

# Product Technology Showcase - Zetec

## The Inspection Advantage

2019 A4A Conference

# MIZ-21C Family of ET Instruments

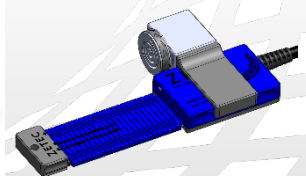


- Easy to use
- Superior Probability of Detection (POD)
- 1<sup>st</sup> Handheld to support surface array ET
- Compatible with standard probes & scanners
- Compliment or replace other techniques
- Recordable data (128GB onboard)
- Surface array solution **dramatically reduces inspection time**



# MIZ-21C Applications

Model	Handheld Probes	+Point Weld Scan	Conductivity Probes	Rotating Scanner	Surface Array
MIZ-21C-SF	✓	✓	✓		
MIZ-21C-DF	✓	✓	✓	✓	
MIZ-21C-ARRAY	✓	✓	✓	✓	✓



# MIZ-21C Probes and Accessories



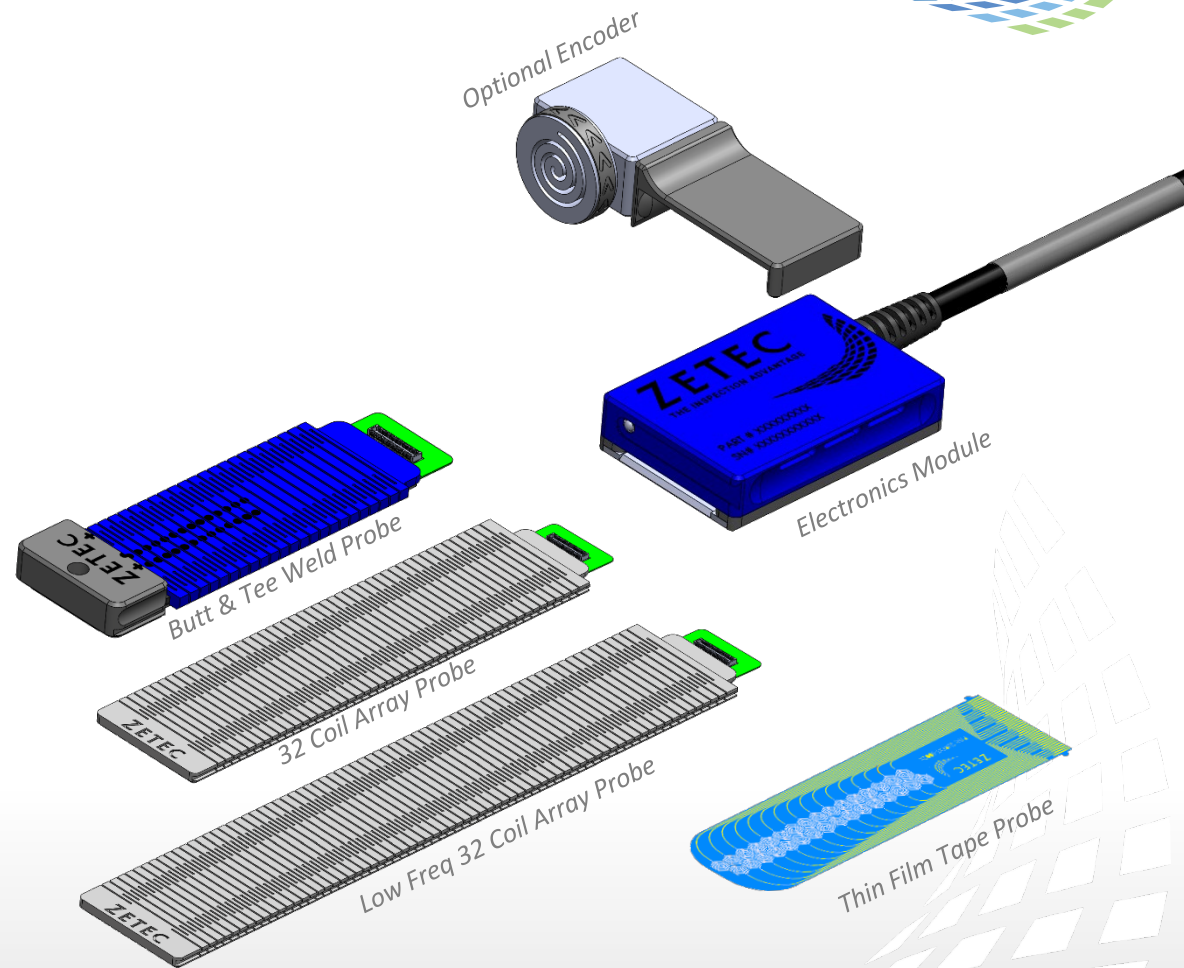
# Surf-X Array Probe Solution



- Disruptive leap for surface inspection
- Quick and clean inspections
- Proven technology with low total cost of ownership
- Accurate, high quality inspections

