IDIS

Asia's largest rail network, Indian Railways, adopts IDIS video tech as security and safety foundation for multi-year upgrade

Industry
Transportation or
Critical Infrastructure
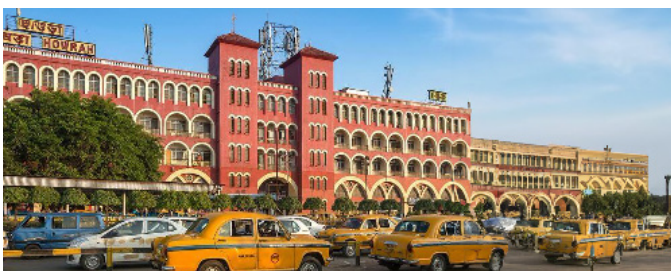
Customer
Indian Railways

Region
India

IDIS Partners
IDIS Securitatem
Solutiones Pvt Ltd and
M2M Cybernetics PVT Ltd

Background

Multi-billion USD$ upgrade of Asia's largest rail network – and advanced video surveillance is key

Indian Railways is Asia's largest rail network and the world's second largest transportation entity. With around 14,000 trains operating on 65,000 miles of track, Indian Railways carries an estimated 9.5 million passengers daily. Its services are the country's most popular form of long-distance travel, thanks to affordable fares subsidised by revenue from freight transportation.

Indian Railways has embarked on a comprehensive upgrade programme, as part of an ambitious growth strategy which could see it involved in up to 40% of global rail traffic by the middle of the century. Upgrade plans include full electrification, new lines, and a cross border high-speed train network connecting major cities and neighbouring countries. Amenities and safety measures at stations in the Eastern region are also being transformed through significant investment with advanced video surveillance key to delivering world-leading services and safety.

Challenges

Phase one to improve secure management of high footfall stations

The first phase of the safety upgrade is aimed to ease congestion and make it easier to manage high passenger volumes, securely. Indian Railways earmarked 230 stations in the Eastern region with a high daily footfall to be the first to benefit from an end-to-end and AI video surveillance solution.

The video system which included 4K cameras, AI-powered video analytics and facial recognition, had to be installed across hundreds of platforms, and the Railway Protection Force needed a monitoring station on every fifth station for simultaneous live viewing of each location. These monitoring hubs were to be managed and controlled using a federated architecture with an overarching central command and control system, which also serves as a data centre and disaster recovery facility.

This critical infrastructure project went to tender, meaning price-competitiveness was essential. IDIS won the contract due to advantages inherent in its technology that guarantees efficiency gains and a low total cost of ownership (TCO).

Solution

IDIS technology delivers superior performance and best value

Razor-sharp image capture, with optimized video data handling, provides the foundation for Indian Railways' state-of-the-art, AI-enabled video surveillance solution. IDIS Deep Learning Analytics (IDLA) – with functions including motion, loitering, and abandoned detection and line crossing, continually refined to ensure industry-best performance – make it easy for the Railway Protection Force to configure and automate alerts to a range of potential risk events. Facial recognition is also a key function, and the IDIS solution was seamlessly integrated with Herta Security's facial recognition technology, which uses advanced algorithms to provide real-time identification and alerts to persons-of-interest.

MAT

To underpin these advanced functions, the best-fit cameras for each location were selected from IDIS's comprehensive range, with principal models including full-HD, vandal-resistant, ruggedized, IR dome cameras, bullet cameras, and Lightmaster PTZ cameras.

IDIS Intelligent Codec combined with MAT compression technology delivered a 30% data bandwidth reduction compared to competitors, with no compromise on crystal clear image capture. Further savings on storage were delivered by Motion Adaptive Technology (MAT), which adjusts recording when there is no movement in the scene, which was ideal for stations that weren't operational during the night.

Cybersecurity was also paramount for Indian Railways, and all IDIS devices cleared the OWASP Level 2 – Appendix C certification standard, going beyond standard penetration tests.

The entire solution operates on the IDIS Solution Suite (ISS) VMS management platform, handling multiple high-performance IDIS servers in a federated architecture. ISS comes with vital features including Critical Failover including redundancy, storing video data on a high-speed Storage Area Network (SAN) utilizing RAID 5 to protect against gaps in recording during network interruptions or failure.

Finally, ensuring maximum flexibility for the surveillance operations team, the cost-free IDIS Mobile Plus app puts enterprise-class VMS at security officers' fingertips from their smartphones or tablets. Crucially, ISS also allows image and video capture from smartphones to be fed into the surveillance system, adding hugely to the potential surveillance reach – for example, allowing local staff to send on-site reports of damage or incidents, channelling them directly to local and central command centres.

Results and benefits

Efficient delivery ensuring success for an extensive and nationally critical security upgrade

Despite the ambitious scale of the project, the IDIS solution was delivered efficiently by systems integrator M2M Cybernetics. Today, the Indian Railways Railway Protection Force can take a proactive and preventative approach to safety and security thanks to efficient monitoring using IDIS Solution Suite VMS combined with IDIS's Deep Learning Analytics and Herta Security's facial recognition software. Benefits include:

- Highly accurate AI-powered alerts to threats to quickly coordinate a response to safety and security threats. This use of AI video drives efficiency and reduces pressure on monitoring teams, for maximum consistency of surveillance operations.
- Enhanced security through the ability to identify and alert authorities to the presence of individuals with potential security concerns.
- Advanced video search functions, using metadata, are now speeding up investigations, making it easier to find suspects including regular offenders, improving security and safety across the rail network.
- IDIS SmartUX controls including the patented 'rubberband' feature make live tracking and playback smooth and comfortable, a benefit particularly appreciated by operators.
- The IDIS DirectIP® hallmark plug-and-play and FEN Service, allowed rapid set up and ensured instant compatibility and full functionality of all devices and simple connection to central command and regional monitoring centres. Throughout, minimal support was required by the ground engineers ensuring a low total cost of service (TCS) for M2M Cybernetics.
- IDIS Solution Suite features an intuitive and user-friendly interface making it easy to learn and operate, which is essential for Indian Railways, which has a continually rotating workforce due to shift flexibility. This has reduced the burden of ongoing staff training costs and acts as force multiplier for efficiency gains.
- Multi-task surveillance operations, robust and cybersecure video footage, no ongoing VMS or service license fees, and a future-proof platform to ensure a low total cost of ownership.

> *Indian Railways wanted the most flexible, robust, future-proof video surveillance solution to provide a secure foundation for our ambitious growth and development plans. With IDIS video, the Railway Protection Force now has full confidence that they are operating 230 of the safest and most secure stations resulting in two more regions now identified for upgrade.*

Rahat Jain
Managing Director, IDIS Securitatem Solutiones Pvt Ltd

IDIS
One Solution. One Company.

For more information, please visit
www.idisglobal.com