – torsional or longitudinal guided waves are induced into the pipe body and propagated along the pipe segment being inspected. When these guided waves identify an anomaly or pipe feature their mode convert into laminar waves and reflect back to the tools original location. Using a laptop these signals are digitally captured and processed. The time-of-flight for each signature is calculated to determine the distance from the tool and the significance of the anomaly. The octants determine the position around the pipe.



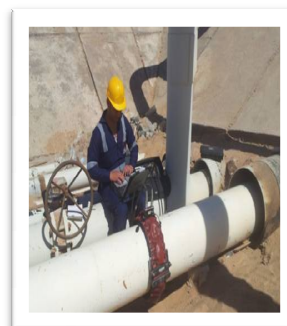
Benefits:

- Low cost screening with 100% coverage.
- Focusing capability to evaluate corrosion distribution around pipe circumference
- Test range under ideal conditions can achieve 300m or more.
- Testing of pipes from 1.5" up to 48" diameter
- Reliable and accurate detection
- Ideal where conventional testing is impossible or very costly e.g. clamped, insulated, elevated, sleeved or buried pipes
- Operating Temperature -5°C to 100°C using normal modules and up to 350°C using the high temp. modules
- Inspection on insulated pipes without taking of the insulation (only where equipment will be) fixed)



Applications:

- Sleeved Road Crossings
- Corrosion Under Insulation (CUI)
- Buried Pipe
- Wall Penetrations
- Pipe Racks
- Corrosion under supports
- Offshore Risers and Caissons





Acoustic Emission

Acoustic Emission technology has for a number of years been used to monitor the active corrosion condition of Above Ground Storage Tanks floors.

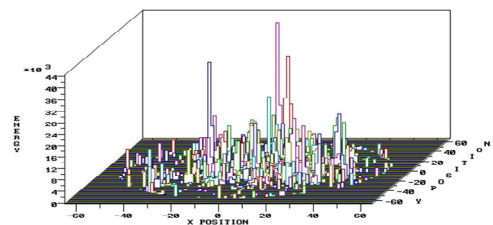
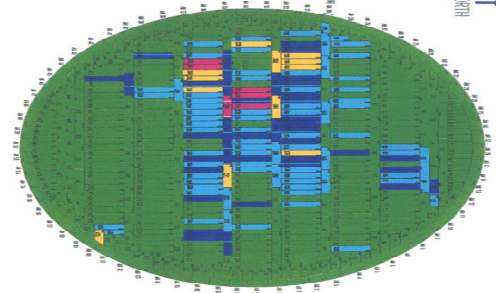
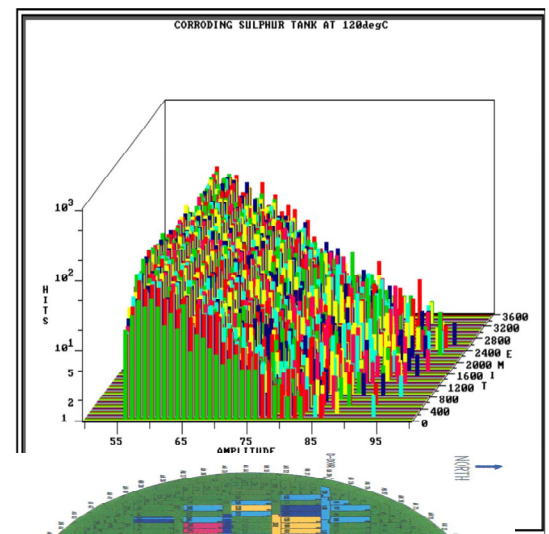
This technique provides a non-intrusive method of determining the active corrosion condition of tank floors without the need to open, clean and inspect. Costs involved in cleaning and inspecting a tank floor can be very high, and if the floor after inspection proves to be in a good condition, then the time and cost could have been better used elsewhere.

How it Works:

The tank under test must be isolated for 6 to 24 hours depending on tank size and contents, with all valves closed, with all heaters and agitators switched off. The Acoustic Emission sensors are mounted in array around the tank shell, usually in two rows with the bottom row carrying out the monitoring function and the upper row filtering out noise sources from shell and roof. The acoustic activity in the tank is then monitored and stored. Acoustic activity is produced by the fracture of corrosion products under head of product and sources (higher energy) that can be potential leak sites/indications.

Advantages:

- To avoid taking the tanks with good conditions out of service which will save the cost of down time and maintenance activities
- To prioritize and plan effectively for which tanks to be taken out of service based on the inspection results and tank conditions
- Only tanks with poor conditions will be taken out of service
- Inspection cost can be negligible if compared with taking the tank out of service, cleaning, scaffolding....etc.
- Inspection takes very short time





MAGNETIC FLUX LEAKAGE (Tank Bottom Inspection)

In MFL technology, the component required to be tested is magnetized to a saturation level at which the presence of a significant local reduction in material thickness causes distortion of the internal magnetic field, allowing flux lines to break at the area of the discontinuity. With MFL, sensors are used to give an electrical signal at the leakage site. This signal operates an audible or visual alarm to alert the inspector or stores the event for computer mapping of the area.