# Surf-X Array Probes

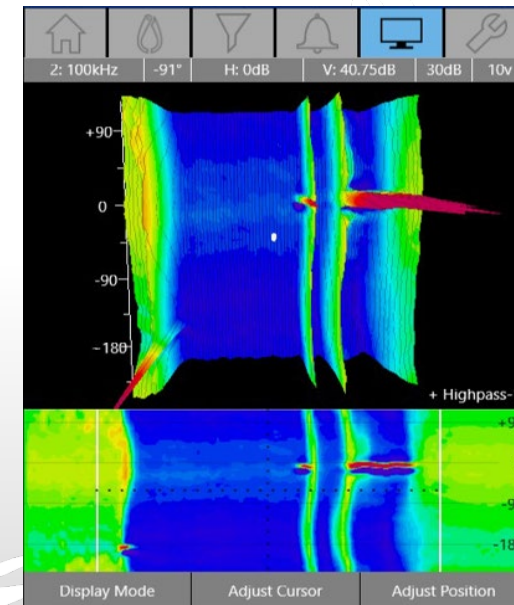
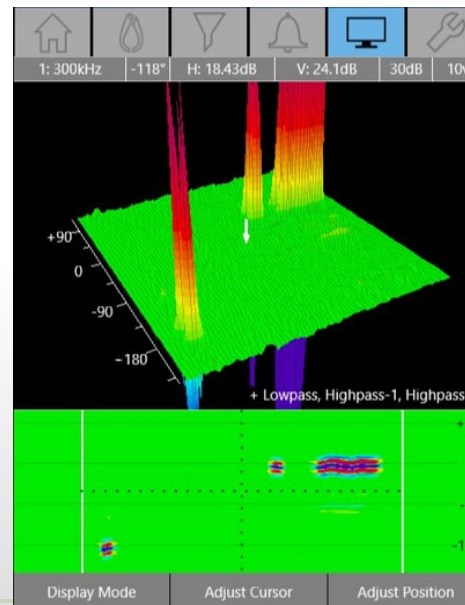
- Modular approach improves value
- Single electronics module supports all MIZ21C array probes
- Detachable encoder
- Each interchangeable coil set has 3 wear surface options



# Embedded MIZ-21C Software



- Full Two Finger Dynamic Touch Control
- Filters for Pencil Probes
- Distance Markers on C-Scan and Waterfall
- I/O Capabilities
- Bolt Hole Clocking
- 1:1 Ratio Lock and Top View
- One and Two Coupon Conductivity
- Mix in All Techniques
- Sweep Measurements
- Save Setups by Technique
- Configure Data Persistence
- Real Time Measurements
- Rotating Scanner RPM
- Automatic Rotate Lift Off
- Multiple languages





# Friction Stir Weld Inspection

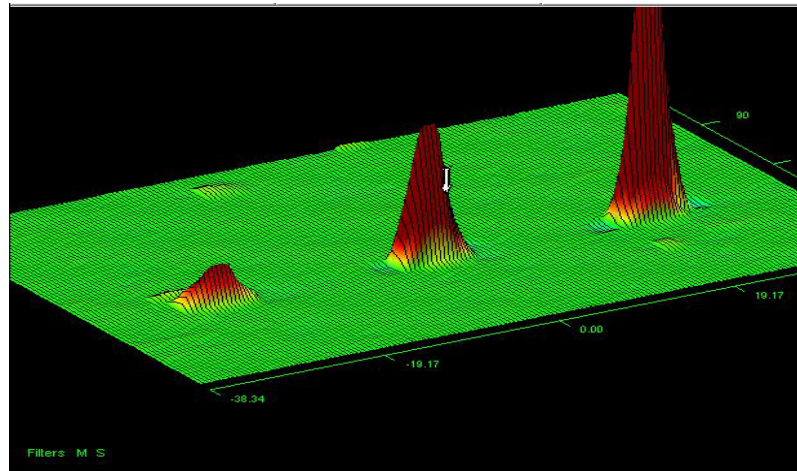
- MIZ-21C Array is ideal solution for surface breaking crack detection in friction stir welds (FSW)
  - Detect and discriminate flaws in any orientation
  - Inspection speeds over 12 in./sec
  - Greater coverage in a single pass
  - Easy to use



