

LINES OF COMMUNICATION

Rob Green explains how two-way radios enable private security and public safety personnel to do their jobs more effectively

The private security industry embraces a wide range of roles across a large number of sectors. Front-line security roles include manned guarding of assets, protecting cash and valuables in transit, security management at venues and events and close protection work of individuals in normal and hostile environments. Despite this variety, what these roles all have in common is the need for reliable communications, particularly for those operating in a lone-worker role.

A communication device enables regular contact with managers and fellow team members, the ability to alert control if there is a problem and enable them to take part in a coordinated response to any incident. Private two-way professional mobile radio (PMR) systems provide one of the best communication solutions, as they deliver instant push-to-talk communications, priority and emergency calls and they can send and receive automatic alarms.

Much more than just a traditional walkie-talkie, professional digital radios can offer enhanced safety

COMMUNICATIONS ARE MORE COMPLICATED IF MULTIPLE EMERGENCY SERVICES ARE INVOLVED

features including Lone Worker, Man Down and GPS location-based services. These provide the user with added protection by automatically sending alerts if they do not respond to an inquiry within an allotted time or if the radio tilts beyond a certain angle should the user fall over or become incapacitated. GPS information can send a location to control to help locate the individual quickly, while also alerting other team members.

Private PMR systems have the advantage over other public and cellular mobile systems as they can be designed to provide the required coverage and capacity exactly where it is needed, along with high levels of network security, availability, resilience and redundancy.

PMR systems also provide a much wider range of call options compared with cellular networks, including individual calls, group calls and broadcasts to the whole network of users. It is also worth noting that modern gateways can extend PMR networks by interconnecting them with cellular mobile systems for example, enabling voice traffic (and messaging) with non-radio users on their smartphones via a push-to-talk app.

What type of network is used and what level of ruggedness and sophistication in terms of features the radio terminal supports will depend on the nature of

the security job and the risks involved. Below we take a brief look at communication solutions for security workers operating in stadia, education campuses and during major national incidents.

Major sporting events will usually involve the police, but a range of operations staff will also play a part in managing and securing the event – some or all of whom will have a radio.

Staff venue roles may include parking attendants, gate security, ushers, retail concessions, cleaning and maintenance staff, field (playing area) staff, and of course security staff, whose role is to protect the physical venue itself, the staff who work in it and the people attending the event.

Venue managers will need to coordinate security plans with the police if they are involved and establish liaison staff and ways of communicating between venue security personnel and police commanders assigned to the event.

COMMS FOR VOLUNTEERS

Volunteers are often an essential addition at major sporting events. The London 2012 Games required a workforce of around 200,000 of whom 70,000 were volunteers, for example.

If volunteers are issued with radios, they need to be trained in how to use a particular terminal and in the operational protocols that ensure efficient use of the system. This will include day-to-day operations, minor incidents and in particular what to do and how to use the radio in the event of a major emergency situation.

Radio managers will need to assign radio IDs to users to authenticate them on the network, establish call groups and ensure radios are charged overnight for use by permanent staff and volunteers the next day.

Digital two-way radios are particularly useful in crowded stadia, as the audio is clearer and stronger than analogue radio and mobile phones, thanks to more powerful transmissions and background noise-cancelling technology. It is vital that security guards can hear transmissions. Additional earpieces and headsets can also be connected to handsets.

Venue owners or large security contractors may also want to invest in or hire a trunked two-way radio network, rather than operating a conventional one. A conventional system may clog up quite quickly, meaning that radio calls have to queue until a channel becomes available.

A trunking system has more channels and automatically finds the best available slot, thereby avoiding a stack of calls queuing up. This could be important if an incident occurs and priority can be assigned to particular users or groups.



Emergency services utilise the TETRA communications network in the event of an incident

UNIVERSITY AND COLLEGE SECURITY

Universities have a duty of care to faculty staff and students to provide as safe an environment as possible. A professional mobile radio system can be designed to cover the whole campus using repeaters to extend the system and potentially a distributed antenna system (DAS) to distribute the signal inside large buildings, which may block external signals.

