

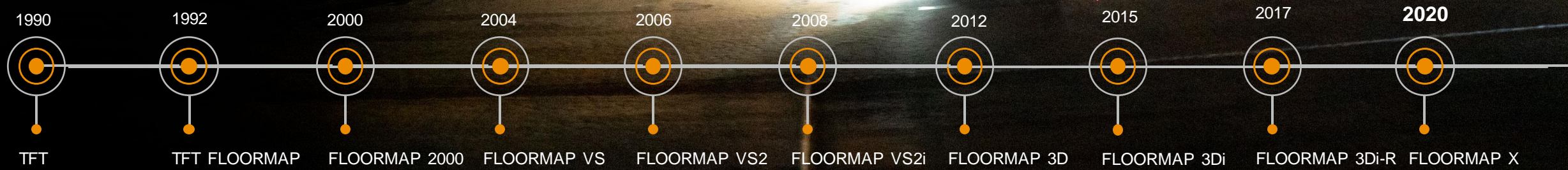


NEXT GENERATION TANK FLOOR SCANNING – INSPECTION RELIABILITY AND PERFORMANCE

Technology Evolution

FLOORMAP X

30 years of
EVOLUTION





*It's not how fast you scan...
It's how well you scan fast!*

- ✓ True MFL Array and STARS technology
- ✓ Unrivalled high-resolution imaging
- ✓ Critical zone coverage
- ✓ High Probability of detection
- ✓ Best in class signal-to-noise ratio
- ✓ Unprecedented Efficiency

System overview

SYSTEM OVERVIEW

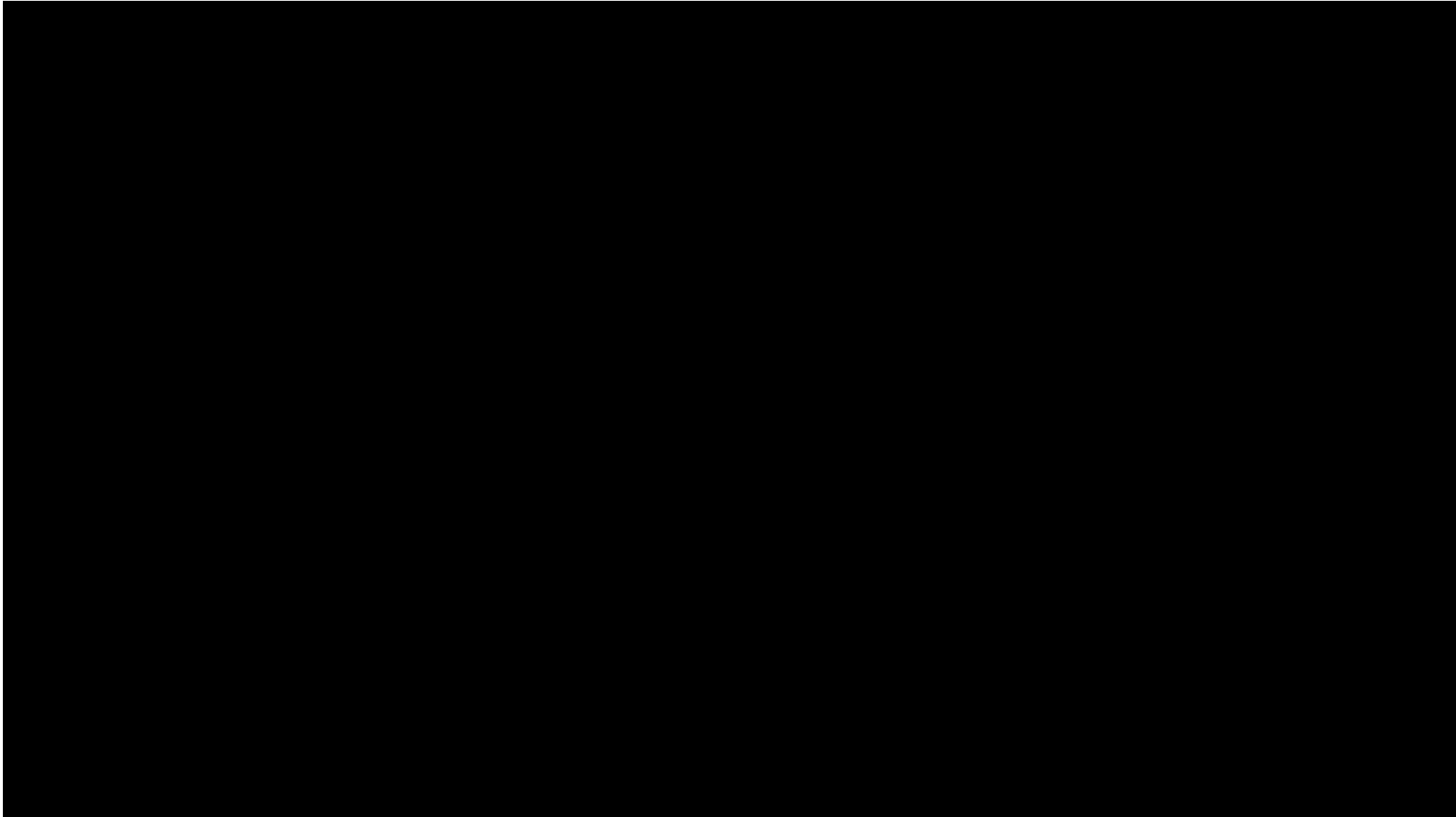


Removeable Tablet– Ruggedized and bespoke



- Finish the MFL Inspection
- Undock tablet
- Perform supplementary NDT
- Update defect listings before leaving the tank

