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BRITISH APCO JOURNAL

Knowledge Exchange for Public Safety Communications

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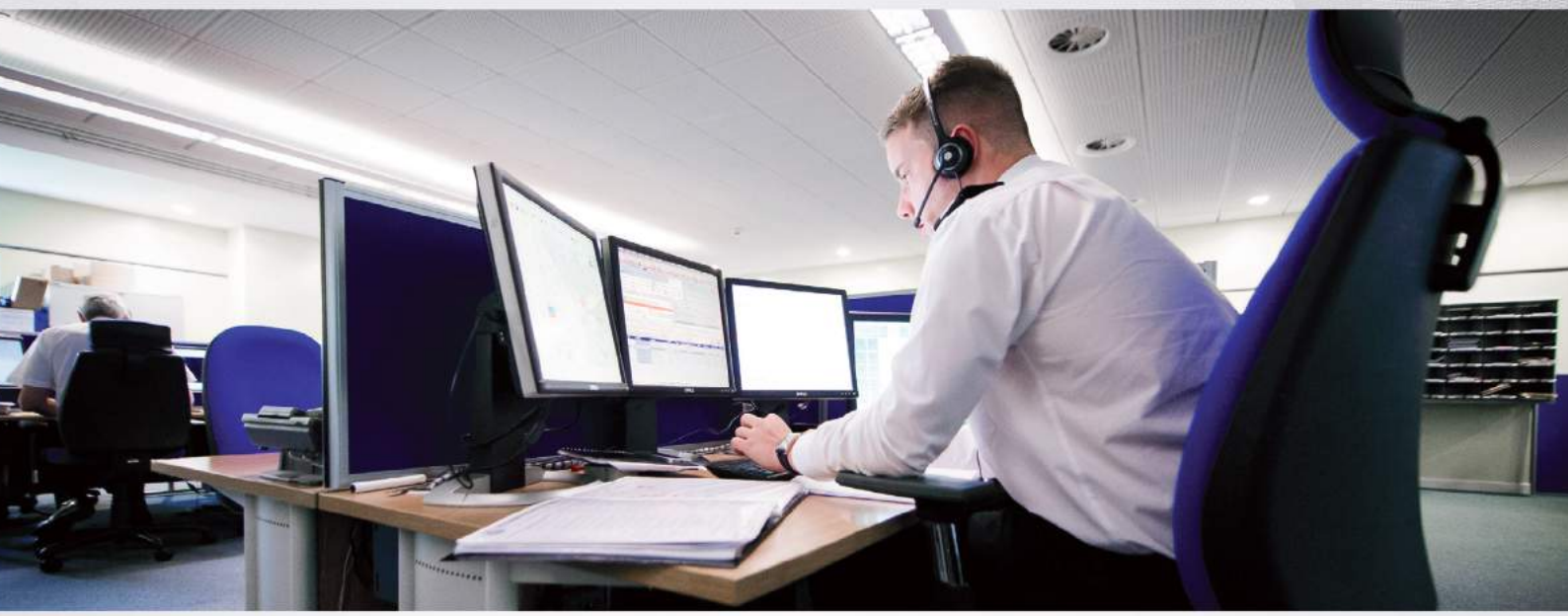

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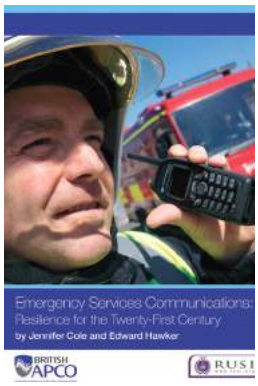

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BRITISH APCO
Knowledge Exchange for Public Safety Communications

British Association of Public Safety Communications Officials

British APCO is where active and advising members of our public safety community exchange and advise on all critical communications subjects. British APCO participates strongly in the Global Alliance of APCO Interational.

British APCO's aims include solving realtime critical communications problems, participating in research programmes (eg EU projects), showcasing technologies, and lobbying on issues such as spectrum and harmonisation.

British APCO holds an annual exhibition and development event, many regional events as well as training sessions, and is respected as the UK's (and Europe's) leading – and only – forum of knowledge exchange and transfer specific to communications in public safety.

To find out more details on how to contribute and draw from of this vibrant community, by becoming a member, contact Tracey Langmaid, Tel: 01522 548325, admin.manager@bapco.org.uk

For more information visit www.bapco.org.uk

British APCO: President's address

Sue Lampard, President

Whenever I sit down to write this column, I always seem to be on a plane. This time, I'm travelling back from New Orleans having attended the APCO International Conference. My primary reason for the trip was to have the regular face-to-face meeting with my counterparts from Australasia, Canada and US. As ever, there have been other useful contacts made and sessions attended. Along with a visit to Mardi Gras World and a Gala Dinner. It was a fun-packed three days!

This edition touches on resilience. Many of our operational B-APCO members are expected to wear two hats – running the day job, as well as ensuring that business continuity and interoperability measures are in place for when the inevitable crises occur. Having been in this position myself, I know how challenging it can be to ensure the contingency planning, training and testing work is done. Shortage of budget and resources – and often apathy from those around – can all stand in the way.

During my trip to the States, I was priviledged to attend a breakfast session where Captain Richard Phillips (played by Tom Hanks in the film 'Captain Phillips') was the speaker. His US Merchant Navy vessel was attacked by pirates in 2009. The sole reason that he and the crew survived was because he made sure there was a plan; that he trained his crew; and that then they drilled it. It provides a classic example of how taking time to practice a procedure pays off – even if it's not always the most popular course of action for staff involved. More importantly: learn why this aspect of our work is significant.

As an Association, we want to help you shortcut much of the work needed in both your day-to-day business and your crisis planning. Sharing knowledge and experience can often lead to not reinventing the wheel. We believe that one way to help is to ensure that our two main events (November and April) are designed to provide a hub for public safety communications activities.

Having the time to network with colleagues from the same agency, different agencies and the commercial sector, enables ideas to be exchanged (and copied), and for valuable contacts to be made. At the forthcoming November event we'll be running whole-day workshops aimed at control room managers and heads of communications. There will be a second all-day workshop for ICT and procurement managers. The fact that both will be multi-agency will add context and richness to the content. We'll also be hosting the annual CCS TSG Symposium, as well as providing updates on MAIT, NG999, spectrum and JESIP – all areas that the public safety communications community should keep up-to-date with. It can be really difficult to take time out to come along, but I think the return on investment will be worthwhile in saving time for you and your teams in the future.

Our main work programmes (MAIT and NG999) are really beginning to take off. The interest in MAIT has been phenomenal – and recently culminated in BAPCO being invited to sit round the table with the MOD and USA DoD to discuss the future direction of interoperability in terms of standards for electronic data exchange. I have a great team supporting this work, but as ever it's mainly unrecognised, non-funded and not yet an integral part of the thinking within public safety change programmes. The team members are doing the work on top of their day jobs (and probably the contingency planning too). My mission is to change this and to get MAIT (or its next generation) 'mainstreamed' into both change and funding programmes. This has to be the way forward to significantly change the way public safety does business – as well as to deliver significant financial savings and improvements in customer service.

The NG999 work has progressed to the extent that GPS location data delivered via EISEC is a tangible outcome. If you don't have EISEC capability in your control room then you need to lobby. If you do have it, you need to make sure you follow the BT update for 'double dipping' (we'll cover this in November).

We're also close to the first 999 App (Real Rider) going live as part of the pilot scheme. This will be an emergency app that connects with ambulance services and will deliver not only GPS location, but additional data such as personal medical information. This is a really exciting programme which, if adopted, will help save lives as well as deliver significant savings to the public purse.

As ever, I urge you to get involved with B-APCO and be part of everything that is related to public safety comunications.

I hope to see you in Newcastle!

BRITISH APCO

Knowledge Exchange for Public Safety Communications

The Association continues to push forward in areas such as interoperability, future technology and synergy, writes Chief Operating Officer Geoff Naldrett.

Since I wrote my last article I have no idea where the weeks have gone. It has been a very busy few months, with internal and external tasks and opportunities taking my attention. At the heart of it all has been the desire to make the Association the best it can be for its members. Better organised; easier to manage; and therefore abler to respond to the needs of its membership. We are reaching out to a wider co-operative; extending links into Europe and beyond; and enhancing the reputation and portfolio of what we do, and how we do it.

Our contacts database is extensive and truly versatile in how it can be searched and sorted. If you want to find individuals who are expert in a certain discipline or companies that specialise in a particular field of technology, then send us an enquiry and we will do our best to assist. Our internal and external communications are about to move to a cloud-based service, which will make us more responsive while providing us with data-retrieval capabilities in tune with the latest technology and practises.

In Europe we are deeply involved in R&D projects that explore the possibilities of technology and how it can best be used for public safety benefits. These projects are truly cosmopolitan with ideas and participants from across Europe. The B-APCO Project Management team, which has recently expanded, provides organisation and structure to a variety of EC-commissioned ideas, and has a reputation for user experience, dissemination, publication and demonstration (the positive kind).

We are also exploring the synergies with like-minded organisations and associations in Europe. The aim is to share and absorb best practice in public protection communications and, if it calls for it (and has benefits) – form alliances and partnerships with these groups. These collaborations will enhance the support and experience that we can provide to our emergency services and those associated with them.

Within our own UK boundaries, the Association continues to drive for interoperability. Under Sue's enthusiastic guidance and direction the Multi Agency Incident Transfer (MAIT) concept gets nearer to tangible reality with each passing week. Also nearing a viable and accredited process is the work that B-APCO is leading on for Apps that are intended to directly interface with the 999 system. This is part of the wider NG999 initiative that will eventually affect all of us. Probably those who drive and anyone who purchases a new car will be the first to experience NG999 in the next few years.

