



Case Study | IN

Western Dedicated Freight Corridor (WDFC)

Challenges

The Western Dedicated Freight Corridor (WDFC) is one of India's most crucial freight transportation initiatives. Aimed at enhancing the efficient movement of goods between key economic centres, the WDFC is expected to contribute to the economic growth and development both in the local region and beyond, highlighting its strategic importance. To achieve its ambitious goals, the Dedicated Freight Corridor Corporation of India Limited (DFCCIL) required a state-of-the-art track vacancy detection system to be implemented on this line. This system needed to ensure minimal downtime and optimise traffic flow, thus contributing to smooth and efficient rail operations. Additionally, the operator also required the train detection system to be seamlessly integrated with existing equipment, while possessing the ability to withstand the region's harsh environmental conditions, such as extreme temperatures, humidity, and frequent flooding at the trackside.

Solution

To meet the customer's extensive requirements, our renowned Frauscher Advanced Counter FAdC® was chosen for this project due to its optimal performance and robustness, coupled with high levels of reliability, consistent availability and minimum downtime or service interruptions. The Frauscher Wheel Sensor RSR180 was deployed

alongside the FAdC® due to its ability to withstand harsh weather and track conditions. The installation of the RSR180 is made easy due to the patented Frauscher Railclaw SK140 which eradicates any need to drill into the rail, reducing installation costs and the dwell time of staff on track.

The distributed architecture along with serial interface with EI, made possible by the FAdC® has resulted in the following benefits:

- Redundancy for critical components link COM, PSC & network with bus architecture for high availability.
- Track sections resetting via panel-based reset functionality and auto resetting via Supervisory Track section in Auto Blocks.
- Ability to seamlessly switch over from one network to another without manual intervention.
- Lower number of cables due to distributed architecture.
- Serial interfacing eliminated usage of additional hardware like relays and extra wiring which contributed to greater cost efficiency and reduced spatial requirements for the installation.
- Easy scalability due to serial interfacing and modular design.

Project Details

The Western Dedicated Freight Corridor is a major infrastructure project that is expected to provide significant benefits to India's economy. **Frauscher** and **Hitachi** are bringing their expertise in the form of a joint venture which will make a significant contribution to this project, a crucial segment of India's Dedicated Freight Corridor. The project covers major industrial zones and manufacturing centres across a total distance of **953 Km** between Rewari, Haryana to Makarpura, Gujarat, traversing India's largest industrial hub between Delhi and Mumbai.

Commissioning details:

- 178 Installation locations, 953 Km (Rewari to Vadodara)
 - 31 Stations
 - 135 Auto Location Huts
 - 30 Automatic block sections
 - 10 Interfaces with Indian Railways - Mainlines
- 3911 Commissioned Wheel Sensors (New Rewari- New Sanand South)
- 2536 Commissioned Track Sections (New Rewari- New Sanand South)

The FAdC® indoor equipment is placed inside equipment rooms of each station and various auto location huts. Auto location huts which are under the control of the station are connected via optical fibre cable as a communication media.

The implementation of the FAdC® alongside the Wheel Sensor RSR180 in this project has presented the customer with the following benefits:

1. No trackside electronics which reduces overall maintenance requirements and thus lowers costs.
2. Establishment of serial interfacing with electronic interlocking.
3. Optimal performance even in adverse weather and track conditions.
4. Greater cost effectiveness due to the establishment of a distributed architecture.
5. Modular and flexible architecture, allowing for easily scalability.
6. No drilling in the rail and quick installation of the RSR180 using the patented Frauscher Railclaw.
7. Frauscher diagnostic system for fast and convenient troubleshooting of failures.

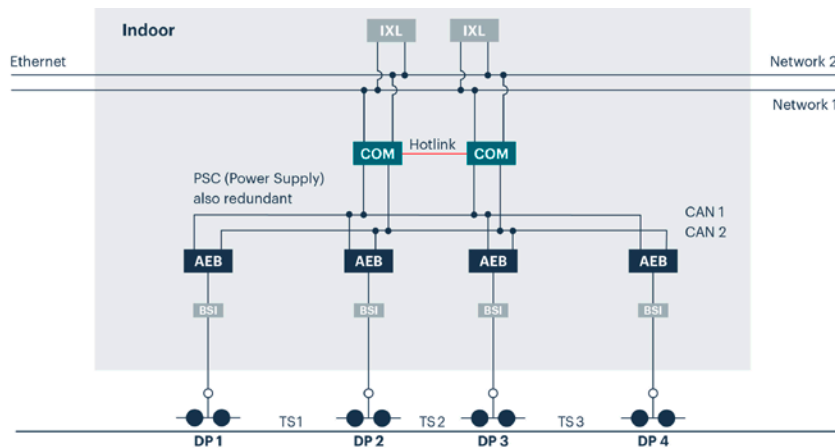


Image 1: Smart True Redundancy Architecture

Key Facts

Operator	Dedicated Freight Corridor Cooperation India Limited	Country	India
Partner	Hitachi India Pvt. Ltd.	Segment	Freight Line
Scope of supply	FAdC®, Frauscher Diagnostic System and Network Management Software	Application	Yard, Auto Block section and Block Proving Axle Counters.
Scope of project	4516 counting heads	Project start	19-Oct-2016
Axle Counter	Frauscher Advanced Counter FAdC®	Wheel Sensor	RSR180