

## CORIANT IS NOW PART OF INFINERA

# Harnessing a High Performance Infrastructure for Innovative Enterprise and Carrier Service

## *Digitization Drives DWDM and MPLS-TP Network Upgrade*

### CHALLENGE

RailTel Corporation of India Limited, a subsidiary of Indian Railways, is one of the largest providers of telecommunications services in India. The company operates an extensive fiber optic network that delivers communications services to a wide variety of enterprise and carrier customers, provides connectivity within several metro areas, and offers Wi-Fi at railway stations.

In 2014, RailTel embarked on a major upgrade and expansion of its network infrastructure to support the Government of India's digitization mission and create new opportunities for India's citizens by expanding broadband availability nationwide.

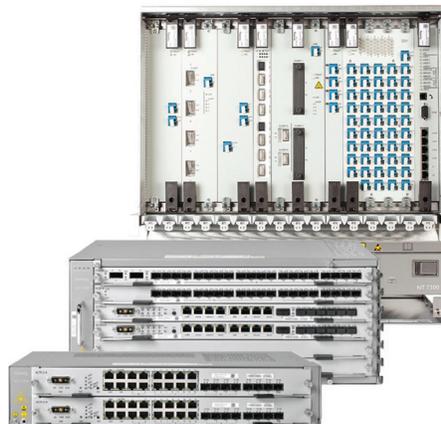
Previously, RailTel used SDH technology for its network, but that technology did not offer sufficient bandwidth to meet the anticipated increase in network traffic. In addition, RailTel required a highly efficient and resilient solution for increased demand from enterprise and carrier customers for Carrier Ethernet connectivity.

### SOLUTION

RailTel upgraded its SDH network to Dense Wavelength Division Multiplexing (DWDM) to meet the increased traffic demands expected from India's digitization initiative.

After rigorous analysis and testing of competitive solutions, RailTel selected the Coriant® hiT 7300 Multi-Haul Transport Platform, an industry-leading DWDM solution, for deployment throughout a significant part of the network in northern and eastern India along with implementation of new routes.

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### Customer



### Location

India

### Challenge

- Replace SDH network to address increased traffic demand for the Government of India's mission to digitize the country
- Support growing demand for Carrier Ethernet connectivity

### Solution

- Deploy the Coriant® hiT 7300 Multi-Haul Transport Platform, an industry-leading DWDM solution in Tier 1 carrier networks worldwide
- Deploy Coriant® 7090 Packet Transport Solutions, extending service efficiencies and reliability to the network edge

### Results

- The hiT 7300 met RailTel's transmission capacity and distance requirements, eliminated 28% of Intermediate Line Amplifier requirements, and resulted in direct savings for RailTel
- The 7090 Series provided MPLS-TP and ROADM capability, enabling RailTel to efficiently serve its Carrier Ethernet customers while also supporting carrier-class resiliency

Meeting RailTel's key requirements for service flexibility, low latency, high resiliency, and Reconfigurable Optical Add/Drop Multiplexer (ROADM) capabilities, the hiT 7300 offers easy reconfiguration of optical routes. By deploying the hiT 7300, RailTel received the following benefits:

- A colorless ROADM that automates the process of connecting the correct transceiver to the correct mux/demux port at the add/drop site, enabling faster and more economical topology changes
- The ability to support data rates between 100 Mbps and 100 Gbps, enabling simplified future expansion
- Automatically Switched Optical Network (ASON) capability providing network resilience by automatically rerouting traffic in the event of a link failure (e.g., a fiber cut) while enhancing end-to-end provisioning
- End-to-end network and service management capabilities using the powerful Coriant® Transport Network Management System (TNMS)
- Higher channel count (96 channels per fiber) for better fiber utilization
- Optical mesh capability for improved service resiliency and network efficiencies

To effectively serve its Carrier Ethernet customers, RailTel deployed the Coriant® 7090 Packet Transport Solutions, including the Coriant® 7090-8 M Packet Transport Platform and the Coriant® 7090-92 M Packet Transport Platform, throughout 65% of its MPLS-TP footprint, including the northern, eastern, and western parts of India. With MPLS-TP, packet networks can be managed in a manner similar to traditional connection-oriented TDM networks – but with greater efficiency and flexibility. Optimized for packet-based network traffic, MPLS-TP enables service providers to build a circuit on a packet network across packet switches and optical equipment.

RailTel required a highly efficient technical solution capable of meeting carrier-class resiliency from the service edge through the network core, and MPLS-TP features on the 7090-8 M and 7090-92 M met this key requirement. Capabilities of the 7090 Series that met or exceeded RailTel's expectations include:

- Improve resource utilization with highly efficient packet transport features
- Ease migration from TDM to packet-centric services while building a flexible infrastructure, optimized for future growth
- Enable highly reliable packet services with end-to-end OAM and network protection for circuit-oriented transport technologies
- Optimize end-to-end service delivery with a single, unified transport platform – reducing OpEx via simplified operations, fewer spares, and reduced training needs
- Increase overall network efficiency with advanced multilayer optimization and fully integrated end-to-end service management
- Grow revenue by providing cost-effective, feature-rich Carrier Ethernet and MPLS-TP services

## SUMMARY

The hiT 7300 and 7090 Series played important roles in the network upgrade and expansion that national network operator RailTel undertook to support the Government of India's initiative to expand broadband availability throughout India.

The Coriant products provide key technology advantages at an economical cost. The hiT 7300 offers RailTel the flexibility to expand service connectivity up to 100G for its customers, while also enhancing optical layer resiliency and agility via colorless ROADMs, ASON, and optical mesh capabilities. The 7090 Series supports packet transport efficiencies, connection-oriented MPLS-TP, variable gain amplification, low power consumption, high channel count, and a sophisticated planning tool.

Moving forward, the hiT 7300 and 7090 Series will enable RailTel to minimize capital and operational expenses while expanding the resilient services they can offer enterprise and carrier customers.

## ABOUT THE hiT 7300 PLATFORM

The hiT 7300 uses advanced digital signal processing and coherent technology – a sophisticated form of wavelength modulation and detection. Together these technologies enable the hiT 7300 to support data rates of 40 Gbps or 100 Gbps over a single wavelength over spans of 2,000 kilometers without regeneration, and thus deliver the same or better reach than non-coherent 10 Gbps wavelengths.

## ABOUT THE 7090 SERIES

The 7090 Series provides efficient and scalable access and aggregation supporting cost-effective, service-enabling technologies including MPLS-TP and Carrier Ethernet. The 7090 Series includes multiple platforms from small edge devices to regional/access concentrators/aggregators.

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