



Applications
Brochure

WELDXPRT

X may mark the spot, but WeldXprt maps the path to complete pipeline girth weld integrity.

Unlock the full potential of your pipeline operations with Eddyfi Technologies' pipe girth weld solution.

ADVANCED INSPECTION FOR SUPERIOR WELD INTEGRITY AND EFFICIENCY

Coupled with the powerful Emerald instrument, WeldXprt supports acquisition using multiple methods including Zonal Discrimination Technique, Conventional Ultrasonic Testing (UT), Time-of-Flight-Diffraction (TOFD), Phased Array UT (PAUT), Full Matrix Capture (FMC), Total Focusing Method (TFM), and Plane Wave Imaging (PWI) combined with TFM. Its automated calibration routines, real-time data analysis, and user-friendly interface streamline the inspection process, reducing setup times and improving production rates. Operators can rely on WeldXprt to meet the most stringent industry standards while minimizing rejection rates and ensuring long-term pipeline integrity.

BENEFITS

- Ultra efficient workflow supporting high speed inspection
- Dedicated pipe girth weld interface powered by the UltraVision® software engine with long history and global support
- Mission-critical reliability trusted by leading industries including oil & gas, nuclear power, defense, and aerospace
- Support for multiple techniques—Zonal PAUT, TOFD, PWI for high-speed assessments
- Real-time results and rule-based assisted analysis for streamlined decision-making

WeldXprt™ by Eddyfi Technologies is an advanced Automated Ultrasonic Testing (AUT) solution that sets a new benchmark for the rapid inspection of pipeline girth welds at the point of installation. Engineered specifically for both onshore and offshore projects, WeldXprt delivers faster, more precise inspections and ensures complete reliability at every weld.



AUTOMATED ULTRASONIC TESTING FOR PIPE GIRTH WELD INSPECTION

Automated ultrasonic testing has emerged as the preferred method for pipeline weld inspection worldwide, gradually superseding traditional radiography. Radiography, with its inherent limitations such as poor planar defect detection, absence of vertical sizing capability, safety concerns, and environmental issues, has paved the way for the adoption of AUT. The advantages of AUT are manifold:

- Elimination of radiation hazard, chemicals, and licensing requirements.
- Remarkably short inspection cycle time, ideal for high production rates.
- Enhanced detection and sizing accuracy, resulting in a reduced rejection rate.
- Real-time analysis facilitated by leading-edge inspection instruments.
- Storage of data and inspection reports in electronic formats for efficient record-keeping.
- Improved control over the welding process, contributing to a decreased rejection rate.

A DEDICATED SOFTWARE SOLUTION

WeldXprt is based on the robust and field-proven UltraVision data acquisition and analysis software. Featuring a dedicated and streamlined user interface for Pipeline Girth Weld (PGW) examination, it is highly responsive. The workflow has been optimized for this specialized use case, ensuring the highest productivity during inspection campaigns. It features a comprehensive and cutting-edge software suite supporting users every step of the way from design of the inspection technique through to equipment setup, data acquisition, analysis, and reporting. The software has been designed to offer a powerful, flexible, and scalable solution for pipeline weld examination. The platform supports multiple techniques, which may be carried out independently or simultaneously in multi-channel set up, acquiring all relevant data in a single pass of the weld:

- Zonal Discrimination Technique
- Phased Array
- Time of Flight Diffraction (TOFD)
- Conventional UT
- Live FMC-TFM
- Live PWI-TFM
- RAW FMC or PWI data saving

CALIBRATION BLOCK DESIGNER

- Built-in calibration block design
- Automatic or manual reflector creation
- Fine adjustment with live update
- Export mechanical drawing for fabrication
- Reflectors pull through directly into zonal builder and calibration routine

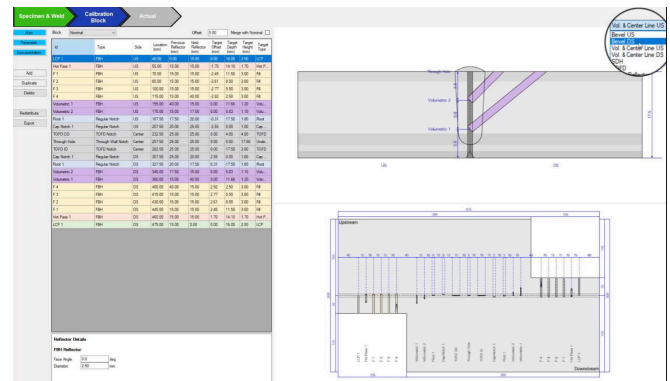


Figure 1: Calibration block designer.

