Enhanced Inspection Productivity with On-Device Guided Workflows

A4A NDT Forum

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GE Measurement & Control

Imagination at work.

Today, NDT inspections are more critical than ever.

More demanding inspections require advanced NDT procedures…including…

- Improved inspection efficiency
- Better inspection repeatability
- Digital capabilities for data storage

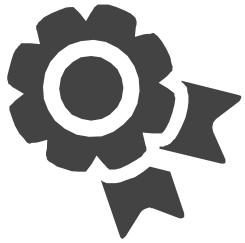
New NDT industry realities…

AGING WORKFORCE

High degree of expertise loss across industry.

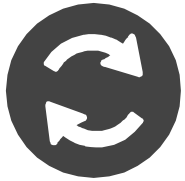
INCREASED COMPLIANCE

Enhanced safety regulations.



MORE PRODUCTIVITY

Increased requirements and expectations for output.



Weighed down by legacy inspection processes…

Detailed, paper-based inspection procedures

- Hundreds of inspection procedures
- Periodic updates
- PC based print outs
- Difficult to keep up and maintain

Inconsistent results

- Translation of lab PoD to field PoD
- Need for multiple inspector levels to review data

Hard-to-use inspection devices

- Complex interfaces
- Hard to maneuver
- Difficult for non-experts

Weighed down by legacy inspection processes…

Detailed, paper-based inspection procedures	Inconsistent results	Hard-to-use inspection devices
• procedures • Periodic updates • PC based print outs • Difficult to keep up and maintain	• Need for multiple inspector levels to review data	• Difficult for non-experts

Unique Challenge Within Aerospace Applications…Version Control, Distribution and Control of Inspection Procedures/AWD's…

Mentor EM

Eddy current expertise with guided on-device inspection workflows

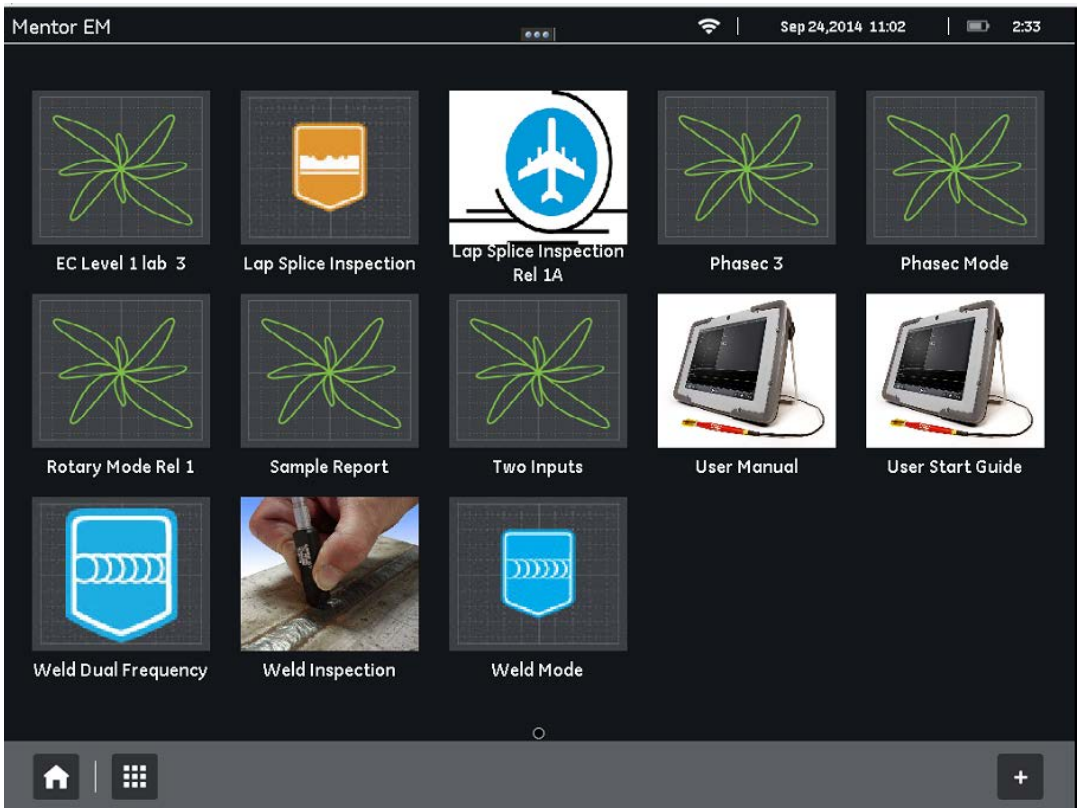
THE POWER OF WORKFLOW

On-device workflow procedures

Assist the inspection (and the inspector)