NG999, just like MAIT, is supported and driven by representatives from across England, Scotland, Wales and Northern Ireland, both from the public and commercial sectors.

Finally, an update on forthcoming events. Our Autumn Event will be held in Newcastle this year, 11-12 November at St James' Park, the home of Newcastle United. This is a city centre venue offering a range of accommodation choices and excellent transportation links to the city and within it. We are pleased to be co-operating with Airbus Defence and Space in sharing our organisational skills to provide two full days of updates, discussions and networking opportunities for anyone with a deep commitment (or just a passing interest) in public safety communications.

As I have been compiling this article there have been a vast amount of TV programmes and media articles about the centenary of the outbreak of WW1. Bicycle messengers, semaphore, dogs and pigeons were valid methods of communicating 100 years ago. We have certainly progressed massively since then, but we are now facing another step forward in the need to embrace IP and smart technology in our control rooms and out on the street. With your help we can continue to lead and provide cohesion in these areas. As a not-for-profit Association we need your support, and by becoming a member (or ensuring that you renew your membership) you are providing funds that will help us to help you (details available at www.bapco.org.uk).

Best regards,
Geoff Naldrett,
COO, B-APCO.

Project FREESIC – proven success

On 5 June at the University of Luxembourg Project FREESIC (FREE Secure Interoperable Communications) presented its findings to an invited audience of 30 users from across Europe including three representatives from the UK.

The new technology developed under an EU FP7 financed program sought to answer the central challenge that different responder organisations face whenever they use different technologies to communicate with each other – the difficulties in intra and inter agency interoperability, especially during cross-border major incidents.

The answer came in the form of a universal gateway operated from a web front-end – a little similar to Facebook or LinkedIn – which enabled participants to easily create common talk groups for the duration of incidents. Unlike social media gateways, however, these groups enable participants to talk with each other using their iPhones, Android phones, or TETRA radios, as well as sending messages.

In Luxembourg the project's Collaboration Web was demonstrated live to the audience showing how requests for agencies and command roles' talkgroup set-ups of different systems are attributed and configured in readiness for various operational requirements.

In brief the Project demonstrated:

- Ability to accept/decline requests for interoperability
- Ability to structure communication plans in line with differing command structures
- Ability to set up pre-planned inter agency talk-groups according to different scenarios
- Ability to dynamically set up inter-agency talk-groups according operational need
- A short live demonstration was enacted shaped around a plausible scenario of a major incident at a chemical plant sitting across the border of two EU states.

The use of FREESIC capability illustrated the facilitation of communications between various agencies and devices so that urgent changes could be agreed at the Silver command level between six agencies and the chemical plant, to a pre-set contingency evacuation plan, before first responders had even arrived on scene – thus providing a more effective multi-agency response with potential for saving more lives.

'After one false start – which showed that the demonstration was really live – we successfully demonstrated for over 10 minutes PTT voice communications between five countries using VoIP terminals, analogue radios as well as Tetrapol and SECRICOM systems with a range of devices including mobile phones, tablets, laptops and handsets,' explained B-APCO European Projects Manager Shaun O'Neill.

Following the demonstration the audience was invited to the on-site equipment room for an opportunity to touch and feel the deployed kit and to speak with the various project technicians involved. 'The responders shed light on possible applications for FREESIC and pointed out several essential activities which FREESIC would allow them to do which they are unable to do currently,' said Shaun, adding: 'An additional relevant conclusion to emerge was that most of the responders thought that the benefits gained from the technologies offered by FREESIC would make it worthwhile to change agency processes and procedures. Moreover, a clear majority of the stakeholders taking part in the questionnaire indicated that the three attributes which FREESIC focused upon were relevant as well, namely confidentiality, integrity, and availability.

'In summary it was felt that FREESIC constitutes an awaited tool with several desired features that offer a range of new essential possibilities.'

Next steps

Some project partners are exploring opportunities to commercialise FREESIC's developed capabilities (B-APCO will not be involved in related exploitation activities to preserve its supplier independence and credibility).

Project Re-DIRNET – the son of FREESIC and SECRICOM

RE-DIRNET IS THE LATEST EUROPEAN PROJECT WITH B-APCO INVOLVEMENT, WRITES BRITISH APCO EU PROJECTS MANAGER SHAUN O'NEILL

Re-DIRNET (Emergency Responder Data Interoperability Network) builds on progress and achievements that emerged from SECRICOM and, more recently, FREESIC.

SECRICOM proved that various communication services (such as voice, data and image) could exchange information securely across several hundred miles between EU states using multiple bearers and multiple devices facilitated by multi-bearer routers. The bearers included TETRA and non-TETRA systems.

FREESIC took a slightly different approach with the development of a single platform that enabled different communication systems to exchange information through the development of specially configured adaptors plugged into an open FREESIC gateway; a recent proof-of-concept demonstration in Luxembourg illustrated this capability very effectively.

FREESIC also introduced the concept of a web collaboration capability to assist different agencies both within and across EU states to pre-set various talk-groups (of different voice communication systems) as operationally agreed between the agencies – a bit like a combination of an old fashioned telephone switchboard and Linked-In.

RE-DIRNET: COMBINING THE POWER OF FREESIC AND SECRICOM

This project aims technically to provide the range of communication information exchange services from SECRICOM (voice, data and image) plus video, CCTV and remote sensor information combined with the technical platform development and web collaboration capability of FREESIC.

In addition a key feature of the project's Work Package 2 (WP2) is to gain a better insight and understanding into the non-technical barriers to interoperability (process and procedures, commercial and financial considerations and regulatory constraints). The collated findings in WP2 from across seven partner states will then be reviewed in WP3 by seven similarly structured national user workshops, with their output being again collated into a single reference document for comment, observation and validation by a panel of international users.

Findings from these workshops will be fed into the project's technical development WPs, with plans for interim (in 2015) and a final field test demonstration in the Summer of 2016.

In addition to B-APCO (with the lead business/use role) the project consortia consists of partners from Belgium, Czech Republic, Luxembourg, Spain, Slovakia and Slovenia.

The project is currently engaged with WP2 activities researching and seeking information in relation to constraints and issues regarding information exchange between agencies. It is intended that during the B-APCO Autumn event this year in Newcastle (11-12 November) a UK WP3 user workshop will be held to review this research work and suggest solutions. In April 2015 we intend to hold the WP3 International Validation Exercise in Manchester during B-APCO 2015 (March 31-1 April). For more information, visit the Re-DIRNET project website (http://www.redirnet.eu/). To be involved in the workshops, contact: Shaun.ONeill@bapco.org.uk.

Staying ahead of the curve

Multi Agency Incident Transfer (MAIT) is just one of the many projects that B-APCO continues to lead, explains B-APCO President Sue Lampard.

B-APCO members will no doubt be aware of the Multi Agency Information Transfer (MAIT) concept that was successfully trialled in Wales under the name DEIT (Direct Electronic Incident Transfer). DEIT proved the benefits to the emergency services and the public of sending key incident details electronically between mobilising systems ie the capability to exchange incident information between emergency services without having to pick up the phone

Following this key project, the Cabinet Office commissioned B-APCO to develop an open standard for incident transfer, facilitating interoperability between systems from different manufacturers. A key building block to the MAIT project is a resilient data hub that acts as an enhanced data switchboard between all the organisations taking part in MAIT.

Having published such a schema for open consultation earlier in the summer, the Association is now looking to take the next step and test the MAIT concept in England, Scotland and Wales with a set of partners.

It is hoped that the next iteration of MAIT will be tested by a group of partners in Hampshire, comprising South Central Ambulance, Hampshire Police, Hampshire FRS, Dorset FRS, Devon & Somerset FRS, Wiltshire FRS, and Maritime and Coastguard Agency. 'On the periphery there may be others but these are the main players,' explains B-APCO President Sue Lampard, who adds that the first hub will be built by VectorCommand.

There are a number of potential developments for MAIT, explains Sue. First is regarding a possible alignment with the CAP standard (Common Alerting Protocol) that is in common use in Europe to pass on incident information.

Another possible development is to also align MAIT with the Public Sector Internal Identity Federation, or PSIIF, which is an IT service developed by the British Government PSIIF. PSIIF incorporates IDA, or Identity Data Access protocol. PSIIF basically enables people and their roles to be correctly identified and recognised electronically: 'And this is actually quite critical for MAIT too,' says Sue.

A future road map may also seek to bring MAIT closer with the data exchange system that is being used by Ambulance Trusts on the 111 side. 'Ambulance Trusts have a data exchange for passing information from 111 call centres to emergency call centres – but they use a completely different standard that is not very compatible with MAIT. They are almost in a parallel universe.'

In addition, the Ministry of Defence has been in touch with B-APCO regarding MAIT. The MOD happens to be also looking for the next generation of interoperability standards for armed forces, and are considering a number of directions such as MIP (Multinational Interoperability Programme) which is a standard being developed by NATO, and the US-based NIEM (National Information Exchange Model).

And to top it all, the Cabinet Office is investigating an open standard for warning and informing the public (UK Alert): 'And this is relevant to MAIT too, because ideally you want the same standard for agencies speaking to each other and talking to the public, as this helps information exchange considerably.'

Is there a danger that MAIT could become too complex? 'Yes and no. MAIT started as a simple concept but it does make sense to move towards an existing protocol. The problem is that we are now finding all these other standards that are relevant, so it is almost a case of having to take three steps back to broaden the approach before we narrow it again. As MAIT is now, we are not going to change it until it is embedded, and move to version two in three to five years' time.'

Sue Lampard points at the DEIT experience in Wales as an example of how successfully MAIT could become if embedded. 'In Wales, the operators were saying that DEIT was the best system that they'd had in years. Their feedback reported that that engagement encouraged the services to exchange more information than ever before. Obviously, once you have operational staff on board, then the quality and amount of information increases, which results in support from all quarters.'

