



Ambulance HART takes TETRA into the inner cordon with Motorola Intrinsically-Safe hand-portable radios



Redefining the role of paramedics in support of the UK's national capabilities programme

Hazardous Area Response (HART) teams comprise specially recruited and trained personnel providing the ambulance response to major incidents involving hazardous materials and environments. Following a number of major incidents in recent years, and faced with an increasing threat of a chemical, biological, radiological or nuclear (CRBN) event, ambulance staff were initially trained and equipped to work within the 'warm zone' just outside of the inner cordon of incidents involving hazardous materials (HAZMAT).



Recognising that more lives could be saved if paramedics were able to operate within the inner cordon, the Ambulance Service Association (ASA) and the Department of Health developed the HART programme, establishing the first units at the London and West Midland Ambulance Services in 2007. With 12 Ambulance HART teams to be deployed across England by 2011, each team will comprise 42 paramedics working in seven teams of six, and supported by a fleet of specialist vehicles.



Ensure mission-critical radio communications within the inner cordon of major incidents involving hazardous materials and environments

The Ambulance HART programme continues to evolve to provide paramedics with the necessary skill-sets and equipment to support a wider range of operations. This remit takes in Incident Response Unit (IRU); Urban Search and Rescue (USAR), including water/flooding scenarios, rescues at depth (e.g. in tunnels) or height; and Personal Protective Equipment (PPE), Civilian Responder 1 (CR1) and Powered Respirator Protective Suits (PRPS).

Working with a broad range of emergency services, specialist agencies and healthcare organisations, Ambulance HART relies on the Airwave TETRA network for nationwide radio coverage, inter-agency and dedicated talk groups, resilience and security. However, HART paramedics also needed intrinsically-safe hand-portable terminals able to deliver robust yet flexible modes of operation, since they must enter hot zones dressed in PPE, use breathing apparatus for extended periods of time, and be able to work at depth or height.

Ambulance HART adopts Motorola's MTP850Ex intrinsically-safe hand-portables and ATEX-rated intrinsically-safe accessories to meet unique operational challenges

Ambulance HART is being migrated to the Airwave digital communications network under the Ambulance Radio Programme. Dedicated for use by the emergency and public safety services, the Airwave service is the world's largest and most complex Terrestrial Trunked Radio (TETRA) system, and is based on Motorola's Dimetra IP TETRA network solution. Currently serving about 200,000 users, it forms an integral part of the UK Government's critical national infrastructure, and leads the way in implementing highly secure, resilient, reliable and scalable radio coverage and capacity. The Ambulance HART solution comprises dedicated access to the Airwave service, a range of hand-portable and in-vehicle radio sets, and mobile data terminals. However, as the HART teams were being migrated, it was recognised that their requirements were slightly different to those of the Ambulance Service.

Customer name

James Price, HART Manager, West Midland Ambulance Service & Communications lead for the Ambulance HART programme.

Company

Ambulance HART

Service provider

Airwave

Industry name

Ambulance/Blue-light emergency response

Product

- Motorola MTP850ex ATEX TETRA Radio
- Range of ATEX-compatible accessories

Solution Features

- Best in class audio, simplified keypad with large buttons
- Comprehensive user safety features (GPS, man-down alarm)
- Class-leading ATEX & IECEx specifications
- Throat microphone, acoustic ear tube, and large PTT button

Benefits

- Designed for use in explosive gas and dust environments
- High quality communication with comprehensive user safety
- Hands-free operation in protective clothing and breathing apparatus
- Best in class audio performance in noisy environments

“Bearing in mind that we are wearing breathing apparatus and a protective chemical suit for long periods, the intrinsically-safe radios have to be simple to use, and guarantee crystal clear and reliable communications. We need to know that when we press the PTT button, our call will get through...”