Compliment paper procedures

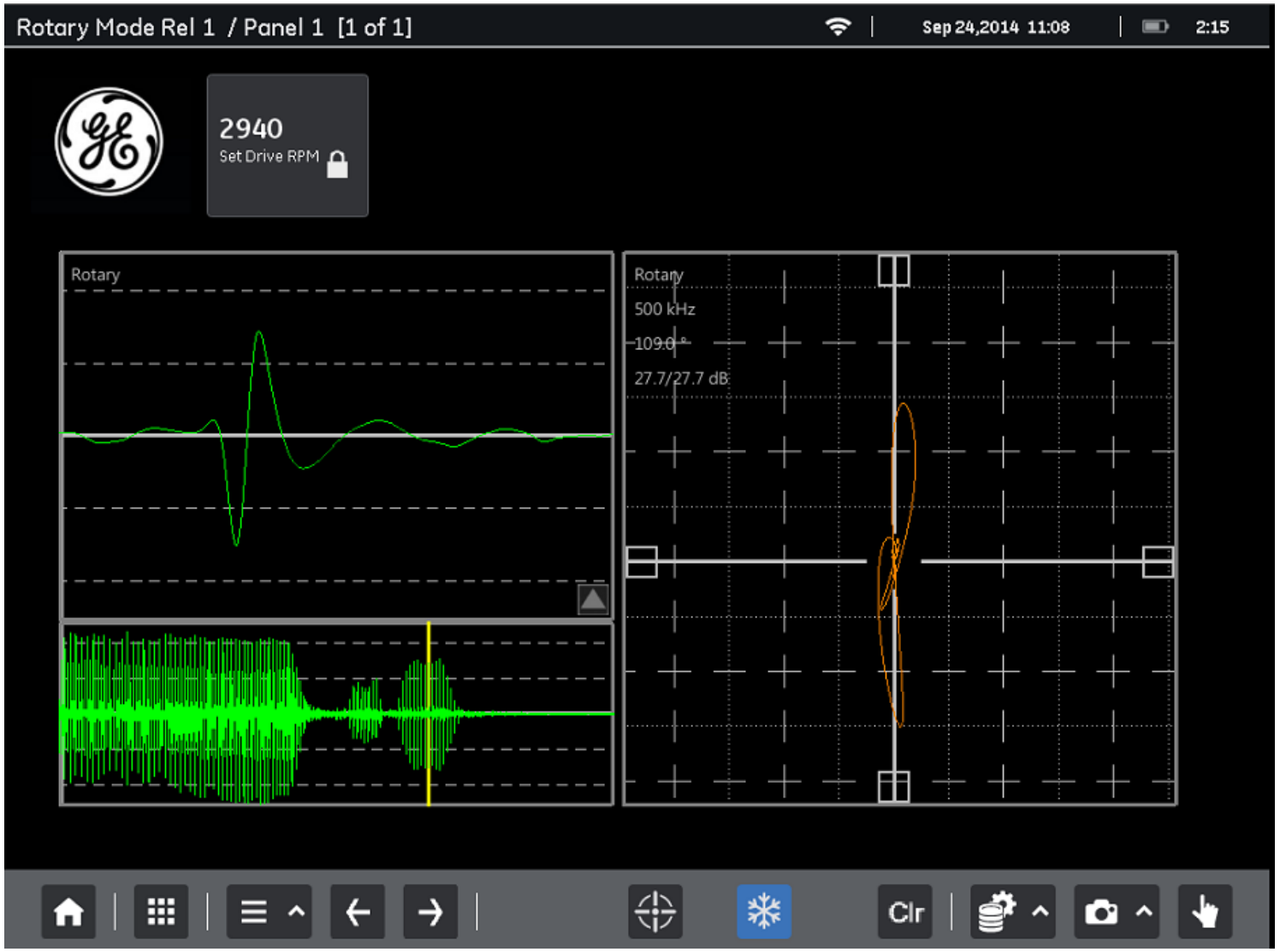
THE POWER OF WORKFLOW
Simply Select the Workflow



Easy customization of the user interface
Assist NDT training

Simplify complex inspections

Easy Customization of the User Interface



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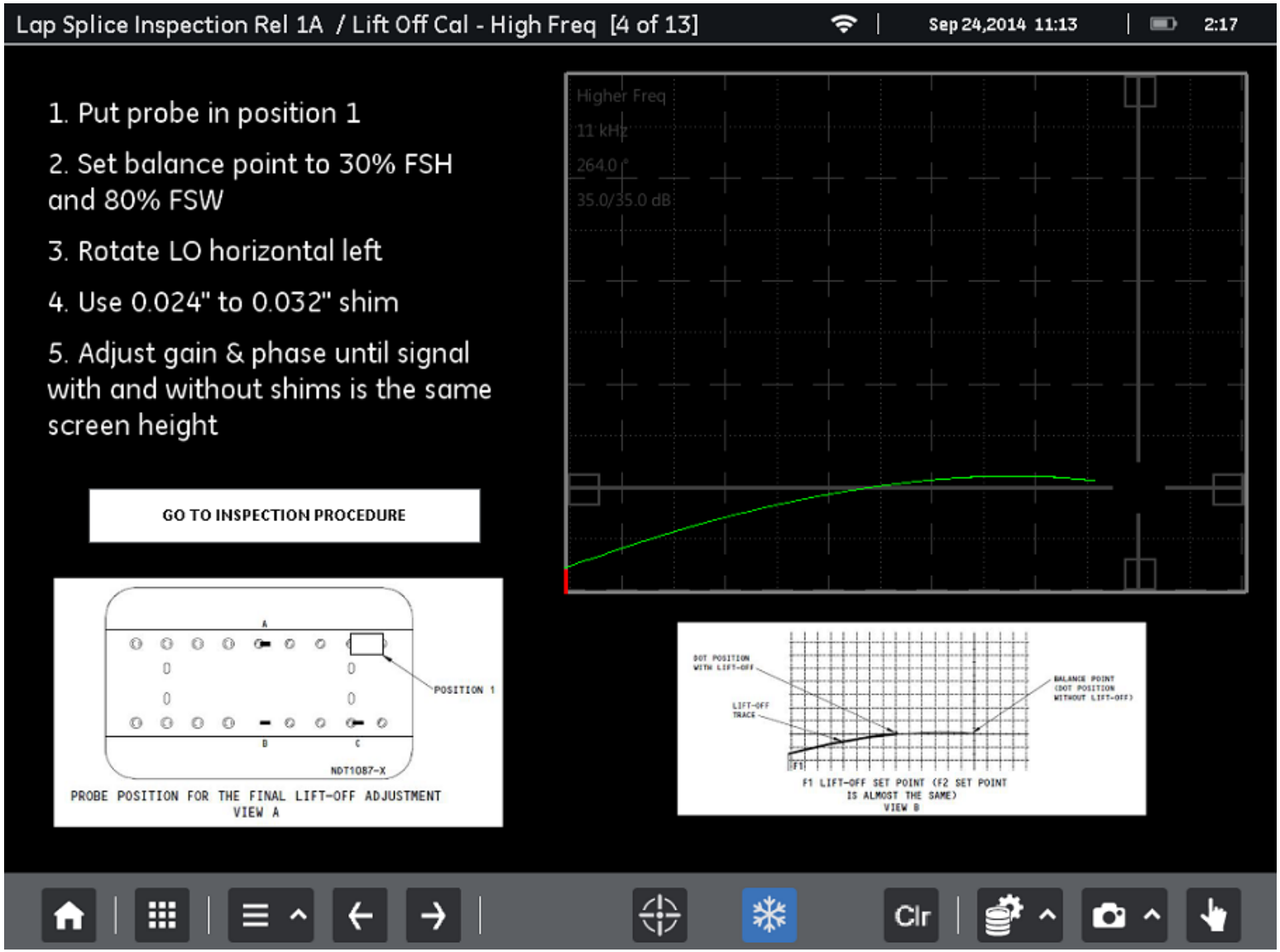

