

British Association of Public Safety Communications Officials



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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 International.

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



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British APCO: President's address



Alan House, President

So we turn into 2013 and the pressures continue to exert themselves both on our public safety services and on their commercial suppliers, with a drive to do things smarter, to work with greater collaboration, and to make budgets work with greater efficiency. Some predict this will be the peak impact year for local government

services. Only time will tell. A meeting with commercial colleagues in December has resulted in a re-launching of the Commercial Advisory Group with new thoughts and ideas about closer working with our commercial sector colleagues. The Executive Committee has also discussed possible changes to our Constitution relative to Representative Groups, and organisational structure, and proposals will be circulated to members prior to the 2013 AGM. Our intention is also to raise our profile by engagement and by facilitating discussions with central Government departments and agencies, acting (as appropriate) as a bridge between public safety services, suppliers and government policy makers. I am pleased to see that work has commenced between the

emergency services to discuss interoperability, a term that has been on the lips of many for a long time, but often with different interpretation and emphasis. My personal hope is that, unlike past attempts to tackle this subject area, emergency responders and public safety in general will really benefit from the obvious effort and emphasis now being concentrated on the topic by senior members of all of the primary 'blue-light' services. British APCO very much endorses all initiatives to establish or improve the ability for emergency responders to share information and achieve common operational awareness in the interest of public safety, and we would be pleased to be involved in any initiatives to further the thinking. Finally, remember Manchester, April 29-30 – you need to be there.

CAM – the future of British APCO CAG



Simon Land, CAM Chairman

British APCO has long had a Commercial Advisory Group (CAG) fulfilling the role of industry advisers to the user membership. This role is vital to both the user members of British APCO and the wider responder community as a whole. As a former communication officer for the Police, I am acutely aware of the importance of industry advice. Without this advice, the job of a communications officer becomes extremely difficult. Technology changes at an ever

increasing pace. Maintaining sight of the current and future trends in technology is difficult in itself. Ensuring that you have sufficient knowledge to make an informed decision as to which technology is the best for your organisation is even more difficult. Ensuring that the technology you chose is interoperable with those other organisations that your organisation needs to work with, and that it provides a suitable response to an incident, is the most onerous element of the role. Having moved into the commercial world I now believe I have some understanding of both sides of the issue. This is why I have agreed to take on the role of Chair of what was called CAG. B-APCO is in a unique position in that it can support its commercial membership to provide the public safety community in the UK with the best comms solutions available. Interoperability between

responders, regardless of their service, is vital to ensuring that an efficient response is achieved. To achieve this, there needs to be commonality between cultures, systems and suppliers. British APCO is the trusted partner, creating an environment where suppliers can bring their products to the table so that interoperability is assured without compromising commercial advantage. My vision for the future is to bring together the commercial membership. I do not believe that simply changing the name is important, but using that change to bring all of the commercial members into an interoperable environment is significant. Commercial Advisory Membership (CAM) is the name I propose to spark the changes that will enable each commercial member to be part of projects run by B-APCO, on behalf of the user membership. All that I ask of the CAM is its support.



Knowledge Exchange for Public Safety Communications



Executive Director Tony Antoniou presents some of the many achievements of B-APCO during 2012 and outlines some exciting cooperative initiatives for 2013.

We held seven separate initiatives combined into four memorable occasions in the last quarter of 2012. It's important to recognise that many of these marked how much we've achieved and how we're delivering real benefit to our members – public safety practitioners and commercial members.

The new level of delivery of tangible benefit to our members, of sheer activity and energy, continues to feel exciting. British APCO has come of age, and at such an important time – this is no accident, and there are many to thank for their efforts and support. This support counts most – let's make sure we sign up as members all the new partners and participants across these initiatives.

I was thrilled to see our commercial group reinvigorated, and congratulations to our new Chair, Simon Land. I look forward to working with him on some challenging and compelling projects

For the first time, in October, we brought together partners from public safety and from transport and utilities (and our friends at Wireless magazine) to begin to look at how we should move towards the convergence of our systems (as our Government says we must), and how we can benefit from knowledge exchange between our sectors. This event was held at the same Heathrow venue as an in-depth review of state-of-the-art approaches to ARL (Automated Resource Location), chaired by Paul Kinsella on behalf of ACPO.

Both of these have important follow-through sessions at Manchester during British APCO 2013. We will be reporting on how we're using what we learned on ARL in one session, and we're holding an important follow-on session on cross-sector convergence. Please see your event guide!

We have worked with our valued partners in Cabinet Office to start the initiative to take DEIT (as trialled in South Wales) forward to provide what we really need, in the shape of a robust, all-agencies solution – the Incident Data Transfer Standard. We have brought together all our members who commercially supply into command and control with stakeholders across the agencies. And the sponsorship of Cabinet Office is bringing along chief technical offices, the Department of Transport and other important partners. The effort here will be focussed on a

new level of co-operative development, and the result will be a genuinely extensible architecture that will last – the Standard for Incident Data Transfer. During the Manchester event we will see the first stage of the work, and we'll be making our cross-agency stakeholders work hard in refining the requirements during the early development stage (with British APCO's Projects Office co-ordinating the initiative). We'll be holding a major session to disseminate on the benefit this provides to control rooms across public safety and transport and utilities on the second day at Manchester.

British APCO is similarly commencing other new initiatives with this same sponsor group, to actively deliver improvement and strategic influence across other important technical and communications aspects of the tools we need to save lives. You'll hear these announced at Manchester. I believe that we will find that having two main focus events works best – the big annual event (Manchester) followed six-months later with another that combines ongoing initiatives and important events (as happened last October). Combining them like this reduces costs, helps our supporters' budgets for a known pattern of spend, and provides them with an audience that is larger, consistent and wider (with members in transport and utilities sectors).

In terms of value, we continue to subsidise subscription costs with our research work. Free entry into all workshops still means that the value exceeds the cost of subscription (in cash terms) if you went into just one session. The key value is that we're delivering real benefits across communications for public safety, with mission sponsorship from Cabinet Office and stakeholders.

This year's Manchester event will be the most amazing yet, in terms of the continued radical change that we started last year and in its content. When I look at the event guide, the subject matter and participants in the sessions, I am genuinely astounded. We're going to be oversubscribed quickly on many of the sessions, so it's important to book your places early. Where the rate of booking is very high for these (and we are monitoring) at some point we may (in fairness) have to give priority to members – so do hurry and get your days planned well ahead of time.

Tony Antoniou, Executive Director.



Knowledge Exchange for Public Safety Communications

Immediate Past President Ian Readhead, responsible with Executive Director Tony Antoniou for planning this year's exhibition and workshops for British APCO (Manchester Central 29-30 April), explains why this event will be – literally – unmissable.

We recognise that moving from London to Manchester was always going to be challenging, I was really pleased with the exhibition last year but felt that the traditional conference arrangements did not suit the needs of our members and other attendees. So this year we have put a lot of effort into facilitating workshops that have a real relevance to blue light services and civil contingency responders. For example we were delighted that Commander Richard Morris – the ACPO Lead for Communications – is to lead a workshop debate on the future user requirements with regards to voice and mobile communications.

We already have confirmation that Chief Constable Andy Trotter who represents the Police on the Emergency Services Mobile Communications Programme and Chief Constable Simon Parr who Chairs the Operational Requirements Board have also indicated their intention to attend. I anticipate that a significant number of influential members of all the services will want to be there.

We are also delighted that Airwave, O2, Vodafone, EE and Three will be present in order to outline their proposals in this area. Phil Kidner will also have colleagues from the TETRA and Critical Communications Association (TCCA) in attendance and hopefully also representatives from Joint Emergency Services Interoperability Programme (JESIP).

This is a first-class assembly of all the key members and I would hope that colleagues within British APCO and others take the opportunity of attending.

We have also been working towards a further workshop that is focused upon the intention next year of creating corporate emergency plans. We are therefore consulting with colleagues from utilities, petrochemical/gas suppliers, Petroleum Industry Association, Environment Agency and Category 2 responders. This workshop will review how together we should cooperate more fully in the future with a focus on interoperability, clarity of governance and how to migrate from disaster to normality.