Why MFL

The storage of dangerous goods in tanks must be done in a safe way. In order to reduce the economical as well as the environmental risks to a minimum, a thorough knowledge of the condition of the tank, and in particular the tank floor, is of outstanding importance. To minimise inspection time we offer you a quick and a reliable inspection, **by combining:** Magnetic Flux Leakage (MFL) for tank floor inspection, Hand scan for the inspection of areas with limited access and Ultrasonic Testing (UT) for verification of some areas expected to undergo corrosion. By using those techniques, corrosion can be effectively detected.



Advantages of MFL over the conventional techniques:

- 1- More reliable results as MFL covers the entire area of tank bottom not only random readings as conventional methods which increases the possibility of detection of anomalies and remaining life assessment RLA
- 2- Saving time and cost due to the high inspection rate (Min. productivity is 300 square meters per shift and could be much more depending on bottom conditions and cleaning)
- 3- Comprehensive reporting with statistical data, color mapping, patch plate design along with recommendations according to the applicable codes and standards

Reporting Software



Plate View



Patch Plate Design Tool



Statistics



Tank View



Pulsed Eddy Current

We also offer Pulsed Eddy Current (PEC) inspection technology for the detection of corrosion areas in carbon and low alloy steels. Measurements are taken through any non-conductive material e.g. insulation, protective coatings, concrete and marine growth.

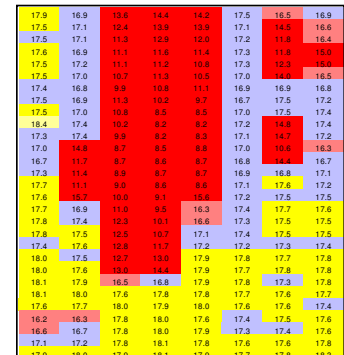
Technique

It is an electromagnetic inspection technique used for measuring the thickness of steel objects, such as pipes and vessels, without the need for contact with the steel surface. This makes PEC very suitable for inspections where the surface of an object is not accessible. Readings are generated when a transmitter coil within a protective housing produces a magnetic pulse which induces eddy currents within the component wall. The eddy currents in turn produce a second magnetic pulse, which is detected by the receiving coil. The system monitors the rate of decay of the eddy current pulse within the steel wall and produces an average thickness value from the comparison of a calibrated signal.



Capability

- Provides the average remaining wall thickness measurement within the interrogated area (footprint).
- Direct contact is not required and wall thickness can be measured through any non-conductive material up to 200 mm thick, e.g. insulation material, paint, bitumen, dirt, ice or sludge
- Works through Stainless Steel and Aluminium sheeting less than or equal to 1mm.
- Surface preparation is not required enabling measurements to be taken through corrosion products
- Wide temperature range -100°C to 550°C
- Good reproducibility of PEC readings at the same locations makes it ideal for corrosion monitoring.
- Rope Access deployable
- Subsea and splash zone deployable
- Battery operated and robust design
- Fast and reliable data collection typically 700 to 1000 readings per day



Applications

- Vessel and pipe work inspection
- In-service corrosion/erosion monitoring
- Wall loss measurement through corrosion product
- Riser inspection above and below splash zones
- Storage tank inspection
- Ship hull surveys
- Refractory lined vessels
- Subsea Inspections



Robotic Tank Inspection (through associates)

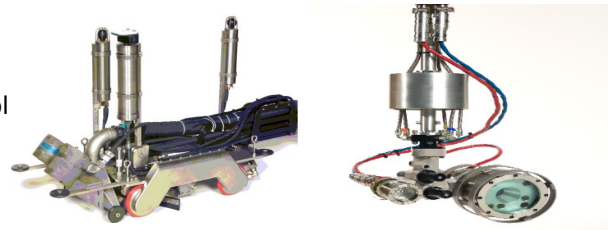
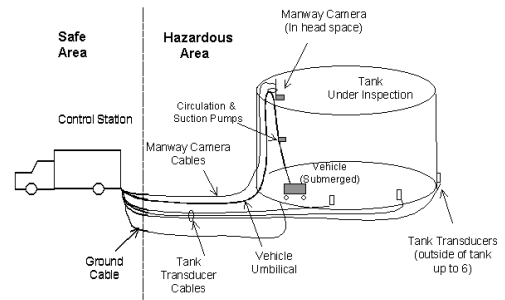
Tank bottom is the only part of the above ground storage tank which we cannot be accessed from the outside to perform the required periodical inspection as per API 653 requirements. Due to production requirements as well as the time required for cleaning, preparation and inspection a new inspection technique for the inspection of tank bottom without taking the tank out of service was highly required to avoid the unrequired down time. The in-service tank bottom inspection is one of the services we offer our customers. This high technology tool performs the inspection of the tank bottom plate according to standard API 653 while the tank remains in operation.

How it works:

A robot, equipped with ultrasonic transducers, is inserted into the tank through a manhole on the tank roof. As soon as it reaches the bottom of the tank it starts the inspection, the sonar system helping it to navigate and to avoid obstacles like roof supports. The robot is connected with a number of transceivers which are attached outside around the tank to determine the exact location of the robot.

The robot is producing 200,000 up to 1,000,000 point readings, depending on the tank size.

All results are directly transferred outside to the control unit for analysis and report generation.



