



WIRELESS NETWORK SOLUTIONS

WIRELESS TECHNOLOGY TRANSFORMS TRAIN OPERATIONS

INCREASE PASSENGER PRODUCTIVITY, SAFETY AND RIDERSHIP WITH RELIABLE WIRELESS ACCESS



A GREENER RIDE TO WORK

Looking for a way to save costs on gas – not to mention hassles with traffic and parking – a hotel worker abandons his 1 hour and 45 minute daily drive into the city in favor of the train. He feels good about making this “green” decision and can now spend the daily trip catching up on email, browsing the latest news or watching his favorite video programming – all things he can’t do in his car.

EXTENDED PRODUCTIVITY

An executive wraps up another long day at the office and heads out to catch the train home. Rush hour chaos is in full swing as he grabs a seat. His day’s work is not quite over. Luckily, his commuter train has reliable Wi-Fi

access, allowing him to make the most of his 45-minute train ride home to put the finishing touches on a client presentation for a meeting the next day.

SAFETY FIRST

While monitoring the video stream from a wireless camera onboard an inbound train, an operations center security worker spots a suspicious package underneath one of the empty seats. He immediately notifies the conductor and engineer of that train by sending an alert directly to their handheld devices. The conductor clears the passenger car and secures the area until the train reaches the next stop and train security, with help from local police, can remove the package from the train.



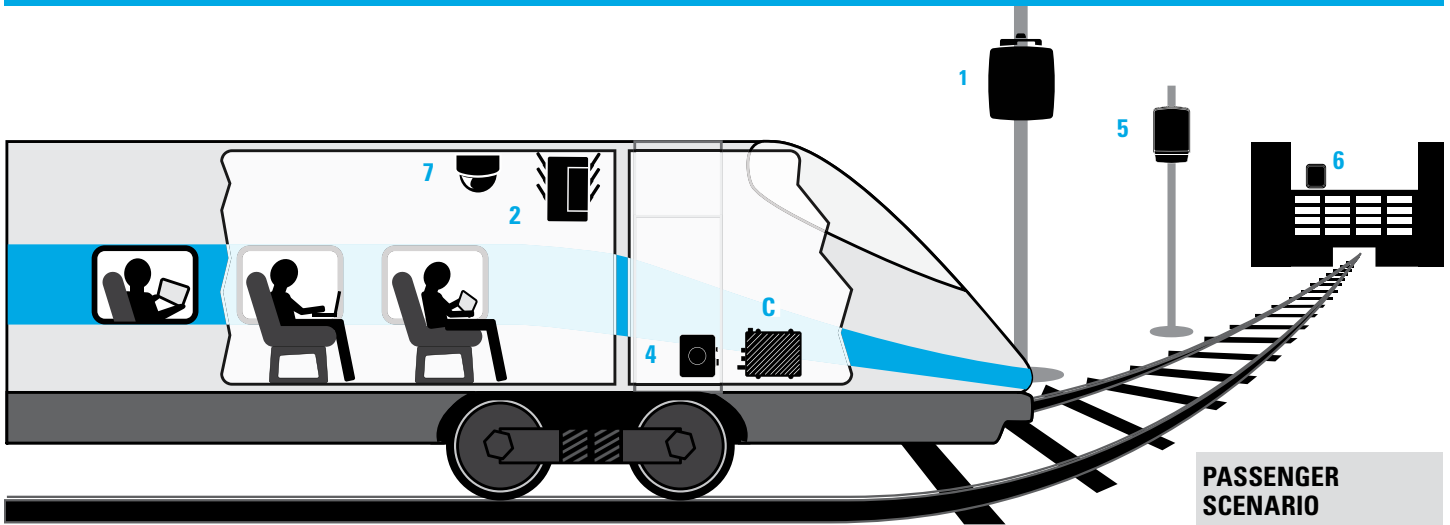
IN PURSUIT OF A HIGH-SPEED MOBILE OFFICE

With increasing public safety concerns, congestion, pollution, and the rising cost of gasoline and parking, many commuters are getting off the highways and choosing commuter train systems as their primary transportation mode to work. It's the job of the Transit Operator to provide the means to quickly, safely and comfortably connect passengers to their jobs and communities; a service that offers an environmentally desirable solution to pollution, traffic and parking headaches. But to keep them coming back, you need to offer more.