AUTUMN EVENT: NEWCASTLE 11-12 NOVEMBER

B-APCO is sharing a venue with Airbus Defence Safe Command Group's annual user meeting which takes place in St James' Park. New for this year is a communications training course that will pull together interoperability, resilience and all things related to communications: 'This will be our first attempt at training, a long term aspiration for the Association, and we are very excited about it,' said Sue Lampard.

On Day 1 a Symposium for Telecommunications Sub Groups will run concurrently with a closed stream for emergency control room managers in the ambulance, police, fire highways and coastguard. A separate stream will focus on more general subjects such as JESIP, Next Generation 999, and a special presentation on the significant deveoplments in technology employed by Inmarsat during the search in the Indian Ocean for the missing Malaysian Airline MH370.

Day 2 will contain similar streams but with a slighter stronger focus on the knowledge needs of ICT and procurement managers. 'We'll also be looking at the comms developments in Scotland and Wales, as well as further afield in Europe.' A tour of the stadium is a 'must' for delegates, who will also be encouraged to use the executive boxes as 'break out' rooms.

Cell Broadcasting: public emergency alerts without the network crash, B-APCO Journal, June 2014

Sir,

I think we should be cautious to follow suit with Cell Broadcast technology employed in other countries. Technology is a fast moving thing and to pin our colours to the mast (no pun intended) with an infrastructure-based solution could be a possible mistake.

We are going to be reliant on a handful of mobile operators and a very mature technology, with few opportunities for integration or future enhancement – think TETRA. Cell Broadcast also creates a burden on the emergency services to develop processes, which may be cumbersome and ineffective to execute ie limited by the technology.

If you consider the recent UK Alerting tests, in some cases it took 15 minutes to send a message and up to 1 hour for the message to be read. This capability, therefore, misses the 'golden hour' which may lead to dire consequences. The delivery of messages into already-crowed inboxes (text, SMS, Twitter, email, etc) compounds this problem.

Allied to this, the concept of only alerting a specific geography could be construed as an outdated idea, in our highly mobile society. Fine if you are living in the affected area, but what about the weekly commuter, who is at the other end of the country and is unaware his family or property are at risk. Conversely, leaving a geo-fenced area also means you potentially fall off the communication grid and no longer receive subsequent updates on the BC situation – another risk to a properly coordinated response. Add into this mix data-only devices; network coverage issues; multi-lingual requirements; and the fast pace of technology evolution, Cell Broadcast looks like a 'best endeavours' solution.

In the age of social media we need to let communities take some responsibility for sharing information and responding accordingly. As long as the initial information broadcast is correct, touches relevant stakeholders, and is in an appropriate 'open' format, communities are empowered to gather and share information, to support the required response. The key elements are engagement with citizens, encouraging them to take an interest and harness the tools within their control.

The solution will be out there, but chances are that it will be not supplied by traditional vendors, and it will be society that dictates their preferred solution.

Tony Watson, Vice President, Government & Defence, Resilient Networks plc, London

PS – it is worth looking out for the Callmy solution, due for launch in September this year.

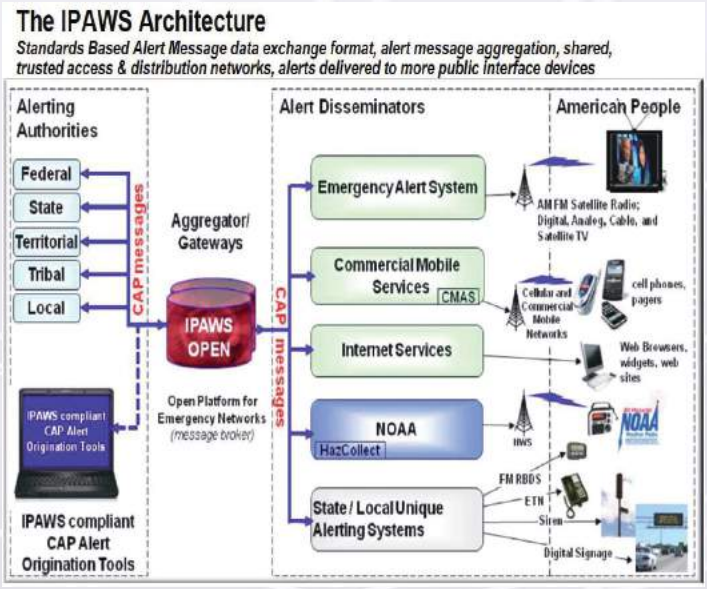
In response to Tony Watson's letter

Sir,

I fully agree with the previous commentator who points out that no one technology has all the answers in the complex and changing world of personal communications, and that we must allow room for all solutions to find their place and grow. No country is thinking of using CB exclusively, nor hampering other technologies from participating. In the USA, networks, such as AT&T chose Cell Broadcast to implement a Commercial Mobile Alert system (despite their earlier resistance), because it performs best during overload events, but the truth is that FEMA uses CB in addition to, not instead of, its other very powerful social media technologies, including the mighty Google, and plans to open its arms to any good ideas.

Alert systems have an additional gateway technology. In the USA for example, it is called the IPAWS OPEN gateway (http://www.fema.gov/integrated-public-alert-warning-system) – see below diagram.

The purpose of this is to collect alert and warning information from authorised and pre-selected sources (such as police control rooms or weather centres), authenticate and authorise them according to the national regulations set by the government. The messages are available on an open standard protocol, to any participating partner, including private messaging specialists.



Regarding Push messages to clients out of geo-scope; of course no mobiles outside of the 'polygon' are contacted by Cell Broadcast, nor does it store messages for later delivery (it only delivers the present 'live' one). However, there is an opportunity for commercial providers to read the open messages from the gateway just mentioned, and after consulting a simple database of client interest areas, distribute them to clients who have subscribed to be informed about messages for a specific area. This would make a high value-added product, and at least one UK vendor already has such a product. Delivery would have to be on a 'best-effort' basis, but likely, the recipient is not in the disaster zone, so his part of the network would not be in the overload situation that makes CB necessary in the disaster zone during the critical phase.

Mark Wood, Consultant & *B-APCO Journal* contributor

To comment, email the editor on: j.sanchez@hgluk.com

Authoritative mapping added to Resilience Direct

A new online mapping service has been launched as part of the Cabinet Office Resilience Direct multi-agency tool. The mapping service has been built using a range of Ordnance Survey mapping scales and products, which users are already familiar with, via the Public Sector Mapping Agreement.

Resilience Direct was initially launched in April 2014, providing a secure platform for multi-agency partnerships to share information in both emergency response and in planning. The service acts as a common operating platform for use by local multi-agency planning and response partnerships, with users including police, fire and ambulance services, local authorities and utilities partners. The service enables real-time sharing of accurate data and information, allowing all agencies to maintain shared situational awareness and supporting effective decision-making at the tactical and strategic levels.

During the early development stages of Resilience Direct it was quickly agreed that mapping would play an integral part. It was also acknowledged that authoritative mapping was needed, enabling users to view accurate representations of the landscape, providing them with the confidence to make vital strategic and operational decisions.

The new interactive mapping service, rolled out to the resilience community since the end of July, allows responders to quickly and easily build bespoke incident maps to support a shared information picture. The service can digest a variety of data formats, enabling users to add their own layers to maps, reflecting accurate local detail. For example, cordons can be added and highlighted, utilities and pipelines can be shown and points of interest can be overlaid to the mapping. The service has been designed to enable strategic and tactical commanders to visualise their area of interest in a flexible, dynamic way.

The service can be accessed through any device which has Internet access (including mobile devices), and is free at point-of-use to the resilience community. Mapping information can also be shared with a wide range of colleagues to ensure that all the agencies have a consistent view of the incident.

LTE THAT IS BUILT FOR THE STREET

The Motorola LEX755 has been purpose-built and optimised for first responders and reinforced to meet mission-critical requirements.
Using the advanced Security Enhanced (SE) version of the Android operating system, the mission-critical handheld provides users with a secure, robust and flexible platform for multimedia-rich applications and can be equipped with applications such as unified push-to-talk, real-time video intelligence, and electronic forms for query and incident monitoring. The application ecosystem includes real-time video streaming, computer-aided dispatch, unified push-to-talk, electronic citation, report writing and data capture.

Jury's virtual walk

Photographs from a panoramic 360-degree camera have been used in a Crown Court murder trial for the first time.

The jury at a Birmingham murder trial saw crime scene photographs provided by a camera that permits a virtual 'walk through' of the scene of an incident. Warwickshire Police used the iSTAR camera – which produces a street view-style navigation – to help secure a 26-year conviction of Scott Melville (38) who murdered partially sighted pensioner Sydney Pavier (91) in his Leamington Spa home during a burglary. The members of the jury convicted Melville of murder at Birmingham Crown Court on June 2 and details of how the camera allowed them to be part of a virtual walk through of the crime scene have now emerged.

Peter Grieves-Smith, Principal Crown Advocate of the Crown Prosecution Service, who led the prosecution team at the Melville trial, said: 'It was invaluable footage that greatly assisted the jury in understanding the layout of the property. It will surely become the norm to use this in the future in the prosecution of complex and grave crime.'

Body-worn video guidance

New technical guidance highlights the key issues for those interested in purchasing and deploying body-worn video (BWV) recording devices.

The guidance by the Home Office's Centre for Applied Science and Technology is also aimed at those who manufacture and supply BWV equipment, and who wish to have a better understanding of the requirements that are important to the policing end user.

Although the focus of the guide is on the recording devices themselves, it emphasises that it is equally important to put in place appropriate procedures and facilities for the transfer and management of the recordings. One of the key aims of the guidance is to ensure that the video is recorded in a non-proprietary format that makes the subsequent storage, replay and sharing of the product within a centralised evidence management system straightforward, promoting interoperability.

