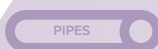


# FLOORMAP3Di

MFL Floor Scanner with STARS Top & Bottom Defect Discrimination  
& MFLi Advanced Defect Analysis



TANKS



PIPES



VESSELS

- > COMPLETE TANK FLOOR MAPPING
- > ENHANCED PROBABILITY OF DETECTION
- > HIGH RESOLUTION SCANNING UP TO 1440 M<sup>2</sup>/DAY
- > FIELD PROVEN DURABILITY & RELIABILITY

# FLOORMAP3Di

## ADVANCED MFL TANK INSPECTION WITH STARS TOP & BOTTOM DEFECT DISCRIMINATION

Silverwing's Floormap3Di with STARS, MFLi (intensity) and Dynamic Cursor is the highest performance Magnetic Flux Leakage (MFL) storage tank inspection system on the market today. Building on over 20 years' experience and the class leading Floormap3D the new system introduces advanced defect sizing and classification tools coupled with STARS top and bottom defect discrimination. Used together these innovative features achieve significant advances in corrosion measurement, with the potential to reduce inspection times and significantly enhance the quality of tank inspection. This enables tank engineers to determine the optimum repair strategy and improve Risk Life Assessment (RLA) and Risk Based Inspection (RBI) programmes.

The Floormap3Di has the highest density of MFL sensors, coupled with advanced signal processing to deliver greater accuracy and probability of detection at maximum efficiency.

### KEY FEATURES

- > 20 years MFL development in over 60 global locations
- > Through coating inspection up to 6 mm including FRP, GRP and SS
- > Full tank floor data recording
- > USB for data transfer
- > Digital calibration for different plate thicknesses
- > 64 channel 256 sensor MFL acquisition for 4.6 x 2 mm scanning resolution
- > Battery powered, no 110/240 v cables required
- > Touch screen computer providing immediate Plate scan view for defect assessment
- > Field proven durability & reliability
- > Motor driven, 0.5 m/s constant scanning speed eliminating API 653 Appendix G operator requirements

### SURFACE PROFILE WITH STARS TECHNOLOGY

The innovative STARS technology (patent pending) adds an additional set of sensors to detect variation in magnetic field strength caused by top side defects, and combines this with traditional MFL indications to identify top or bottom location. The Floormap3Di has a total of 256 sensors, enhancing lateral resolution to detect smaller defects, and reduce sensitivity to defect orientation. The top surface discrimination works effectively through up to 6 mm (1/4") coating, enabling effective tank inspection without coating removal.



## DATA ACQUISITION SOFTWARE

The on-board computer uses touch screen technology and proven user interface for ease of use within the hostile storage tank environment. The system captures all the MFL signals, analyses, and displays the location and severity of the corrosion in real time. The operator can select to view top, bottom or full defect maps, providing instant feedback on tank condition. Plates are defined by shape and size, and the most efficient scan path displayed for the operator to follow. Obstacles such as heater pipe, roof supports and old patch plates are catered for, and displayed as un-scanned areas.





### MFLi VIEW

The Floormap3Di introduces a new defect map based on the intensity of MFL signal response. This defect map is used to highlight areas of corrosion, reduce the effect of spurious indications and most importantly, help to classify defect type. MFLi has been made possible by the industries highest resolution hall-effect sensors and advanced signal processing capabilities of the Floormap3Di.

### DYNAMIC CURSOR

The unique Dynamic Cursor (DC) sizing and verification tool assists in identifying difficult to size defects such as deep pits, bacterial attack and through holes. By using the DC prove-up actions such as pit gauging and ultrasonic measurements can be targeted at the most critical defects, reducing overall inspection time and improving inspection accuracy.

### DIGITAL CALIBRATION

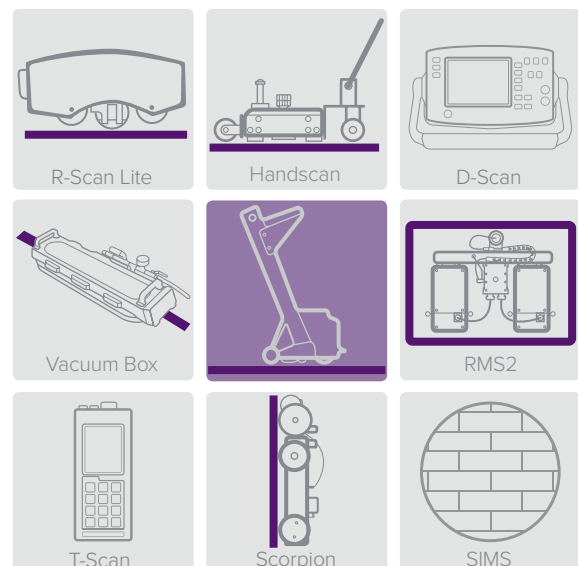
In addition to improved defect sizing the new fully digital calibration system removes the need to adjust the scanner height for different plate thicknesses. The calibration used is stored with each plate scanned, providing traceability and confidence in the data recorded. This greatly reduces the chances of human error and is a real benefit of the system.

### HIGH PRODUCTIVITY AND ACCURACY

The Floormap3Di has a wider sensor scanning head than previous models capable of scanning up to 1440 m<sup>2</sup> per day, and unlike manual "stop on defect" systems, this is irrespective of the number of indications found. The software guided mapping process encourages the most efficient plate coverage, and helps ensure the maximum area is scanned reducing the chance of missed corrosion. The high resolution MFL sensor head coupled with advanced signal processing, significantly improves corrosion detectability and sizing over previous generation systems. Typically on a 1/4" (6 mm) plate, defects as small as 20% (as specified by API 653) have a 100% probability of detection, with sizing accuracy better than +/- 5%. The system will also detect pipe type defects and through holes down 1/8" to (3 mm), with the unique raw MFL and STARS data views aiding in characterization of defect types.

