

Emergency Service Uses Wireless across Dispersed Sites

Derbyshire Fire and Rescue unites emergency services with Cisco Unified Wireless Network

EXECUTIVE SUMMARY
<p>DERBYSHIRE FIRE AND RESCUE SERVICE</p> <ul style="list-style-type: none"> • Emergency Services • Derbyshire, United Kingdom • 950 employees <p>BUSINESS CHALLENGE</p> <ul style="list-style-type: none"> • Roll out wireless services across a wide number of dispersed sites quickly and easily • Support location-based services and wide range of future applications • Control remote wireless networks from a single central point
<p>NETWORK SOLUTION</p> <ul style="list-style-type: none"> • Unified Wireless Network to improve productivity • Location services for asset control • Centralized management functions
<p>BUSINESS RESULTS</p> <ul style="list-style-type: none"> • Greater station efficiency with visiting staff able to access applications over the wireless network • Easy configuration means new installations can be completed in under an hour • Potential for the introduction of new services such as automated updates to fire appliances

Business Challenge

As with many emergency services, a drive for efficiency is at the heart of technological innovation at Derbyshire Fire and Rescue Service, a 950-strong force that serves 956,560 civilians spread across 1000 square miles in Derbyshire, a county in England.

Derbyshire Fire and Rescue makes extensive use of information and communications technology (ICT) to support its service delivery, with all its departments and 31 fire stations connected to a WAN for data sharing and the delivery of applications such as a Management Information System, which provides incident reporting and performance analysis.

In a public sector service concerned with citizen safety, reliability is critical. As a result, the service has traditionally relied on tried-and-tested communications channels: a plain old telephone service, e-mail, and a proprietary network for

communication with crews on board fire appliances.

These channels link the service’s headquarters to fire stations, an administration office and some fire appliances. Over time, however, the traditional communications channels have gradually been supplemented as new technologies enter the mainstream. Thus, for example, the service now uses voice over IP links for communication between major sites.

In 2005, the service began looking at WLANs as another trusted technology. “We believed people would be more efficient if they could use it to work with laptops and PDAs,” explains Pete Garyga, ICT projects officer for Derbyshire Fire and Rescue.

“When a fire officer arrives at a remote station they could log in from anywhere in the building, without having to track down a spare network cable. People such as fire safety officers are often making calls into local stations and we envisioned that they would be able to ‘hot desk’ more.

Network Solution

Cisco® was a logical choice of provider for the wireless network technology, since the service already used a number of other platforms from the vendor, including Cisco Catalyst® 2950 and

3750 Series switches, Cisco 2600 Series Multiservice Platforms and Cisco PIX 515E Security Appliances.

“We wanted to stick with the brand we know and love,” says Garyga. One of the reasons for this affinity was the leadership that Cisco has in the integration of wired and wireless networks; a leadership that was soon to become evident for Derbyshire Fire and Rescue.

In 2005, the service initially ran a wireless network technology pilot at its headquarters, using a CiscoWorks Wireless LAN Solution Engine (WLSE). The service was about to roll out the infrastructure across all of its main locations when it learned of a new technology from Cisco that might better suit its needs.

At this time, Cisco was in the process of introducing a new, much more powerful form of WLAN approach: the Cisco Unified Wireless Network. This allows organizations to create secure, scalable, cost-effective WLANs with the following benefits:

- Greater potential for collaboration with colleagues, business partners and customers, using tools such as instant messaging, e-mail and network resources to boost productivity and speed up decision-making.
- More insight into organizational data and processes, to help develop new applications that transform operations.
- Higher awareness and use of assets through real-time simultaneous tracking of thousands of Wi-Fi devices, permitting location-based security, high-value asset tracking and business policy enforcement.

“East Sussex Fire and Rescue Service was deploying a similar system so I did some investigation into the way that it worked,” says Garyga.

“I also looked on the Cisco Website and there were links to a setup in [Finland](#) where they had deployed it for public use. The main thing that caught our eye was the location services capability. That really jumped out at us.

“The other feature that we were interested in was having central control of everything; although the controllers are all out at different sites, they can all be centrally managed.”

Garyga rapidly became convinced that a Cisco Unified Wireless Network infrastructure would be ideal for Derbyshire Fire and Rescue. Budget had already been allocated to purchase the autonomous mode WLAN technology that the Service had been piloting at its headquarters, so he had to create a business case for the more advanced platform.

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— Pete Garyga, ICT projects officer, Derbyshire Fire and Rescue Service

“I put together a recommendation to our ICT strategy group and explained the added benefits, and it was agreed we would put this up in place of our original WLAN,” he says. “We realized that we could get much better functionality for just a little bit more expenditure.”

The decision to buy the Cisco Unified Wireless Network equipment was made halfway through 2006, and the purchase was carried out via a U.K. government Office of Government Commerce Catalyst framework from BT iNet, a division of the British telecommunication services provider BT.

Business Results

The Service started rolling out the WLAN technology within about a month and a half of placing its order. And soon Garyga started to appreciate the benefits of the technology. “It was extremely quick to roll out because once you had a configuration set up for a controller, you could clone it for the next one,” he says. “It takes us under an hour to go through the setup process.”

Every Derbyshire Fire and Rescue site is now covered by wireless, following a rollout that took about eight months to complete. Typically, larger fire stations have a Cisco 2006 Wireless LAN Controller and up to six Cisco Aironet® 1242 Access Points.

PRODUCT LIST
<p>Wireless</p> <ul style="list-style-type: none"> • Cisco Aironet® 1242 Access Points • Cisco 2710 Wireless Location Appliance • Cisco 2006 and 4402 Wireless LAN Controllers

Garyga selected the latter specifically for their hybrid remote edge access point (H-REAP) capability. This allows control of the remote access points from the main office through a WAN link without deploying a controller in each site. The access points can switch client data traffic locally and perform client authentication locally when the access points’

connection to the controller is lost. When the access points are connected to the controller, they can also send traffic back to the controller.

Meanwhile, at the headquarters there are two Cisco 4402 Wireless LAN Controllers, configured for redundancy. A Cisco 2710 Wireless Location Appliance has also been installed at the service’s headquarters in order to allow Derbyshire Fire and Rescue to track high-value assets such as laptops.

These assets are tracked using AeroScout active RF identification tags attached to bags or packaging. The active tags are too large to be affixed directly to smaller high-value devices, Garyga says, but putting them on the associated accessories enables greater awareness of the assets and makes it easier to find them when they are needed.

So far, says Garyga, the response to the service’s WLAN offering has been very positive. “Pretty much anything that can be accessed using a desktop is also available over wireless, including the Management Information System that we use for reporting on fire incidents.”

Next Steps

The service is currently looking into an automated system for loading new maps and map-based data onto fire appliances. Automating the updates will provide fire and rescue teams with greater insight in emergency situations and improve civilian safety because new maps can be pushed out whenever there is a change to the database, rather than at quarterly intervals as currently dictated by manpower considerations.

In addition, the information can be disseminated much more quickly, helping ensure that each fire appliance always carries completely up-to-date information. “It will be more timely and efficient,” says Garyga. “The infrastructure is already in place.”

For More Information

To find out more about Cisco Unified Wireless Networks, go to: <http://www.cisco.com/go/wireless>.



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