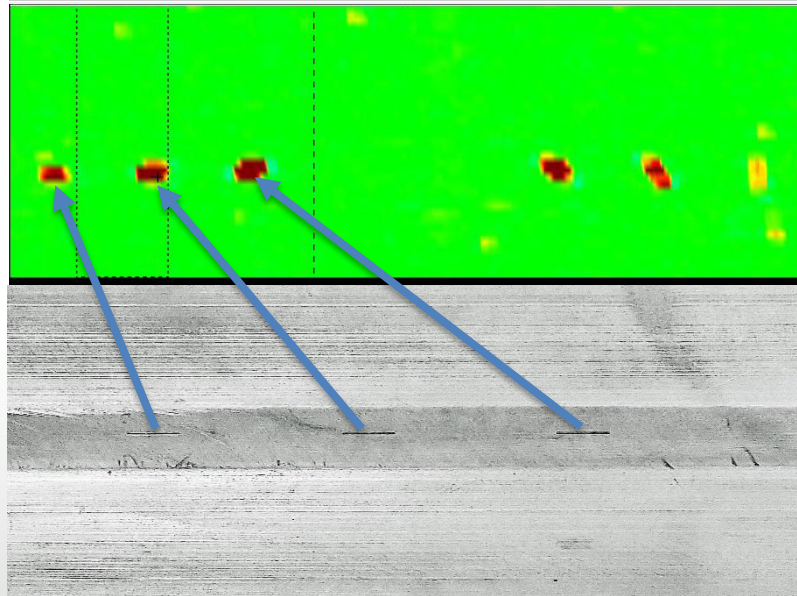


# Friction Stir Weld Inspection

Superior SNR



3 axial flaws of  
varying depth

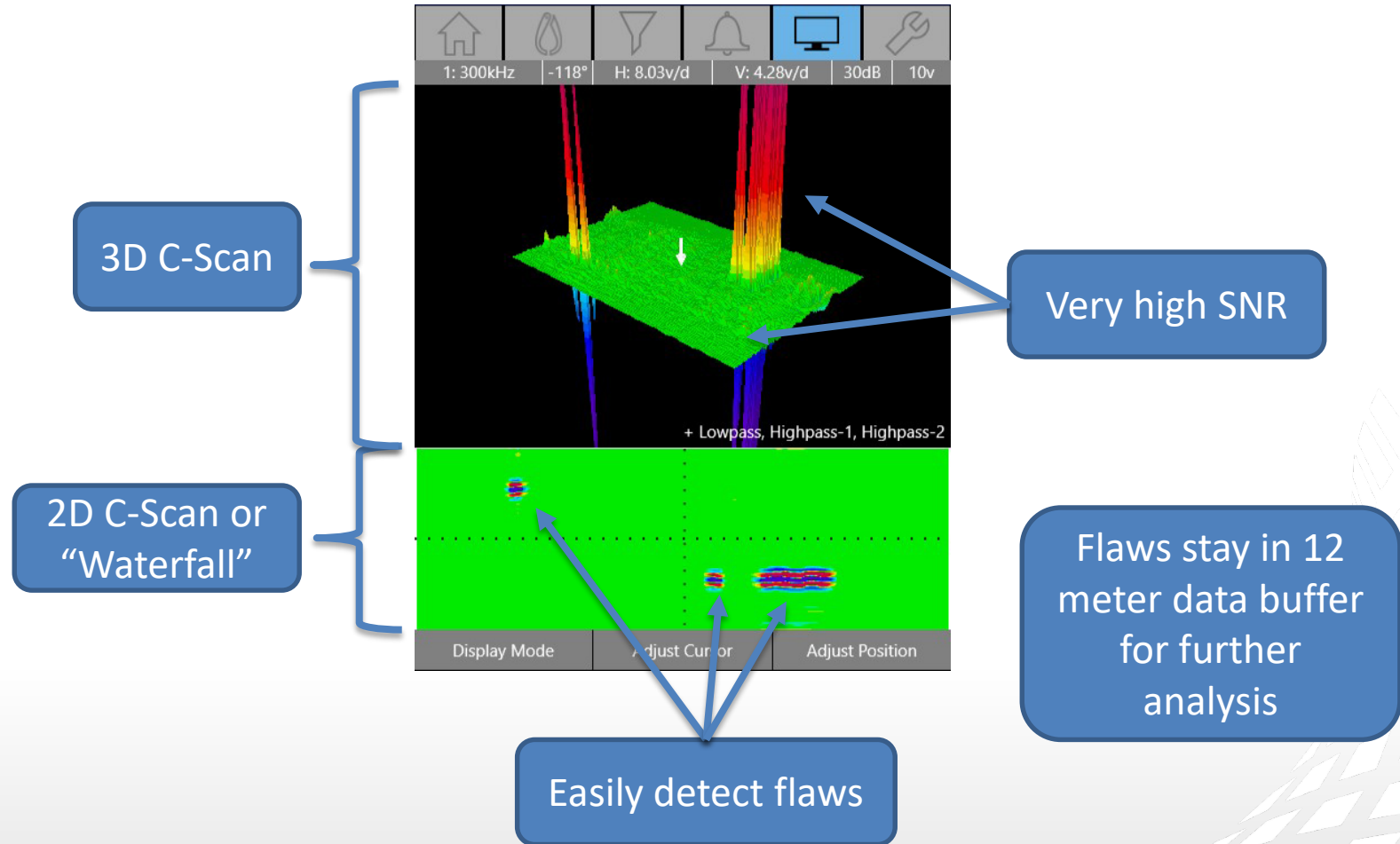


# Bolt Hole Inspections

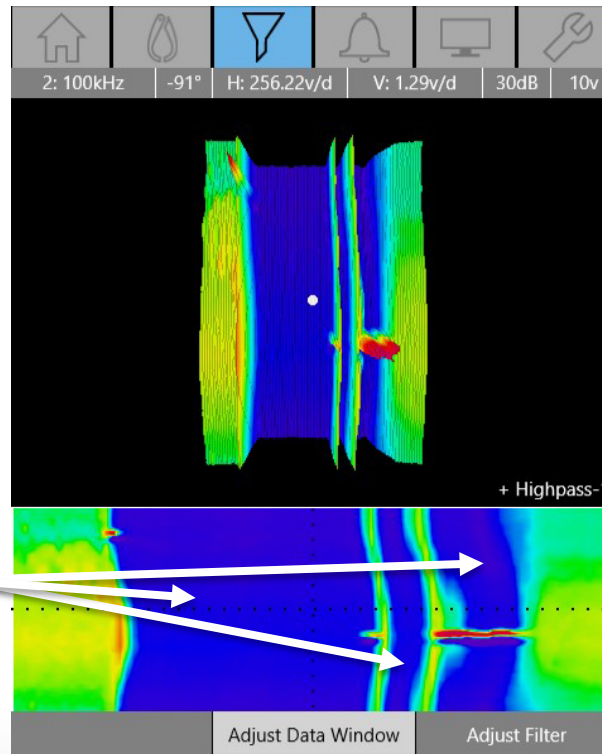


- Elevating bolt hole inspection capabilities with advanced technology originally developed for other industries
- Fast and easy inspection
- Better POD than standard impedance and sweep displays:
  - Color 2D & 3D C-Scan displays from ECA can now be used for bolt hole inspections
  - Superior SNR makes flaws easily identifiable

# Bolt Hole Inspections



# Seeing Layers in Bolt Hole Inspections



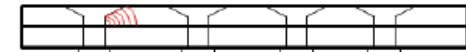
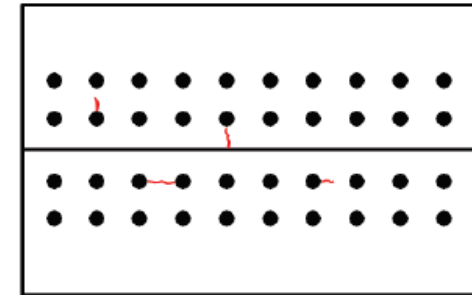
3 layers shown in  
the C-Scan

Easily identify layers

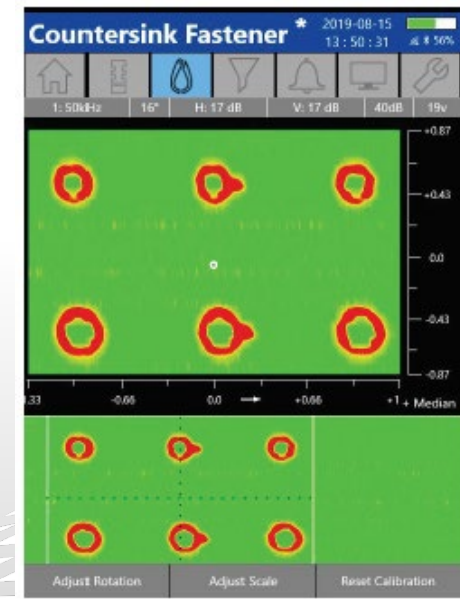
Can see which layer  
the flaw is located

