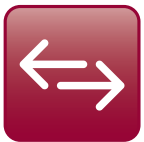


High reliability communications support Indian Railways' 6.6 million Mumbai commuters



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The buzzing metropolis of Mumbai depends on reliable transport, which in turn relies on high availability communications to carry its management system data. Commtel Networks provided and is supporting a field-proven solution based on Nokia Siemens Networks equipment.



Transportation

“The digital communications system provided by Nokia Siemens Networks, with its field-proven high availability and built-in redundancy, is a good fit for the mission-critical communications requirements of Indian railways in Mumbai.”

Shriprakash Pandey,
CEO, Commtel Networks.



One of the busiest cities anywhere, Mumbai needs a reliable transport system. With more than 6.6 million people using it daily to cross the city and its suburbs, Mumbai's commuter railway network has one of the world's highest urban passenger densities.

Helping to ensure the network's smooth running is a Train Management System (TMS) supplied by Bombardier Transportation. With trains running every two to three minutes during peak hours, and about four minutes during regular hours, the TMS needs a reliable, failure-proof communications system for its continued operation.

Bombardier turned to Commtel Networks, an expert sales partner for Nokia Siemens Networks in India, to provide an advanced communications system built around Nokia Siemens Networks' Dynanet Solution with centralized Network Management. The system carries all TMS data.

Train operations depend on the TMS

The TMS supports the integrated management and monitoring of train movements and signaling, as well as planning train routes, diversions, and the introduction or withdrawal of services.

Signaling and route interlocking information from signals, points, track circuits and route settings at various stations is fed into the TMS. Train identification information is also collected from each of the train origination stations. The TMS processes all this information and provides an integrated real-time display and status indication of train positions and movements, as well as signals and route interlocking status. The TMS integrates and processes this information to control the remote activation of points and signals and to set routes for trains.

Information from the TMS is also fed to public announcement systems at stations to update passengers on train status. In addition, reporting functionality to generate punctuality reports, rake and crew links, train graphs, and unusual occurrence reports is included.

Reliable communications keeps the trains running

In order to meet Indian Railways' demands for extreme reliability, Commtel had to provide the most technically effective solution. Their track record in executing telecoms projects for non-telecoms sectors, as well as the field-tested primary multiplexer equipment from Nokia Siemens Networks proved to be a winning solution.

Commtel specified and designed a system incorporating Nokia Siemens Networks Dynanet Primary Add/Drop Multiplexers with various data interface units, along with the Network Management System. Following successful field trials in December 2008, when the communications system was found to be functioning in line with all requirements, the full system is being deployed in phases.

"Reliability is critical because if the system goes down even briefly it can have a huge operational impact and cause havoc for commuters," says Shriprakash Pandey of Commtel Networks.

"Nokia Siemens Networks solutions are cost-effective, rugged and have a proven track record for reliability spanning several years – they have always functioned without major failure. They support redundancy in the design which enables us to build reliability into the system."

High system availability also helps to achieve low operational costs for Indian Railways, with significant savings in repair and maintenance costs, as well as a lower cost for stocking spares.

Simplified project management

Commtel's engineers are hugely experienced with Nokia Siemens Networks systems, the two companies having worked together for more than ten years. This enables Commtel to design, integrate, install commission and support its solutions.

This capability enabled Commtel to provide an end-to-end, integrated communications system that greatly simplified Bombardier's project management and implementation process, resulting in significant cost, resource and risk savings.

"Care and support services have to be excellent; with quick response for rapid restoration of operations should a failure ever occur. Most Level I and some Level II support is handled by Commtel, but for more complex support we rely on Nokia Siemens Networks providing a high degree of responsiveness. With its strong local presence in India, Nokia Siemens Networks is able to fulfill this role well," comments Pandey.

Commtel also enjoys full technical support when required from Nokia Siemens Networks. "At critical meetings with decision-makers in customer organizations, Nokia Siemens Networks and Commtel stand shoulder-to-shoulder, it instills real confidence when the customer hears from Nokia Siemens Networks directly," concludes Pandey.

Challenges

- Transporting 6.6 million commuters daily demands an ultra-reliable train management system
- A complex array of data from the rail network must be carried to the TMS for processing
- Data from the TMS must be distributed reliably to control signaling and other operational functions, as well as provide real-time information for passengers

Solution

- Commtel provided a communications system based on Nokia Siemens Networks Dynanet Primary Add/Drop Multiplexers and a Network Management System
- The Commtel system was seen as being the most commercially and technically viable solution, able to provide extremely high availability
- Commtel and Nokia Siemens Networks supply full technical support backed by a strong local presence

Benefits

- The field-proven reliability of the Nokia Siemens Networks solution offers the mission-critical support required for the TMS
- The end-to-end solution reduces Bombardier's project management costs and risk
- High availability of the communications system reduces Indian Railways' maintenance and spares stock costs

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