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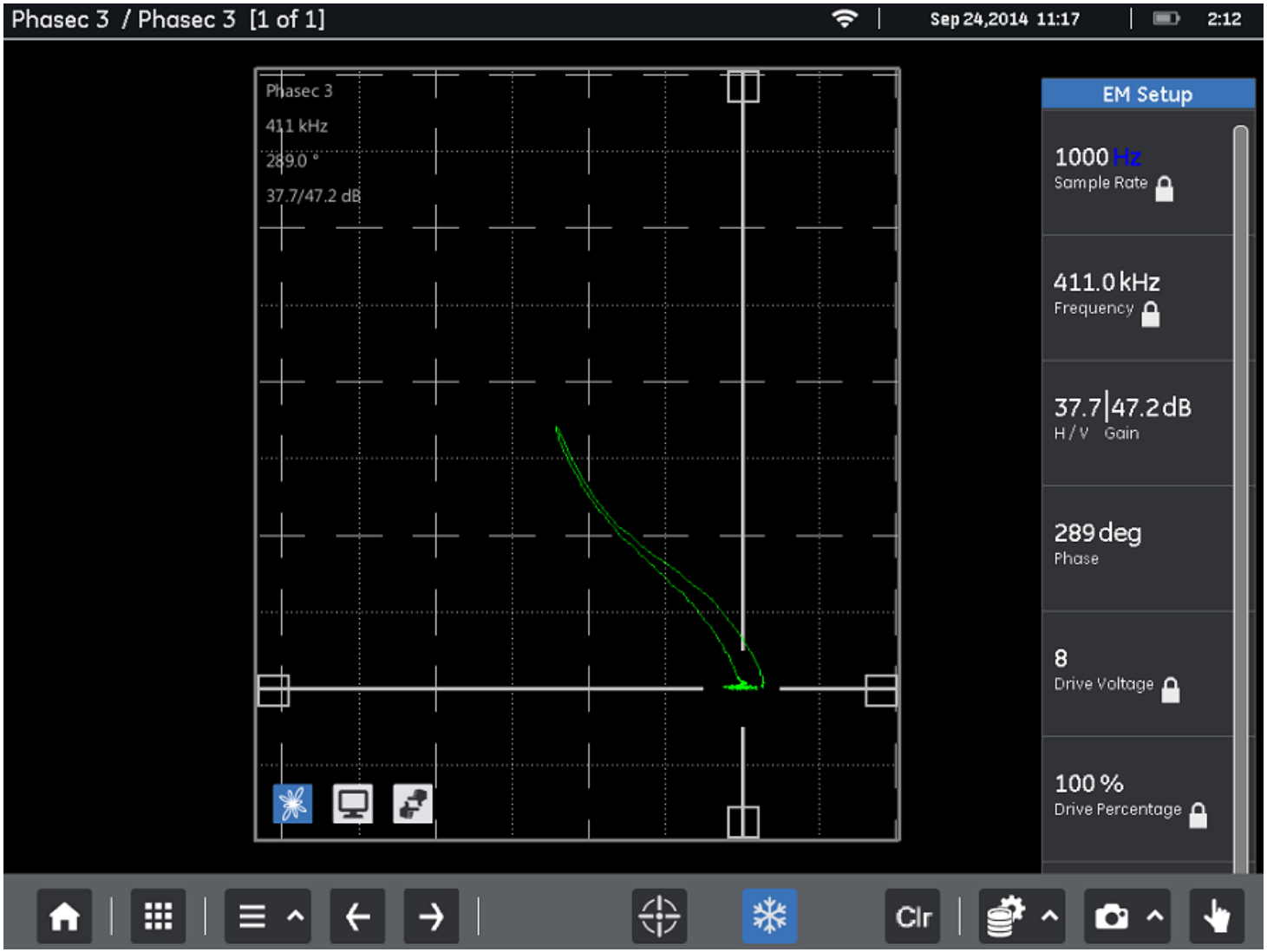
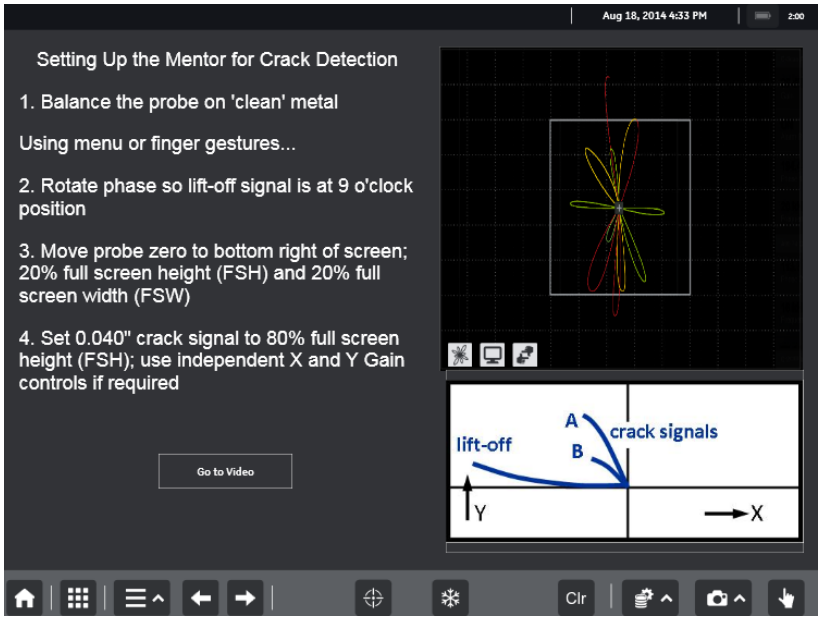