Benefits:

- No tank downtime, production loss
- No material transfer
- cost effective
- No alternate storage needed
- Speed
- Detailed information on bottom condition
- Reduced safety & environment risks
- Not affected by coating (incl. fiberglass)

Limitations:

- Only operable in liquids.
- Not operating in rigid sludge.

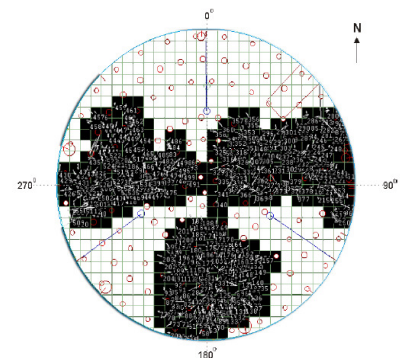
Reporting:

ACCURATE THICKNESS MEASUREMENT.

VISUAL INSPECTION REPORT.

REMAINING LIFETIME.

ACCEPTED API 653.



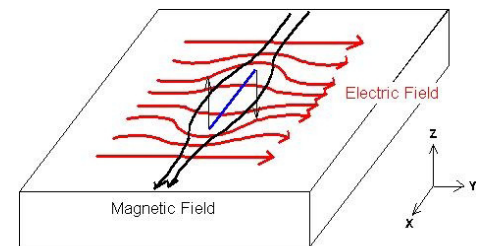


Alternating Current Field Measurement (through associates)

ACFM is used for detecting and sizing surface breaking flaws. ACFM is also applied to structures both in and out of the water. (It has the advantage over some other techniques that the structure requires minimal cleaning and that it can be applied over paint and other coatings up to several millimetres in thickness).

How it works:

ACFM is an electromagnetic technique. A sensor probe is placed on the surface to be inspected and an alternating current is induced into the surface. When no defects are present the alternating current produces a uniform magnetic field above the surface. Any defect present will perturb the current, forcing it to flow around and underneath the defect; this causes the magnetic field to become non-uniform and sensors in the ACFM probe measure these field variations. Two components of this magnetic field are measured - one provides information about the depth or aspect ratio of the defect(s), and the other shows the positions of the defects' ends. The two signals are used to confirm the presence of a defect and, together with a sizing algorithm, measure its length and depth.



Applications:

ACFM is particularly suited to the detection and sizing of fatigue cracks at the toes of welds, including all butt, fillet, node and nozzle welds. ACFM to inspect fillet welds in Mobile Offshore Drilling Units (MODUs) to detect any possible original fabrication hydrogen cracking present at weld toes.

It has also been successfully deployed in the laboratory in a joint industry project to detect stress corrosion cracking in duplex stainless steel pipe welds.

- Offshore cranes
- Storage tanks floor & roof 'lap' joints
- Storage tank annular welds internal & external
- Vessel nozzles

The main technical advantages of ACFM are:

- The ability to detect defects through several millimeters of coating.
- Works equally well on plain material or welds, ferritic or non-ferritic metals. Can be used on hot surfaces, underwater, or in irradiated environments.
- Provides both depth and length information. Defects up to 25mm (1") in depth can be sized accurately.
- Rope access and ROV deployed. Real time evaluation of the weld area
- ACFM products are accepted by leading Approval and Standards bodies.



Short Range Ultrasonic Testing (through associates)

The Short Range Guided Wave Ultrasonic Technique (SRUT) was designed to test the annular plate of above ground storage tanks (AST's) while the tank remains in service.

The technique is based on the concept of pulsing guided laminar waves into the base material from the chime area.

The waves propagate up to three feet into the annular plate. When corrosion, pitting, erosion are present the ultrasonic waves mode convert and are received by the same transducer.

The technique is also being used to test for corrosion under pipe supports, corrosion at soil air interfaces, and similar difficult to access locations.

Graphic Figure One depicts the transducer placement on the chime plate propagating long range ultrasonic waves into the annular plate. The sound reflects at top side or underside corrosion providing a C-scan image of the defect. The signal strength at the defect provides evidence of the depth and overall morphology of the defects.

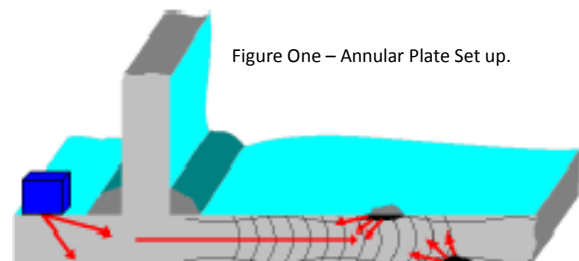


Figure One – Annular Plate Set up.

