

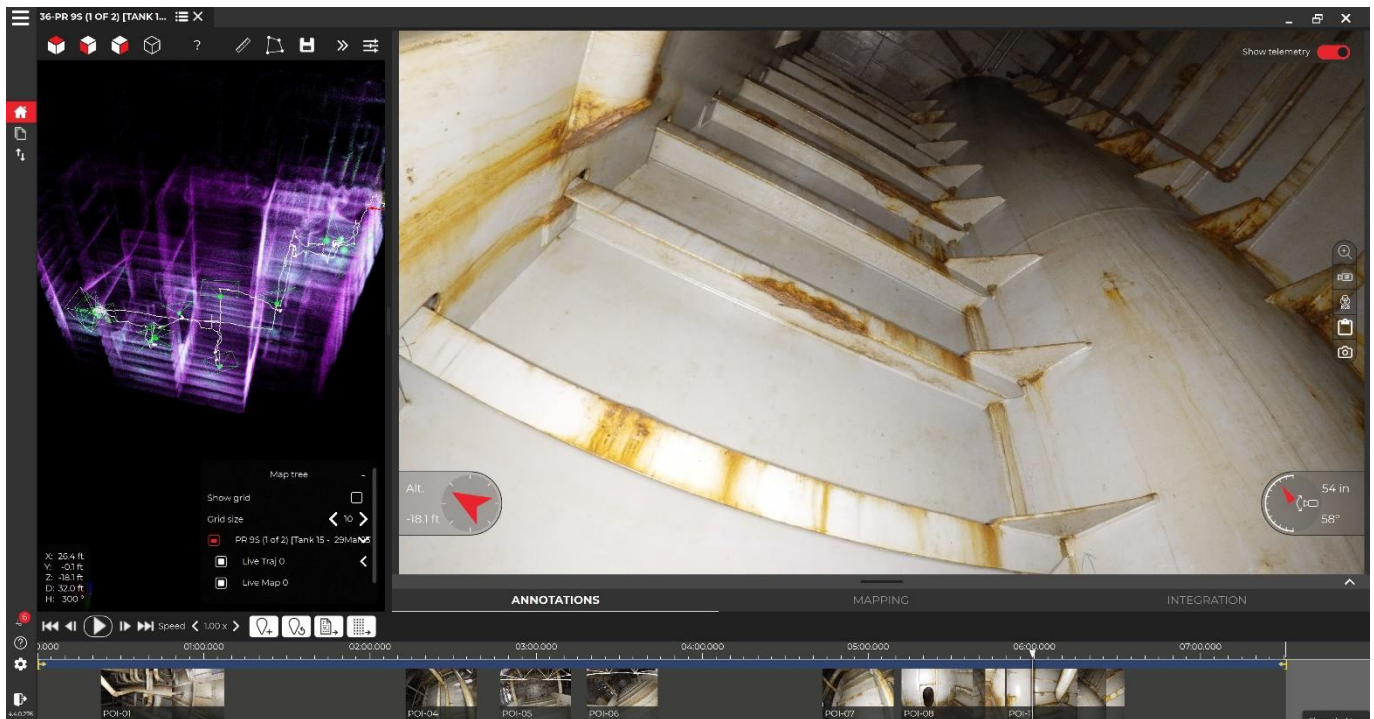
The Future of Tank Inspections

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Zentech Incorporated, headquartered in Houston, Texas, USA, is at the forefront of innovation in a rapidly evolving world where efficiency and life-safety drive progress. Zentech is revolutionizing inspections by challenging conventional practices and introducing advanced techniques for enhanced safety.

Through their cutting-edge Zentech Extended Reality (ZXR) platform, they have incorporated unmanned aerial vehicle (UAV) drones to conduct tank inspections more efficiently and securely. Leveraging the state-of-the-art Flyability Elios 3 confined space drone, the ZXR Team can access tanks without the need for human entry, scaffolding, lighting, or atmospheric testing. This advanced technology enables them to capture high-resolution 4K videos, photos, generate 3D point-cloud models, 2D CAD-based drawings, and perform thermal imaging. Regardless of the tank's dimensions, whether it is a 1.8m double bottom or a full-size preload tank spanning the vessel's hull height, the system can capture accurate data.