Removeable Tablet – Providing the backbone to paperless



User control – simplicity at your fingertips



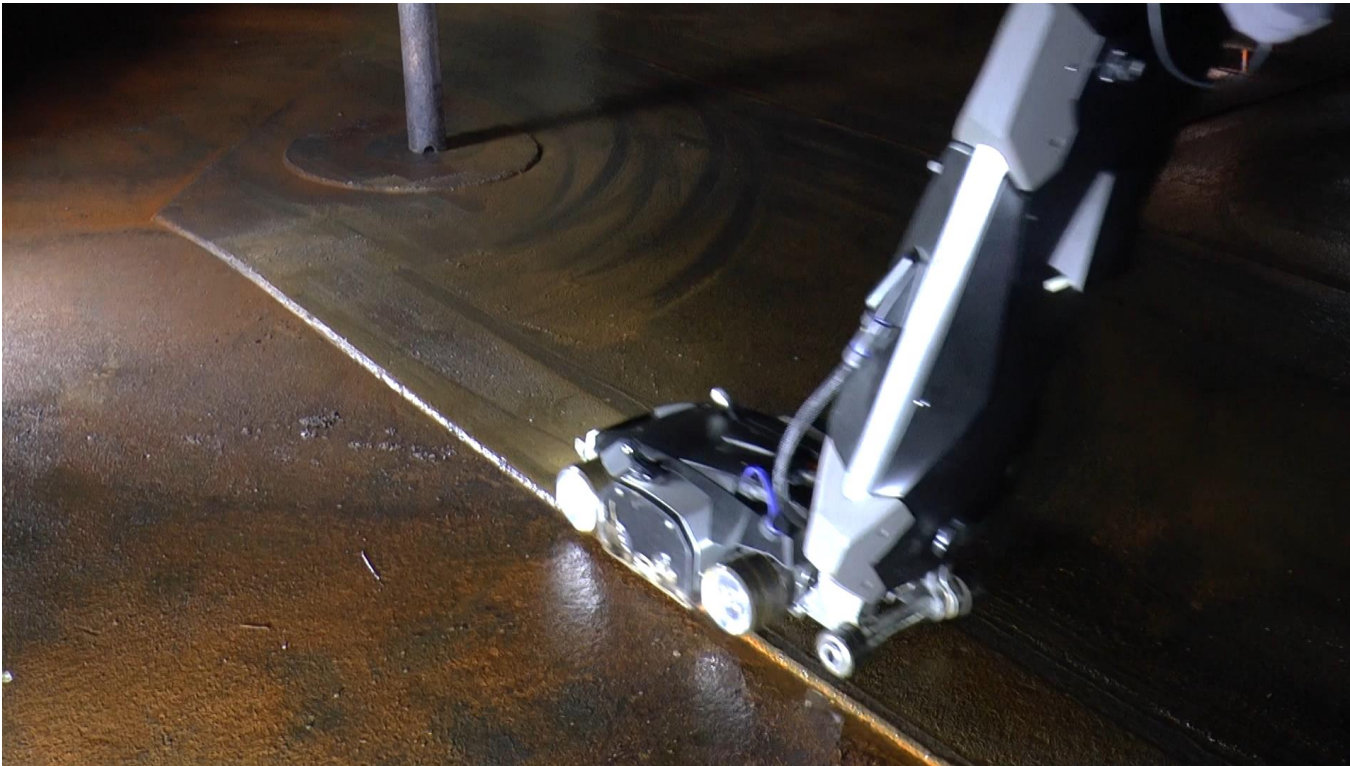
Let the Levers do the work



- Unique lever system for easy break
- Improved dexterity around obstacles
- Increased efficiency for floor coverage



Adjustable sensor height – No terrain left unturned



Adjust magnet bridge height to cope with all eventualities and 'get the job done':