This is again an excellent opportunity for our commercial members to review the needs of users and to see how they can assist technical platforms upon which the strategic aims

within the emergency plan can be delivered. We are also holding a further workshop which is focused upon the concept of information exchange and cloud computing. This is being organised by Analysys Mason and we hope to have colleagues from the Post Office also participating. This will give us an opportunity to review the future of hub capability, which is clearly a priority for the Government with regard to information exchange between public authorities in furtherance of its transparency agenda.

All of the above evidences how critical it is for us to effectively network between agencies, suppliers and users in order to ensure that we can achieve future efficiencies and added effectiveness through the implementation of solutions that engage the very best business processes.

We are also hosting some key meetings which may evolve into workshops. In particular British APCO recently hosted an opportunity for the Cabinet Office to meet with British APCO commercial members for an initial dialogue involving the implementation of a direct electronic incident transfer (DEIT).

The discussion was led by David Barnes from the Cabinet Office who was keen to explore if British APCO could assist in managing the standard and its implementation. This would also be extremely relevant for suppliers who were seeking to ensure that their solutions were DEIT compliant. There was significant interest in this initiative and a considerable number of British APCO commercial members were in attendance. We hope that this next opportunity to meet will add more detail to the proposals and allow us to progress the work throughout 2013. Working with Brintex, we have also attempted to create a better arrangement for booking hotels as this can all be achieved through Zibrant (as indicated on the exhibition website which you can view at www.bapco.co.uk). Colleagues will be pleased to note that we are still holding the British APCO Dinner in the Midland Hotel, which last year attracted over 250 attendees.

Entry this year to the exhibition and workshops is completely free so we are hopeful that blue light services will release members of staff to attend, as it represents great value and an opportunity to participate in leading areas of technical change.

British APCO – the Project Team

Research in action

We've chosen the above strap-line for this new section showcasing British APCO's project team because it encapsulates what we do in a few words.

We hope you'll come back in future issues to find out what's new and what's planned in the EU and UK research worlds.

So what do we do?

As part of a consortium we bid to EU funding bodies for research projects relevant to British APCO members. Our contribution is generally twofold: capturing user requirements and demonstrating the final outcome or product to our user base.

Previous projects

The range of topics is broad – HELP looked at innovative approaches for the management of network and spectrum resources; SECRICOM created a proof of concept network demonstrating real interoperability in a disaster, and CHORIST addressed environmental risk management in relation to natural hazards and industrial accidents.

Silly names, serious research

EU partners love creating intricate acronyms to describe projects! In FREESIC (yes, really), ABSOLUTE, ALERT4ALL and HYDRA we have been looking into barriers to interoperability, airborne emergency networks, community alerting and identification of people trapped in collapsed buildings.

So what's in it for members?

Emergency responders – British APCO members – can help by contributing to user requirements and validating project outputs. You could complete a questionnaire or help with a workshop. At the same time you will be furthering your interest in public safety communications and adding to your personal CV.

Commercial, go-ahead B-APCO member companies will be interested in project outcomes and recommendations, or could get involved in a project during the annual bidding season.

Project news

The latest EU-funded project is ABSOLUTE, which has the ambitious target of demonstrating a rapid deployment emergency network using aerial platforms to provide a high quality service over a major incident or disaster site.

Following a 'kick-off' meeting in Paris in October, Jim Strother is working with UK, European and world-wide colleagues to capture comprehensive user requirements. He'll need help in reviewing and validating these and will be talking to B-APCO contacts – if you'd like to assist let him know on euprojects2@bapco.org.uk.

Shaun O'Neill's previous project provided practical solutions for interoperability – he's now investigating the reasons why it doesn't always happen. Check out progress to date on the following pages of the Journal!



Shaun O'Neill

Tony Antoniou, British APCO Executive Director, is also responsible for managing the Project Team and works mainly on bids, relationships and all legal and financial aspects.



Tony Antoniou



Paul Hirst

The project managers have between them nearly 100 years' experience in the emergency services, much of it in communications roles.



Jim Strother

Project Freesic – interop challenges

On 16 October 2012 at the Radisson Edwardian Hotel, Heathrow, B-APCO hosted a Project FREESIC consultation workshop with a range of emergency service end-users, writes Shaun O'Neill, B-APCO European Projects Manager.

The workshop was focused upon potential solutions to various interoperability challenges and issues that have been identified in multi-agency responses to major crisis incidents.



Background

FREESIC is an EU funded research and development project from the 7th Framework Programme; it commenced in February 2012 and will run for 30 months. Its objective is to improve multi-agency interoperability both from a technical and non-technical perspective.



There are 9 organisations from six EU states involved in FREESIC with a wide range of abilities and experience represented across the project partners; this includes academic and applied research capabilities and commercial suppliers with communications and



security systems expertise. In addition there are two state National Security Agency partners providing high level security inputs.

Role of B-APCO

B-APCO's role in the project is centred on business and users' needs and as lead for the requirements analysis work-package in the Spring and Summer of this year it co-ordinated, across several EU states, the identification and documentation of issues that inhibit interoperability. This work involved three distinct spheres of activity:

- Consultation was undertaken, by all project partners, with end users from 9 EU states. The consultation with a wide range of agencies took several forms ranging from one-to-ones, small workshops and briefings through to larger presentations and involved a mix of senior managers and operational personnel with ICT and incident management experience.
- Review and analysis of publically available documents on 20 recent EU-based major crisis events and exercises where multi-agency interoperability challenges were identified as factors in the overall incident resolution. The UK events analysed were the London 7/7 attack in 2005 and the Cumbria shootings in 2010.
- Review and analysis of over 20 EU and world-wide current and recently completed projects that had focused on interoperability issues between emergency response and civil protection agencies at times of crisis.

Identified interoperability issues

Emerging from this requirements analysis exercise is a range of issues that includes both strategic and operational matters. Interestingly, but perhaps not too surprisingly, there was a fair degree of commonality between issues raised by the engaged end users across the different EU states; this commonality was also observed in the research outcomes from the past major crisis incidents and from the aforementioned projects review. These identified issues were formally classified into project requirements under five categories:

- Process, culture and practical issues
- Finance and commercial issues
- Legal issues
- Security issues
- Technical issues.

It was noted that when reviewing the identified issues that there were clearly some matters that sat outside of the capability of the Project to address. For example there were several references by users to the lack of coterminosity of agency boundaries and associated governance impacting on interoperability – this clearly would not be an issue that a project could address and as such was classified as a 'constraint' that the project would have to work within.

These constraint issues are being collated separately by the project as we acknowledge they are identified as inhibitors to interoperability and will need to be addressed at some point in the future.

Workshop

The purpose of the October 16 workshop in London was to review the identified interoperability issues and where possible propose solutions that the project could take forward.

Eight end-users attended the workshop:

- A London NHS Senior Ambulance Manager
- A Northamptonshire Local Authority Contingency Planner
- A London Fire Brigade Group Manager
- An All Wales Joint Emergency Services Group ICT Manager
- A Hampshire Police Service Radio Tactical Advisor

- A Home Office Senior Radio Technology and Strategy Manager
- A Humberside Police Control Room Inspector
- A Swedish Police Inspector who implemented the National Police Tetra Radio System.

The workshop was facilitated by Shaun O'Neill (B-APCO), who was assisted by Jim Strother (also from B-APCO); Stefan Vanya of Ardaco, Slovakia (and overall project co-ordinator); and Wojciech Wojciechowicz of ITTI, Poland (Work Package 3 Leader).

Workshop findings

Early findings from this UK workshop indicate a range of proposed solutions to multi-agency interoperability challenges; some of these proposed solutions may not – to some – be overly surprising but are still valid by reason of the fact they have been highlighted as responses to problems that still exist and inhibit operational effectiveness.

The following are illustrative of the wide range of proposals that have emerged:

- Development of a readily accessible register of agency capabilities and specialist resources
- Benefits of interoperability to be articulated in a clear manner to agency senior managers and thus influence organisational objectives and planning
- Joint agency procurements – not only offering economies of

scale but stronger consideration of requirements for enabling ICT to more easily enhance inter-agency process and procedural integration

- Development of inter-agency communication talk-group plans prior to operational deployment – to include non-core (Cat 2) and voluntary agencies
- Development of agreed security procedures with flexibility to accommodate changing circumstances
- The need for agreed data standards to facilitate more effective information exchange.

