



## CASE STUDY

# Extend the lifetime of aging assets with **smart monitoring**

How Ertsoverslagbedrijf Europoort (Thyssenkrupp) gained close to a month of uptime, doubled inspection accuracy and avoided unscheduled repairs using continuous fatigue monitoring.

# Context

Bulk material handling operations at port facilities demand reliable, heavy-duty crane systems that operate continuously under extreme loads. EECV, part of Thyssenkrupp Steel Europe, is one of Europe's largest bulk handling companies, transshipping approximately 22.5 million tons of iron ore and coal annually for steel production. Ensuring the structural integrity of these critical assets is essential for maintaining operational efficiency and safety.

## AT A GLANCE

**15 days**  
of **extra uptime**  
earned per year  
from avoided  
unscheduled repairs  
**€80K**  
**saving** from  
eliminating  
unplanned and  
emergency repairs

**40 hours**  
**saved annually** in  
maintenance by  
shortening existing  
maintenance windows

## Challenge

Thyssenkrupp Steel Europe is one of Europe's leading steel producers, operating several assets – some that have even passed their calculated lifetime. These assets remain essential for maintaining required production volumes, but their age makes them increasingly prone to steel fatigue. The cranes required increasingly **longer and more frequent maintenance windows. Unplanned downtime and repairs became more common, even emergency repairs.** Traditional inspection methods weren't providing the accuracy needed to distinguish between cracks that required immediate attention and those that could be safely monitored, leading to a **need for more accurate inspection results.**

***"With assets operating beyond their design life, we needed more accurate insights into fatigue behavior to make informed decisions and maintain safe and efficient operations"*** said Johan van Jole, Project Engineer at Ertsoverslagbedrijf Europoort (EECV), part of Thyssenkrupp Steel Europe.

## Solution

EECV installed Villari's wireless monitoring system on the most fatigue-critical locations, many in hard to access locations, specifically targeting welds and areas where cracks had been observed or were expected to form.

The system now provides:

- **Continuous monitoring** of fatigue-critical points
- **Real-time crack development insights**
- **Automated alerts and trend visualizations**
- **Accurate fatigue-development data**, even in hard-to-reach areas

## Results

### 1. Reduced repairs and increased uptime

Since installing the Villari system, Ertsoverslagbedrijf Europoort has **avoided all unscheduled repairs**, previously averaging 2–5 per year, each causing around 3 days of downtime. This shift alone **delivers 15 extra days of uptime annually**. Scheduled maintenance windows also became more efficient: each was shortened by about a day, resulting in **40 hours less maintenance time each year**.

### 2. Doubling inspection accuracy

The engineering team reported that using Villari, instead of relying on historical experiences with certain assets, they are much more confident in terms of the reliability of their inspections.

***“We have effectively doubled our inspection accuracy. While we used to rely on experiences with similar assets in the past, we now know exactly which fatigue indicators can be safely deferred.”***

### 3. Ensuring safe and efficient operations beyond design life

Continuous monitoring gave the team the confidence to keep operating critical assets well past their calculated lifetime while maintaining safety and structural integrity.

## Conclusion

By implementing Villari's continuous monitoring system, EECV achieved measurable operational improvements: 15 extra days of uptime annually, €80K savings from eliminated emergency repairs, and doubled inspection accuracy. The wireless sensors, installed on fatigue-critical locations including hard-to-access welds, now provide real-time crack development insights that enable confident operation of aging assets well beyond their calculated design life, turning what was once a maintenance challenge into a strategic advantage.

## CUSTOMER FEEDBACK

***“For me the biggest insight from Villari’s continuous monitoring was that crack development was much slower than we thought. And this provides us with the strategic advantage to make better plans even with some of our aging assets.”***

**Johan van Jole,**  
Project Engineer,  
Ertsoverslagbedrijf  
Europoort (EECV),  
part of Thyssenkrupp  
Steel Europe



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