THE POWER OF WORKFLOW
Assist NDT Training
Increase Inspector Confidence

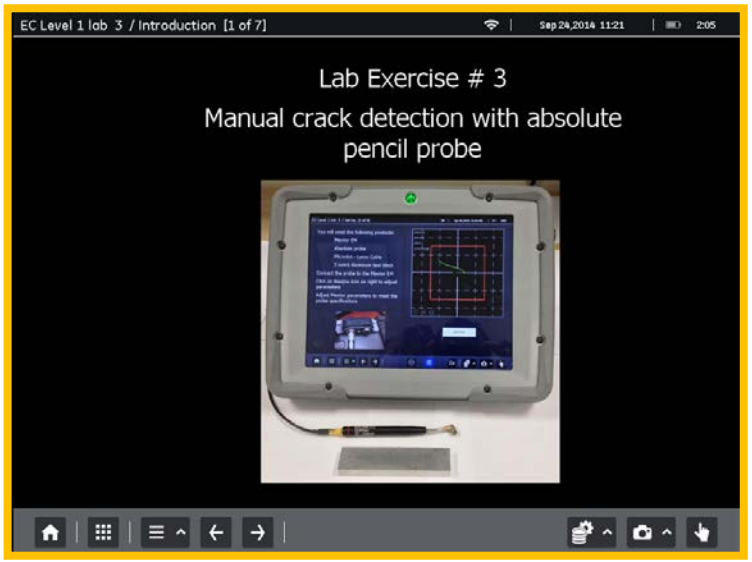
Guided NDT Training

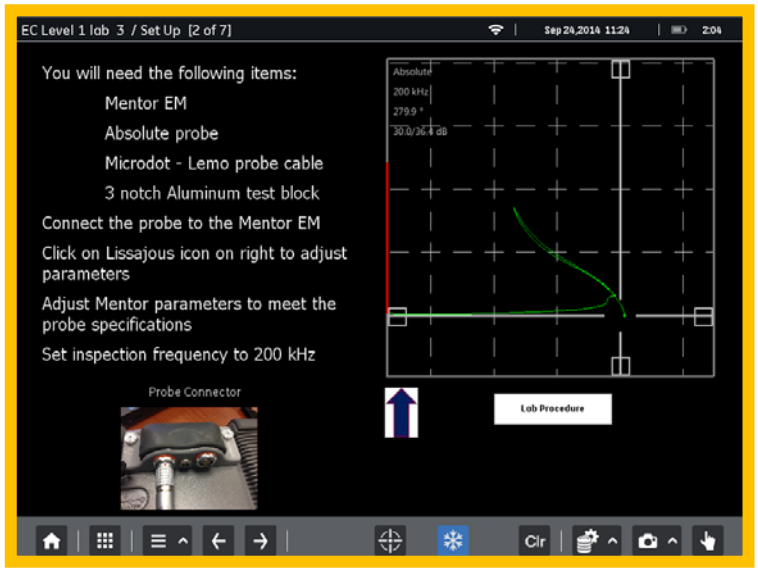
- Compliment lecture with guided hands-on practical training

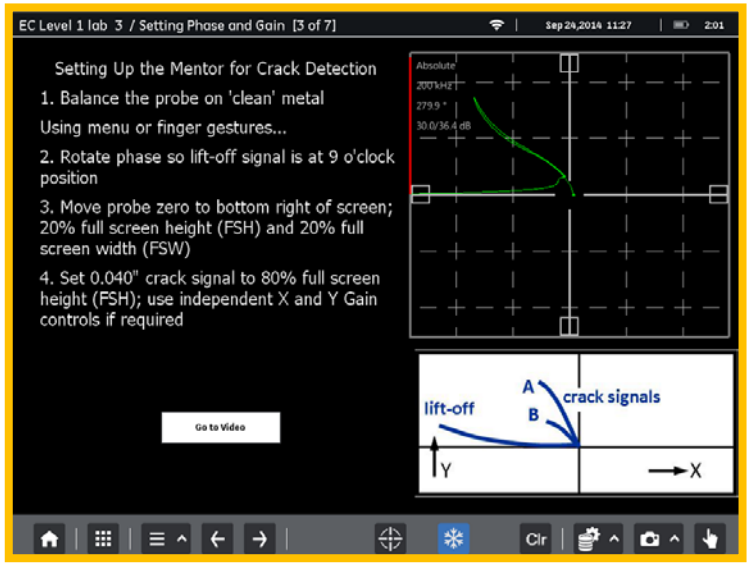


- Step-by-step directions with Live Lissajous to validate set-up and calibration
- Figures to illustrate probe positioning & signal response
- Videos to illustrate probe scanning and experiential knowledge
- Links to training documents