Constantly being connected demands reliable wireless connectivity everywhere. Providing access along with the ability to push digital content to passengers wirelessly such as entertainment, train arrival and departure information, available seats, can transform the rider experience and increase the likelihood they'll come back and encourage others to do the same. A wireless broadband network extension is a cost-effective way to deliver that access and to create a robust network platform to support a variety of innovative mobile applications. Light rail has the potential to become the ultimate mobile office.



BUILDING AN INTEGRATED WIRELESS SOLUTION FOR RAIL



THE PRODUCTS WITHIN THE SOLUTION

1 Mesh Wide Area Network (MWAN) AP 7181:

A best-in-class, high power, multi-radio outdoor 802.11n access point with ADEPT (ADvanced Element Panel Technology) integrated antenna technology. It offers the highest mesh capacity to support the long-term wireless network needs of light rail operations.

2 WLAN AP 7131: This powerful tri-radio access point provides simultaneous support for high-speed wireless voice and data services, self-healing mesh networking and non-data applications such as Wireless IPS. This fully DFS-compliant 802.11n device offers speeds up to 300 Mbps per access point — six times the bandwidth of an 802.11a/g access point.

C Mesh Vehicle Mounted Modem (VMM) 4300:

The VMM enables secure and reliable wireless broadband connectivity at light rail speeds. It includes a 4.9 GHz, 5.4 GHz or 5.8 GHz radio and provides exceptional wireless backhaul connectivity. It turns the train into a mobile office.

4 Mesh Vehicle Mounted Modem (VMM) 6300:

The VMM 6300 provides high bandwidth access to mission-critical information at speeds over 100 mph. Compact and ruggedly designed, it supports up to 6 Mbps burst data rates.

5 PMP 430: With OFDM technology, the PMP 430 delivers 40+ Mbps throughput, ranges up to 30 miles (48 km) and near-line of sight (nLOS) performance for reliable and secure data, voice and video connectivity.

6 PTP 600: With aggregate throughput up to 300 Mbps, PTP 600 Series solutions are well-suited for applications and networks that require high throughput and T1/E1 capability because they build in extra features that deliver greater speed and mitigate radio-frequency (RF) interference.

7 Mesh Cameras: Utilizing licensed 4.9 GHz or unlicensed 2.4 GHz frequencies, the Mesh Wireless Video Camera system can be used as part of a larger Mesh Wide Area Network (MWAN), or as a standalone video solution. Users can wirelessly access high-quality video feeds — even at high speeds.

PASSENGER SCENARIO

In-train 802.11n AP 7131 nodes provide access to the Internet for consumer devices, which connect to a VMM 4300 to enable wireless connectivity while the train is in motion. The VMMs then connect to AP 7181 units mounted along the track to provide outdoor coverage. The AP 7181 connects to the PMP 430 to distribute that data to an aggregation point where it can be back-hauled wirelessly using the PTP 600. The result? Reliable and robust connectivity to support both passenger access and operator applications.



SECURING RIDERS AND STAFF

Safety matters – to riders and train personnel alike. The ability to monitor in real-time what’s happening onboard a moving train and at train stations provides greater situational awareness of potential safety issues – with time to act. Wireless connectivity gives you the flexibility to put cameras where you need them and access to that video at the control center and in the hands of conductors, delivering enhanced passenger safety and system-wide security.

SIMPLE, INTEGRATED MANAGEMENT

No matter which combination of wireless network solutions you choose, they can be fully integrated and managed using a powerful tool, the Motorola Wireless Manager. This dynamic platform provides a single view and point of control for all network components in an easy to use embedded Google mapping environment. Its ultra-thin light client even enables you to view the status of the network remotely using your smartphone.

MULTI-PURPOSE, FLEXIBLE SOLUTIONS

Advanced wireless network solutions can greatly improve the passenger experience, security and reliability of rail operations. Building the right, scalable wireless network platform that supports a robust number of applications is the right strategy long-term. We can show you what’s possible.

ABOUT WIRELESS NETWORK SOLUTIONS

We deliver seamless connectivity that puts real-time information in customers’ hands. Our proven solutions provide the agility needed to grow business or better protect and serve the public. Working seamlessly together with world-class devices, our portfolio includes indoor WLAN, outdoor wireless mesh, point-to-multipoint, point-to-point networks and voice over WLAN solutions. Combined with powerful software for wireless network design, security, management and troubleshooting, wireless network solutions deliver trusted networking and anywhere access to organizations across the globe.

For more information on transportation solutions, please visit:

www.motorola.com/government/transportation.

For news and comments on the industry, join the conversation at

wirelessnetworkpulse.com.

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