Next steps

The UK workshop outputs will be further refined and then combined with the proposed solutions from similar workshops planned over the next two months in Czech Republic, Luxembourg, Poland, Slovakia and Spain. In early 2013 the findings from all the national workshops will be collated into one format that can be presented to an assembled international validation team of users during the B-APCO 2013 event in Manchester next April. Following the outcomes of this validation exercise system and technical development, work will progress towards a full proof of concept of trial.

Consideration will also be given as to how best to disseminate and progress the issues identified as constraints (out of project scope) with any proposed solutions.

Project ABSOLUTE – it's a network, but not as we know it



gives an overview of the ABSOLUTE architecture as envisioned to date.



ABSOLUTE (www.absolute-project.eu) started in October, and is funded by the EU. It has an ambitious objective, which is to link multiple land-based stations to aerial platforms to create a portable, swiftly deployable network demonstrating the high capacity, low-latency and coverage capabilities of LTE-A solutions, talking 'back to base' through a satellite link.

B-APCO is responsible for leading on the user requirements, which are collected through the External Advisory Board with links in the UK and abroad. A detailed questionnaire is being created for distribution later this year. In the meantime, an introductory set of questions has been sent out, aimed at establishing commonalities across the different user organisations in six countries.

B-APCO members attended a workshop in October which provided valuable insight into the potential requirements for this and another project. If you represent a user organisation which might have a requirement now or in the future for 'instant broadband' in a crisis situation, you are invited to contribute. The diagram (left column)

Project LYNX – satcoms in a hurry

LYNX started in July looking at the use of portable satellite equipment to provide a broadband network quickly in an emergency situation where existing comms are non-existent or inadequate.

This is a UK-based and funded project which will deliver a marketable product at the end. LYNX is envisaged as a single human-portable box essentially providing fast access to broadband via satellite, but with the ability to connect to applications such as the antenna needed to transmit and receive over an incident scene. Thirteen representatives of emergency responder agencies attended a B-APCO-led workshop at the National Space Centre in October 2012. A scenario involving a plane crash was used to spark discussion on essential communications needs. Their inputs provided valuable insight into the potential requirements for LYNX.

The user requirements are currently being fed into the system requirements as the technical partners gear up to develop the state-of-the-art satellite terminal.

To contribute or keep up to date with both these projects contact Jim Strother at euprojects2@bapco.org.uk.



PORTABLE TETRA SWITCH LAUNCH

At the PMR Expo in Cologne (November 2012) Cassidian unveiled the DXT3p (portable) TETRA switch.



DXT3p offers TETRA voice and data services in a compact form and it has been designed for setting up temporary networks or for applications where the network itself needs to be mobile. It is the size of a suitcase and one person can carry it if necessary. As the heart of the TETRA radio network all other network elements connect to the switch.

DXT3p is ideally suited for setting up a temporary network in cases of natural or human-induced disasters, and can be the temporary solution for large events. It is also easy to install in a vehicle. 'The DXT3p brings totally new crises management toolset for public safety authorities,' said Eric Davalo, CTO of Secure Communication Solutions at Cassidian. 'This new switch allows quickly setting up secure, reliable communication infrastructure to areas which either do not have, or have lost, any communication system.'

➔ Major players join forces to target the fire sector

Telent, Intergraph and Frequentis have joined forces in a strategic partnership that will target the UK fire sector with a comprehensive mobilising solution.

'The increased scale and scope of modern mobilising systems demand greater integration and coordination, both organisationally and in terms of technology. This places them beyond the scope of a single provider and requires a significant element of project services,' said Chris Metcalfe, Managing Director for Telent's Technology Solutions business, adding: 'The partnership between Telent, Intergraph and Frequentis overcomes this hurdle, offering a unique understanding of the specific safety and operational requirements of public sector emergency services.'

Specific capabilities of the partners include:

- A specialist in systems integration and services for critical communications, Telent supports some of the largest UK public safety organisations including Merseyside Fire and Rescue and the Met Police.
- Protecting one in twelve of the world's population, Intergraph is a leading provider of computer aided dispatch and incident response solutions. Its implementations span every level from single, local operation centres to national, multi-centre operations.
- Frequentis is a leader in integrated communication control and command and control centre solutions. Its critical voice communication systems are in use throughout the world.

➔ CCTV video also goes the way of the cloud

Securicorp and partners has announced a cloud solution for CCTV.

The cloud CCTV solution Securicorp Components stores all the CCTV images on the cloud and is controlled and managed through one account username and password.

Where IP cameras before had the advantage over an analogue system of being on a network which allowed adding cameras with ease there was still

an issue of expanding PC power. Adding one camera to an existing one meant a doubling of resource usage.

Securicorp has partnered with telecom, data centre and internet service providers to provide the cloud. Retail distribution will be through the securicorp.com website and partnerships with retailers. Some service providers will also retail the cameras as a full bundled CCTV service.

➔ No paper notebooks for new recruits in Surrey

All new recruits in Surrey Police will be issued with and trained to use only an e-notebook.

All shift information will be available to authorised personnel and stored and retrieved for evidential purposes. This will remove the cost and inconvenience of storing and managing paper notebooks.

Using the Pronto electronic notebook from Kelvin Connect, information can also be shared with other organisations such as coroners' offices and local authorities. Kelvin Connect said that the e-notebook will also facilitate an officer's search across a broad range of back-end systems. It will enable the officer to complete multiple forms using the same accurate and validated information. These forms will then be submitted in real time over the air, as well as printed copies issued on the spot to the member of the public.

Chief Superintendent Dave Leeney of Surrey Police said: 'We are delighted that all our new recruits will use the e-notebook from the commencement of their service. Not only has the device shown large cost and time-saving benefits, it is a vital tool front-line officers need to enable them to focus on their job.

'By capturing and managing accurate and validated



information electronically at the start of a process, it removes significant time wasting across the organisation and drives our commitment towards paperless policing.'

Kelvin Connect announced in December that its Pronto software suite is now available for BlackBerry smartphones.

→ London Fire Brigade to improve public communications through Tweeting

The London Fire Brigade is to explore setting up the world's first 999 emergency Twitter feed.

The announcement comes following the publication of the Brigade's draft Integrated Risk Management Plan, which sets out how the fire and rescue service in London will be delivered over the next few years. In it the Brigade has pledged to look at how best to use social media in the future, including how it would respond to people using it to report incidents.

The Brigade would be the first emergency service in the UK to look into how apps, social media and micro-blogging sites, like Twitter, could be used by the public to report emergencies. It said it aims to work with the Government and other blue light services, such as the Met Police and London Ambulance Service, to establish whether the idea could become a reality and the extent to which social media might be used to report emergencies.

Earlier this year a report from Ofcom suggested that:

- For the first time text-based communications are surpassing traditional phone calls or meeting face-to-face as the most frequent ways of keeping in touch for

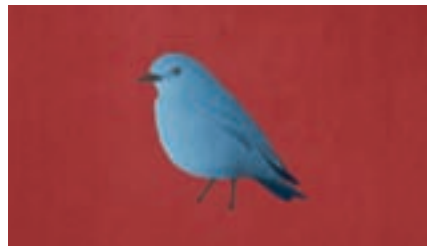
UK adults.

- Traditional forms of communication are declining in popularity, with the overall time people spend talking on the phone falling by five per cent in 2011.

- One in five adults in the UK now uses a smart phone.

Rita Dexter, Deputy Commissioner of London Fire Brigade, said, 'With over a billion people now using Facebook and half a billion using Twitter, it's quite clear that social media is here to stay. The London Fire Brigade is the biggest fire service in the country and we think it's important to look into ways to improve how we communicate with the public and how they can get in touch with us.

'It's time to look at new ways for people to report emergencies quickly and efficiently and social media could provide the answer in the future.'



→ Collaborative effort by West Midlands Fire and Ambulance Services

West Midlands Fire and Ambulance Services have formally agreed to share a number of fire station sites in a move that will see more collaborative working between the two organisations.

It will mean that West Midlands Ambulance Service staff will be able to make use of some fire station facilities.

Ambulances and rapid response vehicles will be based at 34 West Midlands Fire Service sites including its Headquarters in Vauxhall Road, Birmingham.

Steve Vincent, Head of Community Safety at West Midlands Fire Service, said: 'At a time when both organisations are under severe financial pressure, it makes sense to share some of our sites and facilities.

'The arrangement means we are able to provide even better value for money to the taxpayer while maintaining the high standards of service that the communities we serve expect. We work together on the ground, so sharing some office space is a beneficial extension of that.'