Assist NDT Training



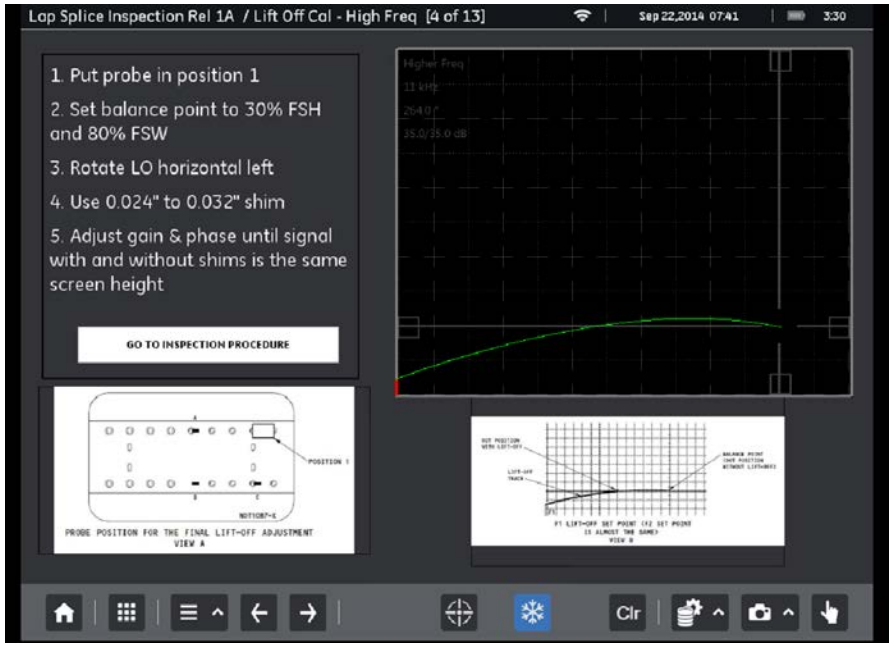




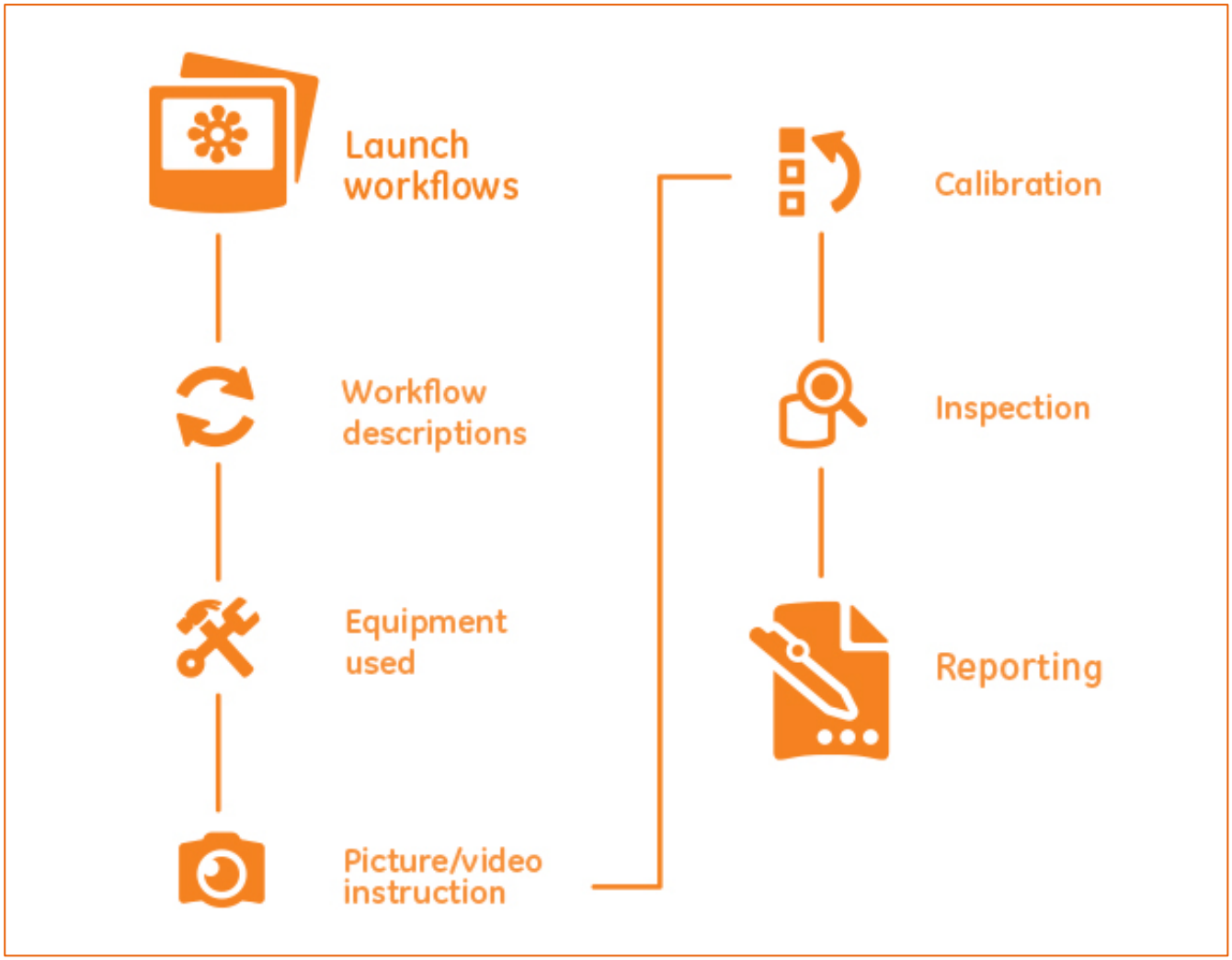
Simplify Complex Inspections
Convert Lengthy Procedure to Guided

Sliding Probe Inspection of Lap Splice

- Dual frequency eddy current with sliding probe
- Mix to ‘remove’ fastener signal

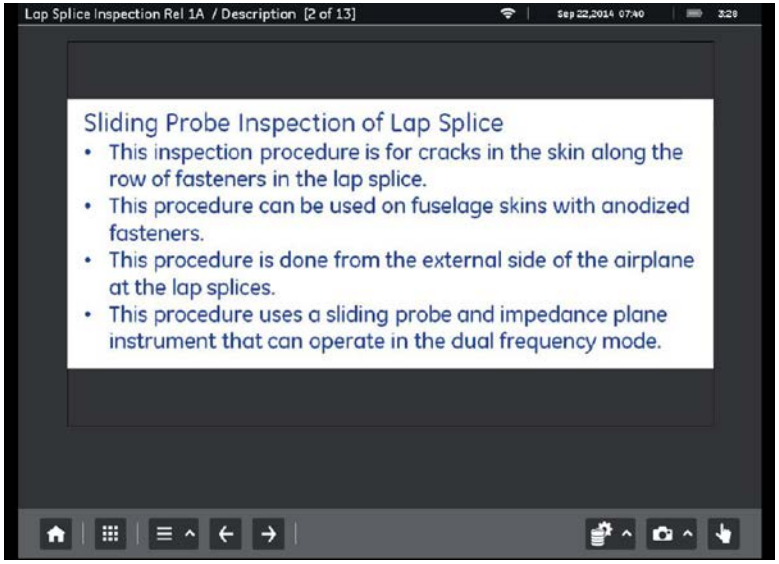


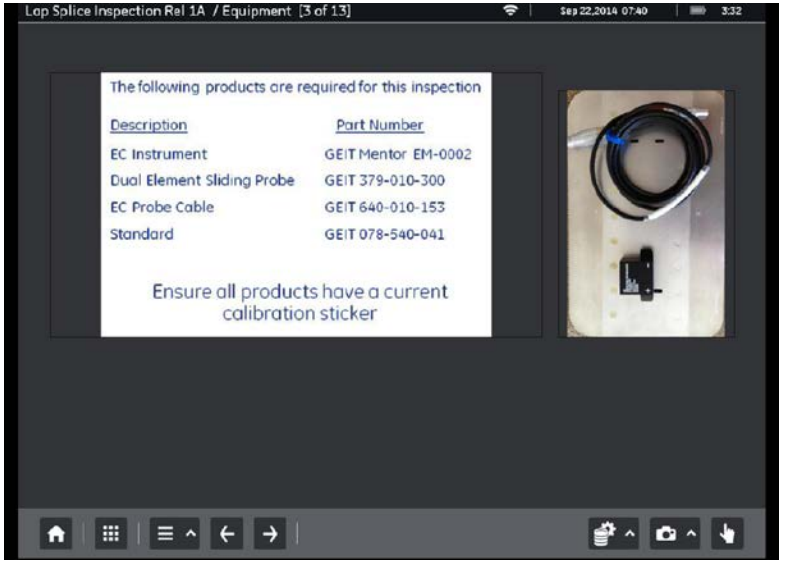
- Guided inspection
- Live Lissajous with step-by-step directions
- Figures to illustrate probe positioning and signal response
- Simplify challenging dual frequency Mix set-up and calibration



