



PAPERLESS TANK INSPECTION REPORTING

When making remaining life decisions for assets within the oil and gas industry, integrity engineers understand the importance of keeping aboveground storage tanks online. Non-destructive testing is carried out during turnarounds which typically occur every five to 10 years with the goal of providing sufficient evidence for continued operation. Techniques such as Magnetic Flux Leakage, or MFL, may be used to assess tank floors for time-dependent damage mechanisms like corrosion. Beyond gathering

the data required for fitness-for-service assessments to help prevent accidental leaks and avoid costly decontamination, tank inspection is also required for operating license and insurance purposes. When interpreting storage tank inspection findings to ascertain the continued operation of this asset seeing particularly high demand at a global level, you need to be confident not only in the inspection acquisition data but also in your analysis tools.

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THE CHALLENGE

Paper reporting is time consuming, fallible, hard to compare, and subject to the human factor impacting overall storage tank inspection data integrity.

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THE SOLUTION

Innovative software platform combines reliable acquisition data with automated, comprehensive digital inspection report functionality that includes assisted defect recognition at a given threshold.

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THE BENEFITS

Extended inspection intervals for in-service tanks is possible thanks to earlier detection, better decision making and data confidence with auditable record.

The Challenge

The largest and most vulnerable element of a storage tank is the tank floor, and detection scanners are often used to map this area for defects. With the industry still in its infancy of the digital transformation, operator dependent systems introduce the human factor which is a liability for inspection data integrity. It is common practice for technicians to manually record any indications and reproduce a digital version used for the final report. In addition, any prove-up of indications is also recorded

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by pen and paper and later entered into a digital file. The time required is cumbersome, and without a formal template, it is difficult to compare the subjective inspection results. This puts a burden on the recorder to ensure that a sheet of paper is not missed, handwriting not misinterpreted, nor typos made. These actions directly impact the integrity of the final inspection report which could put the health of the storage tank in jeopardy.

The Solution

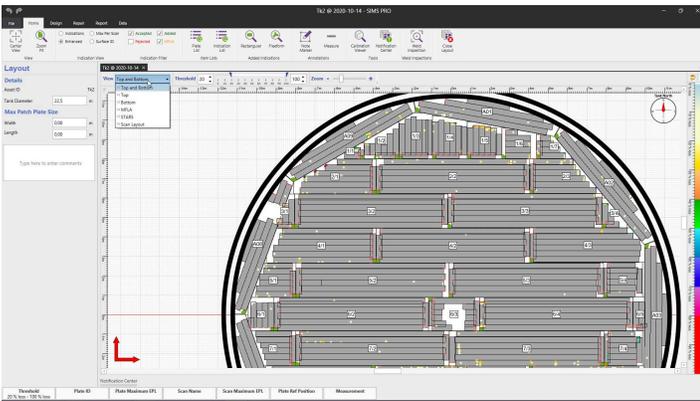
An advanced multi-technology MFL array tank floor inspection instrument is now commercially available with a software platform combining data analysis with reporting to produce comprehensive digital inspection reports. The human factor of data handling is removed with the operator independent system able to detect and characterize indications with as low as 10 percent material loss. The removable tablet displays high-resolution mapping views including detailed color-coded severity maps and full resolution MFL and proprietary Surface Topology Airgap Reluctance Sensors, or STARS, data views with true metal loss values across the entire tank. Valuable for an inspector to view in real-time, all inspection data is easily transferred onto USB storage with a single click for offline viewing, analysis, and reporting.