- Undulations
- Patch plates
- Lap joints



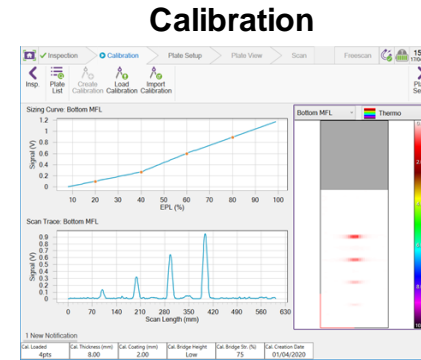
SIMS GO – Making Mapping work for you



Turn Tablet On



Create/load an Inspection



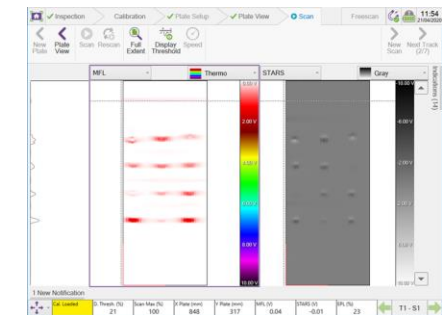
Create/load calibration



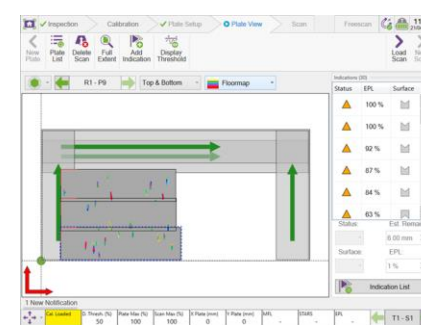
Enter Plate Details



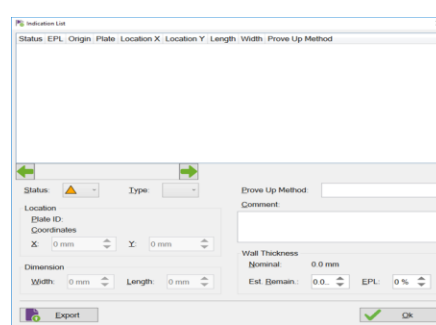
Scan



- See live MFL array and STARS data
- Pause Scan and identify corrosion
- View and edit scan Indication list

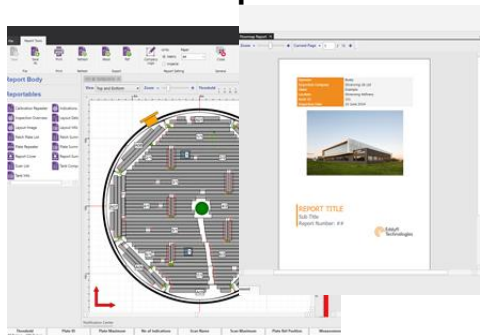


- Analyse full plate
- View and edit automated *plate* Indication list
- Add prove up information if required



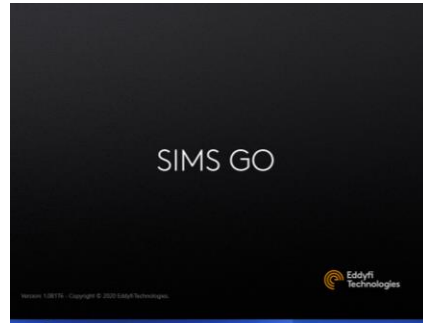
- Use SIMS GO capability to add indications found by other technologies in inaccessible areas

Report



- Export data to SIMS PRO and analyse
- Generate a Report
- Investigate corrosion rates
- Formulate maintenance and repair strategies

SIMS GO – Making Screening work for you

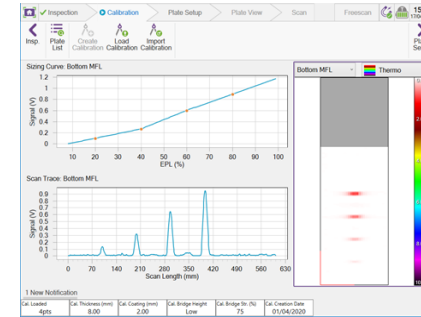


Turn Tablet On



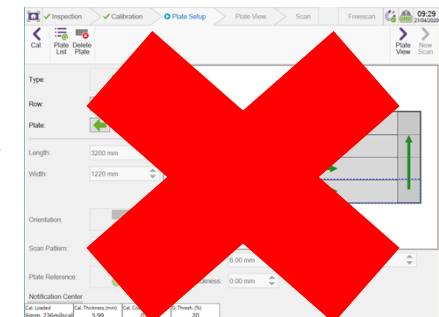
Create an Inspection if starting a new Inspection.
Load and Inspection if continuing an inspection.

Calibration



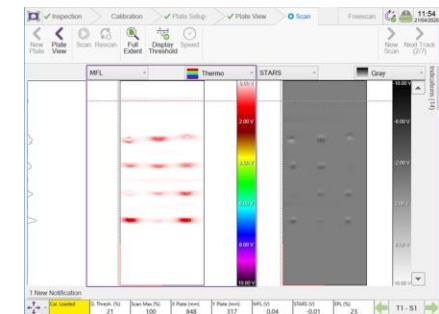
Create a new calibration
Or
Load and verify an existing calibration

Plate Set-Up



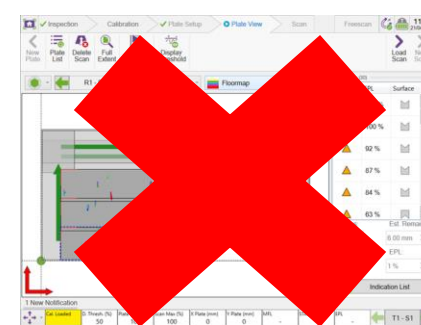
Enter Plate Details for automated tank drawing

Freescan



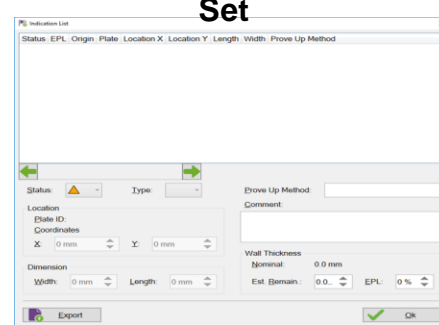
- See live MFL array
- Pause Scan and identify corrosion

Analyse in Plate View



- Analyse full plate
- View and edit automated *plate* Indication list
- Add prove up information if required

Report and Complete Data Set



Use SIMS GO *Add Defect* feature to create Indication List and Report.

