



Training Outlines:

Online Full Phased Array Ultrasonic Testing Training

Our Phased-array UT Level II training is based on ASNT and ISO Standards topical outlines. The training is divided in sections. Each section covers a specific subject, corrosion mapping, lamination detection, weld inspection, from setup and calibration to data analysis. The training covers manual PAUT as well as automated and semi-automated PAUT.

SECTION 1: BASIC PRINCIPLES OF ULTRASOUND AND ULTRASOUND TESTING

- Sound versus Ultrasound
- Physical properties of ultrasound waves
- Description of conventional UT hardware
- Origin and use of A-, B- and C-Scans
- Production of ultrasound waves
- Properties of the ultrasound beam
- Structure and content of a UT procedure
- Choosing the right hardware for an inspection
- Importance of calibration
- Inspection guidelines

SECTION 2: PRINCIPLES UNDERLYING PHASED-ARRAY ULTRASOUND

- Origin of phasing
- Phased-array hardware
- Scans and views specific to phased-array
- Production of phased-array ultrasound
- Properties of 0-degree phased-array ultrasound beam
- Phased-array specific procedures
- How to build a 0-degree phased-array ultrasound setup
- Calibration of a 0-degree phased-array setup
- Introduction to 0-degree phased-array scanning
- Analysing 0-degree phased-array data

SECTION 3: BEAM STEERING IN PHASED-ARRAY ULTRASOUND

- Introduction to beam steering
- Inner workings of phased-array instrument
- Scans and views specific to angled phased-array
- Beam steering theory and limitations
- How to build an angled phased-array ultrasound setup
- Calibration of an angled phased-array setup
- Introduction to angled phased-array scanning
- Analysing Angled phased-array data

SECTION 4: BEAM FOCUSING IN PHASED-ARRAY ULTRASOUND

- Introduction to focusing
- Phased-array probes
- Multiple scans and views
- Beam focusing theory and limitations
- Choosing between focused and non-focused beams
- Calibration with focused beams
- Defects shape vs. focal distance

SECTION 5: OPTIMIZING DATA QUALITY

- Introduction to data quality
- Selecting optimal hardware
- Instrument limitations
- Data quality theory and limitations
- Optimizing setups parameters
- Encoder calibration
- Remote data analysis

SECTION 6: REVIEW

- Introduction
- Hardware
- Scans and views
- Theory
- Setups
- Calibration
- Inspection
- Data analysis