



## Benefits

- **Enhanced safety** through event-triggered streaming video and live video surveillance at stops, stations, and yards
- **Increased revenue** through digital advertising, data monetization, and improved ridership
- **Improved passenger experience** via seamless Wi-Fi connectivity along any part of the transit journey, real-time updates on departures and arrivals, and an ability to process wireless payments
- **Increased efficiency** through optimized routing and passenger loading, proactive maintenance, real-time asset tracking and monitoring, converged networks across all services, automated business processes, and analytics to help identify trends more easily
- **Lower total cost of ownership** by incorporating existing infrastructure and eliminating redundant, proprietary systems with limited or no interconnectivity

# Cisco Connected Mass Transit

## High-level overview of the future of public transit

### Become safer and more operationally efficient with Cisco Connected Mass Transit

Growth in public transit relies on a simple but often overlooked truth: when your riders are satisfied, they come back for more.

Cisco® Connected Mass Transit was developed to help you retain your riders and meet their needs. By providing real-time updates that affect your passengers' commute, wireless payment systems for e-ticket purchasing, and onboard Wi-Fi for entertainment, riding with you becomes easy. Once your network is converged, other things often begin to fall in line too – digital advertising revenue increases, maintenance is simplified, operational expenses stop rising, and safety as well as security threats become easier to handle.

**Cisco Connected Mass Transit allows you to simplify your operations and maintenance without necessarily replacing existing legacy infrastructure.** For instance, onboard sensors can inform you in advance of diagnostic issues, allowing you to perform proactive maintenance on your vehicles, reducing maintenance and delay costs instantaneously. Our solution is based on a proven architecture and provides a secure, converged, standards-based infrastructure that can replace your redundant, proprietary single-application solutions that have limited or no interconnectivity. Consequently, you can optimize both capital and operating expenditures without risk.

Your goal is to keep your riders safe, get them to their destinations, and have them continually come back to use your transit channels while keeping costs low. Our goal is to provide you a reliable end-to-end network with applications, proper security, and devices that help you deliver on that front.

### Overcome your challenges through a converged, end-to-end network

Here are some **common use cases** that have provided positive results for Cisco Connected Mass Transit customers:

- Reduce fuel costs by optimizing routes based on passenger loading statistics at different stops
- Reduce costs of maintenance, delays, and downtime through both fleet health management statistics and proactive maintenance
- Establish two-way voice, video, and data communications to improve workforce productivity
- Protect your assets, employees, and passengers from safety threats with video surveillance
- Provide real-time updates, onboard Wi-Fi, and wireless payment options to your passengers
- Improve cities' and municipalities' compliance with air pollution and other regulations
- Generate faster upload and download speeds, especially with onboard video surveillance, with wireless bulk data transfer (WBBDT) in your maintenance yard



## Case study

**Situation:** Linz AG needed a way to install video surveillance, support no-contact payment systems for the city as well as Wi-Fi functionality aboard its trams, and improve its operational efficiency.

**Solution:** Linz AG's 56 trams now support up to 500 simultaneous Wi-Fi users and generate more than 20 GB of 3G wireless traffic per tram per month. Using real-time video displays at tram stations, Linz AG now displays tram schedules and can announce events or incidents that might cause transportation delays. Also, the company is able to analyze real-time data from connected trams, which helps to optimize traffic flow and improve schedule accuracy

**Results:** With Cisco's help, Linz was able to increase tram efficiency and performance while reducing energy consumption by 10 percent. Further, they were able to simplify maintenance on ticketing machines, enhance capacity management, and reduce CO<sub>2</sub> output by 85 tons in just nine months.