The initiative will also enable West Midlands Ambulance Service to provide a faster response to an incident, because the number of bases ambulances can use will have increased dramatically.

Assistance Ambulance Chief Officer Tracey Morrell said: 'This shows how far we, as emergency services, have come in cohabiting. Staff from both services have embraced the concept and it is working well. Ambulance service staff enjoy it because they have nice surroundings and have developed a rapport with their fire service colleagues.'

→ £81m contract for NGN in Essex

Essex County Council is set to deliver enhanced ICT services to around 200,000 users through its next generation network (NGN) services whilst also reducing spend.

Daisy Updata Communications Limited (DUCL) has been awarded the NGN contract to manage and develop the IT network infrastructure and associated telephony services, for 10 years, for one of the largest local authorities in the UK, Essex County Council (ECC). The contract is valued at £81m. DUCL is a new joint venture between Daisy Group and Updata Infrastructure.

Built to PSN-standards but requiring no new financial investment by the Council, the NGN will initially establish a single network with connectivity to schools, council sites members of the Essex On Line Partnership, a combination of organisations working together on ICT projects including local district, borough and unitary councils, Essex Police and Essex County Fire Services. The contract will combine ECC's data and telephony networks and add additional services – eg unified communications and video conferencing – to support flexible working. A key early deliverable is to provide full compliance with PSN standards to enable secure connectivity to government services and to provide a platform for sharing services with ECC's other public sector stakeholders, for example the emergency services and the NHS.

→ Cyber response

Cassidian CyberSecurity, a division of EADS, has been chosen by CESG (the information assurance arm of GCHQ) and CPNI (Centre for the Protection of National Infrastructure) as one of four commercial cybersecurity organisations to work with the National Authorities in the Cyber Incident Response pilot. The three other commercial organisations are BAE Systems Detica, Context Information Security, and Mandiant.

The Cyber Incident Response scheme was launched on November 7 and commences with a pilot phase running until February 2013. It will be developed to allow organisations to be certified by the UK National Authority to work on networks belonging to government and critical UK industries. The organisations will be certified largely on the basis of the competences of the teams and individuals working on these cyber security issues and tackling the effects of advanced malware attacks. These cyber attacks may include new techniques not previously seen, zero day attacks, innovative attack combinations and especially persistent threat attacks.

➔ Smart antenna for uniforms

An EU project is to develop a smart antenna that will work as a 'human black box'.

The smart antenna will be integrated into the uniforms of police and emergency services so that the location of officers can be precisely pinpointed in an emergency.

Sofant Technologies, a provider of miniaturised smart antennae technology, will be part of the two-year, 1.5m euro ARMOURS project.

The Scottish company will help in the creation of Galileo PRS (Public Regulated Service).

Part of a consortium, Sofant's role on the ARMOURS project is to develop low cost miniature steerable antennae that can be incorporated into portable devices including

smart phones as well as the clothing and uniforms used by police, intelligence services, customs officials, coast guards, peacekeeping forces and rescue teams.

This new affordable multi-frequency receiver technology is intended for future use with Europe's 'Galileo' satellite navigation system which has been developed as an alternative to the US controlled GPS system.

Jointly funded by the GSA (European GNSS Agency) and the EU as part of the FP7 program, the ARMOURS project will be delivered by a consortium that also includes Acorde Technologies; Ecole Polytechnique Fédérale de Lausanne; and Interuniversitair Micro-Electronica Centrum.

➔ Getac's new range



At the Emergency Services Show Getac presented its new range of next generation technology – the performance-enhanced V200, the X500 mobile server, and Getac's fully rugged Android tablet, the Z710 (above).

The V200 convertible notebook offers a sunlight-readable screen for the display of routes and schematics with clarity. It comes with full-size mechanical keyboard as standard and can be securely mounted on an in-vehicle docking station for easy operation whilst on the move. It can also be used as a tablet in the field, and comes with integrated GPS, 3G, Wifi and Bluetooth.

Getac's X500 fully rugged mobile server contains the latest generation of Intel Core processor – the i7 vPro – and high performance NVIDIA GeForce graphic controller. The portable device can rapidly analyse intelligence data acquired from multiple mobile computing devices to allow command and control centres to make informed decisions.

The new Z710 7-inch Android tablet is a fully rugged tablet offering glove-friendly touchscreen. The device has a 5MP camera with optional 1D/2D barcode and high-frequency RFID reader.

The Z710 MDT enables real-time communication of mission-critical information to field personnel, and is built to withstand the toughest of emergency environments – IP65 and MIL-STD-810G certified.

➔ Bucks FRS joins Thames Control

Royal Berkshire Fire Authority (RBFA) and Oxfordshire County Council (OCC) Cabinet Members have approved Buckinghamshire Fire & Rescue Service's plans to join the Thames Valley Fire Control Service (TVFCS).

RBFRS and OFRS have been working in partnership on the TVFCS since 2010 and many key decisions have already been made, for example, the location of the TVFCS.

Buckinghamshire Fire & Rescue Service will work closely with RBFRS and OFRS during the delivery phase of the programme, before becoming a full member of the joint governing body once the TVFCS goes live. Work will now begin on a revised, detailed staffing model to establish how many posts will now be required for the TVFCS and a full HR staff consultation process will be conducted at the appropriate time. All three fire and rescue services are committed to supporting their staff throughout the change process.

The location of the TVFCS will remain unchanged within RBFRS' new headquarters in Calcot, near Reading, which will include purpose-built accommodation for the new joint Control, including improved security measures. A non-staffed secondary Control room will still be located in Kidlington, Oxfordshire.

The overall programme deadline is not expected to be affected by the addition of BFRS to the TVFCS, which is still anticipated to go live in April 2014.

Olaf Baars, Deputy Chief Fire Officer at RBFRS, said: 'I am delighted that political approval has now been granted for Buckinghamshire Fire & Rescue Service to join the Thames Valley Fire Control Service. The addition of Buckinghamshire will further enhance our aims of providing an improved service to the public we serve, greater safety for firefighters and a more cost-effective service for the people of all three counties.'



➔ Kelvin connects to the G-Cloud II Framework

Kelvin Connect (KC), an Airwave Group company, has been selected by the Government Procurement Service to join the Government G-Cloud II Framework (Lot 4: Specialist Cloud Services).

Nigel Rees, managing director of Kelvin Connect (left), said: 'We are delighted to have been selected for the G-Cloud II Framework.'

KC recognises the importance of this framework in making software and services readily available to Government and other public sector organisations in more cost-effective and innovative ways. Our selection adds to the list of existing frameworks from which KC products and services are available, offering real choice and flexibility.'

➔ Charter ceremony demonstrates Global Alliance commitment

APCO partners have signed a Charter demonstrating their commitment to the Global Alliance.

The new Charter and corporate plan represent 'significant milestones in the continuing evolution of the Global Alliance as a body capable of identifying, informing and advocating on global issues.'

In November 2012 representatives from APCO International in the United States, APCO Canada, British APCO and APCO Australasia (APCO Partners) came together to sign a Charter that demonstrates their continuing commitment to the APCO Global Alliance.

The event took place in Winnipeg, Canada, in conjunction with the APCO Canada Conference.

The signing of the new Charter solidifies APCO International's relationship with its partners: 'APCO is honoured to be part of this monumental venture to ensure public safety communications is a priority across the globe,' said APCO International President Terry Hall.

'I believe that the signing of the new Charter for the APCO Global Alliance represents an important moment in time, as the constituent APCO Partners continue to further their aim to progress the global development of public



safety communications,' said Alan House, President of British APCO.

The APCO Global Alliance was originally formed in 2006 during which time the APCO Partners executed a Charter that would exist for an initial term of five years. The Partners agreed to sign a new Charter to provide the governance arrangements for the APCO Global Alliance to function for a further term from January 1, 2013 to September 30, 2015.

As part of the Charter, the APCO Partners prepared a corporate plan to guide the President's Council as the Global Alliance undertakes its core business of promoting excellence in the global development and use of public safety communications.

LIVE VIDEO STREAMING TO CONTROL

Greater Manchester Fire and Rescue is trialling ground-breaking new mobile phone technology that will enable live video from a mobile phone to be streamed to the control centre, using 3G, 4G or WI-FI.

Created by YRfree Technologies, the platform will initially be used to help GMFRS Fire Investigation and Fire Enforcement Teams to collaborate quickly with their respective management teams, and produce a detailed visual record of the scene to assist in the decision-making process.

