

SDC Engineering B.V.

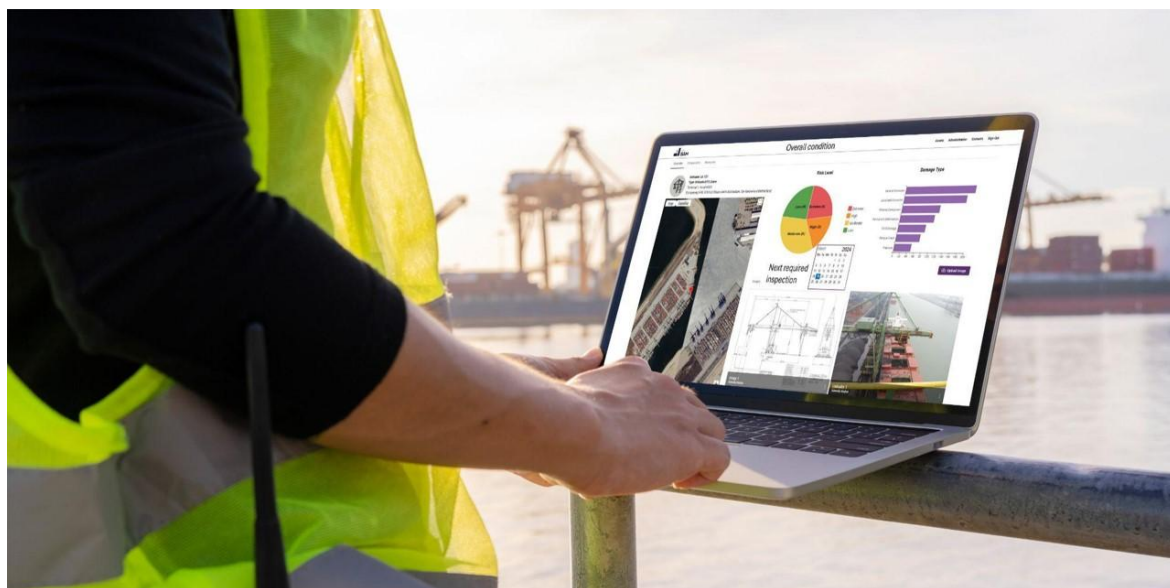
system that combines Finite Element Analysis, user data integration, intelligent inspection workflows to detect structural vulnerabilities, adapt maintenance schedules, and extend structural asset lifespan

the challenge

SDC SAM addresses the challenge of maintaining structural safety in complex assets prone to structural failures due to fatigue, buckling, and corrosion from operational stress and aging. Traditional maintenance approaches often rely on reactive methods, increasing risks of failures and non-compliance with safety standards.

Using FEA analysis, SDC SAM provides a digital twin of the asset for precise monitoring of it's conditions. By incorporating inspection data, it allows to dynamically update asset models, recalculate fatigue life, and adjust inspection intervals to target high-risk areas. This proactive approach prevents failures, reduces downtime, and extends safe operating lifespans.

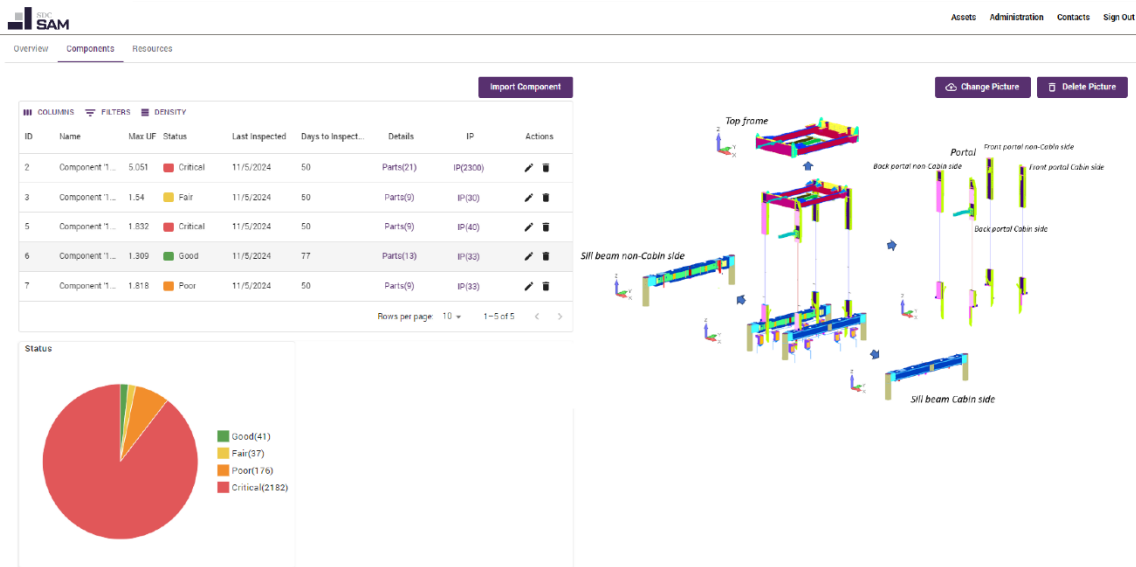
The platform's centralized system ensures all asset information, from global conditions and localized vulnerabilities, is accessible for maintenance and compliance. SDC SAM enables effective monitoring and management, reducing risks while optimizing operational efficiency.



the innovation

SDC SAM is a software that combines Finite Element Analysis results, user data integration, and intelligent inspection workflows in a web based, cross-platform interface to detect structural vulnerabilities, adapt maintenance schedules, and extend structural asset lifespan which helps to avoid downtime and accidents.