The software automatically generates the tank floor layout along with a fully automated indication list which can be viewed with multiple data layer options. Smart tools allow full interaction with the recorded information which seamlessly combines the tank floor scanner data with other inspection results. In addition, tank

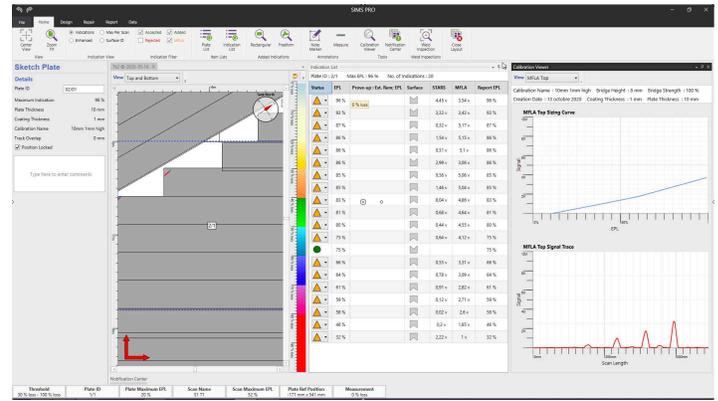
components can be added to the tank design layout to represent the internal features and obstructions. Creating a list of repairs is quick and easy with the ability to drag and drop repair plate design features on the visual guide.

The final output can be an EEMUA and API compliant report, based on a fully customizable template that can be standardized for global locations and easily compared over time for clear decisions. This software offers the first truly paperless reporting strategy to the industry with a seamless interface that delivers a final inspection report with no pen required.

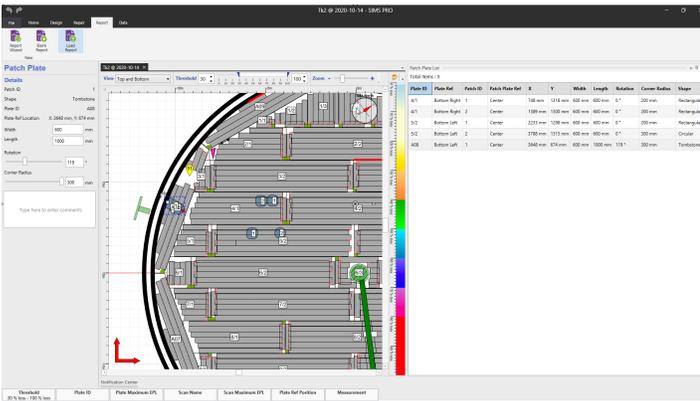
Eddyfi Technologies Floormap®X is the only MFL array tank floor scanner with such high productivity rates. What used to take 15 minutes for bottom-side follow-ups now takes a mere five minutes. Paired with the embedded SIMS™ PRO software, it is the leading solution to deliver complete tank floor mapping reports quickly.



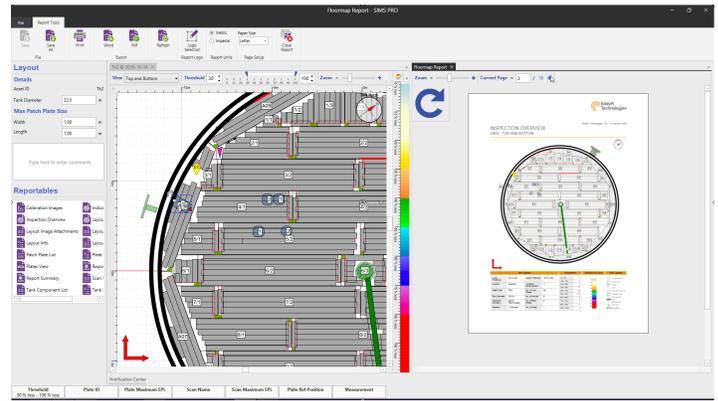
SIMS PRO Data Views



Fully Automated Indication List



Tank Design and Repair Planning



Customizable, Consistent Reports

The Benefits

The offline software package provides engineers with access to the storage tank much like a digital twin with data including calibration traces to ensure traceability, repeatability, and inspection confidence. The powerful software offers high-resolution mapping images that provide an estimated percentage that can be filtered based on indication status and threshold levels related to corrosion rates and remaining life calculations.

With the tank floor scanner capable of detecting and sizing features with as little as 10 percent metal loss and the appropriate repair strategies in place, it is possible to get a next in-service interval of 20 to 25 years. This early detection and better risk-based assessment can save asset owners millions of dollars with extended inspection intervals, ultimately keeping stakeholders and the assets themselves operating at maximum efficiency.