Report



- Export data to SIMS PRO and analyse
- Generate a Report
- Investigate corrosion rates
- Formulate maintenance and repair strategies



Battery Power

- NiMH batteries for transport safety
- 3 battery cycle for 24 hour inspection
- Dedicated chamber for spare battery
- Quick swap
- Powers the tablet until undocked



High Flux vs Low Flux

6 mm bottom side defects

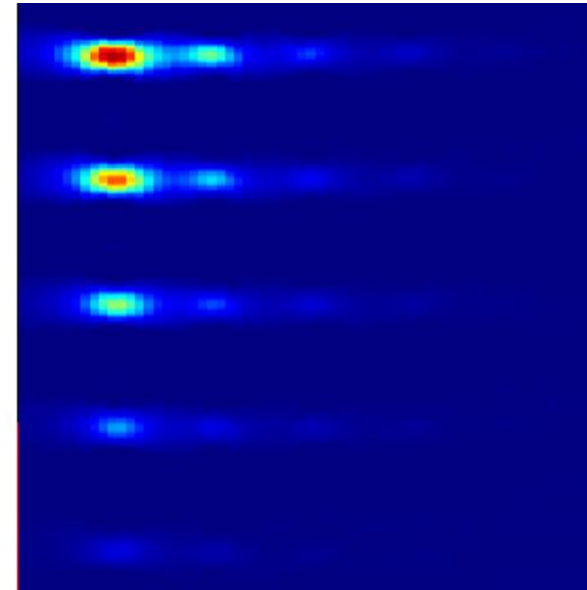
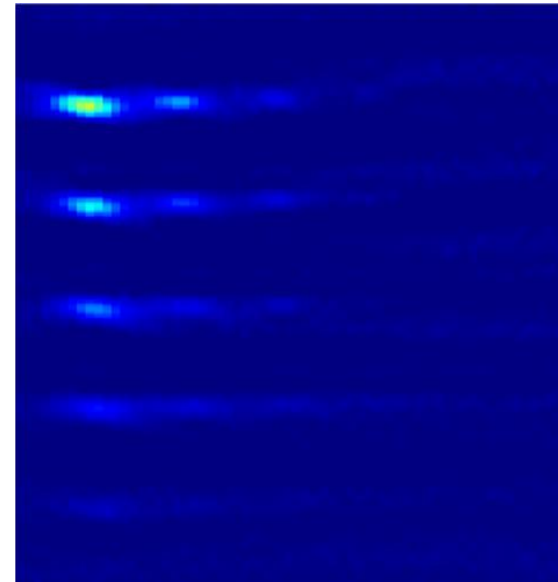
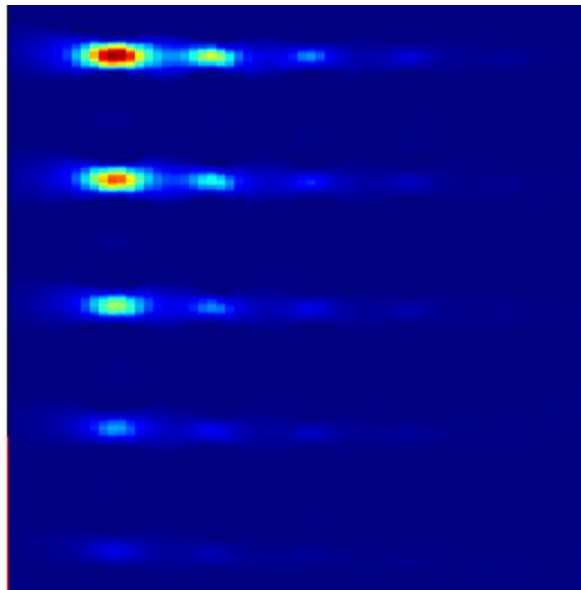
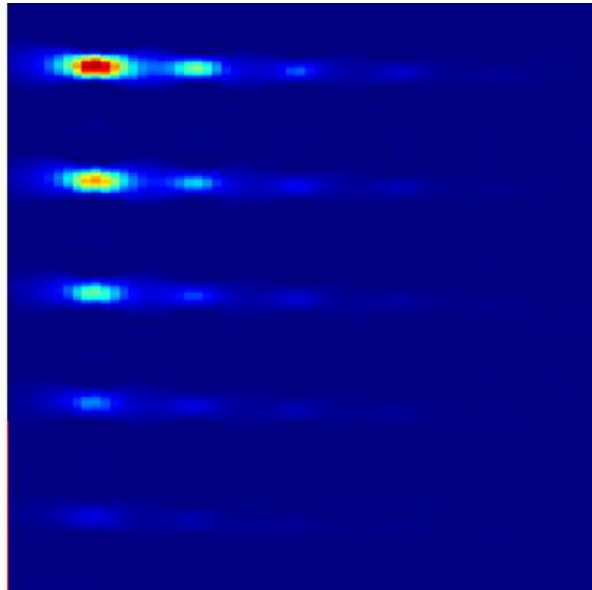
10 mm bottom side defects