The revolutionary system, recently out of development from Sci-Tech Daresbury, logs time, date and location using GPS, along with other smart data to create reliable, accurate records.

Damian Parkinson, director of ICT for GMFRS, said: 'If the trial proves as successful as we hope, we see tremendous potential in the YRfree system. As well as enabling officers to collaborate more effectively, it has a number of sophisticated features which could help us to improve our operating procedures. For example, YRfree Smart Object Recognition software could help us to identify the exact make and model of a vehicle involved in a road traffic accident, or assess the nature of a chemical hazard. For us, it is all about having the right information, in the right place at the right time. YRfree technology will enable us to gather live data, in a manageable format, which will help us not only to improve our response today, but may help to reduce the incidence and severity of fires in the future.'

John Ridd, CEO of YRfree, said: 'The YRfree Platform is ideal for the emergency services, as it enables them to improve communications between officers on the ground and their management teams, as well as allowing them to collect data in a way that wasn't possible before. What's more, the YRfree platform runs on GMFRS servers and corporate network therefore allowing the organisation to effectively manage stringent data security requirements.'

➔ MOD to auction spectrum

Under plans announced in December, the MOD intends to auction around 200 Megahertz (MHz) of its spectrum usage rights.

The announcement comes as market demand for extra spectrum is mounting, fuelled by the sharp rise in the use of spectrum-hungry devices such as smartphones and tablets.

The sale will give private operators the chance to buy more spectrum to support the introduction of fourth-generation mobile services to people in cities, towns and villages across the UK.

Alternatively the spectrum could be used by fixed-line operators to provide wireless access to broadband services.

The spectrum being sold by the MOD is all below 15 Gigahertz (GHz) which is regarded as the most useful and valuable part of the radio spectrum because of its wide range of applications.

Almost half of all spectrum below 15GHz is held by the public sector and is used for a broad range of services including defence, emergency services, transport and science. The MOD holds around three-quarters of all publicly-held spectrum and one-third of all spectrum below 15GHz.

The sale follows the announcement made in the Government's 2010 Spending Review that at least 500MHz of public spectrum below 5GHz will be released by 2020 for new mobile communications uses. The spectrum to be sold off is being cleared of military users to contribute towards this target.

Preparations are expected to start at the end of 2013, with the auction completed by the summer of 2014.





When the world came to the UK

The London 2012 Olympic and Paralympic Games were a global showcase not just for athletic prowess but also for UK public safety capability. With agencies in the UK relying on their communication systems under the world's gaze, what kind of Olympics did Airwave have? Martin Benke, Director of Network Operations, answers in full.

The civil unrest in August 2011 provided some important learning points both for Airwave and the civil protection agencies ahead of the London 2012 Olympics.

It goes without saying that a huge amount of preparation work went into expanding the Airwave Network and adding more features and base-station capacity in the long run-up to the Games. This enhancement meant that Airwave had greater capability to handle traffic as a result of more control channels.

This work included re-tuning all 312 London base sites and 1,280 base radios as well as other key sites across the country where Olympic and Paralympic sports were staged.

What couldn't have been predicted was that these enhanced capabilities would be tested to the max during live operations in the period before the Games. 'The Network was bigger and better; it worked bigger and better during the civil unrest in August 2011; it worked bigger and better during the EDL march in September 2011; and it worked best during the Queen's Diamond Jubilee in 2012.'

Martin Benke points out some important learning both for Airwave and the civil protection agencies during the civil unrest. The plan for the Olympics was for mutual aid to be provided by 35 different police forces. During the civil unrest, 25 different police forces came to London to provide mutual aid to the Metropolitan Police Service. 'So the plans that were being put in place for the Olympics were exercised early –

and the learning for that was applied to the Olympics.'

One of the feeding stations for officers during the civil unrest was at Brent in northwest London. 'Many of those officers would come to Brent but – being still interested on what was happening at home – would use their radios to listen in. This meant that non-London talk groups were now sitting on the base station serving Brent, resulting in reduced capacity.'

Prompted by the Met, Airwave dynamically reconfigured the Network using the 'valid site profile' feature, so that the base station would only be enabled for certain talk groups. 'It is not something we would do lightly – and typically it is done at the request of our customers. But the lesson was taken that there had to be a far tighter control on the talk groups of the mutual aid officers during the Olympics. The way the Met actually solved it was by providing officers with dedicated terminals with the Olympic event talk groups, and asking mutual aid officers to leave their handsets at home.'

Airwave supported this strategy in the three feeder distribution centres around the capital (Battersea Park, Wanstead Park, and Blackheath). To ensure officers were familiar with the Motorola terminals, they were provided with user guides in the form of credit-sized z cards. 'And

prior to that the Met had set up online training to use the mutual aid radios.'

Last minute hitches

Martin is complimentary about the working relationship between Airwave and the Olympic Security Directorate responsible for the upgrade of the blue light network, saying it was open, transparent, and co-operatively honest. This meant both sides worked well together to resolve the inevitable last-minute hitches.

One such last minute hitch involved providing an in-building coverage solution for the Olympic Village. By this time, no cabling could be carried out inside the tower blocks that stood around an inner courtyard because there simply wasn't the time. 'In the end we placed an aesthetically-pleasing base station in the middle of the courtyard, which then radiated into the buildings. This in itself provided some challenges because construction was difficult – a membrane had been laid on the ground so no holes could be dug – and we still had to get the normal planning approvals. It was one of those situations where we both looked at it and thought, yes, we should have thought about this before.'

Apollo

B-APCO members will be aware that, in addition to its enhanced blue lights service, Airwave also delivered a PMR service across all the London 2012 Olympic and Paralympic Games venues via an independent communications infrastructure.

This ensured radio coverage across East London, and in venues across England including Weymouth (for sailing) and Old Trafford (for football).

The TETRA network was used by LOCOG's 18,000-strong team of volunteers and staff. As part of the service Airwave also provided the handsets for the users. 'We went for a macro approach in London, and what we mean by that is we built sites around the Olympic Park rather than in it – for two reasons. Firstly, we felt we'd get better in-building coverage by radiating into the park than trying to radiate out of the park. And secondly, it would help with the access. You couldn't just drive into the park with a van full of kit to fix a base station. But by putting the kit outside, we were able to remove the access difficulties.'

This approach was not going to solve the issue of events such as road cycling, where the event started at Box Hill and ended up in central London. Neither would it solve the even more complex situation of the torch relay, which covered the entire country and lasted 70 days. 'For the cycle event, we used mobile stations. For the torch relay, we knew that the BBC was covering every minute, so the simple answer is we had some kit on the back of the BBC van! We created a bubble of coverage that went with the van, which covered the event, which therefore was in the immediate vicinity of the relay.'

The end-to-end service provided to LOCOG meant that Airwave looked after the terminals and all the equipment in the control rooms and despatch centres. This included mobile systems in vehicles and accessories for disabled

users. 'At the peak we had 34 distribution rooms at various places. And staff were the first ones in and the last ones out, to ensure they were collecting radios until everyone had gone home.' Airwave was still collecting radios up to Christmas, and in October 2012 there were still 357 radios 'out there'.

'We had two learning points from the radio distribution process. Firstly, the initial plan was that people would come on a daily basis to collect their radios and return them at the end of the day. In practice, they would take them and keep them for the week. So it went from a pool system to a self-managed one. Secondly, we were unprepared – and amazed – by how quickly the venues were closed down after an event's completion. As we were collecting terminals at the end of the day, someone would turn up and start taking the tables away, then the power connections... so we were left collecting terminals and writing down information on bits of paper, literally, whilst standing up.'

During the Games there were some steep requirements for resilience. Base station and equipment failure had to be remedied in one hour, which meant a strategy had to be put in place to cope with London traffic. 'I'm not sure if it's the most technically advanced solution in the world but it worked. In London we had 17 engineers in specified locations sitting around and waiting for something to go wrong.'



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In Weymouth we had five base stations so we had five engineers there. I spent some time with them and I would characterise them as being bored but happy. Our basic philosophy throughout the Games was "prepare for the worst and hope for the best". This meant having people waiting at the bottom of tower blocks ready to go up the lifts in case of base station failure. Nothing went wrong, as it happened, but if you don't prepare for most things then something always goes wrong...'

