

Going digital in Wales



Earlier in the year the Welsh Ambulance Service awarded Staffordshire-based Terrafix a major contract for mobile data and tracking for its 701 vehicles. With installation expected by the end of 2009, BAPCO Journal spoke with Terrafix Managing Director Chris Green to find out more about what the new system will deliver.



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The £4m contract is to supply, install, integrate and maintain the Terrafix Vehicle Computer (TVC3000) with custom software for the whole of Welsh Ambulance Service A&E and Patient Care Services fleet. The TVC 3000 will provide dispatch, satellite navigation, and status functions, using a multi-bearer communication platform in the in-vehicle system.

The decision to buy a mobile data and tracking system was made 18 months ago through the Airwave Radio Replacement Project, and Wales is one of the last few remaining ambulance services in the UK to switch over to a digital system. The TVC 3000 was created specifically for Wales and Terrafix MD Chris Green explains that as a result of modifications to the hardware the system is more resilient to communications outages. "We can choose from a multitude of bearers to ensure information is passed back to control rooms. And as a result of the lengthy nature of the Welsh Ambulance project we have been able to supply the same enhanced version to customers elsewhere."

Although the installation of the system in all vehicles is on track for the end of 2009, the integration of the complete system may run into next year due to the Welsh Ambulance business policy to "lock down" a month before Christmas, which means – explains Green – that no new technology can be implemented which may affect the smooth running of emergency response during the busy period.

"The whole mobile data system is new to Wales and will include the installation of the patient transport service with our equipment." Train-the-trainer courses are now in place, with Terrafix supplying a bench version of the vehicle system so that courses can be run in-house.

There is no doubt in Green's mind that the new system will be a benefit in Wales, providing the paramedics a system with sat nav and OS maps. "In our experience going from nothing to something like this can seem quite daunting, but we usually find that within one or two months the users would not be without it."

Benefits

The traditional benefits of mobile data and tracking are well known, and it is expected the system will improve the speed of reaching patients, not to mention improving the data transfer between ambulance and control room. It is now widely accepted that data is more efficient than voice communications. "This will give a control room full visibility of where ambulances are and what exactly they are doing, there is also the capability for the next generation of information coming from the vehicle – such as electronic patient report forms – which provide ambulances with more information prior to reaching the patient, or the patient reaching the hospital. So in principle it will improve performance."

There are additional benefits such as demographic information and field management data for comprehensive management reports, and this sort of information could result in a better business strategy. Green comments that because Terrafix manufactures its own mobile data and tracking units from its headquarters in Stoke, it has been able to create a system just for the Ambulance service. "People will have noticed that when running more than one application on a standard PC the primary application can take over. What we have done is embed all applications including automatic form-filling into the primary application, so incident dispatch is kept primary."

With most of the UK's ambulances now digitally mobile, the question may arise of what can the future bring. Green admits that the market may appear saturated now, but he sees a future where ambulance services move from simple message transfer systems to more complex systems that can help drive performance on the back of the rich seams of data that are becoming available.

In essence, new functionality could create a fleet of mobile offices, making ambulance stations a thing of the past.

The user experience – how it works in practice

In the control room a dispatch person sees an on-screen map peppered with icons that represent all the ambulance units. The icons are not static, they are moving around because of the real time tracking (GPRS and Airwave), with updates taking place every five or ten seconds.

When there is an emergency call, the dispatcher's command and control system interfaces with Terrafix to choose the nearest available resource, using the data provided by the in-vehicle tracking unit.

The dispatcher chooses an ambulance, and a pre-alarm message is immediately sent to the vehicle – while the emergency caller is still on the telephone. The message contains only a small amount of data, but it is enough to get the ambulance on the road.

The ambulance driver presses a button to signal they are on the move, and that changes the status of the icon on the screen. Meanwhile the dispatcher is still on the

phone gathering more information on the incident (such as whether there is a potentially risky situation), to pass onwards to the ambulance.

No messages can be displayed whilst a person is driving, but an indication is given when a message arrives, and the tone of the "beep" changes depending on how critical this message is.

Once the ambulance arrives at the incident, the driver either presses another button to signal arrival, or the system automatically signals arrival when within 200 metres of the scene – the system can be set up to do one or the other, or both.

Once the patient is in the ambulance another button signals the ambulance is about to exit the scene. This also presents the medics with a dynamic list of hospitals they can drive to, and once a hospital is chosen the system navigates there automatically.



On arrival at the hospital another button signals arrival, and the next step clears the job. A variety of other status signals can be created, such as meal breaks etc.

The system can work for single crew vehicles, which can provide a level of confidence to the driver, because the system has an emergency capability should any trouble arise.

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