Approach based on simulation results allows to dynamically update asset models with inspection data, and integrate structural information from sensors or third parties to maintain precise recalculations of structural integrity and proactive maintenance planning.



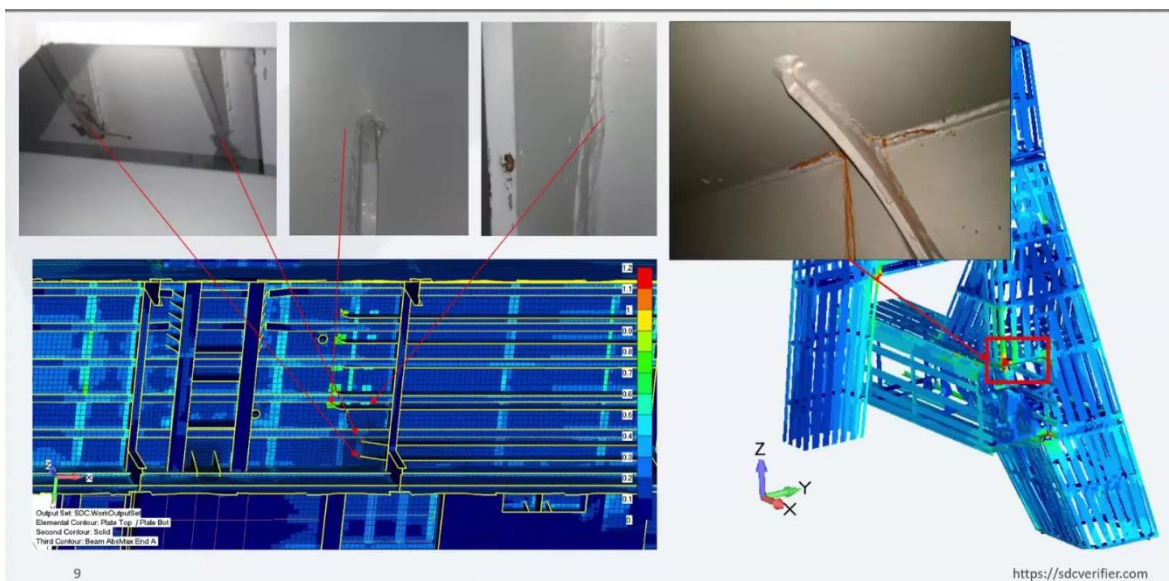
The platform tracks risks like crack propagation and stress redistribution across critical points, ensuring maintenance is targeted effectively. Its modular design supports multiple assets, detailed inspection points, and integration with existing PLM/ERP systems. User-specific access enhances collaboration among engineers, inspectors, and third-party service providers.

By reducing inspection times, optimizing maintenance schedules, and ensuring compliance, SDC SAM delivers measurable improvements in safety and operational reliability.

how it was implemented

SDC SAM was developed using expertise from SDC Verifier to create a modular, scalable online platform tailored for structural asset management.

The development process included identifying key industry pain points, such as inefficient inspections and fragmented data management. Pilot programs tested features like peak detection for stress analysis, crack tracking, and life extension calculations in real operational



settings. User interfaces were developed for accessibility, with role-based permissions enabling collaboration across teams.

result

While still in its early adoption phase, SDC SAM has demonstrated clear benefits.

Pilot program within the terminal allow having the structural health data and results always up to date. This helps to keep 60 year old cranes running without downtime. It also shows a clear reduction in inspection time, since the technicians have continuous access to simulation data in a web interface that is easy to access both online and offline. FEA based approach results in 95% accuracy in stress results and fatigue predictions, and the ability to dynamically adjust maintenance schedules based on real-time data.

Solution adopters report improved safety outcomes and better maintenance efficiency. Centralized structural data provides actionable insights, avoiding downtime and extending asset lifespans. These results highlight SDC SAM's potential as a transformative tool for structural asset management.



conclusion

SDC SAM delivers a comprehensive solution for structural asset management by combining advanced digital twin technology, real-time data integration, and proactive maintenance strategies. Its ability to reduce downtime, enhance safety, and extend asset life sets a new standard in structural management.

As adoption continues, SDC SAM's practical application ensures its adaptability across diverse industries, positioning it as a leading innovation for improving structural safety and efficiency.

LINK: <https://sdcverifier.com/>

