Cisco Connected Rail

Greater safety, mobility, and efficiency

Connected Rail solution was developed by a transportation focused engineering team to address the needs and outcomes of a modernizing transit agency. In short, it is a set of validated reference architectures, design documentation, and implementation guides that were also co-created with global rail industry stakeholders. The solution is comprised of the appropriate data center, wired and wireless networking, security, software and services necessary to enable the most demanding rail applications. Further, Cisco Connected Rail consists of three primary systems Cisco Connected Train, Connected Trackside, and Connected Station. Through proven and well-established standards based technologies, Cisco Connected Rail solutions maximize implementation success and significantly reduce installation risk, cost and deployment time.

Benefits

Cisco Connected Rail helps you:

- **Lower operating expenses and simplify maintenance** by consolidating multiple single-purpose applications onto one converged, open-standards IP network, and by taking advantage of predictive capabilities that can recommend improvements in advance
- **Increase ridership** through onboard Wi-Fi, on-demand entertainment services, and passenger information displays
- **Enhance passenger and employee safety** with improved video surveillance, automated compliance measures, and other automated systems that reduce human error and related mishaps
- **Deploy new services** with high-speed train-to-trackside wireless infrastructure
- **Generate more revenue** with greater advertising capabilities, increased ridership, and more station and trackside businesses

The Cisco difference

In collaborating closely with rail customers and industry experts, we've made major improvements in our competitive offerings. Only Cisco Connected Rail solutions can help you achieve a wide range of safety, mobility, and efficiency objectives by:

- Providing an **end-to-end architectural framework** that delivers high-speed voice, video, and data services – from the train to the trackside to the station
- Building on top of **existing architecture;** there is no set starting point
- Testing and approving products in **real-world scenarios** under the highest standards (via Cisco Validated Designs)

Challenges in the rail industry

Oftentimes, sunk costs hold investment back. Yet encouraging operators to consider ROI over a longer term can lead them to build a foundational future infrastructure and concurrently solve these problems with Cisco Connected Rail:

- Aging systems, which require an increased effort to maintain and are prone to fail more often, resulting in increased costs and safety concerns
- Downtime issues intensified by different levels of reliability between systems
- Compliance issues, since safety mandates now require automated capabilities between trains and back-end systems
- Safety and security concerns, such as train crashes and network breaches
- Passengers' need for Wi-Fi access and more amenities while commuting

The rail of the future: Converged network capabilities

The optimal scenario is a converged network that complements existing systems while enabling smooth migration to next-generation capabilities. This is possible with Cisco Connected Rail, whose architecture includes validated network designs for Connected Train, Trackside, and Station.

Connected Train

- Includes an onboard high-speed, wired and wireless IP network. Operators can enhance security, wireless access, passenger services, and applications.

Connected Trackside

- Replaces multiple older, proprietary railway networks with a Cisco Unified MPLS Mobile Transport (UMMT) network. Operators can expect reduced operational services, cost, and complexity as well as enhanced security, train control and operations, and maintenance.

Connected Station

- Integrates multiple in-station networks and retail communication systems into a single, standards-based IP network. Operators can improve retail offerings and revenue streams, security, and wireless access.

Case study

Cisco helps a large European rail company

- **Situation:** Cisco helped a world-class European rail company define a meta-model (framework) for designing and architecting a converged IP/MPLS carrier-grade network backbone and IP-based command and control signaling system
- **Challenge:** The complexity of the project required an innovative solution to tackle the obstacles that railway network providers frequently run into
- **Solution:** Cisco paved the way to success, with help from its third-party rail solution providers, through strategy, planning, cost modeling, and other services, enabling the rail company to start piloting vendor-specific projects
- **Result:** The new command and control technology helped reduce its operational costs by more than 20%, helped reduce its capital expenses by 21% over multiple Supervisory Control and Data Acquisition (SCADA) networks, and provided wireless access for the rail company's 1.3 billion trips per year

For more information

For more information on Cisco Connected Rail solutions, including products, certifications, and financing, visit cisco.com/go/connectedrail or contact your Cisco representative.

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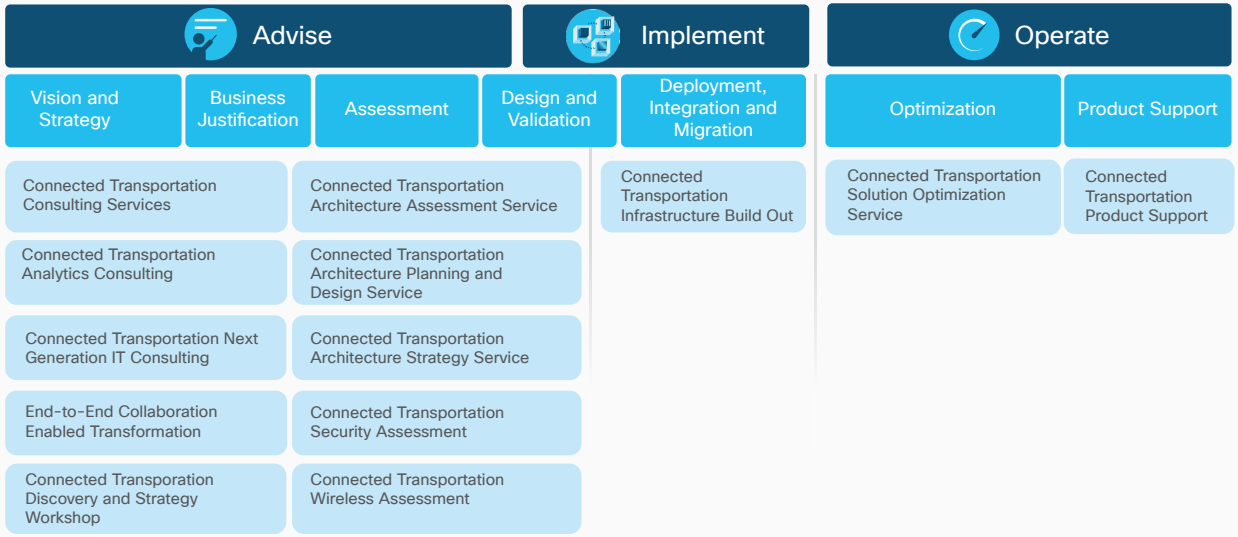
After you've chosen a focus, Cisco Services can help advise you, as well as implement, optimize, and support your solution from strategy to execution.

The Focus is on business outcomes from strategy through execution.



Advise: Strategize and consult

Cisco Services helps to set expectations clearly, create a roadmap for success, and determine a strategy for tracking outcomes and impacts. We also address any architecture and security gaps and even plan for unforeseen technology trends that could negatively affect your business.

Implement: Minimize deployment risk

Cisco Services can also create a converged and secure IP-based network infrastructure, which includes effective integration of an end-to-end solution. Project overruns are minimized and deployment risk is reduced with a thorough validation and testing process, which helps ensure that project requirements are met. This process includes factory acceptance testing, site acceptance testing, user acceptance testing, systems integration testing, and/or commissioning.

Operate: Optimize performance

Finally, our services continually amplify your infrastructure and applications, delivering superior server, storage, system, and network performance. Predictive diagnostics, real-time data, and analytics also aid in anticipating future issues for maximum effectiveness.