## THE SILVERWING SYSTEM

Silverwing produce a full range of equipment for corrosion inspection of storage tanks, including floor plate, wall and roof structures. The product range includes MFL mapping and manual systems, ultrasonic crawlers for thickness measurement, and vacuum boxes for weld inspection. By supplying a complete range we can offer unrivalled support, and ensure the highest quality inspection in the most efficient way. All our products are field proven by our in house teams and used by the most respected global inspection companies. For a complete overview contact our technical sales team.

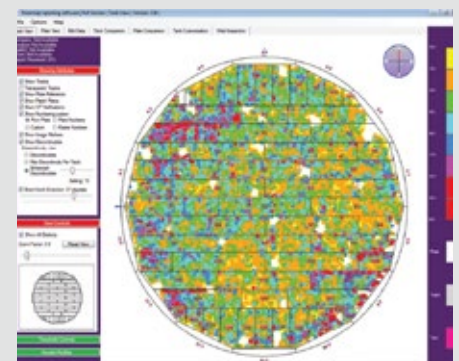


For more information on Silverwing Systems please visit our web site: [www.silverwingndt.com](http://www.silverwingndt.com)

## REPORTING SOFTWARE

The Floormap3Di is supported by the SIMS reporting suite which automatically builds a CAD layout of the tank floor from the data file. SIMS provides the most powerful and efficient means to create high quality reports on tank condition, and archiving of inspection results for traceability.

Additional data from visual, ultrasonic, vacuum box, magnetic particle inspection or even PDF's can be added to the report, generating a full fingerprint of the tank floor including the annular plates. An innovative feature of the software allows subsequent inspection data to be overlaid and corrosion growth assessed as part of RLA/ RBI programme. See separate brochure for full details.



# TECHNICAL SPECIFICATION

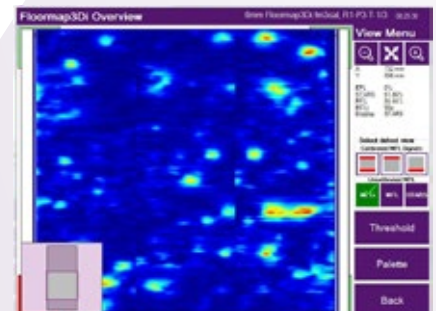
Patent Pending (EU: GB105193.5, GB1110889.1, GB1109371.3 and USA: 13175440)	
Principle of operation:	Magnetic Flux Leakage & Magnetic Field Reluctance
Detection:	256 Hall Effect sensors, 64 channels
Scan width:	300 mm (12")
Maximum single scan length:	15 metres (50 feet)
Position accuracy:	+/- 3 mm (0.11") or (+/- 0.04%)
Un-scanned area:	10 mm (0.4") from plate weld, 160 x 160 mm (6.3 x 6.3") corner dead zone
Method of propulsion:	DC motor
Speed:	0.5 m/sec (19.6" /sec)
Thickness range:	Maximum 12.5 mm (1/2") (automated sizing mode)
Test through coatings:	Yes if non magnetic
Maximum coating thickness:	6 mm (1/4") on 6 mm (1/4") plate, 4 mm (5/32") on 10 mm (3/8") plate
Top and bottom discrimination:	Yes, STARS system
Defect Accuracy:	+/- 5% on 20 mm ball type or API 653 type defect
Max sensitivity:	20% material loss (ball type) under floor and top surface
Data storage:	Yes, internal SSD, transfer via USB
Real time analysis:	Defect size and X/Y position, plate view, top/bottom/MFL/STARS view
Supported plate types:	Rectangle, annular, sketch
Scan overlap:	0 to 50 mm (2") with transparent tracks to show all defects
Inspection Summary:	Number of plates, percentage complete, quick link to plate view
Power requirements:	Includes 4 x 12v batteries and 3 chargers for continuous use
Transit case:	Meets IATA requirements for transporting magnetisable material
Operating weight:	57.5 kg (126 lb)
System Software:	Field updatable
SIMS Reporting Suite:	Full version – 3 user license included. Read only version – unlimited Operating system requirement – Windows XP, Vista, 7 or 8
Training:	4 days Silverwing based training and examination included.
<b>Options</b>	
Standard Reference Plates:	6 mm – Part No: FMCP30 8 mm – Part No: FMCP28 10 mm – Part No: FMCP29 12 mm – Part No: FMCP31
API 653 Reference Plates	1/4" - FMCPAPI-1/4" 3/8" - FMCPAPI-3/8" 1/2" - FMCPAPI- 1/2"
Pre-configured Reporting Laptop:	Windows loaded with SIMS reporting suite
Additional Software Licenses:	Bundle of 3 additional user licenses



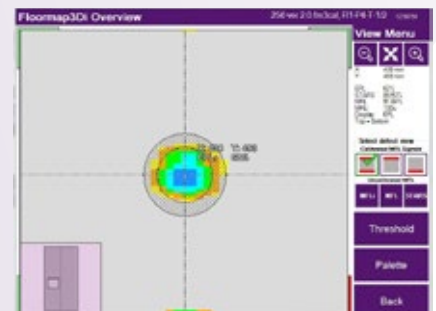
STARS TOP / BOTTOM IDENTIFIER



CALIBRATED VIEW



MFLi VIEW



DYNAMIC CURSOR

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