For example, Central College Nottingham in the UK has multiple sites scattered across the city, many of them high towers with basements. Staff working in canteens, receptions, libraries, cleaning, night classes and maintenance all have different radio requirements, as do security personnel, premises officers and facilities managers.

A Digital Mobile Radio (DMR) system provided by authorised Hytera dealer Radio Links Communications

solved the College's coverage issues. It invested in 51 digital hand portable radios, comprising a mixture of Hytera PD605 radios used by staff working in receptions, librarians, cleaners and canteen, and Hytera PD665 units with LCD displays used by security, premises officers and facilities.

The Hytera DMR system provided clear coverage and excellent call quality across the whole campus. The Man Down functionality and Lone Worker safety features linked to the Security Department helped the college meet its Health & Safety requirements, especially for staff that often work alone at night such as cleaners, security or librarians.

A further advantage of the Hytera DMR system is the ability to integrate with other technology across the campus including Access Control and CCTV systems. It can also be integrated directly with campus

speakers to communicate messages directly across a tannoy system.

A more recent refinement in education security is the ability to integrate personal alarms with the university control room by sending a location and 'how are you' status report. For example, PMR Products, based in Chepstow, UK, has developed a tag that does this. Not only does the tag talk to the control room platform, but it can also be integrated into the radio network, so an alarm message can be sent directly to the security guards' radios, once again enabling a faster response on the ground. It is a good example of converged networking, unifying an alarm system with digital two-way radio systems.

TACTICAL COMMUNICATIONS IN NATIONAL INCIDENTS

Communications in the event of a major incident or pre-planned event will be based on the country's national emergency services communications network. In Western Europe this will generally be based on the TETRA or Tetrapol standard and in North America on the P25 two-way radio standard.

The crucial communications consideration in responding to an incident is to plan and coordinate technically and operationally the call groups for the emergency services at the site.

TETRA base stations are sited at some distance from each other, which means the radios will usually only 'see' one base station. But as each base station can only support a limited number of talk groups (although it can support a large number of individuals) network controllers need to 'patch' different talk groups into fewer, but larger call groups to ensure that everyone attending the scene of the incident can communicate. For pre-planned events, such as the visit of a head of state, this can be done

well in advance to ensure seamless communications from the airport to the hotel, enabling escorting police vehicles, motorcycle outriders and foot police along the route to all keep in touch, or only be in touch with whoever the command and control centre wants them to communicate with.

Communication plans to connect different talk groups can also be set in advance by network system planners for different types of incident, enabling the right talk groups to automatically be connected and sent to the right place. This can obviously save time and help to avoid errors when changing talk groups on the hoof when reacting to an incident.

The system planner uses the TETRA dynamic group number addressing service (DGNA) to patch talk groups together on the same channel for intercommunication and broadcast calls. The DGNA service is also used to remove talk groups to and from radio terminals as the incident unfolds. This can all be done over the air.

Communications become more complicated if more than one emergency service is involved in the incident. Nonetheless, the same process can be used to interconnect multiple police, fire and ambulance crews at the scene.

If a major incident is declared, a strategic plan will be implemented and various tiers of command established. A strategic commander will take overall charge with tactical commanders for each of the three emergency services heading up their particular service and coordinating the actual response together.

Two-way radio has been around a long time, evolving to become a feature-rich, integrated communication tool. While a two-way radio cannot support broadband applications such as video, their ruggedness, reliability, instant connectivity and unique feature set ensure they are still the most vital piece of equipment that any security user has, whatever their role ●

Rob Green is Marketing Manager for Hytera Western Europe and a communications professional with extensive experience working across public safety, security and commercial markets.

Digital Mobile Radio (DMR) is ideally suited to security workers in environments like sports stadia and university campuses

