Regional Transit Service

A Sierra Wireless® Mobile Networking Solution

CUSTOMER CRITICAL CHALLENGE

- Provide real-time on-time performance to passengers and fleet operators via mobile applications and digital signage

- Source a solution that offers network connectivity, high precision location and seamlessly integrates with existing systems including AVL

- System flexible to be extended to new application in future

SOLUTION

- AirLink® MG90 Multi-Network Router, AirLink® Mobility Manager and AirLink® Connection Manager

BENEFITS

- Improved location information feeds real-time updates to operators and passengers

- Improved coverage across operating area

- Extensible for future applications including passenger Wi-Fi

BACKGROUND

Based in Rochester, Regional Transit Service (RTS) is a regional transit authority serving customers and business partners in eight counties in the northern Finger Lakes region of New York State. RTS provides safe, reliable and convenient public transit services to more than 18 million people each year and connects its customers to jobs, school, healthcare, shopping and recreational activities every day.

Customer Challenge

The fleets managed by RTS range in size from less than 10 buses to more than 200 vehicles and includes the authority's RTS Access paratransit program that provides coordinated ride-sharing for people with disabilities.

RTS is recognized as one of the best-run transit systems in the U.S. for, among other measures, its ability to provide accurate, up-to-date route information and its high rate of on-time performance. But RTS wanted to be even better. The authority decided it was time to upgrade its old, proprietary UHF radio-based data system, which not only restricted GPS location data updates to once-per-minute but also provided limited connectivity range outside more populated urban areas.

"We had our previous data system since 2001, with an upgrade to a second data channel in 2008," explained Jeff Luce, Communications Systems Engineer of RTS. "Monroe County, which has one of our largest fleets, was really pushing to move to an updated system allowing more frequent receipt of bus location data to further improve the accuracy of information provided to our customers, as well as improve our overall metrics for on-time performance."

On-time performance is a top concern for meeting customer satisfaction levels. With RTS' outdated system, once-per-minute route updates via GPS data were creating erratic estimated departure times that frustrated bus drivers, fleet operators and passengers alike. In addition, the data management system was integrated with a proprietary CAD/AVL system supporting many applications, including digital signage on the road, bus route information and the mobile app used by customers to view bus location. In order to improve service to its customers, RTS began looking into solutions offering multi-network connectivity and GPS capabilities in a single platform that could successfully be integrated with their existing CAD/AVL system.

Sierra Wireless Mobile Networking Solution

RTS initiated a formal RFP with requirements in three categories: must-have, highly desired, and nice-to-have. For the new system, RTS was looking for a solution that provided both cellular and Wi-Fi on a single device, as well as seamless transition between the multiple connection protocols, and offered multi-WAN support and the ability to incorporate a secure VPN tunnel. After extensive evaluations of multiple

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vendor options, RTS selected the AirLink® MG90 high performance LTE-Advanced vehicle multi-networking platform purpose-built for vehicles to provide secure, always-on connectivity for mission critical transit services and worked with Sierra Wireless partner Island Tech Services (ITS) to deploy.

"The Sierra Wireless solution better met our needs out of the box," said Jeff Luce. "After some head-to-head testing with other vendor products, the rugged Sierra Wireless router and management platform far surpassed capabilities of its competitors."

With multi-network connectivity, the MG90 offers dual LTE-Advanced radios with a Band 14 option, dual concurrent Gigabit Wi-Fi and Gigabit Ethernet, with extensions to Land Mobile Radio (LMR) and satellite systems. The MG90 selects the best available network based on user-defined policies and provides a seamless network handover and sub-second network switching.

The MG90 platform provides consolidated security with AirLink® Connection Manager (ACM) VPN appliance and remote, real-time network insight and control with the AirLink® Mobility Manager (AMM). Available as a physical or virtual appliance, ACM is a mobile-optimized VPN solution that extends the enterprise network to the vehicle; it consolidates security onto a single platform for all connected devices and applications in the vehicle area network and provides an always-on VPN tunnel to eliminate downtime or loss of communications, even in roaming situations between networks (cellular and/or Wi-Fi). AMM is designed for mobile applications where cloud-based management is not an option, enabling simple, remote and real-time mass configuration, control and troubleshooting of AirLink routers and gateways, connected infrastructure and mission critical applications through a user-friendly virtual dashboard.
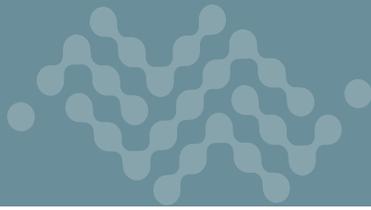
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RTS also utilized Sierra Wireless' Professional Services team, which has expertise in a broad range of IT networking systems—both fixed and mobile—and in integrating network connectivity, applications and devices to provide high performance, end-to-end communications solutions. And helping to pull it all together was Island Tech Services.

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In total, RTS is looking to roll out the AirLink® MG90 multi-networking platform into 295 buses, including those used in its RTS Access program. To date, RTS has this new platform deployed in 240 vehicles, with the remainder targeted for deployment in the coming months.

Results

RTS bus drivers and fleet operators have reported a marked improvement in communications coverage. The legacy radio-based system bounced between voice and message data, frequently falling back to voice-only capabilities when driving out of range along routes located in surrounding communities. Bus drivers and fleet operators were quick to notice that the CAD/AVL system is now no longer reporting loss of communications when the vehicle travels beyond a certain point.

However, the biggest driver for implementing the new data management system was to improve the rate of real-time GPS data updates for both the vehicle operators driving routes and customers tracking departure information to accurately plan their travels.

"Transit customers expect Uber-like tracking capabilities," said Jeff Luce. "With our new system, we have already decreased reporting update intervals from _ _ _ _ to 30 seconds, and we would like to get that down to 10 seconds as our ultimate target."

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