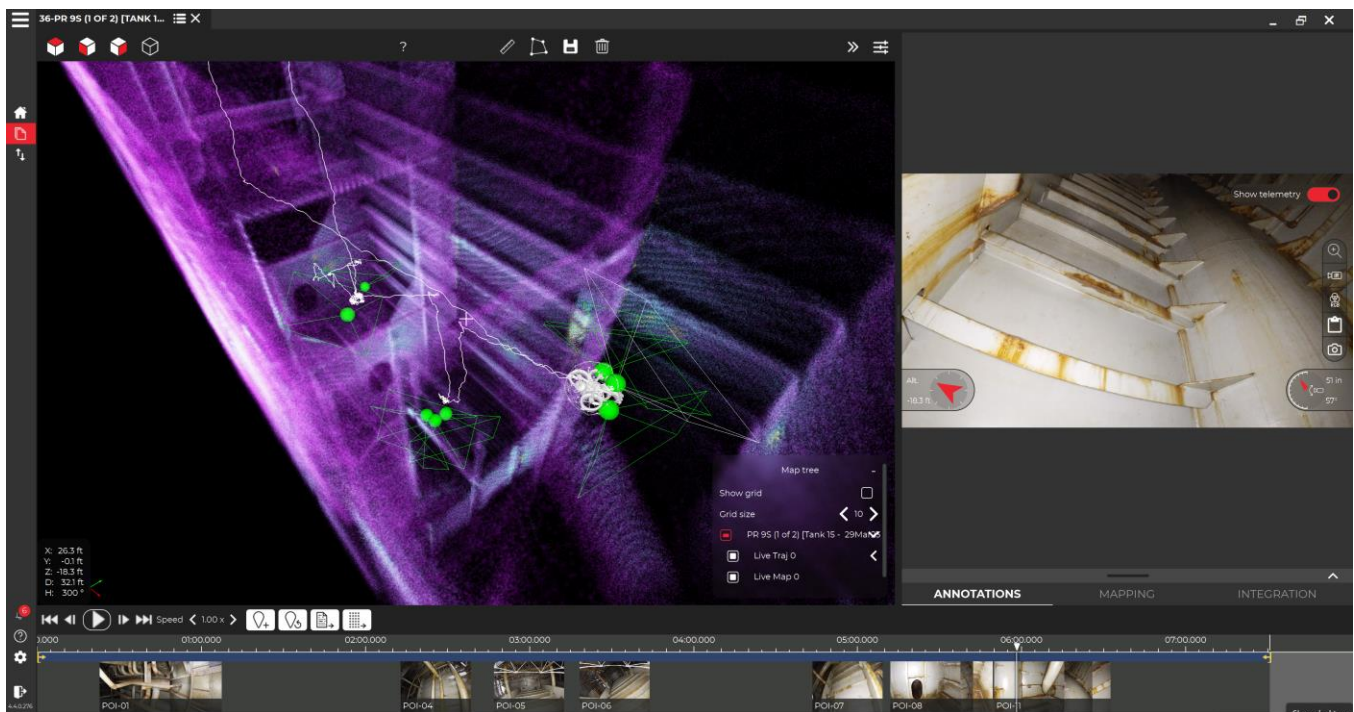


Left Side of Screen: 3D Point Cloud generated during capture with Flight Path and POIs (Points of Interest notated). Right Side of Screen: 4K Video feed with no additional lighting other than onboard lighting.

The fundamental feature to highlight is the elimination of human entry into these spaces. This visual-based inspection tool enables comprehensive tank assessment while removing potential life-safety risks. Whether it is a roustabout or a Class-Inspector, individuals no longer need to enter the tank until work commences or further examinations are required. Ravi Maini, Director of Operations and ZXR Team Manager, with nearly two decades of firefighting experience, emphasizes the paramount importance of life safety, "With our solution, we eliminate risks for individuals that would otherwise need to enter these spaces, ultimately saving lives, time, and costs."

Another key feature to highlight is the efficiency of capture. In a recent project, the ZXR Team successfully captured 31 tanks within a mere 2.5 days. This achievement not only minimized vessel downtime but also exceeded client expectations by enabling visual inspections and facilitating effective planning for the vessel's upcoming 5-year survey by Class Society. This efficient tank inspection process only required the two-person ZXR Team and a single roustabout to open and close each tank's manhole. Detailed reports provided to the client highlighted Points of Interest (POI) marked with low, medium, high, and critical notations/recommendations. These POIs guide the client's attention, while the entire flight for each tank is submitted as a comprehensive deliverable, allowing clients to interpret the data at their own pace.

Image quality and its applicability to various use-cases are among the notable features of our technology. Our system ensures exceptional image quality with 4K video and imagery, enhanced by the illumination of up to 10,000 lumens of light. This combination guarantees the production of high-quality graphics as the sole deliverable. In our comprehensive reports, photos of Points of Interest (POI) are time-stamped, allowing for easy reference within the corresponding video footage. Furthermore, the precise location of each image within the 3D point cloud is indicated. It is worth noting that the captured 3D point cloud enables accurate measurements with a precision of +/- 2cm. This level of accuracy is consistently maintained when the point cloud is integrated into CAD-based software, ensuring reliable and precise data for further analysis and utilization.



Left Side of Screen: 3D Point Cloud showing position of camera within the model, camera angle and elevation within tank. Right Side of Screen: Photo capture within video of specific POI.

Traditionally, tank inspections have been arduous endeavors, involving scaffolding, confined space permits, and uncomfortable working conditions in poorly ventilated and humid areas. Neither roustabouts nor inspectors enjoy entering these spaces. However, Zentech ZXR is transforming the landscape by offering innovative solutions and ushering in a new era that replaces old practices.

The future is HERE

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