

Wi-Tronix

Vehicle tracking and data download and integration



Picture Courtesy of Florida East Coast Railway

“RTI’s middleware combines flexibility and reliability, supporting our need to exchange data with mobile assets as they travel across North America.”

Mike Heilmann
Executive Vice President
Wi-Tronix

Customer Overview

Wi-Tronix provides products and services to wirelessly monitor high-value mobile assets such as trailer trucks, locomotives, industrial equipment and marine vessels. Wi-Tronix customers realize significant savings through improved fleet utilization and more efficient operation of their mobile assets. Wi-Tracker utilizes Commercial Off-The-Shelf (COTS) embedded components, hardened for specialized industrial environments, to integrate with mobile assets and collect location, utilization, and other data. Wi-DownloadER Fleet-wide Data/Event Recorder Download Platform complements Wi-Tracker by providing a single, fleet-wide data/event recorder download platform for wireless remote data download for a mobile asset fleet.

Application

In an industry where tracking and managing large and expensive assets can improve management and oversight and save millions of dollars in higher utilization, Wi-Tronix provides solutions that make sure those assets are used efficiently. Tracking mobile assets such as trailer trucks, locomotives, industrial equipment, and barges enables enterprises to detect problems and reroute equipment based on local conditions, providing for shorter transit time and better scheduling. These solutions also enable a company to track average speed, gas mileage, engine operation, and other characteristics that contribute to both safety and asset performance.

Challenges

Wi-Tronix required a data distribution solution for its Wi-Tracker and Wi-DownloadER wireless asset monitoring and download products in order to provide a comprehensive approach to remote asset management. Together, these products enable a customer of Wi-Tronix to electronically monitor the location of an asset, physical characteristics of the asset, fuel history and efficiency, vehicle operating characteristics, and asset utilization. Because assets are both mobile and frequently geographically dispersed, they communicate via wireless interfaces with the central control facility.

The volume of data and the requirement for real-time analysis and response, with the control signals sent across significant distances make this a challenging application. In addition, because customers can have dozens or even hundreds of mobile assets, data transmissions from many sources have to be received and aggregated across the distributed system. These characteristics make any potential solution complex and subject to poor performance and reliability.

Why RTI Was Selected

Wi-Tronix looked at several commercial solutions, including both commercial distributed networking alternatives and potential in-house custom code. Of the alternatives, the company determined that the RTI Data Distribution Service provided the best technical solution for its requirements. RTI Data Distribution Service is a standards-based middleware product that enables the real-time exchange of data between nodes of a distributed system that consists of both data producers and data consumers. Using a publish-subscribe model for data availability, it provides a means to quickly and reliably move and share data in a distributed computing environment. RTI Data Distribution Service complies with the Object Management Group (OMG) Data Distribution Service for Real-Time Systems (DDS) specification for data distribution across large-scale networks.

RTI had experience aggregating and coordinating data from remote and mobile data sources, and working across wireless networks. These factors, along with performance and reliability tests, helped the company confirm its choice, according to Mike Heilmann, executive vice president at Wi-Tronix.

Without a commercial middleware solution for real-time data distribution, Wi-Tronix would have had to develop and maintain its own code to ensure data flowed between nodes within the required time constraints. In addition to the lengthy development schedule this alternative would likely have entailed, getting the reliability and performance out of a custom solution would have been expensive and time-consuming.

RTI provided Wi-Tronix with a distributed data middleware solution that enabled Wi-Tronix to offer its customers new features and reliability in mobile asset management across a network spanning thousands of miles. The use of RTI Data Distribution Service as a platform enabled the company to focus its efforts on data collection and system integration, rather than building and maintaining a comprehensive data distribution mechanism.

About RTI

Real-Time Innovations (RTI) provides high-performance infrastructure solutions for distributed real-time applications. RTI middleware delivers dramatic improvements in latency, throughput and scalability while slashing cost of ownership. A broad range of industries leverage RTI's software and design expertise, including defense, intelligence, simulation, industrial control, power generation, transportation, finance, medical and communications. Founded in 1991, RTI is privately held and headquartered in Sunnyvale, California. For more information, please visit www.rti.com.

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