TRANSFORMING INSPECTION TECHNOLOGIES

Simplify Complex Inspections
Description of Inspection and Required Tools

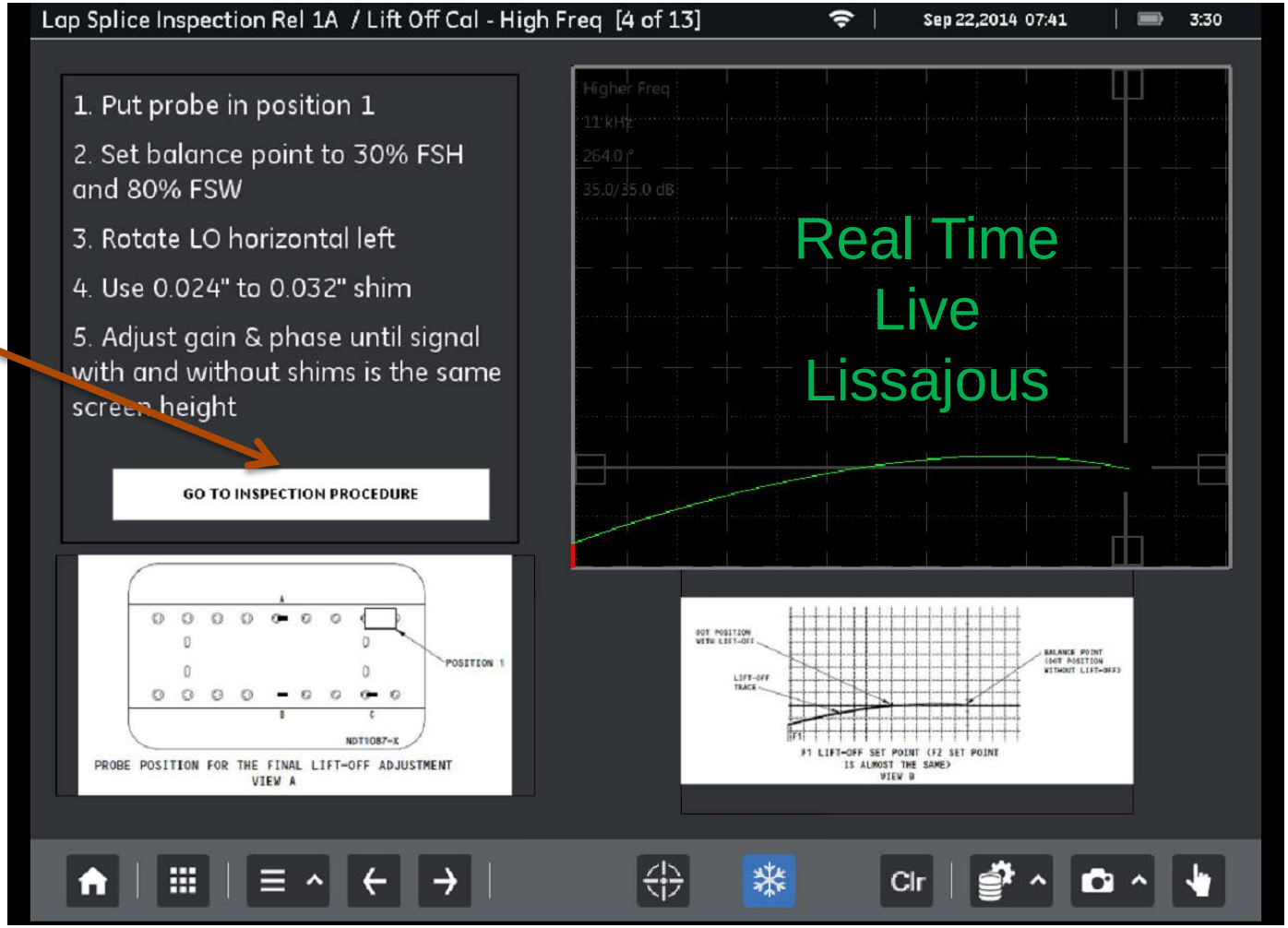




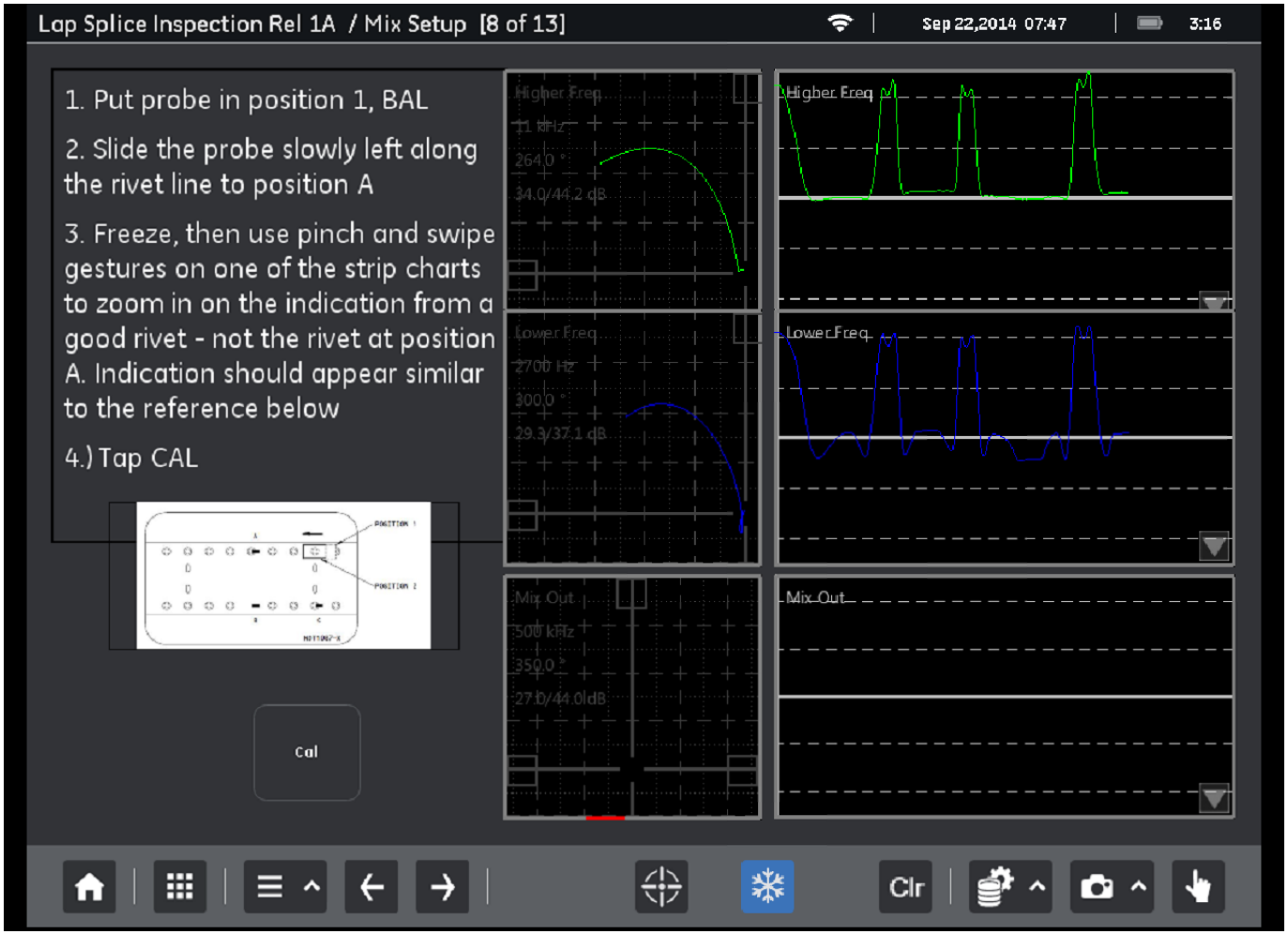
Simplify Complex Inspections
Step-by-Step Procedure with Live Lissajous