Applications:

- Tank Floor Annular Plate Testing
- Testing Concrete Coated Interfaces
- Testing Under Pipe Supports
- Tank Dyke Piping Interfaces
- Scan Under Vessel Supports

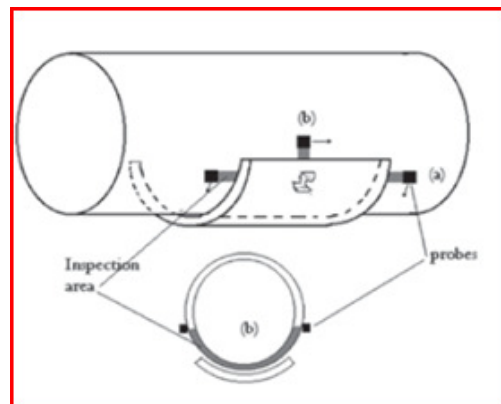


Figure Two – Corrosion under Pipe Support Set up

Limitations of this technique are:

- Top or Bottom Side Differentiation
- Must Have 2" Space for Probe Placement

Short Range Guided Wave Testing has become a proven and reliable technique as one method for determining the integrity of tank annular plates where the highest probability of corrosion exists to help prioritize out of service tank maintenance requirements.

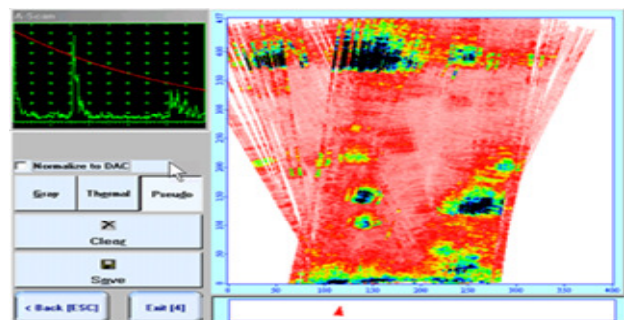


Figure Three – C-Scan Corrosion Map



Arise Global

VertiScan for Boiler Water Wall Tubes Inspection (through associates)

The traditional method of inspecting boiler water wall tubes for loss of wall thickness is by taking many thousands of ultrasonic thickness readings spaced several feet apart in elevation.

In order to do this the boiler must be scaffolded and the tubes usually cleaned to bare metal where the ultrasonic thickness readings are to be taken.

Now we can offer a time and cost saving alternative with VertiScan.

The Vertiscan is an inspection head used with a crawler, designed to allow inspection of five tubes at the same time. Utilizing an adapted Remote Field Eddy Current Technology.



How it works:

The inspection method is an *adapted RFT (Remote Field Technology) method* which is a low frequency AC (electromagnetic) technique similar to remote field eddy current. In this technique a signal is sent from an exciter coil(s) to 15 detector coils.

The signal passes through the tube wall at the crown of the tube near the exciter(s) and returns through the wall again near the detectors. The time of flight of this signal is directly related to the wall thickness of the tube near both the exciter(s) and detectors.

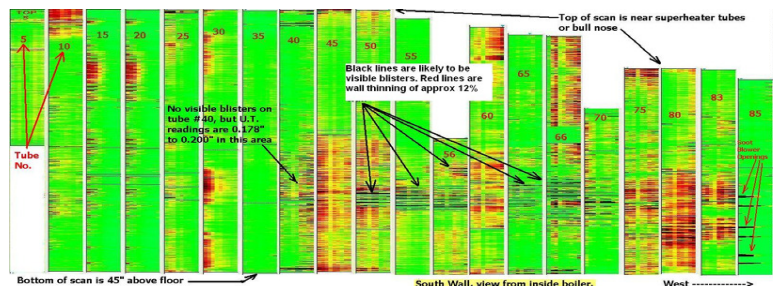


Vertiscan tool manufactured by Russell NDT Systems

Features:

- Electromagnetic flaw detection for water wall tubes of boilers
- 2 parts: Tube Cat (crawler) and VertiScan (equipment)
- Uses adapted Remote Field Technology
- Detection of metal loss, pitting, fatigue cracks, hydrogen damage
- Allows for 5 tubes to be tested at the same time
- 1.5 up to 3m/min; 6000 point readings/ meter
- Detects defects from 5% wall loss
- 15 detector coils

For small boiler we can use the manual hand held E-Pit probe which is also RFT based technique.





Corrosion Mapping (through associates)

Corrosion and erosion can inflict significant damage upon petrochemical vessels, tanks and pipework. Due to the risks involved, it is important to recognize corrosion damage as early as possible, especially when such knowledge can assist in planning your operational maintenance strategy.

With corrosion mapping systems, solutions are available to assist you in developing condition-determined maintenance strategies which can be used in the calculations for the remaining lifetime of a plant.

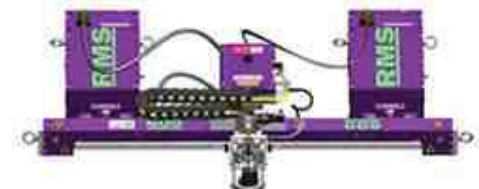
Our strategies can also be used within a structured plant maintenance program and we also offer a visual representation of the results with a comprehensive report of the affected areas helping you to avoid unplanned shutdowns.

Rapid Motion Scanner (RMS)

The RMS is a high speed, high accuracy remote access ultrasonic corrosion mapping system designed to evaluate the condition of ferrous structures such as storage tanks, pipelines, pressure vessels and other critical equipment, supporting effective and safe operation.

The RMS2 can give 100% coverage in a band up to 1000mm wide, significantly increasing Probability of Detection (POD) of corrosion, enabling engineers to determine the optimum repair strategy and improve risk life assessment (RLA) & risk based inspection (RBI) maintenance programs.