AUTO ZONAL CONFIGURATION

- Automatic or manual Zonal Builder for quick beam solving.
- Zonal builder table for instant parameter adjustment.
- Configurable strip chart display.

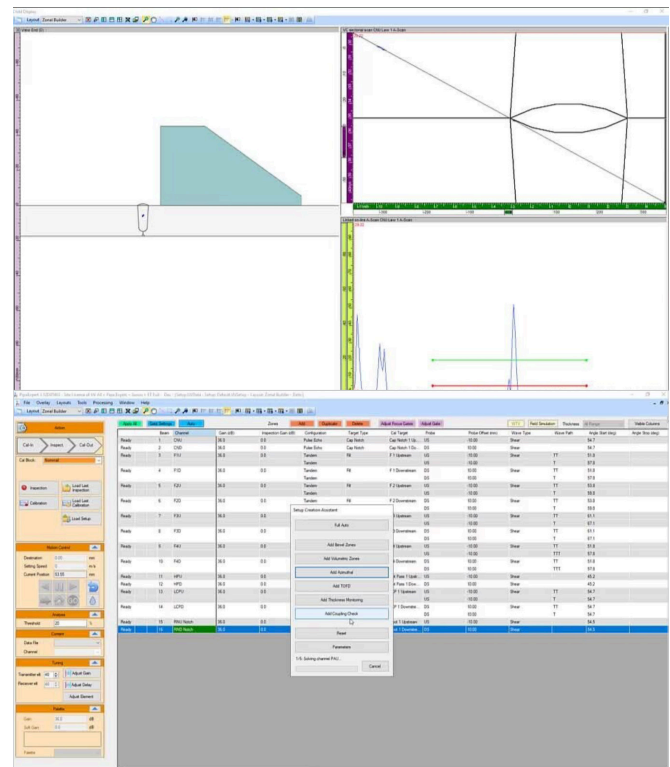


Figure 2: Auto zonal configuration.

- Simulation for self-tandem and pulse echo modes
- Acoustic Field Simulation for TFM channels
- Automatic ideal aperture calculation
- Verify effective beam parameters

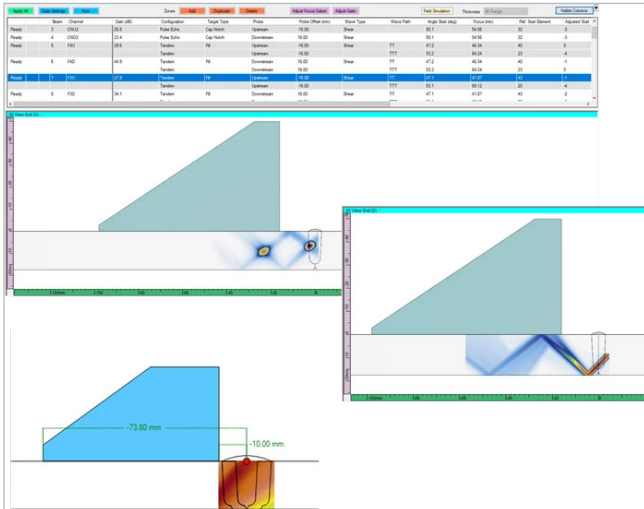


Figure 3: Beam simulation.

- Calibration routine with a single click
- Automatic reflector verification
- Red and Green status for Go/No-Go
- Calibration files saved with weld inspection data
- Assisted 'tap-in, tap-out' routine

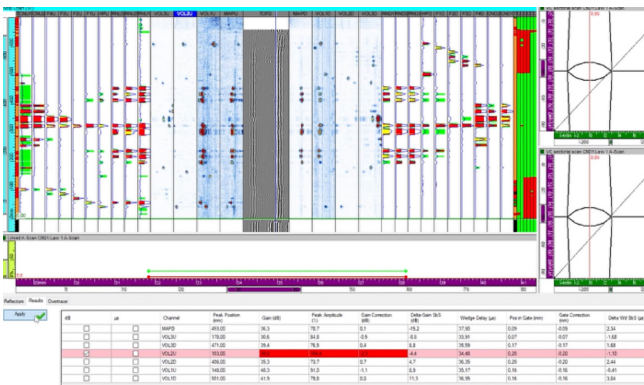


Figure 4: Auto calibration.