Even though extensive testing had taken place over the 18 months before the Games there were some late requirements that had to be dealt with. Coverage at the International Broadcast Centre had been fine during testing, but when the broadcasters actually arrived and started installing equipment, creating studios and putting up new walls, it was found that suddenly user requirements weren't being met. 'We received the request on the Friday and by Monday it had full coverage. We worked hard over the weekend to install cables and a temporary base station.'

Finally, the company is now also busy sharing its Games experience with the next organisers of the Olympics, and some lucky staff are off to Rio for a series of briefings (not Martin unfortunately). 'I would say to anybody looking to organise this type of operation – get your communications sorted sooner rather than later.'

AIRWAVE AND THE OLYMPICS 2012 – IN NUMBERS

- 800 members of the Airwave team kept the networks running – that's 1½ times the size of Team GB
- Airwave staff helping out volunteers at the park each walked over 7 miles a day
- 9,000 police officers a day from 35 different forces came to the Met's Muster, Briefing and Deployment Centres
- 17,387 LOCOG officials and volunteers used the Apollo Network – more than the total number of Olympic and Paralympic athletes
- The first day of the Games was the busiest day for the Apollo Network – it was used 767,201 times
- The day before the Paralympics Opening Ceremony Apollo was used 46,828 times in one hour – that's 13 times a second
- Maximum number of active mobile radio users on the Airwave Network: 85,550 on 1 August
- 767,201 calls on the Apollo Network on 29 July 2012.

We must not forget how far we've gone

At a time when all the emergency services are contemplating the shape of the next communications landscape, Ian Readhead presents a timely reminder of just how far we've gone with our telecommunications – and makes a plea.



**British APCO Past
President Ian
Readhead.**

I am really sorry to start this article whilst swinging the blue lamp but it is a confession that is worth revealing so that we understand how far technology in the emergency services has progressed over the last 40 years.

When I started my police career walking the beat in Fleet, Hampshire I did not have a personal radio. I was required to make telephone kiosk points at set times in order to receive instructions from my Sergeant about deployments and other matters impacting upon my patrol.

On one occasion I was called to an incident at an electrical substation on the main Southampton to Waterloo railway line. Having proceeded to the location on foot I saw two offenders inside the sub-station area clearly involved with removing copper cable.

As I had no way of advising my control room where I was, I crossed the electrified main railway lines on foot in order to alert a householder as to my presence and to request that she contacted the control room to tell them I would need assistance, as I was about to arrest two persons. I then went back across the line and removed the distributor rota from their vehicle that was parked nearby prior to apprehending the villains.

Well, in fact, I managed to arrest one and the other gave up when he couldn't start his car. I could hear police sirens in the distance but clearly no one was sure where I was. I made my way with the two prisoners through a wooded area to a road where I waved down a car driven by a member of the public. The offenders were placed in the rear of the vehicle and I told the driver to take me back to Fleet Police Station. He was clearly excited by the whole thing because as we approached the station he forgot to break and crashed into the foyer.

The moral of the story is that when we talk today about modern communications, panic buttons, encryption and being able to locate emergency services staff, we should not forget how far we have come.

As Deputy Chief Constable in Hampshire and the national lead for ACPO Communications I was progressively involved in the national rollout of TETRA. Whilst it is true that some of the initial publicity about the capability of the solution was excessively optimistic, on the whole the functionality has proved itself invaluable. It is important for us to remember that according to the level of investment initially by the Police Service; coverage could be procured for 100% of the force area.

In Hampshire, with the full support of the Police Authority, we concluded that complete coverage was right for our force. This was mainly because we had an island; the busiest waterway in Western Europe; significant urban and rural areas including the New Forest; numerous military sites; an airport; and the largest petro chemical works in the country.

After implementation and of course some further engagement with the supplier, the matured system began to evidence real communication advantages. The benefits of priority speech buttons for officers, secure voice, using status codes and arranging police resources within talk groups were just a few. As a result we were able to manage one of the largest planned deployment of police officers in Hampshire when her Majesty carried out a review of the fleet in the Solent in 2005.

At a more subtle level when carrying out covert police operations – especially when targets used the railway network – the only way we could historically sustain potential observations was through the use of high-speed motorcyclists and eye-to-eye contact.

The new technology enabled voice communication to supplement this process enabling a far more professional response. Progressive deployment of TETRA on the underground in London, as well as more extensive tunnels throughout the UK, provides the emergency services with critical voice capability so as to ensure traveller safety and a coherent response to incidents. Of course, the emergency services needed to keep up with the technological capabilities of providing information to the point of delivery. Inevitably, staff wished to have access to national computer systems, advisory documents, intelligence, photographs, forms and records.

TETRA was always meant to be primarily a voice-based solution and although it has capability with regard to mobile functionality, this is essentially a slow time facility and would certainly never extend to video streaming. As we therefore near the end of the initial tranche of contracts issued to the Police Service, with the first due to expire in 2016, the debate is inevitably focused upon how best to provide both voice and mobility over the next 10 years for all the emergency services.

The challenge facing the Government is to come to determine whether the new world should sit entirely within the private sector utilising networks as currently supplied by Vodafone, O2, EE and Three, or if it is necessary to sustain voice on a TETRA network and progressively migrate this requirement to the four major communication suppliers over a period of time. Of course this raises significant questions about coverage, functionality and cost, and perhaps it is the latter which will determine above all others how the future will look.

There will also be challenges for the mobile providers during major incidents especially as they will want to sustain the service they provide to their regular customers when demand on their network from the emergency services may be ten times higher than normal.

The recent experiences in the Metropolitan Police area



evidenced how well Airwave, as the current provider of the TETRA network, was able to cope with an additional 16,000 officers using the network.

As all the major interested parties review the situation including the Emergency Services Mobile Communications Programme (ESMCP), I would make just one plea. It is absolutely critical that voice communication across the widest geographical area with in-building penetration is at the centre of deliberations.

It should never be assumed that major incidents only happen in built up areas where coverage at present maybe more guaranteed. On the day that I was crossing railway lines and arresting offenders, I was in the middle of nowhere. This is a place where all my colleagues from the emergency services sometimes find themselves deployed, and where having contact is crucial.

So as I look at the requirements for the future, it does seem to me that those who are in the emergency services will be looking for the continuance of encrypted voice communications with all the attributes of the current TETRA capability including the scope to surge significant additional resources at a time of crisis whilst sustaining control and deployment capability.

Additionally, in order to realise the LTE 4G mobile data capacity, all of this needs to fit within an affordability regime which evidences value for money and enhanced capability at the point of delivery for emergency services personnel.

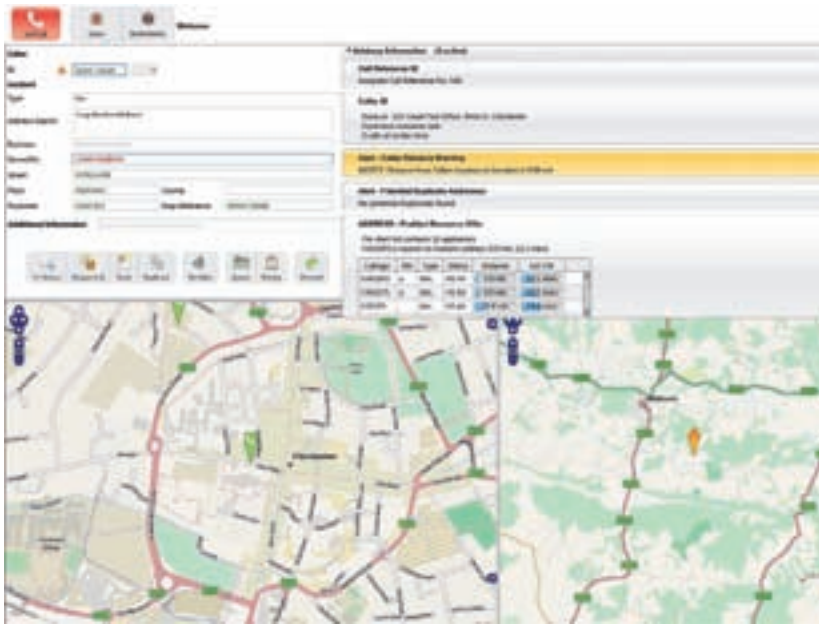
British APCO are delighted to be able to host a session at its Annual Exhibition and Workshops to be held at the Manchester Central. It will start at 2pm on Tuesday 30th April 2013 and will be chaired by Commander Richard Morris who is the current ACPO Lead for Communications. We hope to have a significant number of representatives from the commercial sector, the suppliers of Airwave and the four major LTE 4G companies, representatives from ESMCP, The TETRA Critical Communications Association, and manufacturers of communication equipment.