The RMS2 is extremely flexible with a range of scanning heads to suit different inspection requirements.



Corrosion Mapping: R-Scan

The R-Scan is a manual, dry coupled B-scan ultrasonic scanner which can be used on a wide variety of components ranging from 50mm diameter pipe up to a flat surface. The R-Scan continuously records ultrasonic thickness measurements as the scanning head is moved over the inspection surface. The recorded UT thickness information is presented as an A-scan trace, a digital thickness measurement and a B-scan thickness profile. Inspection results can be viewed in real time in the field or recalled for post inspection analysis at a later date.



R-Scan can be used for inspection of Piping starting from 2" dia., also it can be used as complementary for RMS scanner for testing of in-accessible or limited access areas.

Arise Global



Remote Visual Inspection (through associates)

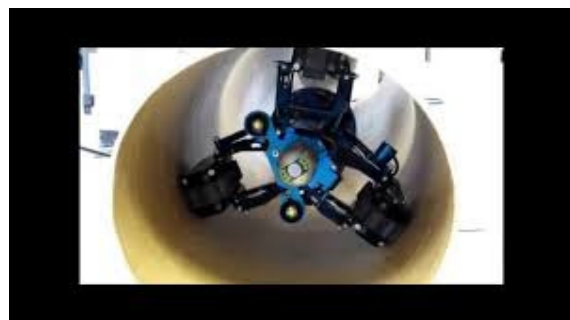
Arise Global group of companies offers solutions for visual inspection of confined spaces or hazardous locations with the use of high-tech video camera systems where human entry is impractical, physically impossible or unsafe. Recording all salient features or defects of the remote areas which will enable decisions or adjustments to be carried out promptly.

There are different types of cameras with different capabilities, resolution, cable length, measuring capabilities, articulation...etc to suit all different application required by our clients all over the world.

Upon receive of the scope of work and drawing we can recommend the suitable system/systems for the application depending on our wide experience.

Applications:

Remote visual inspection services would be beneficial to all companies in the Oil and Gas, Maritime, Petrochemical, Pharmaceutical, construction and Consumer industries as well as companies in the Power Generation, Municipalities and Public Sector.





Phased Array Ultrasonic Testing (through associates)

The distinguishing feature of the phased array ultrasonic testing is the computer controlled excitation of the individual elements in a multi-elements probe. The excitation of these multiple piezo composite elements generates a focused ultrasonic beam, allowing the dynamic modification of the beam parameters such as angle, focal distance and focal spot size through software.

An array of transducer elements in which the timing of the elements excitation can be individually controlled to produce certain desired effects, such as steering the beam axis or focusing the beam.

Basically, a phased-array is a long conventional probe
Cut into many elements

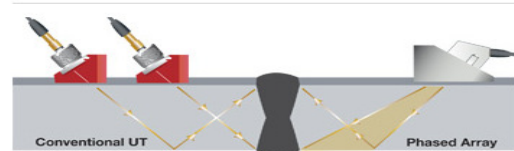


Advantages:

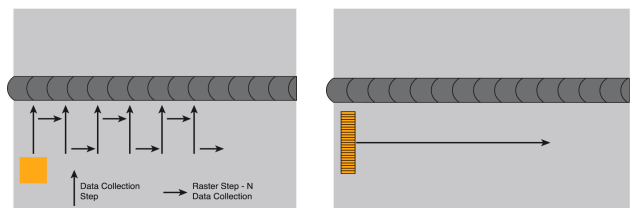
- Multiple angle scan possible
- Simple Interpretation
- More Production rate
- Data storage
- Reproducibility
- Setup time between inspections decreased
- 100% volume inspection in single Scan
- Better sizing of Defects

Applications:

- Inspection of girth welds of Pressure vessels
- Corrosion Mapping
- Laminations checking
- Tube and pipe weld inspections
- Inspection of Tee-joints
- Dissimilar weld inspection
- Nozzle Testing

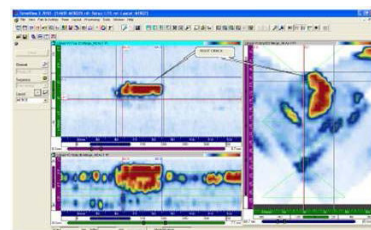


Scan weld in parallel linear motion -> *much faster*



Conventional raster scan

Phased Array scan





Time of Flight Diffraction (through associates)

For the detection and sizing of flaws in new and in-services welds and components, **Arise Global** group offers the semi-automated Time of Flight Diffraction (TOFD) ultrasonic technique.

Technique:

TOFD inspection employs two longitudinal wave (L-wave) angle beam transducers arranged symmetrically opposite facing each other, straddling the weld or base material under test. One probe acts like a transmitter of ultrasonic energy while the other probe receives the ultrasound energy. The transducer, pulser, and amplifier characteristics are selected to generate as broad distribution of energy as possible over the material under test providing full weld coverage. A single-axis scan (that is, along the weld), with a position encoder records the position of the weld and enables the display of digital images in real time.

Capabilities

TOFD defect detection does not depend on the defect orientation, in contrast to the pulse echo technique.

In contrast to the radiography method, planar defects and cracks, which are not perpendicular to the measured surface, can be detected.