A Royal 'thank you' for resilience partners

The Prince of Wales and The Duchess of Cornwall met members of the emergency services in July to thank them and the Local Resilience Forum Partners for their work together during last winter's severe weather and flooding that took place in the West Country.

Their Royal Highnesses visited the Fire Services Academy, Fire Behaviour School based at Exeter Airport where they watched a multi-agency training exercise.

Improved attendance management

Merseyside Fire and Rescue has selected a new StARS-MS rostering and attendance management system from Moore Stephens Consulting (MSC).
The central component of an integrated platform, the StARS-MS rostering and attendance management system has been specifically developed from the ground up to meet the needs of fire services.
StARS-MS provides support for recording attendance, appliance availability, duty assignments, rostering, sickness and leave management, and is a fully featured personnel management system.

Face recognition at maximum warp

Leicestershire Police is the first force in the UK to test new face recognition software NeoFace.
The software compares any digital image with any photo held on the Leicestershire Police database.

The programme has been under evaluation since April and around 200 suspects have already been put through the system, with a high success rate of identification.

It works by comparing dozens of measurements between key facial features, providing initial results in a matter of seconds. The existing system, although computerised, involves manually searching for possible matches, which can take up to several hours.

Chief Inspector Chris Cockerill said: 'We're very proud to be the first UK Police force to evaluate this new system. Initial results have been very promising and we're looking forward to seeing what can be achieved throughout the six month trial.'

While the results can't be used as evidence in court, the programme does give detectives significant help in developing new lines of enquiry. Identity unit Manager Andy Ramsay (left, with ID Unit Officer Hilary Gazzard) said: 'We have over 90,000 photos on our system and Neo-Face can compare someone's image against our complete databases in seconds. Besides the speed it's also impressive because it can even find family members related to the person we're trying to identify.'

Test bed for mission-critical comms

Motorola Solutions has opened the Mission Critical Solutions Centre to shape the future of public safety communications.

The million-euro Mission Critical Solutions Centre is a test laboratory and live demonstration facility at the company's European Headquarters in the UK.

'Emergency services responding to terrorist bomb threat', is just one of many test scenarios at Motorola Solutions' Mission Critical Solutions Centre. The facility has been designed specifically to address the needs for new applications and services that will support emergency service personnel tasked with delivering public safety in the years to come.

The Centre provides a test bed for combining voice and data into familiar mission-critical operations. Data gathering from cameras, smartphones, social media and sensors provides new levels of intelligence for public safety agencies, but also generates new challenges. The Centre will support agencies to realise operations that can manage increased flow of data and then extract useful intelligence. This can then be applied to meet operational demands, replicated within the facility, such as: incident creation; resource allocation; mobilisation; information analysis and distribution of real-time intelligence to manage and then control an incident.

New from Airwave

The City of London Police has signed up to Kelvin Connect's Pronto e-notebook.
The announcement comes on the back of similar contract wins for Airwave with Dyfed-Powys and Devon and Cornwall Police.
Officers will be provided with devices pre-loaded with applications that will give them remote and mobile access to all local and national backend systems. These include the Police National Computer (PNC) as well as the force command and control and crime and intelligence systems.

The City of London Police have requested a phased approach for the installation of their existing portfolio of policing process onto the devices. Chief Superintendent Dave McGinley of City of London Police commented: 'Key to our decision were the proven benefits of Pronto's mobile data capability which is already being used by police forces throughout England, Scotland and Wales.'

Airwave has been successful in its submission to include its location-based tracking solution Collaborate as part of the G-Cloud V framework, the latest UK Government Cloud procurement programme. Collaborate is a location tracking service, which is available to all blue light agencies. Users can share real-time location data with each other to establish a complete operating picture, on a permissions-only basis, without having to deal with the cost and challenge of installing, testing and maintaining new IT systems, as it uses the existing Airwave Network and service management portal.
The appointment of Collaborate to the G-Cloud V framework is part of the government's commitment to encourage the adoption of a 'cloud first' policy to public sector organisations. Euros Evans, Chief Technology Officer, Airwave, commented: 'Airwave is the leading provider of mission critical communications services and our participation demonstrates continued commitment to cloud-based services. As the government's "digital by default" agenda gains momentum, we are pleased to be associated with the new framework which will further help our customers to improve agility without compromising on performance or security with the added benefit of delivering additional cost savings.'

Emergency Services Comms: Resilience for the 21st Century

The Future Communications Study addresses concerns amongst the B-APCO membership that the replacement/evolution of the current Emergency Services Network (ESN) may compromise essential functionality for economic savings. Jose Maria Sanchez de Muniain speaks with Jennifer Cole, co-author of the report.

Considering that the Home Office has put out a tender for a new ESN, isn't a study looking at the options available for replacing or evolving the current Airwave Network unlikely to derail the current trajectory?

The report was always intended to coincide with the tender being published and we wanted to highlight a number of issues.

Firstly, we were trying to keep to what was in people's minds – business as usual – which is what the ESN tender quite rightly primarily focuses on.

However, the B-APCO membership had concerns around extreme situations and one-in-ten-year events, where the very edges of a network are usually the first things lost in the drive for economy. We wanted to stress not only what those edges of the network were, but what their characteristics are. Are they more likely to be in remote locations, where there is no geo coverage? Or more likely to be in city centres where the network is overloaded?

While we may accept there have to be sacrifices because there just isn't the money in the public sector for the perfect solution, we wanted to look into methods for filling that gap, rather than just sticking our fingers in ears and hope that nothing happens, and when it does blame somebody else. In terms of the ESN tender, our report is mostly aligned with Lot 4, and we hope the people who are going to bid for that take notice of the report.

In the research phase of the study, how widespread were concerns regarding the ability of an ESN to run effectively over a commercial network shared with other users?

Not huge, I'll be honest. There were concerns but largely nobody thought that the ESMCP was widely off the mark. Concerns were around; when we know what we need, are we going to be prepared to pay for it? Will the private sector do what they say they will?

Clearly the incident involving G4S and the London Olympics is still in people's minds. It's one thing to say you will provide 100% coverage 100% of the time, but in reality is that really going to happen? And when there is competing demand from much larger customers than the emergency services, whose voice is going to shout the loudest? At that point it's going to come down to the reputational damage to that company, and whether they really care about that damage.

It's all very well to have key performance indicators in place, but when it's your family's lives at risk on the day, the fact that the companies get a slap on the wrist afterwards is not much of a consolation.

Your research shows that some technology functionality loses its previous attraction once it becomes more readily available and its genuine value can be tested. How can decision-makers mitigate against the danger of these types of attitudes when choosing the next technology for the emergency services?

The one that really surprised me was the video. It made me think, if you think of Skype, we could be having this conversation over Skype, with video. But there is no need for it. When we compiled our first report and sent out questionnaires three years ago, Skype video conferencing wasn't as ubiquitous as it is now – and yet people perceived that they needed it. So it is interesting now to contrast this attitude with a period where they are actually able to – but the novelty seems to have worn off. It shows that danger of pandering to what people say they want without doing the proper business case for it. So, yes, we could have gone down the route of 'every call being made over ESN is a video call', but that takes up lots of bandwidth and is going to cost hugely more – and most of the times it's unnecessary.

In an ideal situation you could have A, B, C, D, and E, If you can't have them, which is the one you can do without the most? And which is the one you absolutely have to have at the end of the day? One of the more interesting cases we came across – which we had no room for in the report – involved a doctor in the Democratic Republic of Congo needing to do a shoulder amputation. He had never done one before, and the only system he had available was a telephone. He phoned one of his colleagues in England, who sent him step-by-step instructions by text message. But he did it. The point is that when nothing is available, even something as complicated as that can be done over a very basic phone. So what do you make do with, when you have to, and what do you protect when absolutely everything else has gone?

A 'fall back' additional capability of some kind retained within the public sector could mitigate the risks associated with the move to a commercial bearer. What could such a 'fall-back' option look like?

Something that is similar to Airwave in terms of coverage and resilience. But if it's not there as part of the main ESN 100% of the time, then I'm looking at organisations like Raynet taking a more official role, in the way the ambulance service uses Red Cross in some rural areas.

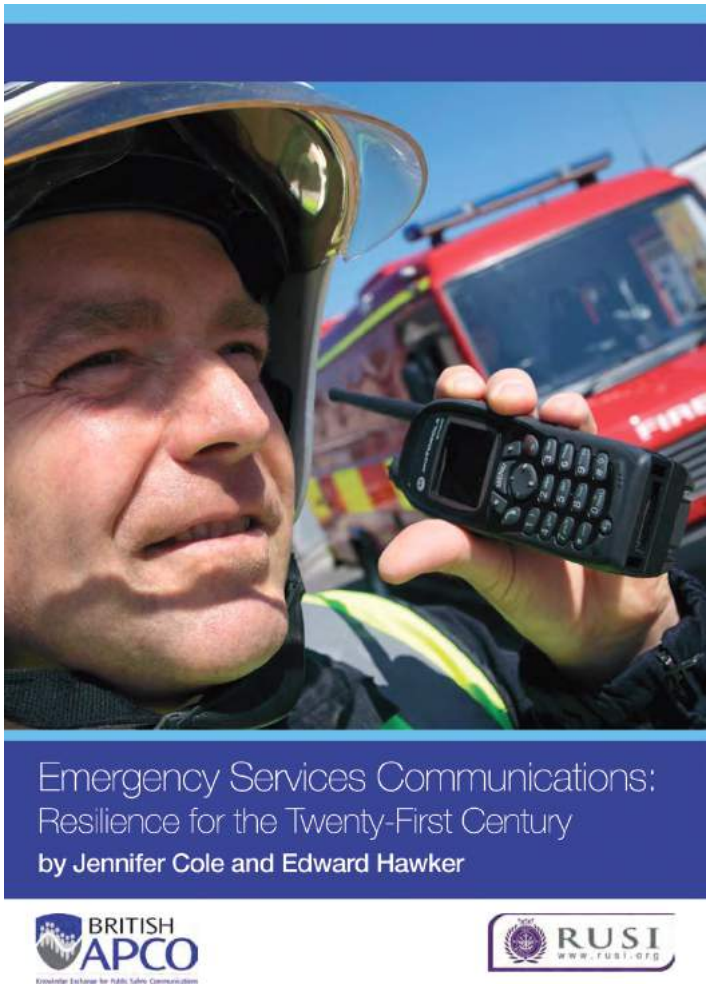
The questions we looked at included, does this actually have to be 100% professionally provided on a single network, or do you look at the core spine of this network within the pockets that don't have 100% last

mile? And what do you plug in? In some areas it may be Raynet, in other areas it might be a TA Signals unit. Other areas may have a large commercial organisation that maintains its own network for security guards, for instance.