Quick Link to Procedure

Figures for Probe Positioning and Reference

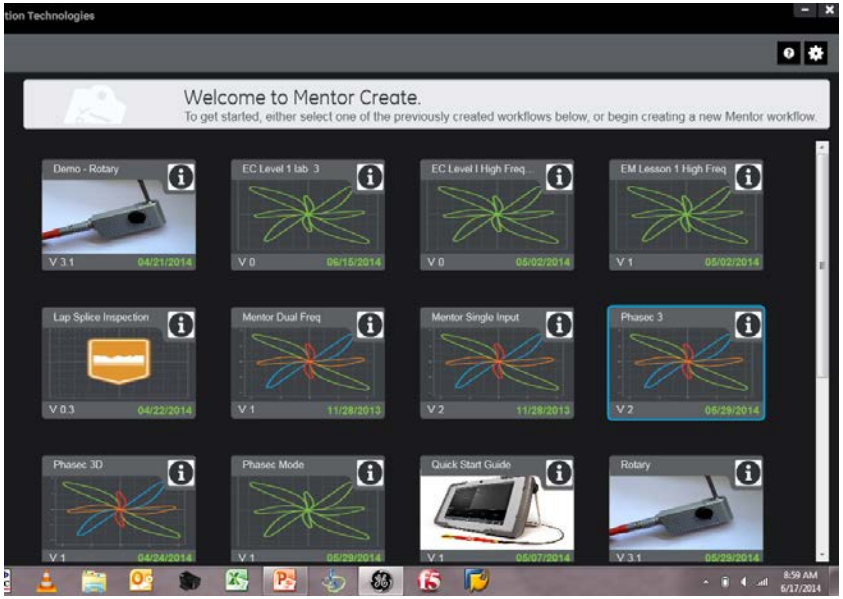


Simplify Complex Inspections
Optimize Screen and User Interface for



THE POWER OF WORKFLOW
Mentor Create Software

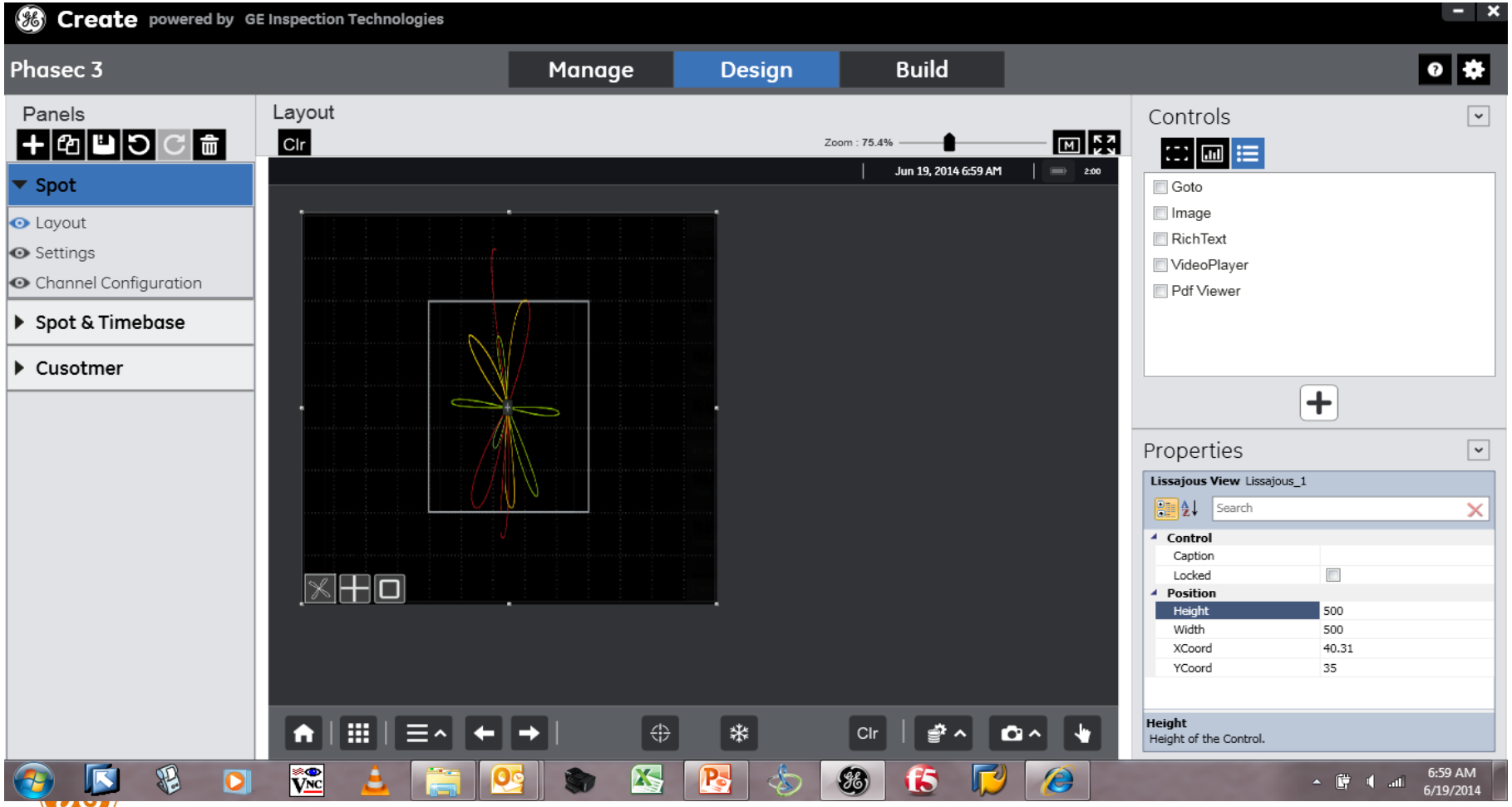
- PowerPoint type tool to generate on-device inspection workflows
- Insert photos, procedures, and videos on device for reference while setting up, acquiring data, or analyzing data
- Limit range of adjustments available to the operator, minimizing error opportunities



Use as a conventional EC flaw detector in Expert Mode, or switch to Workflow On-Device mode for guided procedures