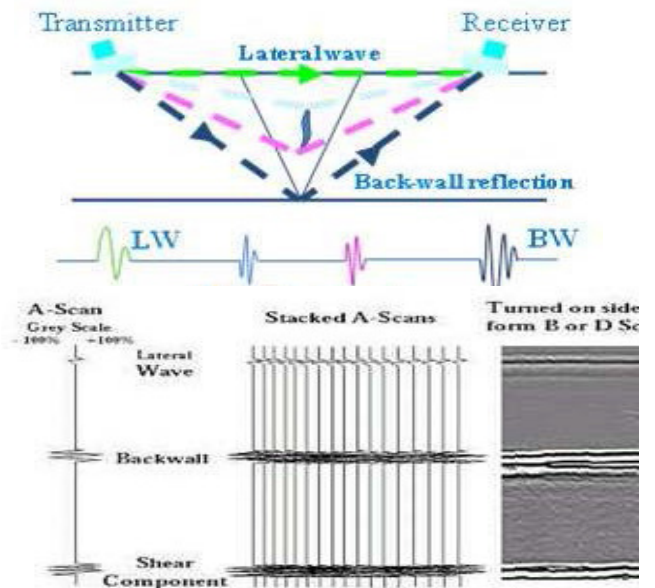
Defect height can be exactly determined.

Higher POD improves risk reduction and calculation.

The inspection results are immediately available, as is a permanent record and a permanent print as longitudinal or transversal projection of the weld is available.

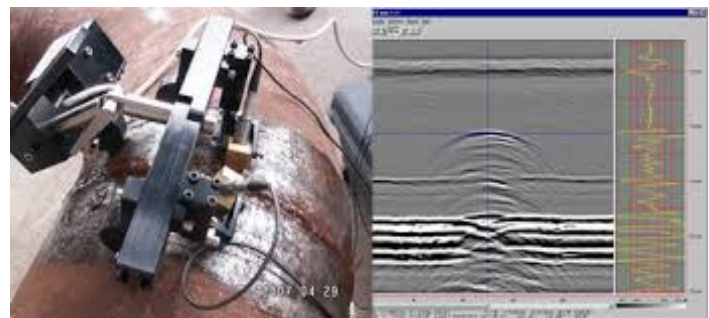
Because of the high test speed the costs are less than those for radiography for wall thickness above 25 mm.

Versatile and portable equipment



Applications

- New and existing welds
- Defect monitoring
- Stress Corrosion Cracking
- Weld root erosion surveys





Arise Global

Conventional NDT (through associates)

Conventional Non-Destructive Testing

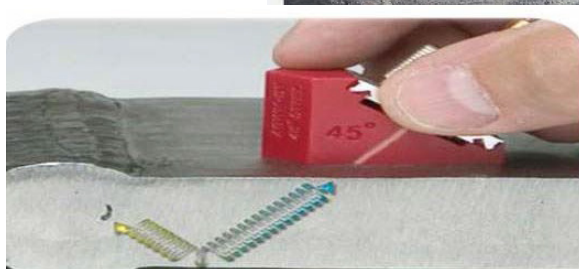
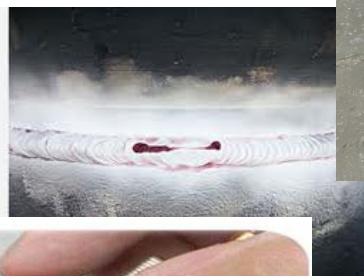
Non-Destructive Testing is the branch of engineering concerned with all methods of detecting and evaluating flaws in materials. Flaws can affect the serviceability of the material or structure, so NDT is important in guaranteeing safe operation as well as quality control and assessing plant life. The flaws may be cracks or inclusions in welds and castings, or variations in structural properties that can lead to loss of strength or failure in service. The essential feature of NDT is that the test process itself produces no deleterious effects on the material or structure under test.

Arise Global provides highly skilled, experienced and motivated personnel qualified and certified in accordance with international certification schemes (e.g. PCN (EN 473/ ISO 9712), ANSI CP-189 and SNT-TC 1A) in the conventional techniques that have underpinned the NDT industry from its earliest days.



List of Conventional NDT Services provided through associates:

- Radiography Testing
- Ultrasonic Testing
- Magnetic Particle Testing
- Liquid Penetrant Testing
- Hardness testing
- Positive Material Identification (PAMI)
- Ferrite Content Measurement
- Holiday inspection
- Infrared thermography
- Vacuum Box Testing