*Linz AG case study*

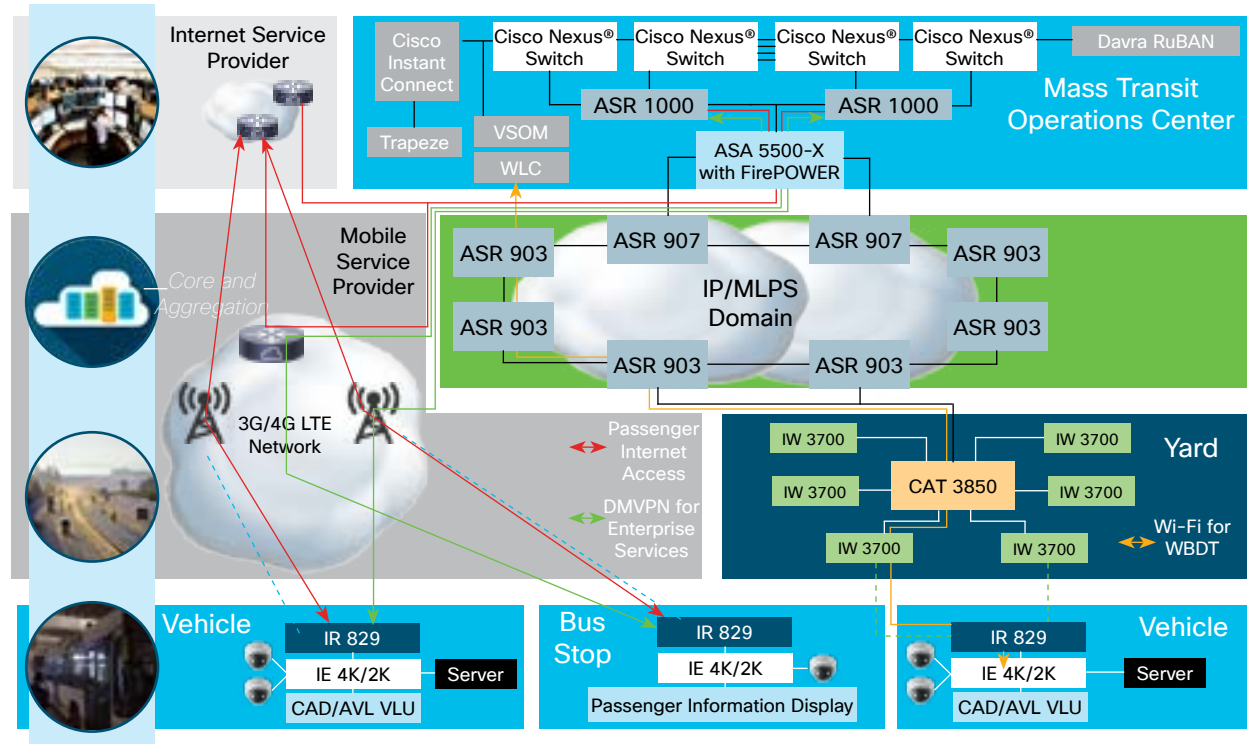
## Solution components

**Table 1.** Main Cisco product components for Connected Mass Transit

Product name	Product Description
<b>Cisco 829 Industrial Integrated Services Routers</b>	<ul style="list-style-type: none"> <li>Vehicle router that connects onboard systems to wireless 3G/4G/LTE, including Wi-Fi for passengers and intelligent off-board connectivity</li> </ul>
<b>Cisco Industrial Ethernet 4000 Series Switches</b>	<ul style="list-style-type: none"> <li>Ruggedized switches that provide resilient and reliable connectivity with Gigabit Ethernet and Power over Ethernet (PoE) support for a range of onboard devices (IR 829, Vehicle Logic Unit, VSM, etc.)</li> </ul>
<b>Cisco Video Surveillance Manager (VSM)</b>	<ul style="list-style-type: none"> <li>A comprehensive, policy-based system for physical security and video surveillance to increase worker productivity across thousands of cameras.</li> </ul>
<b>Cisco ASR 900 Series Aggregation Services Routers</b>	<ul style="list-style-type: none"> <li>Routers that provide a scalable and resilient unified MPLS transport infrastructure and interconnectivity between roadside, yard, data center, and operations center networks.</li> </ul>

Note: products are hyperlinked for your convenience

**Figure 1.** Key elements the Cisco Connected Mass Transit solution





**“We now have real-time diagnostics on our trains so that our maintenance department can see how our trains are operating, and if we’re starting to see issues with thresholds, we can stop a train and do a replacement on it before we experience a major failure.”**

**- Paul Joblonski**

CEO, San Diego Metropolitan Transit System

*San Diego MTS  
case study*

For more information about Cisco Connected Mass Transit, please visit our website at

[www.cisco.com/go/masstransit](http://www.cisco.com/go/masstransit)

## Summary

Choosing to invest in a digital network infrastructure means more than just being able to connect your fleet vehicles and provide onboard Wi-Fi: It’s about integrating real-time analytics and insights to automate tasks across your entire operations and gaining visibility into how to operate more efficiently in a world of rising costs; it’s about being able to safely monitor your assets, passengers, and surroundings without having to look over your shoulder and worry about security threats; and it’s about feeling confident in meeting your customers’ expectations and knowing what to invest in next.

Waiting for federal funding or relying on state gastaxes on gas is not a robust option anymore; transit companies such as yours will need to become more self-reliant if they want to operate in a complex future environment. Lowering your total cost of ownership as you incorporate existing infrastructure and eliminate redundant, proprietary systems is the first step toward scaling rapidly for future growth. The next step is up to you.

## More Resources

Architecture

Solution Overview

Cybersecurity eBook

Cisco Mass Transit CVD