THE POWER OF WORKFLOW

Mentor Create for Rapid Generation of Workflows

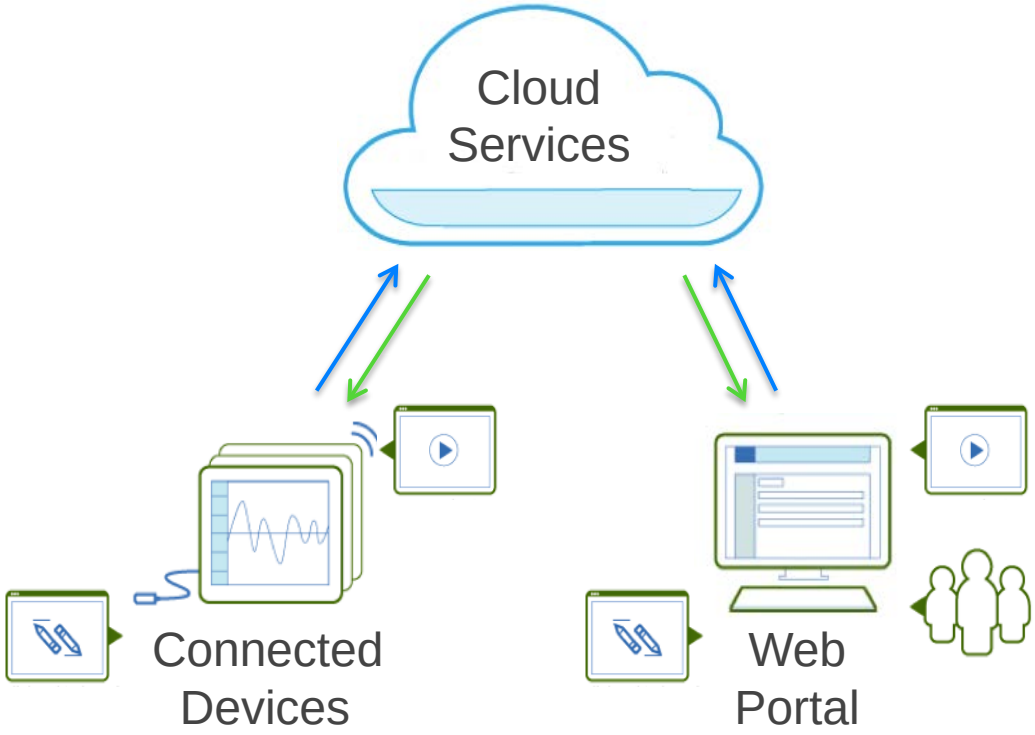


How Do We Value Workflows and Remote Collaboration within Your Aerospace Applications ?

Detailed, paper-based inspection procedures	Inconsistent results	Hard-to-use inspection devices
• procedures • Periodic updates • PC based print outs • Difficult to keep up and maintain	• Need for multiple inspector levels to review data	• Difficult for non-experts

Unique Challenge Within Aerospace Applications…Version Control, Distribution, Control and Disposal of Inspection Procedures/AWD's…

INSTANT COLLABORATION WITH INSPECTION WORKS



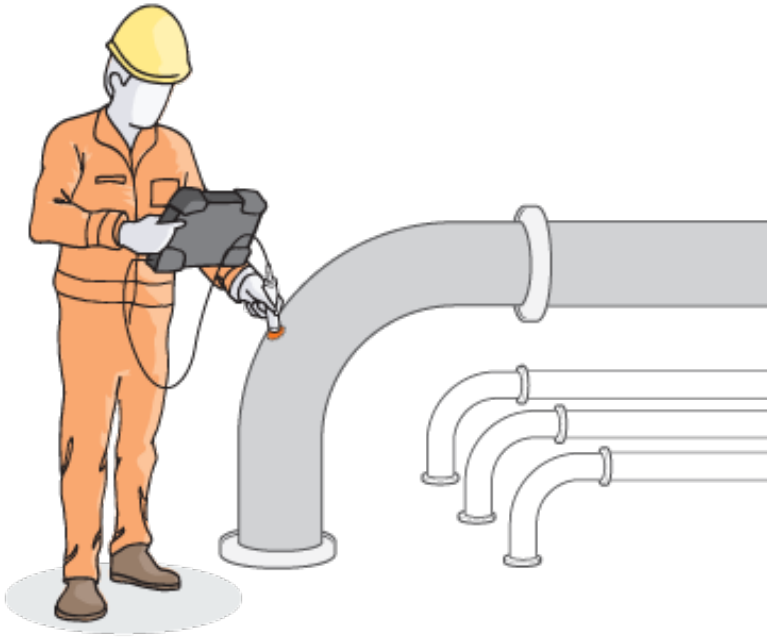
Real-time access to knowledge from off-site experts

More accurate and efficient inspections

Real-time sharing of inspection data

INSTANT COLLABORATION WITH INSPECTION WORKS

- Connect with experts in real-time using a wireless network
- Share screens to make calls, add comments, annotate screens and more
- Troubleshoot issues with complex inspections on the spot, without leaving the inspection site



NDT Solution Center

- An online library of custom workflow applications created by experts for specific applications and companies
- Ensure everyone has access to the latest inspections
- Workflows available for purchase and download
- Easy upgrade process

Mentor EM: The solution for accurate inspections

INDUSTRY KNOWLEDGE

Access to expert knowledge (on-device workflows, collaboration)

IMPROVED ACCURACY

Improved PoD, and consistent inspection procedures

PEACE OF MIND

Conduct consistent inspections with less risk/failure

MORE PRODUCTIVITY

Less-skilled people can conduct inspections—with less setup/configuration time

CUTTING-EDGE TECHNOLOGY

An innovative technology with remote collaboration and Predictivity™

Backed by a history of excellence and innovation

GE Measurement & Control

- Largest supplier of Nondestructive Testing (NDT) products and services worldwide
- Made up of trusted heritage companies
- Only company offering solutions for all NDT technologies:
  - Eddy Current
  - Remote Visual Inspection (RVI)
  - Ultrasound
  - Radiography
  - Metrology

Addendum

Mentor EM: The highlights

- Industry defining signal-to-noise ratio improves Probability of Detection (PoD)
- Customize on-device workflows to optimize inspection
- Instantly connect with other NDT experts
- Immediately access your service bulletins
- High-resolution display for easy signal interpretation
- Industrial touchscreen for rapid inspection setup
- Use the touchscreen while wearing gloves

The details: Product Specifications

- Two probes with independent generators
- Multiple frequencies for each probe input
- Frequency range of 10 Hz to 6 MHz
- Compatible with GEIT/Hocking and other manufacturer’s eddy current probes
- High-resolution display with touchscreen controls
- Wi-Fi enabled with “Remote Desktop” capability
- 6 Bluetooth ports, plus USB and LAN ports
- Screen and user interface fully customizable using Mentor Create software