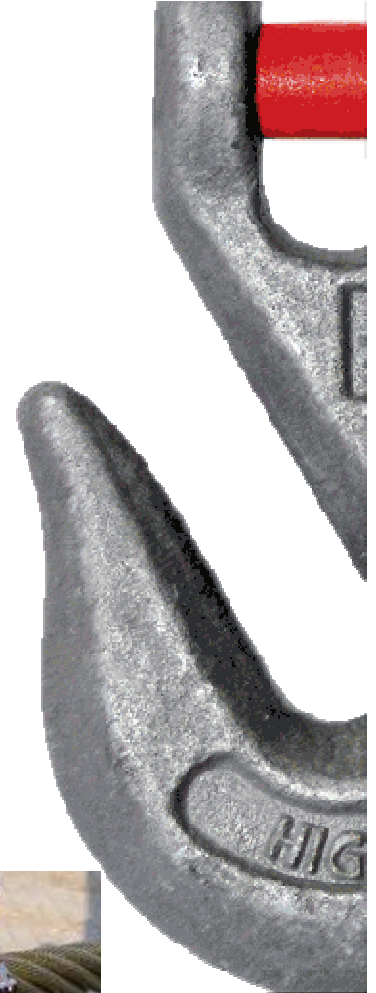
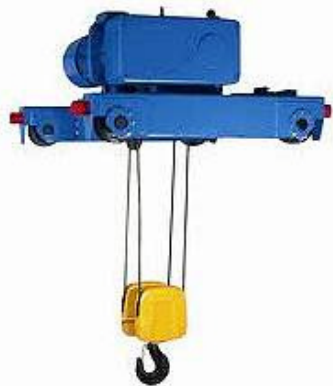
Lifting Equipment Inspection, Certification & Training

Cranes, hoisting and lifting equipment inspection provided by Arise Global group to ensure the safe work and reliability of your equipment and compliance with regulatory requirements and international standards.

Lifting equipment is subject to high static loading and an unpredictable set of dynamic conditions that can lead to mechanical failure.

Wherever there are cranes, lifting or hoisting equipment, you need to ensure that they are safe, and in compliance with statutory requirements. That is where ours' crane, hoisting and lifting equipment inspection services can help.

Periodic inspection is therefore necessary to optimize safety and ensure the equipment is working correctly and efficiently.



Arise Global group offers inspection services for the full range of lifting equipment including cranes, goods lifts, platforms, slings etc, and in line with the Lifting Operations & Lifting Equipment Regulations (LOLER) framework, our inspectors are able to carry out inspections to determine that:

- The equipment is installed correctly and safe to operate,
- The equipment is a good state of repair,
- Any deterioration is identified and rectified in a timely manner.



Tubular Inspection (through associates)

Effective maintenance of drill pipe and associated hardware ensures the continued and safe operation of a drilling rig.

An appropriate tubular inspection program helps identify integrity issues before they reach criticality, preventing costly repairs and / or damage to personnel and the environment.

Professional inspections to thoroughly examine the tube body, as well as connections or end areas are highly required in oil fields. Also checking for possible discontinuities and wall loss in the tube body with EMI equipment.



Through our associates, we can offer a comprehensive tubular inspection service, covering all new and used items, including; Drill pipe, tubing, casing, sucker rods, coiled tubing, drill collars, bottom hole assembly, cross over subs, reamers etc...

A typical inspection program would involve one or more of the following:

- Visual inspection of body & threads
- UT wall thickness measurements & dimensional inspection
- EMI testing
- MPI to identify cracks & other defects
- Hardness testing
- Internal inspection of upsets using remote visual inspection
- Tool joint inspections – VT & dimensional
- Drifting assessment

All inspections are carried out in accordance with client requirements and per the specified standards

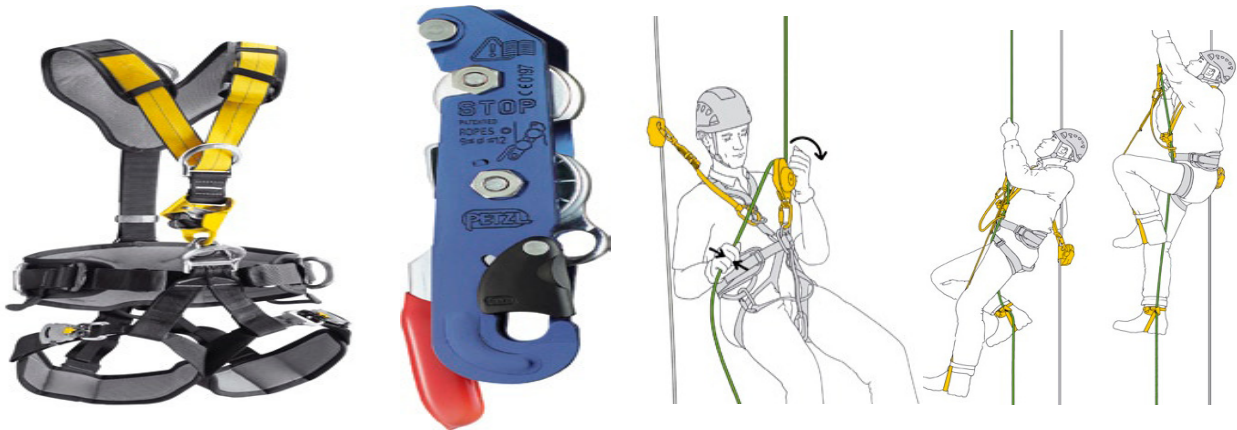


Arise Global

Rope Access

(through associates)

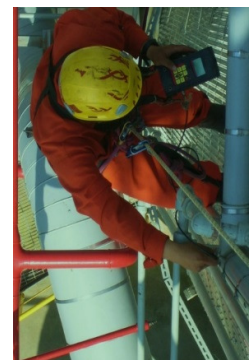
"Rope access" describes a variety of advanced access techniques where ropes and specialized equipment are used as the primary method for providing access and support to workers in their jobs at high or hard-to-reach places.



