

EEMITS DELIVERS ULTRA SMART DIGITAL TWO WAY RADIO SOLUTION TO FALCK FIRE SERVICES USING THEIR UNIQUE TRBOCALL SYSTEM

BACKGROUND

Falck Fire Services UK's Industrial Emergency Response team delivers a range of world class services to customers in a variety of industrial manufacturing sectors. Operating from a base at the Wilton International site in Teesside, Falck is widely recognised as possibly the most competent privately owned industrial emergency response team in the UK and has gained a number of external accolades over the years.



The company's emergency response team have years of practical experience protecting £14 billion of high-hazard industrial assets in one of the UK's largest chemical hubs. At its disposal is the latest cutting-edge fire-fighting equipment designed for high risk environments including world-class fire appliances and bespoke industrial fire trucks.

Speed and effectiveness of response is paramount to ensure the safety of people, plant and property. Consequently, all emergency response radio equipment must perform 24/7/365 to **ensure communication availability at all times**. The two way radio systems operated by Falck are essential to them to maintain 'safe operations' and therefore they must provide excellent coverage with crystal clear audio.

An integral part of the two-way radio communications system is a dispatch suite located in a command and control room. The dispatch suite is operated by two controllers who can use the dispatch suite simultaneously or independently. It is their job to ensure the coordination of teams on the ground and with third parties in the event of an emergency via the two-way radio system. The radio system in turn runs through infrastructure (repeaters) located on a remote hill top site near to the Wilton Chemical Site.

TRBOCALL - GREATER THAN THE SUM OF ITS PARTS



PRODUCTIVITY
up



EFFICIENCY
raised



SAFETY
increased



THE CHALLENGE

Falck was using an analogue radio system, with outdated equipment that significantly lacked audio quality and the coverage following expansion of their business operations throughout the Teesside area.

The radio infrastructure located at the remote hill top site was becoming uneconomical due to the continual increase in site sharing fees, rates and utilities as well the administration burden of managing multiple Ofcom licences. In addition, the IP dispatch suite operated on outdated PC's using operating systems that were no longer supported. Falck required a world class communications system to complement their other major assets and was committed to investing in the latest digital communication technology primarily to overcome their coverage and audio quality issues.

It was also important to Falck that the technology would also offer additional improvements in **productivity, efficiency and safety.**



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THE SOLUTION

We integrated Eemits unique modular platform – TRBOCALL – comprising infrastructure, hardware, software, service wrap, features and accessories. With our unique flexible system, Falck had the option to select elements of the system that worked for them as a business to have a tailored solution to significantly increase productivity, efficiency and safety.



INFRASTRUCTURE

Falck chose:

- Eemits region wide Capacity Max network work system
- A fall-back control room system utilising digital desktop radios



The Benefits:

Eemits region wide Capacity Max network is one of the core infrastructure components that form part of their TRBOCALL modular platform. The Capacity Max Infrastructure component is a region wide digital radio network that provides mission critical communications to multiple customers throughout North East England. The Eemits Capacity Max deployment is the first multiple client, end-to-end managed, region-wide Capacity Max network of its kind anywhere in the world.

Since opting for Eemits' TRBOCALL modular platform Falck has enjoyed peace of mind through uninterrupted service thanks to the resilience of the Capacity Max architecture. The system has built-in diagnostics and many layers of redundancy, so that no single failure can bring it down, which is a critical element of the TRBOCALL Infrastructure module to provide uninterrupted service to Falck at all times. For extra security, Eemits has also installed spare servers, wireless point-to-point failover IP connectivity and battery back-up for the SLR 5500 repeaters, in the unlikely event of power or IT failure at the hill top sites. Resilience is key to Falck's operations and backup control room desktop radio equipment for dispatch purposes are also co-located in Falck's busy control room in the event of local IT failure, which would prevent the main PC dispatchers from operating. Additionally, a fall back control room has also been equipped with desktop radio equipment adding multiple layers of redundancy to the Falck's operations.

Falck has significantly reduced its expenditure as it no longer requires the need to manage or invest in its own radio infrastructure system or Ofcom licenses. Now connected to the Eemits Capacity Max network Falck now benefit from clearer audio and greater coverage due to the digital technology embedded within the Capacity Max infrastructure.



