

VILLARI | Case Study



Context

In the dynamic realm of harbor and steel industry operations, the lifespan of a steel crane is a critical factor. Typically lasting between 20 to 45 years, a substantial number of cranes find themselves in the “end-of-lifetime” (“EOL”) stage or beyond. Aging assets face the challenge of cracks appearing due to steel fatigue, resulting in costly inspections, maintenance, and downtime.



The Challenge:

A prominent Terminal operator in Europe grappled with this exact issue. Seven large STS Cranes, all beyond their EOL stage, required quarterly inspections, that would lead to a major inspection cost of upwards of €250.000 annually. The frequent downtime that would be incurred during inspections added to the financial strain.



Villari's Solution:

Collaborating with a Partner company, Villari proposed a groundbreaking solution that combines IoT technology and expertise. Following a comprehensive single inspection for each crane, our state-of-the-art RedFox v2 fatigue detection sensors were strategically deployed across the seven cranes. These sensors conduct material quality measurements at nearly 500 critical locations, continuously throughout the year.



Transformation and Results:

The implementation of RedFox v2 sensors ushered in a new era for the terminal operator. A continuous stream of real-time data from previously flagged assets provides instant alerts when cracks start to develop. The total inspection and maintenance costs are reduced by more than 40% annually. Additionally, the EOL for each asset could now be precisely assessed – and increased – through the valuable data acquired.



Conclusion:

Villari and Partner's innovative approach not only addressed the immediate challenges faced by the Terminal operator, but also paved the way for a more efficient and cost-effective future in crane maintenance. This case study exemplifies how proactive, data-driven solutions can revolutionize the management of aging assets; ensuring longevity and reliability in crucial industrial operations.

Key Numbers



Installation time/Sensor



Measurements Per Year/Sensor



Maximum Reaction Time



Reduction in Inspection & Maintenance Costs