James Price, HART Manager at West Midlands Ambulance Service

“To work within the ‘hot zone’, we needed intrinsically-safe, hand-portable terminals and a range of specialised accessories to meet our unique operational challenges, and also to comply with the Government’s ‘Gold Standard’ for command and control centre technologies and arrangements,” recalls James Price, HART Manager at West Midlands Ambulance Service, and the IT and Communications lead for the Ambulance HART programme. “Having taken a good look at what was available we opted for Motorola’s intrinsically-safe hand-portable terminals as being the best-fit. Motorola were also able to provide a one-stop solution in terms of the accessories we needed for hands-free operation whilst wearing all manners of PPE and breathing apparatus.”

Designed to be operated in potentially explosive environments (gas and/or dust), Motorola’s MTP850Ex radios were selected, together with a range of intrinsically-safe accessories. Rated to ATEX & IECEx specifications, the intrinsically-safe hand-portables provide safe and reliable communication in hazardous environments, with each HART team receiving ten terminals, plus two spares, for ‘hot zone’ operations. These are operated in combination with the Motorola ATEX-rated accessories, including a throat microphone that fits to the user’s sternum, a large push-to-talk (PTT) button, an acoustic ear tube for clarity of communications in noisy conditions, and a spare battery for extended field operations.

Crucially, the Motorola intrinsically-safe hand-portables include GPS (global positioning system) for accurate location of users via the radio, whilst a motion-sensitive accelerometer recognises if the user has collapsed, and issues a ‘man-down’ alarm to the command and control centre.

Clearer communications, inter-agency collaboration and improved patient and user safety reduce the impact of major incidents on Ambulance Trust resources

Provided as a fully-managed service built on stringent service level agreements, the Airwave service delivers a complete critical communications platform to Ambulance HART, ensuring that its paramedics are in contact via a highly-advanced TETRA system supporting group calls, direct mode and trunked mode operation (DMO/TMO). Ambulance HART has also become one of just a few agencies in the UK to use intrinsically-safe TETRA terminals within the inner cordon of CBRN and HAZMAT incidents.

“Bearing in mind that we are wearing breathing apparatus and a protective chemical suit for long periods, the intrinsically-safe radios have to be simple to use, and guarantee crystal clear and reliable communications. We need to know that when we press the PTT button, our call will get through,” Price continues. “With our dedicated talk groups and Motorola intrinsically-safe radios, we now have a platform that supports us when we are working in hazardous areas, whilst allowing us to increase both patient and operator safety.”

As a national asset, HART paramedics must also assist with NHS Trust ‘999’ emergency calls, and answer requests for mutual assistance. The Airwave service can be re-configured instantly to allow all users to communicate on a single, shared system, enabling multiple agencies to collaborate more effectively. “One of the main benefits of Ambulance HART is that we can deal with large incidents, and reduce the impact on the Ambulance Trusts’ core resource, so that performance standards can be maintained.”

Robust yet flexible communications whatever the scenario

Ambulance HART employs Motorola’s intrinsically-safe terminals whenever it’s called into action in hazardous scenarios. “Operational flexibility is integral in enabling Ambulance HART to fulfil its role. Motorola’s MTP850Ex has a user interface that is easy to see, audio that is easy to hear in noisy scenarios, and simple controls that can be used when wearing thick gloves. It is designed with end users, for end users, to meet their day-to-day needs,” states Natalia Escribano, Account Director Airwave, at Motorola.

“Ambulance HART tends to be seen as a ‘big bang’ major incident agency, but for me, it’s all about the day-to-day differences we can make, and the operations we can perform in a wide range of environments. The Airwave service has been adopted by multi-agency colleagues, which enables greatly increased interoperability, meaning that collectively, we can be more effective in our deployment of resources, and in our response to whatever the incident may be,” concludes Ambulance HART’s James Price.

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www.motorola.com

Motorola, Ltd. Jays Close, Viabes Industrial Estate, Basingstoke, Hampshire, RG22 4PD, UK