

CASE STUDY

Portable Digital Radios & Mission-Critical Network



AMBULANCE SERVICE MAINTAINS COMMUNITY TRUST WITH SUPERIOR COMMUNICATIONS

SEAMLESS, RELIABLE & SECURE COMMUNICATIONS SYSTEM FOR BUSY AMBULANCE SERVICE



In the 1960s, calls to Triple Zero taken in a Sydney coordination centre of the Ambulance Service of New South Wales (NSW) would be noted down by hand. The handwritten notes were then physically passed along a conveyor belt running along the middle of the office to the dispatcher, who then coordinated the ambulances' response.

It's a far cry from the state-of-the-art communications in use by the service today.

These days a call to Triple Zero will be answered by a call operator. If an ambulance is required, a sophisticated communications system enables vital information to be quickly relayed via portable digital radio to paramedics, who will be first on the scene to assist. Information is then relayed between the paramedic, dispatcher, ambulance or other emergency services as required.

With portable digital radios that stand up to the vigorous demands of a paramedic's working day, and a dedicated network, this rapid and reliable response means more lives saved.

CUSTOMER PROFILE

Ambulance Service of NSW

Industry Name

Public Safety

Product Name

- XTS5000 and XTL5000 digital portable radios
- ASTRO25 trunked network

Solution Features

- Ruggedised devices
- P25 digital communications
- High network capacity
- Mission-critical reliability

Key benefits

- Reliability of communications
- Capacity even in peak periods
- Secure communications
- High level of community trust

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“The public expects that when they ring the Ambulance Service of NSW, they’re going to get a paramedic response as quickly as possible. The only way that we can provide that is by using a reliable and secure ‘always on’ network with reliable terminal hardware.”

Roger Hanssen, director of information technology, Ambulance Service of NSW

THE CHALLENGE

Intensive care paramedic Colin Straney is on the frontline when it comes to relying on reliable communication. His job takes him to emergencies as a rapid responder, using a motorbike to access areas faster than or inaccessible to ambulance vehicles. The motorbike enables him to avoid traffic congestion and use footpaths, malls and one-way streets where ambulances can’t reach quickly enough – or at all.

Critical information such as the patient’s location and condition is relayed to Straney by a dispatcher. Once at the scene, Straney reports his arrival to the dispatcher, and provides a report of the patient’s condition. At this point he may need to refine the description of the location, as often the information conveyed is not exactly correct. He might request additional resources such as police or fire services, or more ambulance resources.

At the same time, the dispatcher is relaying critical information to the ambulance en route, as this gives the paramedics a general idea of the situation and what to expect. This enables paramedics to consider possible medications or treatments, all ensuring a better outcome for the patient.

Obviously, effective communication between all parties is critical to patient survival, and failure at any point could have fatal or severe consequences. Even a delay of minutes can have serious ramifications.

“On the motorcycle I’m a single responder, this (radio) is the only communication I’ve got with anybody within the service. If I’ve got a regular ambulance coming to the scene, I need to relay the information to them quickly and accurately,” explains Straney.

“And minutes literally count. The last job I did was a cardiac arrest in the middle of the city. We were there in a couple of minutes, and I relayed the information for the other cars coming to the proper location. So the minutes that we take to get there literally make a difference.”

“If this radio doesn’t work, I’ve got no communication with anybody else within the service. So this is crucial to what I do,” explains Straney.

Moreover, the radio system is the one form of communication the ambulance service relies on when all else fails, as described by Roger Hanssen, director of information technology at the service:



“For me, on the cycle, I don’t think I could do this job without the radio communications. It’s my only link to anybody else on the road or in the control centre. I can’t see that we could do our job with any other system.”

Colin Straney, intensive care paramedic, Ambulance Service of NSW



“We have a number of ways and different technologies by which we transmit information. It goes through our computer system, our paging system, and it also goes via the radio network. While the computer system can fail – and often our paging system can fail too – we absolutely rely on our voice network because the radio system to us is the most mission-critical.”

In addition to devices that cope with the rigours of the job, the ambulance service must ensure that its communication network is reliable and secure.

“The public expects that when they ring the Ambulance Service of NSW, they’re going to get a paramedic response as quickly as possible. The only way that we can provide that is by using a reliable and secure ‘always on’ network with reliable terminal hardware. That enables the dispatcher to communicate with the paramedic to provide as much information as possible, and get the paramedic to that patient in need as quickly as possible,” explains Hanssen.

THE SOLUTION

The Ambulance Service of NSW relies on Motorola Solutions’ digital radios to meet the demanding work of a paramedic. Currently the ambulance service uses

XTS5000 and XTL5000 digital radios, which are purpose-built for the public safety environment.

In addition, Motorola Solutions manages, monitors and provides the equipment for the Government Radio Network, a Motorola APCO P25 trunked network, which is owned by the NSW government and used by emergency services, as well as a number of other government agencies.

THE BENEFITS

The devices

Hanssen explains how the digital radios meet the demands of the paramedics’ work: “The terminals that we use are ruggedised for paramedic use, in that they’re weatherproof. You can use them in the rain, you can use them in smoke, you can drop them, you can spill body fluids on them, and those devices continue to operate. They’re simple to clean, and (it’s) simple to ensure that they keep functioning in the worst of conditions,” says Hanssen.

Straney agrees: “We’re exposed to all weather conditions. It can be pouring with rain or 40 degree heat. But I always know this radio’s going to work. And also it’s when we get on and off the motorcycle, it’s being



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knocked around. But it always seems to come through and work very well.”

Despite the rugged conditions faced by paramedics in their working day, they can be confident that their digital radios can cope with whatever the job delivers.

Finally, there is the safety of the paramedic to consider, and the ambulance service places great value on the radios’ duress function, which can send an alarm back to the control centre if the paramedic is in need of further support.

“For me, on the cycle, I don’t think I could do this job without the radio communications. It’s my only link to anybody else on the road or in the control centre. I can’t see that we could do our job with any other system,” sums up Straney.

The network

In selecting the right communications network for the ambulance, Hanssen had a number of factors to consider:

“When deciding on a communications system for an emergency service like the Ambulance Service of NSW, we need to make several considerations. And they are around things like the capacity of the network, the reliability of the network, the security of the network, and the ability to basically be able to use it anytime, anywhere, 24/7,” explains Hanssen.

For the ambulance service, a reliable, dedicated service that is always available is essential. As described by Penelope Little, spokesperson for the ambulance service,

there are critical times such as New Year’s Eve when there is high demand for the ambulance service, as well as several million text messages clogging the mobile phone network:

“It’s a very busy time for the ambulance, and it’s so important that we have a dedicated radio network to be able to get through and talk about Triple Zero calls that we’re responding to. We can’t simply be relying on a mobile phone network, because that’s what everybody else in the state is relying on. So we need to be relying on a very dedicated radio network that can give timely and accurate information.”

In times of major events or incidents in particular, a dedicated network means that it’s always available, and not overloaded. The benefit to the community is that their calls for assistance can be received and life-saving information relayed – quickly and reliably – even during times of high demand.

Clearly the communications system is effective, as the ambulance service has won and retained the trust of the NSW population. In 2012, NSW paramedics were voted the most trusted profession in NSW in the Australian Reader’s Digest Trust Survey, conducted by a leading, independent research company.

This is the ambulance service’s eighth consecutive year at the lead of the survey!

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