- Highlighted out-of-tolerance reflectors
- Automatic gain and delay correction calculation
- 'Apply Correction' buttons for channel adjustment
- Overtrace calculation and verification
- Signal updates in real time with parameter adjustment

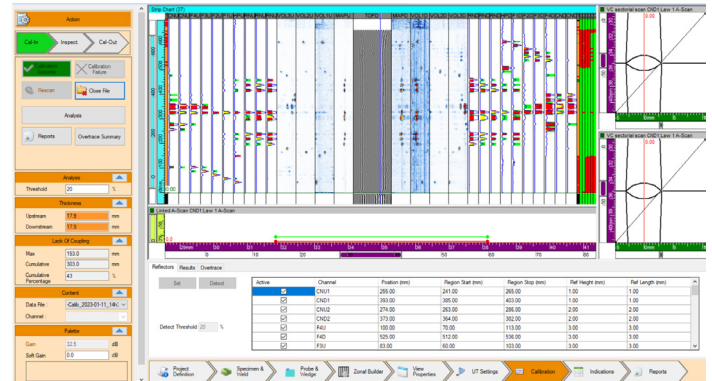


Figure 5: Auto calibration

- Set rules for indication detection based on criteria
- Assisted application of codes with acceptance or rejection options
- Analyst verification
- Unique detection criteria for each rule
- Indication classification
- Automatic indication boxing and measurement
- Interaction and accumulation
- Weld status Accept/Reject highlighted and stored

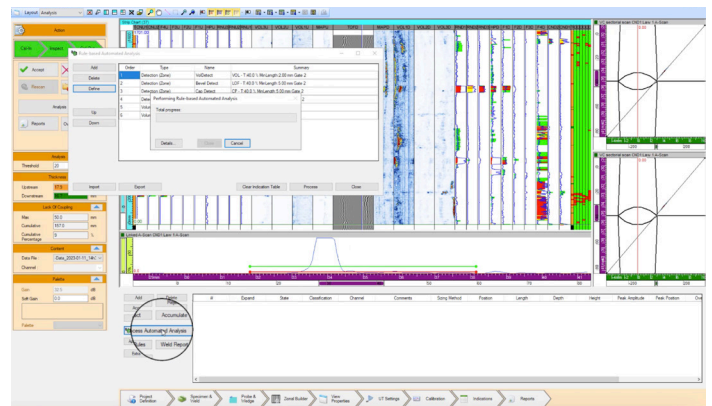


Figure 6: Rule-based assisted analysis

REPORTING AND 3D VIEWS

- Generate customizable weld reports with a single click
- 3D views of weld and volumetric UT data
- Significant time savings in analysis and reporting

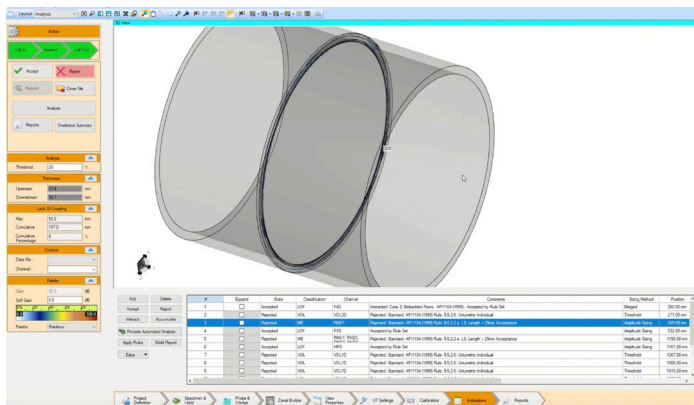


Figure 7: 3D reporting.

REVOLUTIONIZE YOUR PIPELINE INSPECTIONS. PROTECT YOUR INVESTMENTS.

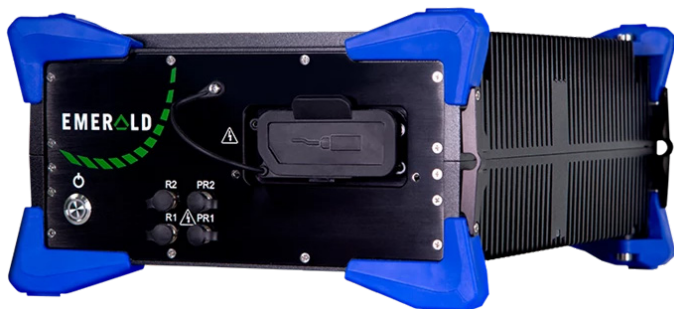
Unlock the full potential of your pipeline operations with Eddyfi Technologies' pipe girth weld solution. Experience the speed, precision, and confidence that come with using the most advanced inspection technology on the market. Ensure the safety and reliability of every weld, every time.

Don't settle for less—take the next step in securing your pipeline integrity.

INSTRUMENT PLATFORM: BEST IN CLASS ELECTRONICS

Emerald

- 64/128PR + 2UT high performance phased array system
- FMC & PWI data acquisition with latest TFM processing and imaging
- High speed multi-channel configurations
- Industry leading signal quality and power
- Seamlessly integrated with WeldXprt & UltraVision 3 platforms



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