The question is, can we plan from the beginning different ways to use those organisations that are there anyway, and that would be willing to help the professional networks that aren't providing coverage anymore?

At the end of the day, reasonable systems integration can be set up in advance. The difficulty is patching it 'on the hoof' when an event happens, rather than in a planned way through local telecoms subgroups or Raynet.

The study alludes to the moral value of having an appropriate system in place – can you expand?



Government has always had to take higher moral standards than perhaps the commercial sector, and there is the expectation that that is as it should be. There is a danger that what used to belong to the public sector is more and more being subcontracted to the private sector, where Government can say: 'This problem is not us, its such-and-such, and we had the service level agreement, but the commercial operator did not honour it.' That is where the concerns were about the level of involvement of commercial networks.

It's about money at the end of the day but it's also about people's lives and it's difficult how you measure that. What is the moral equation between two people dying but 50,000 homes not being flooded? Those kinds of decision are very hard ones to make.

In times of austerity it may be the trade off between the money you'd like to put into an ESN which otherwise could go into kidney dialysis in a hospital. If there isn't enough money to go round anymore, where do you make sacrifices?

Should a new ESN fail during a significant incident where the network is overwhelmed, who would be accountable in Government?

Nobody, and that is a problem. The whole system is open for everybody to put their hands up and say, 'not my problem', and blame somebody else. And the likelihood of the current Government being in power at the time the new ESN is rolled out, would be unprecedented in the history of UK politics. Governments just don't last that long. And even if they do, individual PMs don't. And so it's very easy to look back and blame the previous administration, which made the cuts and made the financial decision that made us go for the cheapest solution.

What is the impact of the short shelf life of technology on public safety communications?

It's a huge issue. Public sector procurement just doesn't move quickly and it's never going to. And how you deal with that is an interesting dilemma because virtually whatever we procure now, in 10 years time there is probably going to be technology that we can't even imagine.

The public sector has traditionally procured something and 10 years later something else, rather than evolve gradually. One of the things we were trying to illustrate in the report with the technology timeline is just how quickly things move. You are now looking at every two to three years the technology changing completely – whilst previously you were looking at 1926, and then to the 1960s.

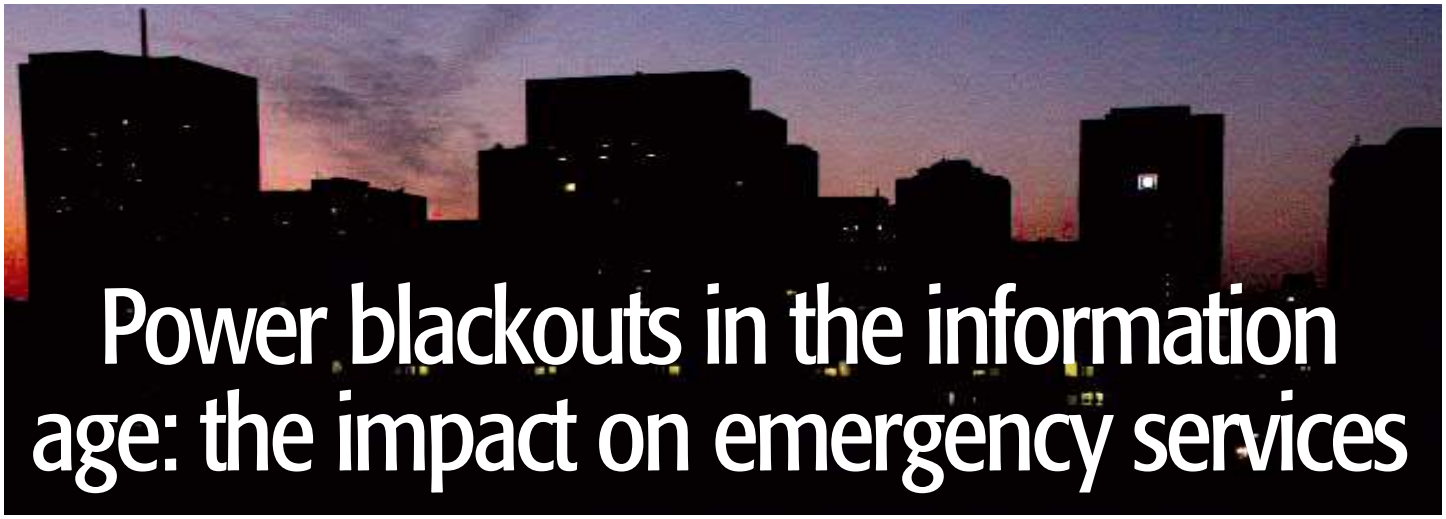
There is a sense in media and public thinking, that 'if we have it, why can't the public safety sector have it too?' By the time pilots and studies are finished, three years have gone by, by which time the technology has moved on. Some core capability is absolutely necessary and you could patch other bits as and when; this year it could be images, then video, the 3D holograms. But do you really need this? And what is it doing to the network when you don't need it?

More important is the issue around training and setting up talk groups, so perhaps a key part of the ESN is perhaps not how the technology works but whether people know how to use it. And training and exercising around that.

I have always thought it bizarre that 10 years after the Airwave network was rolled out you had NPIA guidelines on how you were meant to use it. Surely that is fundamental to the first day Airwave radio was first switched on?

What is the main take-home message?

B-APCO membership's concerns centre around coverage in remote areas and where large amounts of people result in a network being overloaded. But these issues can be addressed through training and awareness. Often the solutions come from making more capacity on the existing networks where the biggest failure is likely to be. Even with train crashes in remote areas, it's reasonably easy to get mobile comms out there. When the Wokingham bridge came down, it was possible to repair the infrastructure fairly quickly, and often it's not an issue of capacity but perhaps educating people as to how to use the network, and ration if need to. It goes back to training and awareness.



Power blackouts in the information age: the impact on emergency services

Power availability is often taken for granted in the UK but according to the gas and electricity regulator Ofgem, spare generation capacity in the UK electricity market will continue to drop. 'De-rated margins' for electricity – ie the average excess of supply over peak demand – will decrease to just 3% by 2015/16[1], writes Adrian Dain, Mason Advisory.

Toronto on the evening of August 14, 2013. A massive blackout in northeastern North America resulted in 50m people losing power across Ontario and eight US states.

The decrease is largely due to power plant closures and mothballing. According to the Royal Academy of Engineering (RAE), this is due to a combination of factors: EU directives can make it more cost-effective to close a plant than to upgrade it to meet chemical and emission targets; a generation of older sites, including nuclear plants, are reaching the end of operational life; and gas plants being decommissioned or mothballed due to the low profitability of gas-fired generation.

This does not necessarily mean there will be more blackouts, but the risk posed by such a small margin of error during winter-time peaks is very serious for the emergency services. In the short to medium term Ofgem does not believe there is a risk that the UK will have insufficient installed capacity to meet expected demand. However, the amount of spare generating capacity that can be quickly brought on line (the power generation margin) will be lower over the next decade than has been typical for the past 30 years.

The problem with operating the National Grid with a low power generation margin is that it makes it difficult to respond to major incidents in the power network, such as an unplanned power station outage coinciding with low wind conditions and the resultant reduction in output from turbines.

Power plants do have unscheduled outages: occasionally two large power plants can have a simultaneous unplanned outage, as was the case of Sizewell B and Longannet coal-fired power stations in May 2008[2]. This particular event coincided with planned maintenance of other smaller generating plans and the resulting power shortage affected half a million people[3]. And although low wind conditions are infrequent, wind generation can drop substantially for prolonged periods. Such low-wind periods do not always occur in the warmer months as one might expect. According to the RAE, wind-generated power dropped to negligible levels for 10 consecutive days in January 2009 – a time when power consumption would be toward its peak[4].

How blackouts emergency services directly

The emergency services are dependent on electricity more than ever. Twenty years ago, many tasks could be completed without power, as most routine procedures were based on paper systems. Even taking the power resilience of critical voice comms as a given, the reliance on computer technology/network communications is such that productivity would fall dramatically after a few hours without power.

Most UK emergency services have well developed disaster recovery plans, to aid recovery from a prolonged loss of power for each of their major sites, with uninterruptible power supplies and diesel-backed power systems to protect critical server rooms. However, the risks posed by a narrow generation capacity margin are often not considered in disaster recovery planning. Power shortages are likely to be region-wide and will affect several of an organisation's locations simultaneously.

Data centres and major server rooms are often well protected, with resilient power systems. However, general office IT, such as workstations and phones are often not protected, especially at smaller sites. Today more than ever, emergency services staff use mobile data solutions to access national and local IT systems. The cellular networks that support these mobile working platforms are likely to fail relatively soon after power is lost. Without the workstations and mobile devices to access central systems, operations could be severely hampered, unless officers and staff are prepared for the disruption.

Mobile devices will hopefully be fully charged in advance of a power failure – although ambulance services relying on 'shoreline' power connectivity to maintain battery charge on station could be affected.