Rope Access Applications

Rope access services provide a variety of solutions. With rope access support, workers can perform different inspection & NDT methods of buildings, bridges or any high structures.

Subsequently, workers can use rope access for maintenance of these structures such as painting, leak repair, window glass replacement and many other tasks which require safe and reliable support for the completion of the project.





Third Party Inspection Services (through associates)

Since the safety, reliability and integrity are the aim of any end user/owner, so most clients require that construction of oil and gas and other industrial plants necessitates that the procurement, engineering and construction activities are verified, validated and at times certified by an Independent Third Party Inspection & Certification agency. This is where **Arise Global** group comes in and plays a major role.

The certification activities require Project Design Verification, Procurement Inspections, Product Inspections, General Construction Inspections, and supporting Testing Services as well as QA/QC services.

Through our associates, we can offer third-party inspection services through its offices worldwide as well as various registrations with internationally recognized entities. Arise Global group deliverables reflect unbiased statement of fact reporting and confirms verification and inspection services to one or more internationally recognized codes, standards, design specifications and specific technical project requirements.

Our source inspection services at supplier and vendor sites for manufacturers, owners and other shareholders verify that the equipment or goods have been manufactured in accordance with a client's specifications and other applicable quality system requirements as specified.

Source inspections are tailored to meet a specific need and may include:

- Review of material test reports
- Witnessing mechanical tests, factory acceptance tests and hydrostatic and performance tests
- Witnessing welder's performance qualifications
- Witnessing NDE and performing visual examinations
- Review of weld procedure specifications and procedure qualifications
- Examination of edge preparation, fit-up and dimensional attributes
- Inspection of coatings
- Verification of quantities shipped, including proper packing and identification marking



Arise Global



Vendor Inspection and Expediting Services (through associates)

Quality Control, Vendor Inspection & Expediting are an integral part of project purchasing activities. Through our associates, we can offer a complete range of services comprising of engineering inspection at the vendor's works.

Inspection scope can be stage-wise as per Quality Control Plan or pre-shipment inspection for letter of credit purposes.

Worldwide vendor expediting services are provided to assist clientele in improving procurement delivery schedules and resolve issues affecting the delivery schedule.

Whether for new construction or ongoing maintenance, our services give you confidence that purchased equipment will arrive when required and as specified.



Arise Global

Specialised Inspection and Modified Surveys Methodologies

Arise Global Group believes in innovation. We utilize innovative methods and technologies, apart from the conventional methodologies used in the industry. We do not reinvent the wheel but take a “common sense” approach to your problem and coming out with a relevant solution.

Capabilities:

- Combined CIPS and DCVG surveys for cross country pipelines or assessing of protection level and potential defects
- Modified survey of underground pipelines under soil, concrete, road crossings etc without excavation or hacking required
- Corrosion monitoring for onshore and offshore structures

Specialised Services for:

- » Feasibility surveys
- » Soil resistivity and design data collection survey
- » Detailed design and engineering of the system
- » Materials manufacturing/procurement/handling
- » Installation of equipment
- » Testing, pre-commissioning and commissioning
- » Monitoring and maintenance
- » Post-commissioning surveys
- » Specialized Integrity surveys
- » Interference surveys



Modified DCVG Survey:

Modified survey was carried out on buried DMF tank in a petrochemical plant.

Arise Global



Cathodic Protection (CP) systems and other niche protection systems

Arise Global Group is apt at providing solutions that provides the best balance between cost and benefits. We provide CP services and systems for new and old facilities. We are also known for our specialty in niche protection systems.

Our CP services and systems protect onshore underground structures for oil & gas plants, offshore platforms, transmission pipelines, power generation facilities, marine vessels and others.

Capabilities:

- Design, supply, installation and testing & commissioning of CP systems for pipelines, tanks, jetties, oil terminals etc
- Audit and trouble shooting and upgrading of existing CP systems for capacity enhancements in Petrochemical Plants and Refineries
- Specialized underwater epoxy for application on condensing gas pipelines and underwater sheet piles & jetty piles



CP Plant Audit:

Our expert specialist carrying out testing of installed system using GPS synchronized interrupters, carrying out precise and in-depth technical audit of existing CP system.

Arise Global



Mission

We are committed to provide the most reliable Advanced NDT and inspection services to all the clients we work with, and to represent a shield between our clients' assets and any unexpected failures.

Vision

We aim to be the world's market leader in Advanced NDT and inspection services, to be always known for quality, reliability and integrity.

Ethics

We believe in doing business with ethics and principles. We will turn away from business dealings that are unethical or that violate the laws of the country or without total contractual transparency.

We grow our business with:

- Quality clients,
- An outstanding reputation in the market place,
- Consultative and trust based solid relationships with clients.

Accreditations: ISO 9001:2008 | OHSAS 18001:2007 | bizSAFE Level Star

Arise Global Pte Ltd

30 Toh Guan Road East, Unit 2
Enterprise Hub, Singapore 608577

Phone: +65 65594677

www.ariseglobal.com

UEN 201411955C