This is a great opportunity, especially if you are a user, to understand the future possibilities whilst ensuring that your operational needs are sustained. Entrance is free and you will be greatly welcomed.

With the first Police Service TETRA contracts due to expire in 2016, debate is now focussing on how best to provide both voice and mobility to all the emergency services.

A reminder of the past in Grosvenor Square – one of the few surviving police boxes in London.





Technology – the great enabler for change

How is command and control technology evolving, and what are the trends in the foreseeable future? Jose Sanchez de Muniaín talks to leading suppliers Capita and Remsdaq to find out.



John Stannett,
Business
Development
Manager,
Remsdaq.

Technology has oft been described as the great enabler and recent developments in command and control are evidencing this on a number of levels;

- in mutual aid and partnership building;
- in creating deeper engagement with the communities the emergency services serve;
- in interoperability with partner agencies;
- in implementing new operational procedures;
- in enabling individual organisations to move away from expensive front-line hardware dependency.

In 2010 Capita acquired SunGard – its first venture into the emergency services sector – and since then the company has made a number of strategic acquisition, including Beat Systems Limited (secure mobile data solutions for police) in 2011; Cedar HR Software (provider of human resource management software for police); and more recently Fortek Computers (communications, command and control systems for emergency services) in 2012.

Capita is today seeking to provide end-to-end solutions that tie together command and control front-line capabilities with the functionality and data provided by traditionally separate back-office systems, explained Product Manager Matthew Palmer.

In his words, the emergency services no longer want to see a separation between the front line and the back office. 'In the future, solutions will tie together the time-line between an emergency phone call and the resolution of an incident, including all the bits in between.'

Technology is moving to the point where different systems can talk together, and awareness of this capability is growing, as Alan Hall – also from Capita – explained: 'We are seeing at the moment many procurement processes stipulating that

systems must be future proof, meaning that they must be compatible with back office systems. This means we, as suppliers, must provide a middle layer that is adaptable for change.'

So what kind of back office systems are we talking about here? Human resources, payroll, training data and relevant skill sets are examples, said Alan. 'The fire services are looking to introduce greater efficiencies in how they deal with calls from the general public, where their main costs are in putting crews on a vehicle and out to an incident.'

'Fire services are saying they want to be cleverer in how they respond.'

'The FiReControl project tried to address this by moving towards attribute-based mobilising, which was a grey area because at the time few people understood exactly what it meant.'

'Current tenders on the market have clarified what attribute-based mobilising actually means – basically specifying the number of riders and type of equipment needed for a type of incident.'

'Historically, a back office system held that information but it had not been readily available to the dispatcher.'

In the context of the police sector, Matthew explained that to tie the back office system to the command and control system would enable the call taker to – quite simply – know the caller better. 'So when the call comes in, has the caller phoned 15 times in the last few days? Is he living next to someone that has criminal intelligence attached to them?'

'It is about providing the right level of information in an automated way, filtered so the call taker gets the most relevant data, and therefore a decision can be arrived at quickly.'

'Operators daily look at multiple systems – crime and

intelligence systems, PNC, etc – all separate, and often requiring copying and pasting between them.

‘By delivering end-to-end capability we can provide more automation. And the outcome is that the time it takes to triage and respond to an incident is dramatically reduced, potentially by as much as a minute. This may not sound like much but if you are the person at the other end of the phone and you know that help will arrive a minute quicker through the use of technology – that is a real benefit for the public.’

Interoperability

A common requirement in current emergency service command and control tenders is the call for a DEIT (Direct Electronic Incident Transfer) interface for sharing incidents logs between communications facilities. ‘There is a Government push for a multiagency-type interface to link control rooms – so police, fire, ambulance and coast guard use a common protocol to exchange data,’ said Matthew, adding that SunGard was the pioneer in the deployment of nationwide DEIT-type systems and as such has delivered solutions to the Highways Agency, British Transport Police, and MOD Police. ‘A pilot in Wales is demonstrating how Welsh Fire Services can all interconnect. The Government would like to see this taken one step further to interconnect with the police, and with DEIT it could also link up with local authorities. All authorities are on the GSX network, so if they wanted they could potentially exchange information on critical incidents like bird flu or major flooding.’

Change is largely being driven by financial pressures, which is why technology provision must also clearly demonstrate that it will result in savings, added Alan – something that is clearly being demonstrated in Wales.

The Welsh Fire and Rescue Services’ National Issues Committee (NIC) was established in 2012 to further improve collaborative working, service delivery and sustained service improvement. It comprises the combined Fire and Rescue Authorities of Mid and West Wales, North Wales and South Wales. Back in November 2012 the NIC reported in its summary of progress two key updates on key collaborative areas.

Firstly, that by integrating the Local Authority NLPG Gazetteer into its command and control systems it would make a potential saving of £30,000 per year.

Secondly, through the piloting of DEIT estimations indicated that a non-cashable saving of 3,000 hours per year could be achieved when rolled out on an all-Wales basis.

Partnerships and mutual aid: Fire sector

Of the three main emergency services the Fire sector is arguably the one that is undergoing the most change as regards command and control. The demise of FiReControl and the subsequent release of government funds is seeing most fire services coming to the market at the same time. As a result, companies like Remsdaq are particularly busy at the moment, as Business Development Manager John Stannett confirmed. ‘A lot of amalgamation is going on. One of the effects of FiReControl was to make people realise that they

could achieve better value for money by working together – and it proved that services could consider sharing their controls.’

The fact that each FRS or FRS consortium is looking for a different solution is providing command and control suppliers with quite a challenge.

Some fire and rescue services are looking to share a new control centre eg Royal Berkshire FRS, Oxfordshire FRS and Buckinghamshire FRS will form the Thames Valley Fire Control Service.

Others are intending to keep their control rooms whilst sharing the same command and control system – providing back up for each other – such as West Yorkshire and South Yorkshire FRS.

This same approach is being taken by Devon & Somerset FRS, Wiltshire FRS, Dorset FRS, and Hampshire.

‘The two buzzwords are “interoperability” and “resilience”,’ highlighted John, adding: ‘Our new systems at Remsdaq are designed from the ground up with a view to buddying with other FRSs and/or sharing incident information electronically with other emergency service control rooms using the DEIT protocol.’

‘One of the scenarios we are proposing is two FRSs using the same system, but instead of each one having their own fall-back control, the fall-back control is each other. The system is resilient in that networked users can log into another control room and operate the system as if the server was downstairs in their own building. And they can stage that such that in an overflow situation, spate conditions, two or three controllers in another FRS can log in and help out. Or indeed fully take over if something were to happen in the other control room. There are several levels of buddying up available now,’ said John.

Business change

While the command and control ambit is buzzing in the fire sector (largely due to FiReControl fall-out CLG funding), the police sector has been fairly quiet in the last 12 months as a result of the Comprehensive Spending Review’s 20% cost saving target, and the fact that the first two thirds of that has been loaded at the front end of the CSR period. But things are moving in the background, with attentions focussing on technology, as Matthew said: ‘Discussions are beginning to happen. Our view was always that cost savings across all emergency services would be focussed on headcount rather than technology.’

‘Now we are starting to see a shift towards technology as an enabler to how the police do business. And this means deeper levels of collaboration and channel shift – for example employing other means of communicating with the public, be it via email, SMS, social media, or web portals.’

One of Capita’s aspirations is to provide a single solution for the different media that enable citizen engagement. ‘On our roadmap is to provide a system for all platforms such as Facebook and Twitter – which is used by some forces – and use it to communicate with the public. We want to take away all the separations between different systems and deliver a single platform.’

'The key thing is that this CSR period will end in 2014 and we know there will be further budget cuts coming, and the only way that this is going to be managed is by looking at business change. I think all the forces accept that now, and they are looking at fundamental changes in terms of what they do.'

The cloud, the device, and the app

What single technology would make the biggest difference to emergency services in terms of cost savings?

Matthew is unequivocal in his answer to this question. 'It has to be the cloud. Why do organisations need their own data centres? We can actually provide – host – a control room service in the cloud.'