As well as the direct impact on the emergency services, the

general public's dependency on power is likely to create great demands on the emergency services. For example, road and rail networks will be badly affected by power outage. The process of electrification has greatly increased the rail network's dependency on power, and could lead to major delays and stranded passengers. Road networks have more traffic lights than ever, and the loss of traffic signals combined with absence of street lighting could lead to an increase in road traffic incidents.

If a blackout commences in early morning, many commuters will choose to stay at home. However, power outages historically are more likely to occur in the late afternoon, during peak electrical demand, leaving many commuters displaced. Buildings rely on power not only for the function of business, but for facilities such as lifts, escalators, lighting etc. People may be stranded in lifts or forced to use unlit flights of stairs.

The more we consider society's dependence on power, the clearer it becomes that a power outage affecting a large town or city will generate significant demands on the local emergency services, at a time when their operational effectiveness may be impeded.

How can the emergency services prepare?

The emergency services need to plan for simultaneous power interruptions over wide geographic regions within their disaster recovery planning. All officers and staff should be aware of what to do in the event of power outages occurring, if they are in work, and if they are about to travel to work. This should be disseminated in advance, as electronic communications are likely to be disrupted during an outage.

The Internet, due to its highly meshed topology and fault-tolerant design, may prove more resilient than cellular phone systems, which may become overwhelmed. Thus websites and social media could be useful channels for communication with the public. Local broadcast radio should be particularly resilient, as it requires limited infrastructure to operate and will be particularly useful for reaching car drivers, whose radio reception is not dependent on mains power.

Limiting the use of 999 services to life-at-risk emergencies, will be vital; this is an ongoing task of educating each successive generation of phone users.

The communication needs of the emergency service command teams should be carefully planned, in order to quickly recover critical business functions.

Immediately at the onset of a power outage, command teams need systems and procedures to quickly establish the extent of the blackout area. This information needs to be updated in real time, so that front-line officers and staff can be directed as appropriate. It should be understood and documented in advance what facilities and functions benefit from resilient power and which will be compromised. In many power outage scenarios, back-office staff may be more productive working from home, if they have some functioning IT, such as a battery-powered laptop or other mobile device. The issuing of commercially-owned-personally-enabled (COPE) devices could help officers and staff to be more contactable when not on shift.

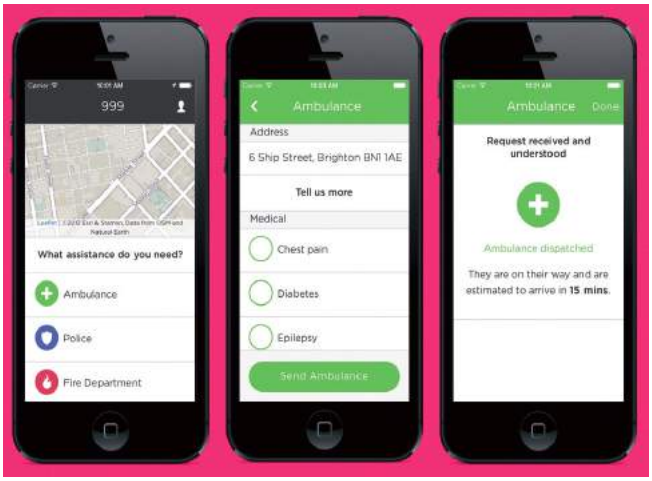
Road networks are likely to become congested and train and tram services may stop operating, thus making the commute to work during power outages prolonged and potentially hazardous. Thus rather than focusing purely on protection of data centres and the head offices, the emergency services should consider supporting a greater number of staff to work remotely. Simple measures, such as having a spare charged laptop battery to hand or the ability to access communications to staff via personal devices, such as home computers, could help maintain key business processes during a power outage.

At Mason, we understand the need to review and update business continuity and disaster recovery plans regularly. With over 25 years' experience in supporting the emergency services, we are well placed to advise organisations on mission and business critical communications.

Adrian Dain, Principal Consultant, Mason Advisory.

References

1. *https://www.ofgem.gov.uk/ofgem-publications/88523/electricitycapacityassessment2014-fullreportfinalforpublication.pdf*
2. *http://news.bbc.co.uk/1/hi/england/7423169.stm*
3. *http://www.theguardian.com/business/2008/may/28/britishenergygroupbusiness*
4. *http://www.raeng.org.uk/news/publications/list/reports/RAE_Heat_Booklet.pdf p32*



Help 999: the app for the deaf

Alison Smith of startup company Pesky People explains how new 999 technology could dramatically improve emergency response to vulnerable communities. Her new app has recently been accepted on B-APCO's App Accrediation Scheme pilot..

On paper the deaf community seems well served with access to 999 services through the use of Text Relay and emergencySMS. However, anecdotal evidence on deaf community forums suggests that contacting 999 during an emergency takes upto a staggering 20 minutes if you are deaf or hard of hearing.

Currently the deaf community can use a 'textphone' (often known as a Minicom), which plugs directly into a phone line. Users simply type in the prefix 18001 followed by the desired phone number, and conversations are then carried out on the device's screen. It is also possible to turn a PC into a textphone (by downloading a computer program) that uses broadband to make Text Relay calls, or alternative via an app called TexMee, which allows people to call other textphones and telephones from computers and mobile devices. Hearing people calling a deaf person do so by dialling 18002 followed by the person's number.

Calls made to 999 with a textphone use a specific Text Relay service (based in Liverpool) which is activated by dialing 18000 – the text relay equivalent of 999. This results in a three-way conversation between the victim and the text relay operator (by text); the relay operator and the emergency response operator (by voice), and vice versa.

Alison Smith of Pesky People believes that with proper support Help 999 can become a valuable tool for both deaf people and emergency services.

Although textphones are helpful, Alison Smith (who is severely deaf) of startup company Pesky People points out that this kind of technology has its drawbacks and is not useful for all types of emergency. 'One lady had the situation where her husband had had an accident with a lawnmower at the bottom of the garden, and she kept running back and forth between him and her Minicom in her hall in order to answer all the questions from the ambulance services control room which were being relayed to her via the operator.'

The other technology available to the deaf community is emergencySMS, whereby messages are sent to UK 999 and from there are passed on to the police, ambulance, fire rescue, or coastguard.

In order to access emergencySMS, users have to first register their mobile phones, which is done by simply typing 'register' and sending it to 999.

The system appears to be quite straightforward because in an emergency – in theory – all that users have to do is text 999 with the name of the emergency service required, a brief description of the problem, and the location of the problem. In return, they will receive a reply which will either ask for more information or say that help is on its way. According to the emergencySMS website, it usually takes about two minutes to receive a reply. If a reply isn't received within three minutes, users are told to try again or find other ways of getting help.

'However, it's not as straightforward as it sounds,' comments Alison, 'Contacting EmergencySMS generates a lot of texts and it is also difficult to use if English is not your first language – and there are 70,000 people in the UK who's first language is British Sign Language. A lady in Preston told me of an incident where her husband was being attacked outside their home whilst he was trying to stop someone from stealing his car. She was using the emergencySMS system, but she was receiving so many text messages asking for further information that she kept having to delete older text messages because her inbox was too full. She was naturally very stressed and anxious trying to type accurately on the small keyboard of her mobile. The same lady told me that she recently had to call for an ambulance and didn't text to emergencySMS but dialled 999 and yelled down the phone because it was quicker.'

Help 999

With 999 voice calls being answered in a matter of seconds, and response mobilisation initiated shortly after, Alison believes that through the use of technology a similar response time should be achievable for the deaf community.

One hurdle, however, is that there is no data on the number or nature of calls being made to the emergency services by deaf people, either by calling 999 directly or by asking a hearing person to make the calls on their behalf. Could collecting this data help improve services, wonders Alison? 'At present, deaf people make eight calls per day to emergencySMS. But people are telling me it is taking 20 minutes to complete emergencySMS calls. This includes BT's own estimation. This contrasts with the government's target of two minutes for voice calls to 999.'

Help 999 is a mobile app that enables deaf people to

request 999 assistance quickly and easily using visual touch screen options that translate the request into text that is received by emergencySMS.

Help 999 is being built by Brighton-based developers Ribot in collaboration with Pesky People, and involves Facebook groups *BSL Act* and *Pardon I'm Deaf,* who between them have over 15,000 members. 'Currently the app is in basic form – it includes GPS location as well as pre-loaded personal information and medical data that can be sent direct to 999 by text message without the need to type so much information,' explains Alison.

She adds that one of the challenges for creating the app is collating in advance all the core information that each agency requires. 'Some of the parameters will be decided by what is needed by specific emergency services. The profile data will include, for example, if the user is deaf or hard of hearing or deaf/blind and their communication needs.'

Simply saying that there is a fire, for example, will not be particularly useful to a fire and rescue service because the response will be different if it is a fire in a bin in the middle of a park or a fire in an occupied building.

'Our app will deliver real time geo-mapping of incidents, make calling for help easier and improve the experience for deaf people contacting 999.'

Some emergency services are willing to work with Pesky People, says Alison. Cheshire Fire and Rescue, East Birmingham Police, and West Midlands Fire Service are currently helping to put together criteria requirements for protocols for contacting specific blue lights services.

'We have been accepted on the British APCO App Accreditation Scheme pilot, which is fantastic. This will mean we can work directly with B-APCO and BT to build and test the app. However it is a chicken-and-egg situation because we are in desperate need for funding and investment in order to take the app forward.'

Over the last year Pesky People has received guidance and mentoring to drive forward Help 999 from the Open Data Institute (ODI) and innovation charity NESTA.

In September 2013, Pesky People was a finalist in the Crime and Justice Open Data Challenge organised by the Open Data Institute and NESTA (http://www.nesta.org.uk/open-data-challenge-series). The challenge invited teams to consider how open data projects could either: increase community involvement with the criminal justice system; create further evidence for what are effective interventions for rehabilitation; or address the rise in personal crime.

