



IDEX uses Windows IoT Core and Azure to create the world's first smart fire truck

Customer

IDEX

Partner

Rev

Products and Services

Azure

Windows 10 IoT Core

Windows IoT

Industry

Automotive

Organization Size

Medium (50 - 999 employees)

Country

United States

Every day, firefighters across the U.S. answer an average of 90,000 emergency calls. Thousands of lives rely on their ability to effectively respond to emergencies, so they need to know their vehicles will work, without fail. But monitoring and maintaining a fire truck's operational health is time and resource intensive, requiring hands-on diagnostics and unwanted downtime for these life-saving tools.

IoT solutions expert IDEX partnered with REV, manufacturer of the highly rated E-ONE Fire and Rescue vehicles, to implement the first-ever Smart Truck Technology platform. The system uses Microsoft Azure and Windows 10 IoT technology to connect the numerous systems and components of a fire truck to provide technicians and maintenance crews with real-time insights into a vehicle's health. These diagnostic insights and network capabilities are helping technicians and maintenance crews increase vehicle reliability, reduce downtime, and ultimately save lives.

The downside of downtime

Healthcare providers use a variety of diagnostic equipment and applications to collect medical data and manage patient care. While similar tools are frequently used in different healthcare facilities, their networks are typically closed systems that restrict the sharing of data with the greater healthcare community. This lack of connected, unified data inhibits innovation, diagnostic accuracy, and patient outcomes.

The heart of improving patient outcomes

A modern-day fire truck is a complex machine comprised of hundreds of mechanical and electronic systems. "The very nature of what the truck is designed for—the complexities and the customization that go into it—make it unlike anything else in the automotive space," says Jay Johnson, VP and General Manager of E-ONE. "It's more than a truck. It's the fire and safety crew's technology and emergency hub."

Assessing and maintaining a fire truck's health—or any emergency response vehicle—is an intricate and laborious process. Taking a vehicle out of service for repairs costs money and administrative overhead. But because of the lifesaving work first responders do, it's critical that vehicles work when they're needed most.

The Internet of Trucks—a shared vision

Many of the systems and equipment on fire trucks can provide data about their functions and status, but the information end points don't connect. IDEX and REV shared a vision of a world in which emergency vehicles have all their systems connected, providing valuable insights to crisis management and maintenance teams. The result of their vision is AXIS, a centralized solution for tracking, collecting, categorizing, and distributing a truck's performance data.

"We're providing a tool that allows first responders to do their jobs more efficiently and effectively"

—Jay Johnson, Vice President and General Manager
E-ONE

REV and IDEX leveraged Azure and Windows 10 IoT Core to build AXIS's back end and IoT gateway solution. REV had already embedded Windows 10 IoT into E-ONE's fire truck operating systems, and IDEX extended that technology into all the truck's systems. The security features and guaranteed uptime of Azure give fire departments the peace of mind that the information they need on vehicle health will be secure and available whenever they need it.

"There are no off shifts ... They're on 24, seven, 365 days a year."

—Jay Johnson, Vice President and General Manager
E-ONE

Instant insights, total transformation

Before AXIS, if a fire truck operator pushed a button to turn on the emergency lights and they didn't work, it took many steps and a lot of back and forth communication to identify and resolve the problem. AXIS gives technicians and operators deep, real-time visibility into the health and operational status of their entire fleet. Now, technicians and maintenance crews can access a dashboard and quickly pinpoint and even solve issues remotely on a computer or smart phone anywhere, any time.

Jeffery Zook, Global Product Line Manager of Vehicle Electronics at IDEX, understands how valuable it is to continuously monitor a fire truck's status and access every bit of data, big and small. "The minute the ignition turns on we are sampling thousands of canned messages across multiple networks second by second." The data AXIS collects provides detailed, customizable reports on current issues and can identify and recommend preventive maintenance that helps reduce costly downtime.

A smarter and safer future

REV and IDEX are working to expand AXIS Smart Truck Technology into other emergency vehicles and public services to help city departments share data and operate more efficiently, ultimately making communities smarter, safer, and more efficient. By bringing together the right technologies, they're creating a world in which first responders can be confident that their vehicle is ready to perform—every time the alarm sounds.