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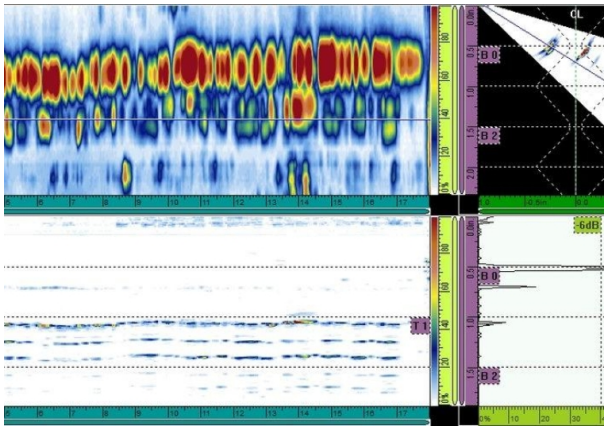
# Phased Array Ultrasonic Testing – PAUT NDT

Phased array ultrasonic testing (PAUT) provides a fast and reliable UT inspection solution for flaw detection and characterisation across multiple presentations simultaneously. Phased array NDT technology uses multiple elements fired in quick succession to produce beams that can be steered, swept and focused electronically. Inspections across multiple angles are performed concurrently, creating significant cost savings and providing recordable results for further analysis and/or future inspections. Phased array ultrasound is capable of performing multiple applications including NDT welding inspection, CUI inspection mapping, and inspections on composites and components of complex geometry. Through use of accurate scan-planning and beam-steering capabilities, phased array ultrasonic testing increases the probability of detection, while inspection times are reduced to a minimum.



THE Applus+ SOLUTION

Applus+ has developed proven and tested procedures for phased array inspections in accordance with applicable codes. Our PAUT NDT technicians are rigorously trained on data acquisition and interpretation, assessed both internally and externally.

## Target customers

Applus+ can deploy phased array NDT on a large variety of equipment and across a vast range of fields for asset and pipeline integrity inspections, including:

- Upstream
- Midstream
- Downstream
- Transport pipelines
- Refining
- New construction

- Power
- Aerospace
- Nuclear
- Offshore
- Maintenance

Phased array ultrasonic testing provides significant advantages over single- probe concepts and conventional radiography. These include:

- No inherent safety issues requiring boundary areas
- Improved defect detection
- Rapid component coverage
- Large range of inspection parameters
- Compliance with inspection codes

## Key customer benefits

Phased array ultrasonic inspection conveys major advantages over conventional means of NDT weld inspection, such as:

- No inherent safety concerns
- No disruption of production due to radiation hazards
- Near real-time inspection results
- Vertical defect sizing for engineering critical assessments

Phased array weld inspection is highly versatile and can be tailored to suit almost any weld profile and predictable defects to maintain weld quality assurance.

Furthermore, the use of encoders in the PAUT ultrasonic testing allows all data to be digitally saved and stored for weld-record retention and analysis as well as future repeatable inspections for in-service applications. Applus+ delivers PAUT NDT inspections using compact, portable equipment and can therefore be carried out on any site.