At the end of June, Pesky People joined ODI's startup incubation programme (theodi.org/start-ups), which is expected to help substantially. 'With proper support Help 999 can become a valuable tool for both deaf people and emergency services. Being one of the seven start-ups on the Open Data Institute Incubation Programme is invaluable to enabling us to move forward with Help 999. It is opening doors and building our knowledge on how we can create open data to improve emergency services engagement with deaf people, safety engagement programmes and ultimately save time and lives.'

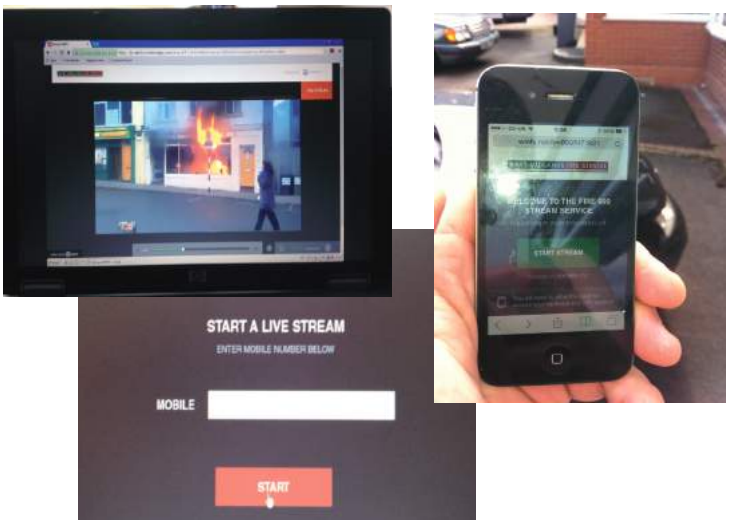
If you would like to get involved with Pesky People, email Alison Smith on: alison@peskypeople.co.uk, or sign up for updates at: https://help999.co.uk/

Over 11 million people in the UK have some form of hearing loss (one in six). From the total, 3.7m are of working age, and 6.3m are of retirement age. By 2031, it is estimated there will be 14.5m people with hearing loss in the UK. The WHO predicts that by 2030 adult onset hearing loss will be in the top 10 disease burdens in the UK and other high/middle income countries, above cataracts and diabetes.

BT: NEXT GENERATION TEXT RELAY

A new service from BT will enable users to link their home, office or mobile phone numbers to a TextNumber (unique Next Generation Text Service access codes with the same number of digits as standard hone numbers). The TextNumber enables third parties to call users of the service via the NG Text Service, which can be answered using a textphone or an Internet-connected device. Words can be typed and read at the same time as words are spoken and heard, so users can reply immediately while the other person's words are being relayed.

It is hoped that Next Generation Text Relay will be available in the Autumn of 2014. A planned Spring launch was delayed when final testing revealed a problem with the quality of emergency calls, which could have put users at risk.



Calling all emergency services – let's create a digital coalition

West Midlands Fire Service is developing 999eye as an interim step into the digital future, explains Matt Wroughton, Emergency Response, Technical and Operational Support Directorate, WMFS.

To start the stream process the operator inputs the mobile number of the caller, who is then sent a link to a website from which the live stream is activated.

Statistics show that, in the UK alone, over 40 million people will be using smart phones by 2017 and emergency services receive most calls for response from mobile phones.

Multiple case studies are available demonstrating the impact and capabilities of technology, social media, and citizens' desire to be proactive when seconds count.

We live in an age where we have seen the birth of the 'citizen reporter' – releasing images and footage to the world of scenes of carnage, whilst others are on a phone attempting to convey the scene verbally to emergency services.

Emergency services are looking for the best practice with social media and how to monitor and pick up on any on-the-ground information that will aid them in responding effectively.

West Midlands Fire Service is keen to raise the profile of this project and feel this system offers a great interim step to enhance the current 999/112/111 systems.

It will be utilised to enable, on appropriate occasions, a smarter response to emergencies – the right resources in the right place responding with as much information as possible.

The key points about the system

- Point-to-point streaming during a 999 call (not like mainstream video calling systems for example, that utilise a midpoint server)
- Another form of mapping for accurate location, WiFi, GPS and cell
- Service-initiated system with consent/opt outs from both parties
- No impact on the current 999 emergency call system
- No recording on the smart phone, only at the service end
- Suitable for any agency
- Equality Impact Assessment
- A system that can be used by anyone with the ability to use a smart phone.

WMFS are on a programme to develop and deliver this system, and we want to share it and offer it out free to all UK Emergency Services.

We are looking for any emergency service that would be interested in piloting this product with us, and ask you to contact us if you would like further or specific information about the implications of your service being involved.

Please raise it with your organisation; we will be hosting a coalition day at West Mids.

This software is just weeks away from being produced – all that is missing is you.

WHAT DOES 999EYE GIVE YOU THAT A VIDEO CALL DOESN'T?

'A video call doesn't require you to install an app. Most people don't expect to have to call 999 and 999eye won't require an app. Apps are restrictive as only limited numbers will download them prior to ever calling 999 (we may get there in the future though).

'This software will be a point-to-point connection (unlike mainstream video call systems) initiated by the services with permission from the caller. We have undertaken testing on the BT 999 system with the range of network providers, smartphones and platforms to identify the best solution.

'Services receive a lot of calls and many will not need the stream. However, the ones that do require the stream will greatly benefit.'

Why we need eye999

Highlighted in the box below is the issue that first responders face every day, as they rush with limited information about what they are going to, and what they will face when they arrive.

The priority for them is to get there quickly (but safely), whilst also trying to imagine what they may need when they arrive, based on next to no information.

When they arrive, minutes later, they will either be relieved that it isn't as bad as the limited description depicted, or alternatively they will be thrown into a scene of utter chaos. Outnumbered by people needing them, under-resourced, with limited information to act upon.

They have to quickly comprehend what they are looking at, scale the issues and gather information, then process it into manageable sections, prioritising life, property, environment. People from the communities they serve look to them to sort out this mess, save life, protect property, remove risk and restore order.

Meanwhile on Twitter, Facebook and YouTube, smartphone-captured images and footage are bouncing around. On occasions, people in other parts of the country or even the world know more than the emergency service en route.

It was with this in mind that West Midlands Fire Service began to look for solutions in 2013 – solutions to enable callers to offer more information using smartphones.

The questions posed – if your loved one was in need of help, wouldn't you want the best possible life-saving guidance? And the best possible response from each service? West Midlands Fire Service understand that, in emergencies, seconds really do count.

Following wide research, development and testing, the Emergency Response team at WMFS are now developing software they call 999eye. We are hoping to pilot this software in 2014 and are looking for interested blue light response organisations to join us.

Essentially, the system will only be utilised as an enhancement to the 999 call, on occasions when emergency services sense value in being able to see the incident from the caller's perspective, and callers are willing to stream it to them.

Once the stream is running, accurate mapping will identify the exact location of the caller and – where possible – imagery from the stream will be forwarded to responders en route.

Consider these questions:

- If you were in a position to carry out life-saving first aid, wouldn't you rather a medical expert were able to see what you needed to do, guide you through it, and thereby give someone the best chance of survival?
- If you were reporting a fire, car crash or rescue, wouldn't you rather the services sent a targeted response that would be up to the task in hand?
- If you saw those blue lights finally moving closer up the road to you, wouldn't you rather the first responders on board had as much information as possible in order to speed up the decision-making process and corrective actions once they stepped out of the vehicle?
- If you were a responder, wouldn't you want as much digestible information and imagery as possible when responding to incidents?

The appliance en route will have the capability to obtain a snapshot of the developing incident.

Contact Matt Wroughton on: Matthew.Wroughton@wmfs.net

EXCERPT FROM 999EYE'S BLOG – DOES THIS SOUND FAMILIAR?

999 operator: *"Which service do you require?"*

Caller: *"Police, or ambulance… err, all of them."*

999 operator: *"Ok, connecting you to police". (20 seconds total call handling.)*

Control Operator: *"Hello what's the nature of the call?"*

Caller: *"There's a fight, about 20 lads in the street going mental! My boyfriend's hurt. I need an ambulance, they have set fire to a house, please hurry!"*

Control operator: *"Ok, slow down, we will be with as soon as we can. Do you know where you are?"*

Caller: *"Yes, outside XXX. Please hurry – my boyfriend's bleeding really badly. I think they are going to kill someone, there's a really bad fire."*

Control Operator: *"Ok, we have got officers on the way to you, stay calm. I need to request an ambulance for you. Can you tell me the nature of his injuries? And where is the fire?"*

Caller: *"He's been stabbed, please help me, what do I do? There's so much blood, please help me." (Control operator hears commotion in the background.)*

Ask yourself: what resources would you expect services to send? Two minutes later, police, fire and ambulance first responders are now en route – but to what?

Setting the gold standard for lone worker safety

An increase in the use of lone workers by Dorset FRS drove the service to assess associated risks and examine technology that could reduce those risks. Jose Sanchez de Muniain spent a day with hydrant technicians and home safety advisors seeing at first hand why a solution was necessary.

PageOne's lone worker device Trio combines real-time man-down monitoring and alerting with dual location services that enable staff in distress to be rapidly found and assisted. Below: Steve Foot demonstrates a hydrant inspection.

Dorset FRS HQ sits on the outskirts of Poundbury, a new town built on Duchy of Cornwall land in line with the urban construction values and principles of Prince Charles.

Sitting with me in the modern, cool and airy offices of the purpose-built HQ are Water/Foam Officer Ian Crabb, Hydrant Technician Steve Foot, and Area Sales Officer for PageOne Nick Smith.