THE SOLUTION



HARDWARE

Falck chose:

- A series of Motorola DP4801 ATEX hand portable radios
- A series of digital Motorola DM4601e desktop radios
- Two dispatcher PC's



The Benefits:

The TRBOCALL hardware module has a wide range of two way radio devices taken from the Motorola Mototrbo product portfolio that offers enough flexibility to meet the demands of every industry. The TRBOCALL hardware module puts the right mobile device in the right hands of the user. Falck were very specific with their requirements. As nearly all of Falck's clients operate top tier COMAH sites it was mandatory that all of the radio devices to be used externally on site were ATEX approved to a minimum IIC T4 Standard for Gas.

The Motorola DP4801Ex radio that was delivered to Falck is ATEX approved to Gas: ATEX: Class II 2G Ex ib, IIC T4 Gb, IECEX: Ex ib IIC T4 Gb; Dust: ATEX: Class II 2D Ex ib, IIIC T130°C Db, IECEX: Ex ib IIIC, T130°C D; Mining: ATEX: Class I M2 Ex, ib I Mb, IECEX: Ex ib I Mb and exceeds the minimum standard required by Falck. In addition to meeting the stringent ATEX requirements the radio also had to stand the rigours and demands of 24/7/365 operational use in the harshest environments. The DP4801Ex is IP67 rated for ingress, which means the radio is waterproof and built to MIL STD 810D, E, F, G which means that the radio has been tested to operate in the toughest and demanding environments.

The DP4801Ex is a full keypad radio with a backlit, 5 line, tricolour display that allows Falck's team to dial, and text through a fully intuitive graphical interface that can be used day and night. This means Falck's team can send and receive private one-to-one calls and group calls with displayed caller ID as well as sending free or status text messages. These rich calling features eliminate unnecessary chatter and free up channels for mission critical voice communications.

Falck's control room were issued two small form desktop PC's with two 22" touch screen monitors and USB desk mics. Each dispatcher has a screen for mapping and a screen for voice dispatch. Each screen was customised to meet Falck's operational requirements to allow quick and easy access to the many tasks that their teams perform on a day-to-day basis as well as for emergency situations.

As the PC's are reliant on IT connectivity, each dispatch position was also fitted with a DM4601e desktop radio with a keypad mic and localised antennas that can be used in the event of an IT failure ensuring that voice communications are maintained at all times. The DM4601e radio is also a display variant radio, which allows the dispatchers to view and interact with basic data messages. The DM4601e desktop radios were also installed in the Falck fall back control room in the event that main control room became compromised.



THE SOLUTION



FEATURES

Falck chose the following features on their DP4801 ATEX radios:

- Push to talk
- Panic button
- Lone worker
- Mandown/No movement
- Remote Monitor
- Intelligent Audio
- Text Messaging
- Rugged design
- GPS
- Over the air programming (OTAP)
- Encryption

The Benefits:

Push to talk – In emergency situations the Falck Fire rescue teams need to communicate quickly and at the single press of a button allows them to do this. The push to talk button on the DP4801Ex has been designed with operatives who wear gloves in mind so even in the harshest conditions communications is made easy.

Panic button – The DP4801Ex has a specifically designed orange panic button located at the top of the radio and in emergency situations this can be pressed to raise an alarm. This is an essential feature for Falck as their main function is to keep people and assets safe so when something does go wrong they need a simple and effective way of doing this.

Lone worker – Protecting their own employees is also essential to Falck and when working alone, particularly at night, Falck's employees have peace of mind that their DP4801Ex radio has a built-in lone worker function that can be set by themselves, a dispatcher or via an event such as a lone worker entering a certain area at a certain time. The lone worker alarm is configured with a variable timer for inactivity and in the event that the timer expires due to no activity on the radio then an audible warning is given to the lone worker to remind them to activate their radio, which automatically resets the timer. If the lone worker does not respond to the warning in sufficient time then an alarm is raised. This is used with Falck's security teams who may have to patrol alone at night.

Mandown/No movement – Another key feature of protecting their employees is knowing that when one of their employees suddenly collapses or doesn't move for a certain period of time and is incapacitated they can rely on their DP4801Ex radio that has a built-in mandown/no movement feature that can be programmed to trigger an alarm. The alarm is triggered when the angle of tilt has been exceeded or the radio has not moved for the set period of time. Initially a warning sound is given to the radio user that the radio has tilted passed the alarm angle or that it hasn't been moved. This gives the user some time to put the radio upright or move it to avoid false alarms. This feature is essential if something catastrophic happens to an employee who needs immediate help and is unable to press a button or wait for a lone worker timer to initiate.

