SEMTECH CASE STUDY

Derbyshire Fire and Rescue Services (DFRS)

Derbyshire Fire & Rescue Service
Making Derbyshire Safer

DFRS Modernizes Firefighting with Real-Time Awareness and Data-Driven Response

By partnering with Semtech to deploy AirLink® Pro multi-network routers in each firefighting vehicle, DFRS provides faster, more efficient, and more appropriate emergency response.

QUICKFACTS

Company

Derbyshire Fire and Rescue Services (DFRS)

Customer Profile

Derbyshire Fire & Rescue Service responds to a wide range of emergency events in the UK County of Derbyshire. Their service area covers over 1,000 square miles, including urban and rural communities, and a population of over one million. In addition to fire response, DFRS responds to road traffic collisions and other rescue situations. It also engages with its communities through prevention and protection activities, conducts fire investigations, and performs other community safety initiatives. Their fleet includes 65 fire engines and specialty appliances, and six electric vehicles.

Objectives

DFRS requires a reliable data connection to support an effective fire response which includes:

- Complete risk information for emergency responders
- Accurate location information for critical equipment and infrastructure
- Automated situation updates rather than crews having to phone them in while en route

Results

- Responders have faster and more efficient access to information both prior to and at incident arrival to inform planning and decision making
- Incident updates occur in real time

Semtech Products and Services

- Semtech AirLink Pro Multi-Network Router
- AirLink Mobility Manager

Solution Partner

Linkwave Technologies Ltd.

> All of a sudden, the connectivity made everything available to you that was available back at the station. And available to everyone at the incident with a DFRS login. The support given to our network operations team gives us high confidence in the Semtech product and in Linkwave. We are soon taking delivery of nine new fire engines, and we will install the AirLink router solution in all of these.

Richard Foster, *DFRS - ICT Support Specialist UM & SI*

INTRODUCTION

Emergency response to fires is a complicated effort. The environment is unpredictable, the properties of fire are complex, and the logistical decisions regarding people and equipment must occur quickly and decisively. For these reasons, access to information can give crews a critical upper hand when it comes to fighting fires.

Reliable data access is also critical because of the large number of incidents. During the first three quarters of 2023, Derbyshire Fire & Rescue Service attended almost 5,400 incidents – an average of 600 times per month.

CHALLENGE

Incident commanders must have accurate risk information available to make correct and timely response decisions. Risk information includes knowledge of any site hazards, details about building position and construction, adverse weather conditions, and any occupants. Commanders and crews also need mapping data that shows the location of fire hydrants and any secondary water sources. Attending an incident without full and complete information can create firefighting delays, which can potentially risk the safety of occupants and crews.

DFRS needed a fast and reliable mobile cellular data connection between the head office and the firefighting vehicles to facilitate access to necessary information. They searched for a mobile networking solution that would make critical data available to mitigate risk to staff and the community during incidents, and that would transform the cab of an emergency vehicle into an office while providing access to all home office systems from remote locations in and around the county during non-emergency events.

SOLUTION

DFRS began evaluating mobile communications equipment in 2019. They were interested not just in purchasing a product, but in partnering with the supplier for implementation and ongoing support. They liked that Semtech AirLink® routers had enhanced data capabilities and were used extensively in mobile public safety settings in the United States. They also appreciated the fact that technical partner Linkwave had strong AirLink knowledge, and provided professional end-to-end technical services and support.

During the spring and summer of 2019, DFRS ran a proof of concept (PoC) exercise with five vehicles. Prior to the PoC, they tested all Derbyshire roads for 4G LTE coverage, availability, and connectivity provided by a mobile network operator. Coverage was deemed viable to support needed data communications.

After the PoC was deemed a success, DFRS deployed an AirLink Pro multi-network router in every fire and emergency vehicle that needed connectivity. The AirLink Pro multi-network router is in the driver's cab and connects two multi-MIMO cellular and Wi-Fi antennas on each vehicle roof. The router maintains a cellular data connection and a Wi-Fi hotspot in and around the vehicle. This provides a platform that transforms old ways of working into a fast and efficient mobile experience. DFRS recently upgraded its 4G routers to 5G for greater performance across the fleet.

Each vehicle also has a Mobile Data Terminal (MDT), a tablet-based portal with access to mapping applications, risk software, routing software, and other tools. At the head office, AirLink Mobility Manager (AMM) is used to track each vehicle in the control center, which means they can be monitored and re-routed if needed.

BENEFITS

Partnering with Semtech and Linkwave has enabled DFRS to have faster, more efficient, and more appropriate emergency responses.

- Head office staff has real-time awareness of the location and availability of all vehicles: no more calling the vehicle crews for updates.
- Incident commanders have access to all needed risk and infrastructure data in the vehicle before arriving at an incident scene.
- Critical applications are available when required.
- Incident updates occur in real time because the Wi-Fi bubble around the vehicle provides instant access via laptop, tablet, or another mobile device.
- The installation process is straightforward, so vehicles have minimal downtime.
- Vehicles are always connected so can be re-routed to secondary events as needed.

About Semtech

Semtech Corporation (Nasdaq: SMTC) is a high-performance semiconductor, IoT systems and cloud connectivity service provider dedicated to delivering high-quality technology solutions that enable a smarter, more connected and sustainable planet. Our global teams are committed to empowering solution architects and application developers to develop breakthrough products for the infrastructure, industrial and consumer markets.

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