Ian Crabb looks after Dorset FRS's team of hydrant technicians, consisting of two civilians whose responsibilities include the inspection, maintenance and repair of 14,000 hydrants in the county of Dorset.

Hydrant technicians are not uncommon in the Fire Service today, explains Ian, partly as the result of the introduction of the New Roads & Street Works Act 1991, which stipulates that workers on the road have to be adequately trained in associated safety measures, for example in the correct installation and positioning of traffic signs and lighting.

'Previously hydrant inspection was carried out by firefighters on an appliance. With the introduction of the Act we couldn't afford to put all our firefighters through the relevant course, plus we didn't have the required orange flashing lights on the fire engines – we tend to carry blue – so we fell at the first hurdle.'

Two years ago Ian was tasked with carrying out a risk assessment for lone workers, with a particular focus on hydrant technicians and home safety advisors. Ian himself had experience of the possible dangers involved with carrying out lone hydrant inspections. He was once verbally assaulted by a man who'd confused Ian's van with a speeding camera van. The assault continued as Ian locked himself in, culminated with his van being punched, and only didn't escalate further because Ian had no choice but to drive off. 'The man was blaming me for the loss of his driving licence, and consequently his job and marriage.'

Hydrants are sometimes used illegally by unscrupulous contractors to steal water that is used to fill the water tanks of cleaning equipment and vehicles. 'We will challenge them to ask if they have a licence, and that conversation could be confrontational. We have also seen hydrants being used illegally in building sites.'

The more common risks, however, are those associated with working by the side of the road, for instance being knocked over by cars.

'Previous lone worker procedures for Dorset FRS consisted of calling Fire Control in the morning, reporting where you'd be going, and then calling again at the end of the day to say you'd finished. If they didn't hear from you they would ring you, but inevitably there would be a large fire somewhere and they'd forget to call. It didn't work really, and of course in some areas there wouldn't be any signal,' explained Ian.

To find out the procedures in other brigades around the country, Ian sent out a nationwide Find Alert. Ian's Alert in particular asked how brigades tackled the risk of a lone worker becoming unconscious as a result of an accident.

The 12 replies he received ranged from brigades providing nothing and relying on personal mobiles, to workers using radios or laptops on their vehicles, or even going to their nearest station for assistance. One brigade did have pagers with an alarm, but only one was in use because they'd proved a 'nuisance that kept going off'. There was no solution addressing the issue of a worker becoming unconscious.

Pager alerts

Further research revealed a pager that could send out an alert, but this technology was based on a manual timer system, requiring the user to first set a timer (eg 10 minutes), and then pressing a button at the end of that time to prevent a distress message being sent. This method proved impractical on several levels, not least of which was that if the worker had been knocked down within the first 2 minutes of the timer's countdown, it would take a further 8 minutes for the distress message to be sent out.

As part of the fact-finding process, Dorset FRS Operational Comms Manager Ian Locock suggested Ian Crabb try out the

Trio solution from PageOne, a pager with a motion sensor and distress signal messaging service. This is the solution that has since been adopted.

Hydrant technician Steve Foot proceeded to demonstrate how the Trio worked in practice.

Steve presses the button and immediately the Trio begins beeping. As he continues pressing the button, the beeping becomes gradually louder, becoming a continuous alarm that – points out Nick Smith – could bring Steve round should he be unconscious. In less than a minute Steve's supervisor Ian, sitting across the table, receives an SOS alert on his iPhone and on his laptop. The SMS and email also provide a map reference on Google Maps, providing the exact location of the device. An email SOS alert has also been received by Hydra hydrant software operator Tamina Collier. Ian adds that shortly Dorset's Fire Control will also be added to the list of SOS recipients as part of an update to the lone worker policy. In the event of an SOS alert, Fire Control will attempt to contact the worker by phone. If he cannot be contacted, the duty officer will be informed, as well as the police and the nearest fire station.

Ian explains that that same SOS alert would be sent out should Steve be lying motionless in a horizontal position, and should a pre-alert SOS messaging 'beep' not be acknowledged to cancel the alert. 'Once I receive the message I'll call Steve to

HOW TO MANAGE DORSET'S 14,000 HYDRANTS

Hydrant technician Steve Foot (pictured) receives a daily hydrant maintenance route through Hydra software. The electronic schedule is an interactive and dynamic programme that enables Dorset FRS to update the status of the county's 14,000 hydrants. This is possible because Dorset FRS took the initiative to spend six months travelling round every single hydrant with a GPS unit to map its exact location and status. The Hydra system uses a traffic-light system to convey the size of each hydrant, up to 'strategic' size for water carriers or a water crew. 'This means we can associate particular risks with a hydrant. So if it's a school, we can say, "go a bit further down the road for a decent hydrant", which the MDTs [mobile data terminals, installed on fire appliances and updated on a regular basis] can see,' said Water/Foam Officer Ian Crabb.

Care in the Community referrals can also be a concern, explains Vanessa Harvey (pictured right) – hence the lone worker pagers. 'I've been lucky, I've only had one gentleman getting a bit too touchy feely. "No, I don't need you to hold the ladder thank you. No, I don't need you to hold me either. And no, I don't want a pan of sausages as a thank you present!"'

make sure he's ok, but normally Steve calls me and says not to worry. In the last year and a half it's gone off maybe ten times by accident.'

As well as manual activation and horizontal man-down mode, the Trio also has a shock sensor to register jolts that could be caused by a fall or a crash.

On a day-to-day basis, Steve explains that when he leaves home he clips the Trio on his belt. 'And that's it. The Trio gives me peace of mind.'

Concluding, Ian Crabb highlights that the research phase had shown that the gold standard for lone worker protection was being able to detect when a person had been knocked unconscious. 'And that is what we went for, because we also wanted to protect home safety fire officers who visit people who are not so friendly.'

Home fire safety visit

2008-9 was a bad year for Dorset FRS, with 13 fire-related deaths in 13 months, explains Home Fire Safety Advisor Vanessa Harvey. A report commissioned by the FRS established that of the 12 deaths, bar one, all the victims were over 60s and living on their own. Of the 12, three had no smoke detection. Of the nine remaining incidents, three involved detectors that were fitted correctly and six homes had defective detectors. The causes of the fires were smoking, and electrical equipment/wiring-related. 'So it was decided that the best way forward was through education. A community safety task team was set up, originally made up of firefighters seconded for six months at a time. Their job was to go out and put up detectors, and talk about escape routes and how to avoid the obvious pit falls.'

The project worked so well that it led to the creation of a permanent group of 13 civilians, tasked specifically with carrying out home safety checks. 'Our home safety checks are quite different to what was previously done. We now have SaIL – Safe and Independent Living – an initiative run by Age UK. It encompasses all agencies and it's a massive point of reference for us, signposting us to the people who need us. We link to community health, social services, everybody. We do the whole thing, even something as random as an old lady wanting an new commode, or deaf alerts, fire retardant spray, fire retardant bedding, food banks – you name it, we sort it.'

The person we are visiting today is not in the typical age group of home fire safety visits. She is a young mother with a teenage son, and she is concerned that there is no smoke detection or escape route in her rented property. 'Our visits take around an hour – and that is a straightforward one where I install a couple of smoke detectors. My longest one was two and a half hours.' The worst visits are referrals from Social Services' Child Care Team. 'Often young single teenage mums, they see us as just figures of authority. They say "yes" to a visit, because they are told they need one, but then they don't answer the phone, or acknowledge a friendly text message.'

Vanessa first trialed her Trio pager around a year ago. 'It goes with us all the time, and we are often working after 5pm. Some of our appointments can end after 7pm. In winter it's no fun driving round the country lanes at night.'

So far Vanessa hasn't had to use the pager in anger, but it's a reassuring presence. 'If the alarm goes off they can see where we are because of GPS and they have access to our electronic diaries so they have the details of who we were visiting at the time. I haven't had any unpleasant experiences but its good to know that if I ended up in a ditch I wouldn't have to wait for someone to ring and say, they were due here three hours ago.'

We arrive in the cottage in the small village of Cattistock and the value of home safety visits becomes glaringly obvious. Helen (not real name) moved into the cottage nearly two years ago, as a stop gap solution, and fortunately for her and her son they are due to move out soon. Helen works with people with learning disabilities and as part of that training she has become highly aware of fire risks – including those in her home.

The cottage is on three levels, including a living room in the basement. There is only one evacuation exit, which is at the entrance to the house (and kitchen area) in the middle level. The entrance area has a porch containing an ancient washing machine and a dryer, and Vanessa is immediately seriously concerned, quickly to pointing out exposed wiring being used as an extension to a double socket. The advice comes thick and fast, 'don't use that on the plug', 'unplug it and leave it', 'don't use the appliances overnight', 'make sure you vacuum the fluff filter drawer'.

As the inspection moves around the house it becomes clear that modern fire safety checks are not just a matter of installing smoke detectors. Vanessa checks the fridge freezer serial number against a list of manufacturer's recalled models . She explains how as a tenant, Helen is entitled to see the electrical installation safety check. As she goes around the house, she dispenses little bits of fire safety wisdom; 'always hoover the air intake of electrical equipment'; 'always take off the wiring diagram on the back of plugs, if something goes wrong it will catch fire'; 'if you need to smash a double glazed unit, the corners are the best place to smash.'

After the inspection, Vanessa puts up three smoke alarms and repeats what Helen and her teenage son should do in the event of a fire. 'If you cannot get out, stay in the bedroom. The control operator will talk you through what to do. You have a fire station up the road, only five minutes away, and if they are not available there are two other stations not far.'

The good-humoured visit concludes amidst smiles: we are all aware that Vanessa's visit may have prevented a disaster and that all that valuable knowledge will travel wherever Helen moves to next. It seems only fair that people like Vanessa, who are out in the community making people safer, should in turn be protected and feel safe themselves.

Exposed wiring in the porch area at the entrance to the property – also the only evacuation exit.

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