Low Flux

High Flux

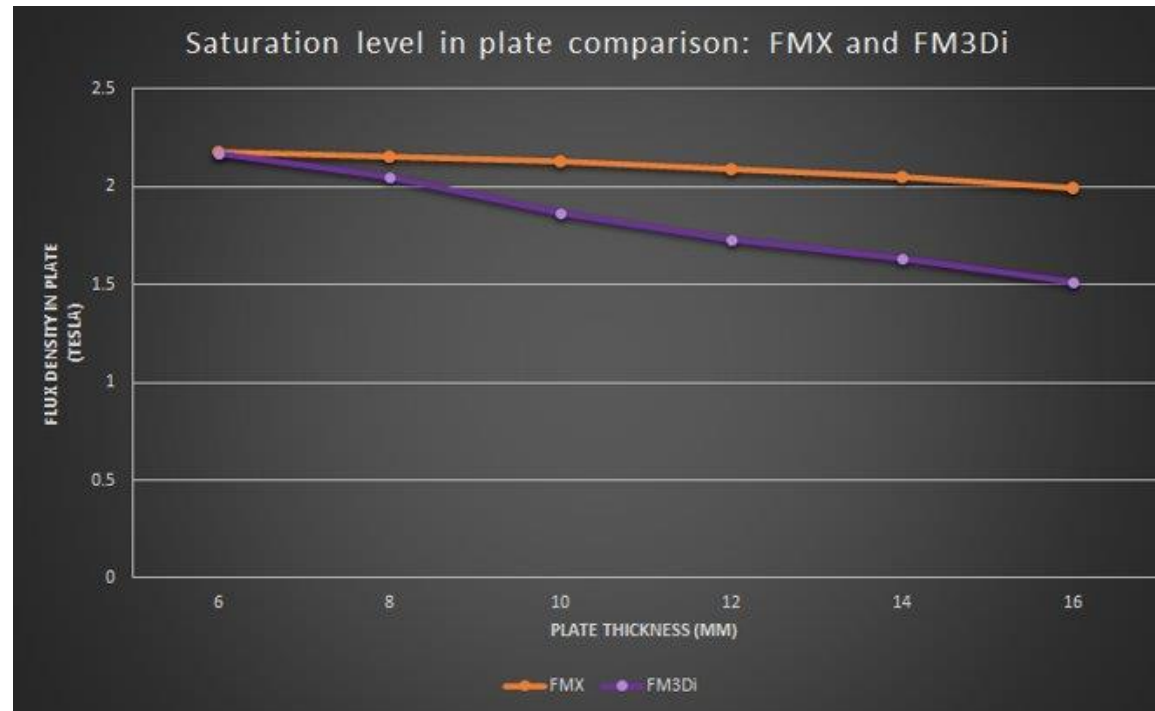
Low Flux

High Flux



Total Optimization

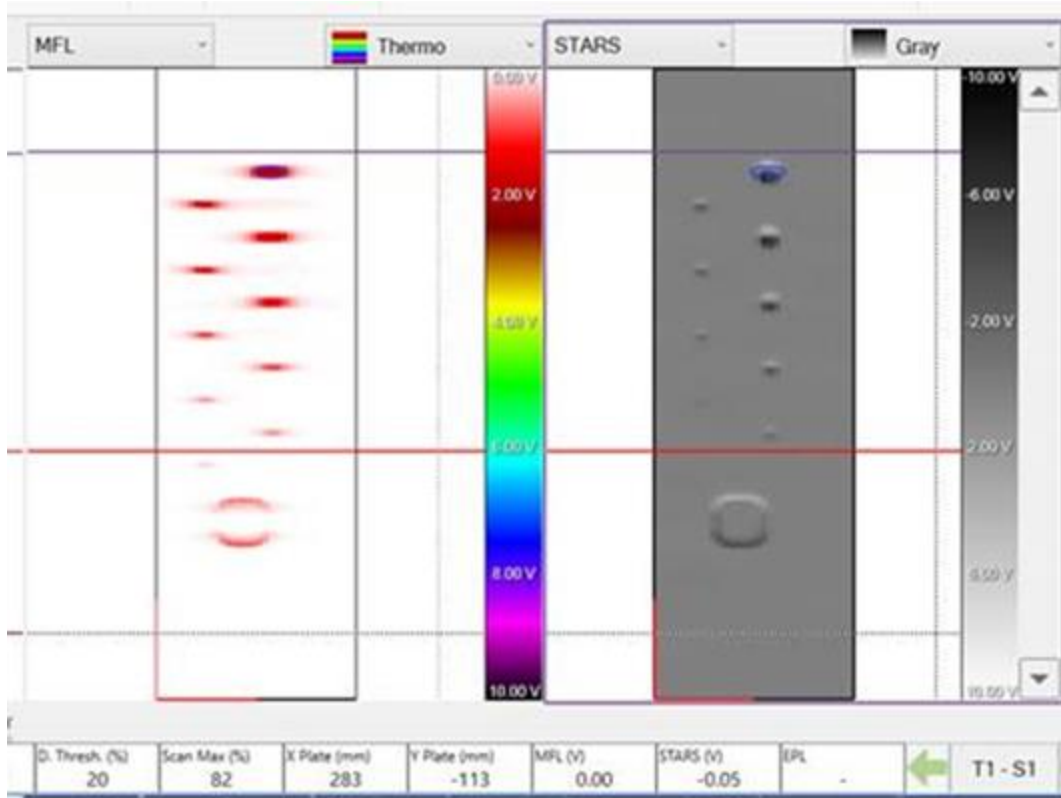
High Flux vs Low Flux

[illegible]