Remote Monitor – In the event an alarm is triggered the alarm recipient often needs to hear what is going on and in most cases the person who has raised the alarm may not be in a position to speak on the radio. The remote monitor function allows the alarm recipient to remotely activate the radio from which the alarm has been sent to monitor all audible sounds near to the radio so that they can quickly gather as much information as possible to give to the first responders.

Intelligent Audio – Falck's teams often work in noisy environments and radio users need to be heard by recipients, particularly the dispatch team. The DP4801Ex automatically adjusts background noise to ensure that the voice of the radio user is transmitted without any of the background noise. This means Falck's teams don't need to shout on the radio to overcome background noise with messages getting through first time.

Text Messaging – In some excessively high noise situations, speaking on a radio simply isn't practical so using the DP4801EX text function still means the Falck team can quickly and share vital information with each other. The text function also lets Falck send recurring messages leaving the channels free for essential voice communication.

GPS – The DP4801Ex radio has built-in GPS and this is vital for the dispatch team to know exactly where the Falck team are so that they can respond to situations with known geographical location information that can be passed on to other members of the team and also to locate the nearest member of the team to any incident that occurs.

Over the air programming (OTAP) - As the Falck radio system comprises a large number of radios that are constantly deployed it is very difficult to organise times to perform updates to the system. Over the air programming allows Eemits to perform upgrades, bug fixes and reprogramming of features remotely and over the air without the need for engineers to attend site. Updates are scheduled and performed during low usage times to cause minimal disruption.

Encryption - It is essential communications relayed by Falck remain secure so that no third party or individual can eavesdrop on conversations and make them available to the public without Falck's consent. The Eemits Capacity Max system has AES256 encryption that ensures all Falck's communications remain secure.

THE SOLUTION

SOFTWARE

Falck chose:

- Voice dispatch
- Voice Recording
- AVL Tracking
- Geofencing
- Personal Safety
- Web Client
- Audit Reports



The Benefits:

Voice Dispatch – The dispatch centre at Falck is critical to the effectiveness of how Falck support their clients. The TRBOCALL voice dispatch software enables each dispatcher to have full control over the system and to manage all of Falck’s resources who use a radio. Each dispatcher can perform a range of sophisticated call types including private, group, broadcast and emergency.

Voice Recording – It is essential that every second counts in an emergency. With the voice recording option the dispatcher can immediately play back the message sent by the first responder so that no time is wasted in repeating messages. The voice recording application records every voice call made on the system and is extremely useful in post incident investigations, particularly if these involve the Health and Safety Executive. The voice recording application also aids with ongoing radio training and the correct protocols to be used, particularly in emergency situations. It allows teams to be debriefed and critically analyse their performance.

AVL Tracking – This allows the Falck dispatch team to track the location of the radio users with their locations being accurately shown down to 1M on the mapping screen. The dispatcher will clearly see if the radio is turned on or off, and if the radio is flagged for personal safety applications. The AVL tracking software stores historical routes of where the Falck team has operated and breadcrumb trails can be viewed over set periods to provide key route information along with speed and idle times if the radios were used within vehicles.

Geofencing – Falck has many high hazard areas and have therefore used the geofence application to highlight these areas and when a radio enters or leaves these areas an alarm is raised to the dispatcher who can then monitor the individual in these designated areas.

Personal Safety – When the panic alarm, lone worker or mandown/ no movement alarm is initiated by a radio the alarm can be escalated by a number of different routes to a number of different recipients. Falck’s dispatchers receive their alarms and when raised a loud audible sound is raised in the control room and the radio that triggered the alarm is immediately highlighted in red on the mapping screen alongside with the nearest available assets who could help. All communications made by this radio are then prioritised so that the emergency can be effectively dealt with.

Web Client – Falck’s management team are able to access the software applications such as AVL tracking and detailed reports from a web browser anywhere in the world. This gives management the freedom to monitor events remotely outside of the control room.

Audit Reports – With this application Falck can retrieve all data and voice communications made on their system. The reports can be set so that only authorised users can access them and a range of reports can be created enabling efficiencies to be made.

THE SOLUTION



SERVICE WRAP

Fully Comprehensive Hardware Cover- This covers not only failure through normal wear and tear but it also provides protection against accidental damage such as broken displays, keypads and cracked housings. Typically things that could go wrong with the DP4801Ex when used in the environments that Falck operate in. Priority, same day turnaround is given to the repair of the equipment with this cover that ensures minimal downtime for Falck.