# Inspection around Countersink Fasteners

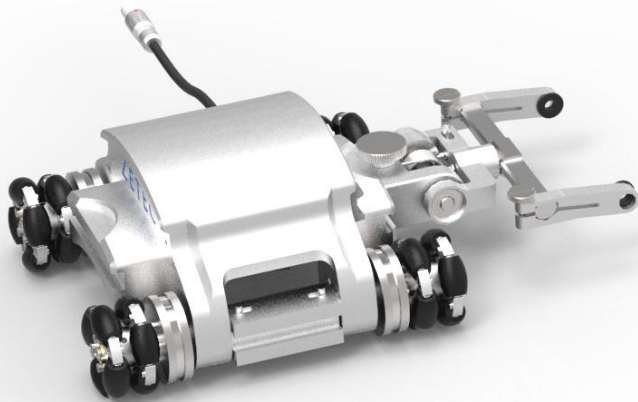
- Zetec offers a solution to reduce inspection time, while increasing the probability of detection (POD) using a Surf-X Flexible Array Probe with a MIZ-21C Handheld Eddy Current Instrument.
- Surface array probes effective across multiple materials and geometries
- Multiple rows of fasteners may be inspected in a single pass
- Much faster than pencil probes and ensures complete coverage of the entire inspection area



Crack Progression --->



## NDT Sweeper



Composite airframes can be damaged during expected lifespan, due to varying type of events such as ramp damage, hailing or other impact sources

These damaged areas need to be assessed to evaluate need for repair

Scarf-repairs must be confirmed with subsequent evaluation to confirm strength of the previously-damaged area

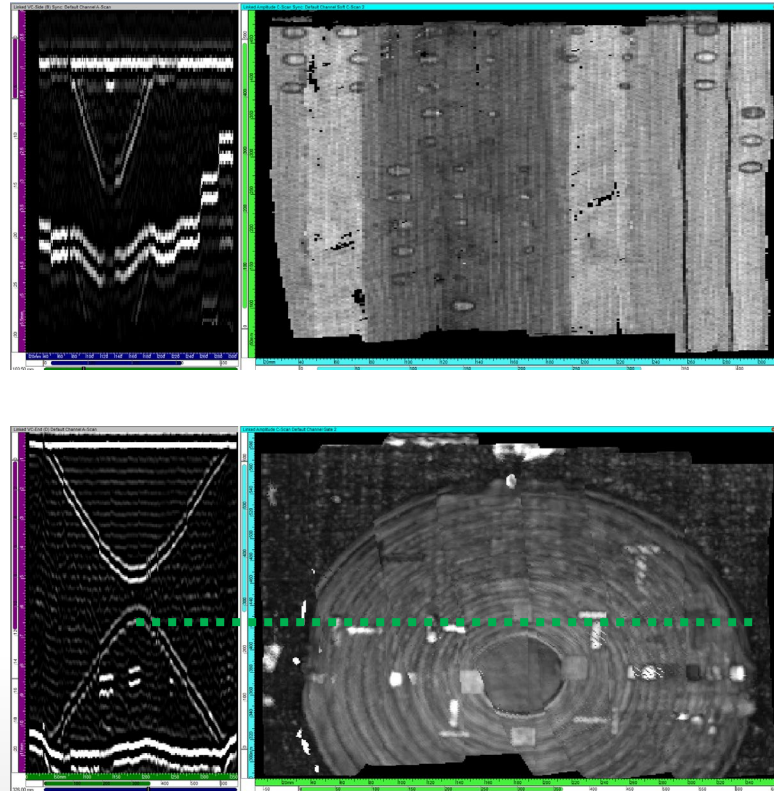
Quick & efficient solution for the assessment of damaged or freshly repaired CFRP surfaces



- Non-marring wheel safe to use on composite component such as CFRP
- Able to scan flat and curved surface
- Support probe and able to encode in raster scan, providing C-Scan mapping of large composite parts
- Versatile probe and wedge support



- Cross section display:
  - Interface signal
  - Scarf edge and depth
  - Flaw
  - Backwall signal
- C-Scan display:
  - Base material
  - Scarf area and boundary
  - Flaw



Thank You