Magnet control – other benefits

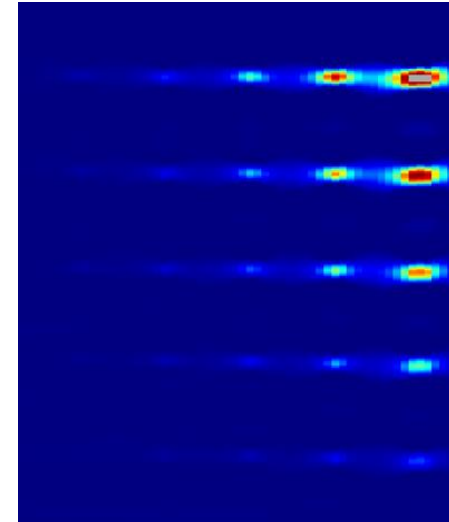


Introducing MFL Array and STARS technology

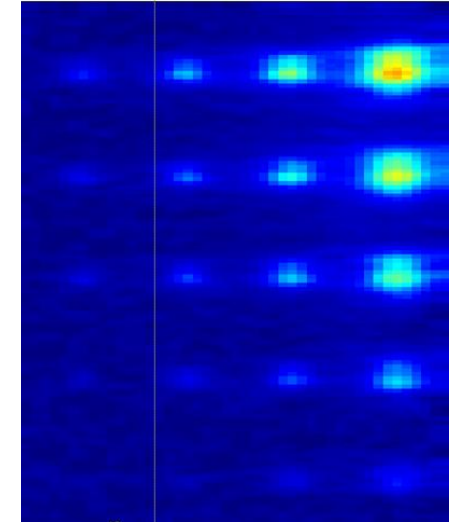


- 128 high definition MFL array sensors
- 64 STARS sensors – for topside/underside discrimination
- Minimum detectability is recorded as 1mm \varnothing X 10%
- Enhanced signal to noise ratio
- Real time view whilst scanning
- Dynamic thresholding

