

Advancing Digital Factory Operations with Rugged Edge Intelligence

AMBITION

A **global leader in material-handling equipment** operates heavy-duty machinery in harsh industrial environments where downtime, safety risks, and equipment failure directly impact service efficiency and lifecycle costs.

Off-the-shelf technology could not withstand high vibration, shock, and environmental stress. To move from reactive repairs to proactive maintenance, the ambition was clear: **embed rugged edge intelligence across industrial fleets while meeting complex global regulatory requirements.**

To achieve this, the organization needed to:

- **Enable rugged edge computing:** Deploy a durable gateway capable of surviving high-vibration industrial conditions.
- **Meet global compliance requirements:** Satisfy strict international certification standards for worldwide deployment.
- **Bridge legacy and modern systems:** Integrate data across mixed-generation crane and lifting equipment.

ACTION

The manufacturer partnered with **Wipro Engineering – Connected Services**. Wipro bypassed fragile retrofits and designed a complete, DIN-rail-mountable hardware gateway from the ground up — allowing the client to standardize edge intelligence across fleets without retrofitting risk:

- **Open-Source Architecture:** Built a robust, scalable gateway using Linux drivers and open-source frameworks to support long-term adaptability.
- **Multi-Protocol Connectivity:** Integrated LTE, Ethernet, CAN, Serial, and USB interfaces to ensure seamless communication across fragmented industrial systems.
- **Global Certification:** Rigorously vibration-tested the physical design and secured FCC, CE, RED, EMC, and RoHS certifications, enabling worldwide deployment.

AMBITIONS REALIZED

By connecting heavy equipment with digital intelligence, Wipro transformed the client's industrial operations — providing new levels of visibility into fleet performance.

The Business impact:

- **Real-time fleet intelligence**, with GPS-enabled location data and unified access to edge telemetry.
- **Predictive maintenance enablement**, simplifying remote diagnostics and allowing teams to address wear and tear before major equipment failures occur.
- **Faster global deployment**, as regulatory compliance and certification were achieved during the engineering phase.

Wipro Limited (NYSE: WIT, BSE: 507685, NSE: WIPRO) is a leading AI-powered technology services and consulting company focused on building innovative solutions that address clients' most complex digital transformation needs. Leveraging our consulting-led approach and the Wipro Intelligence™ unified suite of AI powered platforms, solutions, and transformative offerings, we help clients realize their boldest ambitions to build intelligent and sustainable businesses. The Wipro Innovation Network – part of the Wipro Intelligence™ suite – underpins our commitment to client-centric co-innovation and co-creation by bringing together capabilities from the innovation labs and partner labs, academia, and global tech communities. With over 240,000 employees and business partners across 65 countries, we deliver on the promise of helping our customers, colleagues, and communities thrive in an ever-changing world. For additional information, visit us at www.wipro.com.