The Benefits:

End-to-end management of system faults via a single point of contact who takes full ownership from the moment an incident is detected to its resolution.

Uncompromised management of services delivered to ensure they are consistent with pre-agreed KPIs and SLAs plus regular reporting for your review.

Dedicated service team proactively monitoring for system issues. When actionable events are identified, remote diagnosis is conducted and measures are taken to resolve problems remotely. If necessary, a local field technician is dispatched to the affected site to resolve the issue.

24x7x365 access to our service team to help troubleshoot and resolve system issues.

Priority fully comprehensive hardware repair for all Motorola hardware. This covers failure through normal fair wear and tear and it also provides protection against accidental damage such as broken displays, keypads and cracked housings. Factory trained and certified technicians troubleshoot, analyze, test, and repair your equipment at Motorola's centralized facility. All equipment is returned to factory specifications and updated with the latest firmware before being expedited back to you.

Onsite support for system issues that need to be addressed at an effected site with guaranteed restoration time based on pre-agreed SLAs.

Preventive maintenance by certified technicians to preserve reliability and original manufacturer's specifications which includes testing and alignment of key system components. This service is conducted at a cadence that improves system efficiency, reduces failures and minimizes total cost of ownership by extending the useful life of your network.

Planned system upgrades, implementation and change management services required to maintain your system at the highest level of support to get the most value from your investment with the latest features and security enhancements.

Infrastructure asset management to aggregate and manage your entire system's hardware and software status and information.

Spare parts management to optimize your inventory control and logistics process which ensures you have the right number and types of parts when needed - ultimately minimizing capital expenditure and reducing the number of unneeded parts.

Capacity and coverage optimization to review your network performance data and identify where bottlenecks and minimal coverage exist. With these insights, your network settings are reconfigured and if necessary, we consult with you on recommended infrastructure additions or upgrades to address these issues.

Disaster recovery planning to review your current system coverage and processes and document plans and procedures for redundancy in the case of a disaster and for augmenting your performance, coverage and provisioning for special events.

Spectrum management to ensure your network is compliant with regulatory requirements and your allocated radio frequency is being used by radio users as efficiently as possible.

THE SOLUTION



ACCESSORIES

Falck chose:

- ATEX Remote Speaker Mic
- Case and Strap

The Benefits:

ATEX Remote Speaker Mic - These allow Falck's operatives to hear the radio in loud environments and not have to move the radio body to the mouth to speak in to. The remote speaker has an orange panic button making alarms even easier to raise, volume control and a rear clip that allows it to be worn on the chest area, which makes it quick and easy to speak in to. The ATEX remote speaker mic eliminates the sound of wind and other background noise

Case and Strap: These allow Falck's operators to use the radio hands free and not have to worry about dropping or breaking it.



WHAT THEY SAY ABOUT US:

“The service delivered by Eemits has been excellent and we have developed a very good working relationship over the years.”

“As a local business to Falck Fire Services they can respond to faults or general requests very quickly – which is very important in our line of work - whereas similar suppliers have a greater response time.

“TRBOCALL is an overall platform that has made a massive improvement to our communications in comparison to the analogue system that we had been using for many years. It provides us with many different applications that can be utilised across the business.

“Since introducing TRBOCALL we have seen significant improvements related to safety and in our communications itself, which is critical to our operations.”

Ian Scott, Operations Commander at Falck Fire Services UK



Falck Fire Services now has a system that has significantly increased the safety of its workers, whilst also reducing significant running costs for the business.

Eemits innovative modular platform TRBOCALL - a unique combination of hardware, bespoke software applications and digital features - together create an ultra-smart two-way radio system. Combined with unrivalled wide area network coverage, our customers have the flexibility to build their own system with all, or a combination of infrastructure, hardware, software service wrap, features and accessories that suite their individual business needs.

TRBOCALL - GREATER THAN THE SUM OF ITS PARTS

EEMITS CLIENTS BENEFIT FROM:

Productivity increased by up to

40%

PER SITE

Efficiency raised by up to

1 hr

PER EMPLOYEE PER DAY

Safety increased for

100%

OF YOUR WORKFORCE VIA DIGITAL RADIO WHERE EVER THEIR LOCATION