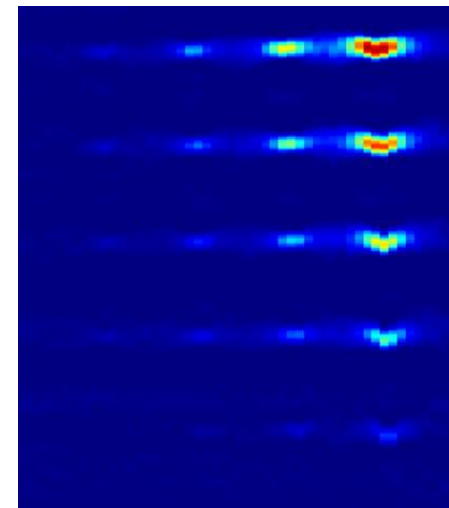
FMX 6mm



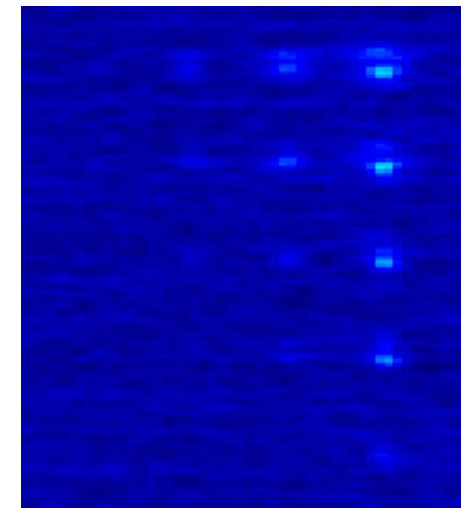
3Di 6mm



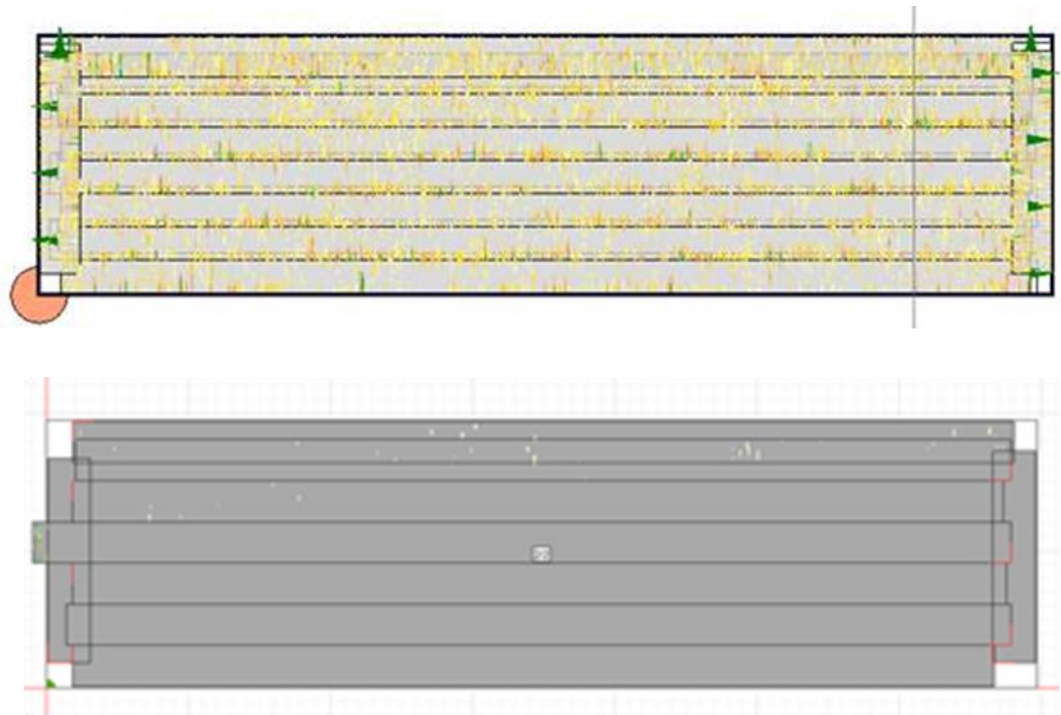
FMX 12mm



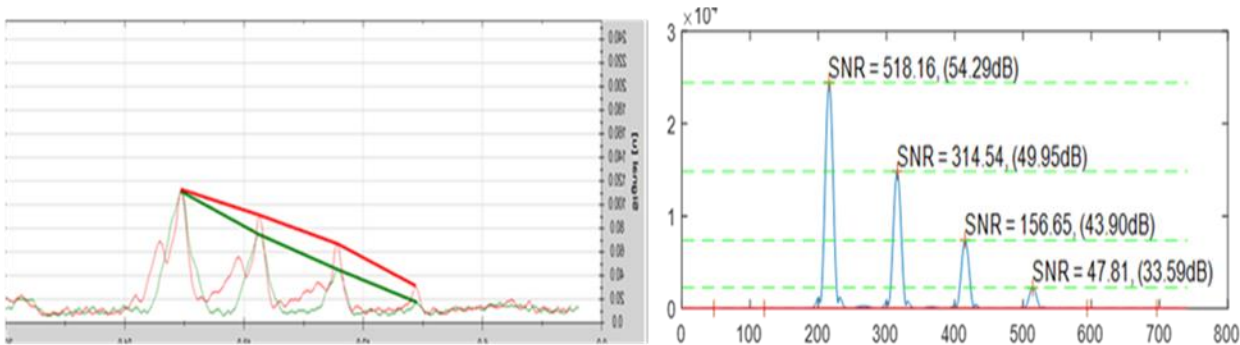
3Di 12mm



IMFL Array – Signal to noise improvements



	Number of False Calls	
Thickness	BEFORE (FM3Di)	Now with (FMX)
6 - 8mm plates	Minimal <5	Minimal <5
10mm plates	Great>50	Minimal <5
≥12mm plates	Extensive >100	Minimal <5



Scanning the critical zone



Control the curve –
manual dial with auto
straightening feature



Critical zone coverage

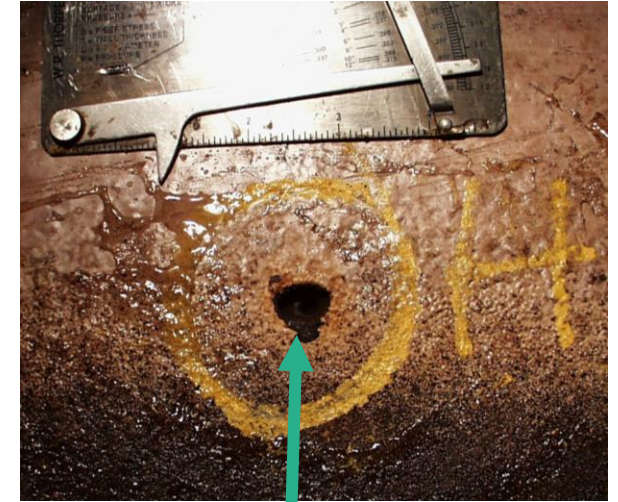
Importance of the Annular Dead Zone Scanning:
Defects won't be missed



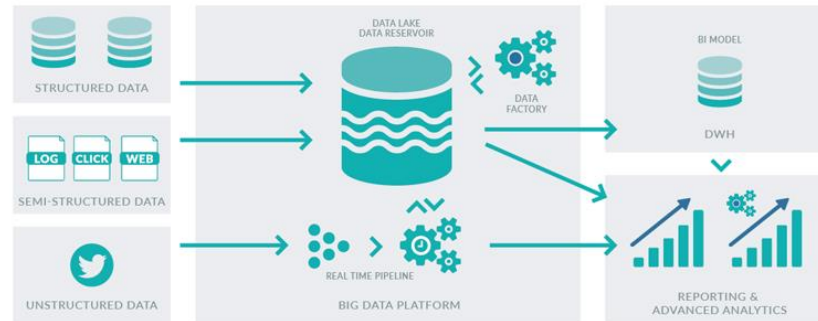
Buncefield disaster – December 2005



Pembrokeshire disaster – July 2011



More data captured = better decisions = extended periodicity



Improved Coverage

Tank CT1 – FloormapX Coverage

Tank Floor Component	Coverage Possible
1. Floorplates: standard without obstructions	~95%
2. Floorplates: with obstructions (piping, support plates, undulations)	~80%
3. Annular Plates	~90%

Improvements are due to:

- **Curved annular scan**
- Reduced profile
- Tilted scanner handle
- Raised bridge for
 - patch and support plates
 - undulations



Light it up!



- Front and rear lighting
- Not set up time
- User control thumb buttons
- 3 levels of intensity
- Topside corrosion

SIMS PRO

Floormap Report - SIMS PRO

File Report Tools

Save Save As Print Word Pdf Refresh Logo Selection Report Logo Report Units Page Setup Close Report

Layout

Details

Asset ID Tank 2

Tank Diameter 22.5 m

Max Patch Plate Size

Width 2.00 m

Length 2.00 m

Type here to enter comments

Reportables

- Calibration Images
- Inspection Overview
- Layout Image
- Layout Indication List
- Layout Note List
- Plate List
- Report Cover
- Scan List
- Tank Info

Index

- Layout
- Layout
- Layout
- Patch
- Plates
- Report
- Tank

View Top and Bottom Threshold 19 Zoom 100

Tank North

Notification Center

Floormap Report

Zoom Current Page 1 / 23

REPORT TITLE

Sub Title

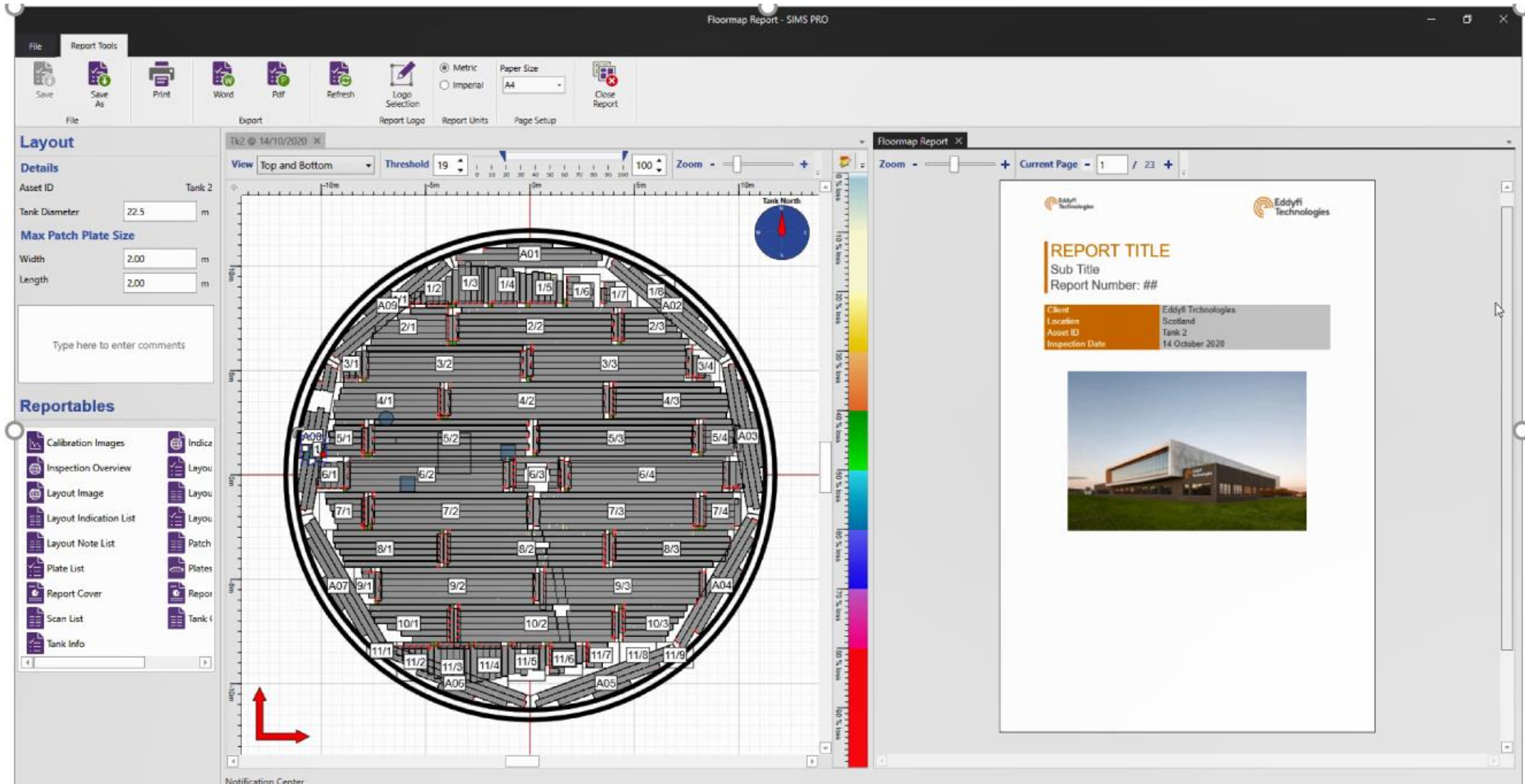
Report Number: ##

Client Eddyfi Technologies

Location Scotland

Asset ID Tank 2

Inspection Date 14 October 2020



Summary of improved reliability:

- 1. Improved Coverage: Complete floor mapping (including the critical zone)***
- 2. Increased Probability of Detection (PoD): Identify defects 50% smaller than previous generation***
- 3. Enhanced Efficiency: Optimized overall inspection***
- 4. Unmatched reporting: Comprehensive, on-the-spot report allow for faster and more confident decision-making***
- 5. Bigger Addressable Market: Versatile solution to address all market needs, virtually no tanks left uninspected***