'We already do it for two customers who don't have any infrastructure in their workstations. Cloud technology enables you to take the next step – it allows greater levels of collaboration and interoperability with other agencies.'

'People probably think that this is a few years away but I've had conversations with customers who have revealed they won't have data centres in four or five years' time. Instead they will have all their apps hosted on cloud-type infrastructures. But different customers have different views and some will want data locally, others will be ok with having it on the cloud.'

The other money-saving trend relates to mobile technology, said Alan Hall; 'We are seeing a lot more willingness to consider a "bring-you-own-device" approach – with the right security.'

MOBILISING THE SMART WAY

John Stannett of Remsdaq outlines how intelligent command and control can work for the Fire Service

'When the call comes in the operator is presented with EISEC information (Enhanced Information Service for Emergency Calls). The operator then has the option to use this EISEC information to automatically populate the screen. He may not want to, as the caller's address is not necessarily the same as the location of the incident.'

'If the caller's EISEC information and the address given by the caller don't match then alarm bells can start ringing that this may be a hoax call. Similarly, there may be intelligence that there is a history of hoax calls from this telephone number – for instance if it is a phone box outside a school – and that fact will flash in front of the operator. If it is the genuine article, then any relevant data related to that address is presented to the operator – eg if medical gases such as oxygen are present in a household or industrial facility. 'In parallel, as soon as a call comes in the system begins to work out the location of the nearest appliances for the type

of incident, using automatic vehicle location and dynamic routing.'

'The closest appliance by geography is not necessarily the one that would get there the quickest by road, and our system enables the service to manage the road network.'

'A standard navigation map may say a road is 30mph, but if we know that even with blues and twos it is impossible to go faster than 20mph, that road can be modified on the system to show it as 20mph.'

'In fact, the system is also intelligent. It can be set to automatically learn roads and speeds from a moving vehicle – it might take a year's worth of incidents, but eventually it will learn that at a certain time of day this speed can be managed down this particular road with blues on.'

'The system can also be managed so it takes into consideration the fact that emergency vehicles can carry out certain manoeuvres such as 'U' turns.'

'Going back to the incident, appliances are mobilised – from the station or via MDTs – not just with an address but the operational intelligence for that type of incident and location.'

'The appliances of neighbouring brigades can be mobilised as well, but some work needs to be

done at present to ensure the command and control systems can talk to each other. It's one thing to send information of an incident or caller by protocol, another to mobilise the resources of another Fire Service that uses a different system.'

'A common requirement at the moment is incident prioritisation. So if the incident is a skip fire, it is classified as low priority – which means that if an attending appliance is the nearest one to a 'people reported' incident, then that appliance can be mobilised – this is called 'snatching'. This technology is not leading edge, but it is more of a defined requirement than it was – say – ten years ago.'

'The underlying trend is the far greater reliance on data than ever before, with data flowing back and forth between the control room and the MDTs.'

This not only includes incident-related information, but also information about the crew – who they are, their particular skills and training – also called "attribute-based mobilising".'

'So we are not just mobilising a fire engine, but one with these items of equipment onboard and officers with these skills. This information is likely to be held in a resource information package, and the command and control system interfaces with it.'

'There has been a huge rush to use ruggedised mobile data equipment and this has created a huge problem. The tenders we are seeing can contain a third of the contract taken up by replacing that ruggedised equipment. And this type of equipment has a very limited shelf life.

'Today emergency services are considering using industry-standard mobile phones with the right apps.'

In comparison with the cost of ruggedised hardware, iPads and Android devices can almost be regarded as 'throwaway' technology, said Matthew. 'These devices are far easier to maintain. But key in this scenario is the delivery of applications that are device agnostic. So it doesn't matter if it's an iPad or Android because the technology is not tied to the device.'

As an example, Alan Hall pointed out a Capita project that resulted in a mobile application that is now being used by the police to share incident-related information for scheduling purposes. 'Officers on the beat or in patrol cars can see on their devices the four or five scheduled incidents they have to deal with. Industry-standard devices connect to an industry-standard Microsoft Outlook-type calendar. And using this standard technology is resulting in significant cost savings. But again, it only works as long as the encryption side is managed.'

As confidence grows on the security side of web-based mobile technology more and more smart devices will be used by the emergency services, asserted Matthew. 'Let's take the iPhone. It has a camera, video, and significant storage – think what you could do with that on the street. You could take pictures of people, do PNC checks, gather arrest warrants etc. Our strategy is to be device agnostic, so forces can bring their own smart devices and we'll put the app on.'

And consumer technology is not just driving front-line devices but command and control interfaces too, emphasised John Stannett from Remsdaq. 'What we see moving forward is not just the technology but how the systems are presented to the operators. We will be seeing smarter ways of presenting information – information that is needed at the time and not superfluous. We are already proposing intelligent systems with flexible searching that replicates the way smart phones work and which people are used to now.

'This will also include adopting how search engines like Google work, so typing a few words will instantly come up with all the relevant options. This new interface – called Resque 4i – will be rolled out to a number of control rooms this year'

Building the data gateway

In order to route data between a command and control system and mobile resources (such as fire appliances) a 'gateway' is needed. B-APCO Journal puts Astrium's Andy Kerr – Head of Sales for Public Safety – under the spotlight to find out why this technology is so useful for emergency responders.



What is the Mobile Data Communications Gateway?

It is basically a mechanism for routing messages and data between a command and control system and mobile resources. It is more software than hardware, and when installing there are two configurations to carry out.

Firstly, the data is configured so it matches what the specific command and control system is expecting. Then, on the bearer end, we configure it to the relevant communications links. The system is neutral so it can use multiple bearers including GPRS, Airwave, satellite, etc, and we can prioritise the bearers too. On the mobile resource end, the Gateway is linked to the vehicle mounted data system via an interface.

What is the main advantage of the Gateway?

It does away with the requirement for voice traffic and the

related inherent delays of having to have another human at the end of a call to manage the data.

It means a control room operator can concentrate on their main function of dealing with a member of the public, as status and other electronic messages go straight into the system.

What kind of data is being handled?

One is vehicle location data, thereby allowing the operator to offer the closest resource. Next is the ability to send status messages from the vehicle back to the operator to inform them if they are available, and who is in the vehicle.

From the control end – because the Gateway is bidirectional – the initial mobilising message goes to the station printer and also to the vehicle. The crew in the vehicle then hit a button on the touch screen to say they are

Astrium's Mobile Data Communications Gateway allows operators on vehicles to inform Control whether a resource is available and which personnel are on board.



Astrium's Head of Sales for Public Safety Andy Kerr emphasises that the Gateway is both bidirectional and resilient.



mobile. In the past there would be instances of multiple vehicles all trying to get through to control to say they were mobile, which would generate a queue.

At the moment the officer in charge has to input who is riding, so the system is not fully automatic but we are working with C&C suppliers to automate this.

How does the Gateway help the front-line responders?

If the call-out involves a risk building, the command and

control system can pass the unique electronic ID to the MDT and automatically open relevant documents such as building plans, storage of chemicals data and hazmat procedures. That information is typically stored on the MDT, but the Gateway handles the ID so the relevant data is automatically located and presented to the users.

The Gateway can handle the documents, but because this type of data is sizeable it tends to be delivered over a wide area network whilst the appliance is in bay, either overnight or when the network is quiet. But there is no reason why it couldn't be delivered over GPRS or even 4G.

Feedback from our fire users also highlights they like the ability to see hydrant locations on a map, and the status of those water sources. We store the information in a back-office hydrant management system which then updates regularly on the vehicles.

The hydrant management system can allow the responders to report if a hydrant is faulty, and the status on the main system then updates itself when the vehicle returns.

How resilient is the Gateway?

If a vehicle is in its bay, we can initially set the system to try through the wide area network, and if it can't use that it will automatically switch to the next available network.

We can also prioritise certain messages to use certain bearers. So if information needs to go immediately, it could go over Airwave. If it's location data – which doesn't update that frequently – it could go over GPRS.

What about 4G?

We could use 4G now because it's more reliant on hardware than software – at the end of the day we are mostly interested in an IP address. As long as we can 'see' that and have a connection to the network it doesn't matter what the network is.

Looking into the future the Gateway could deliver risk information such as building plans and COMAH (Control of Major Hazards) site references dependent on the availability of high throughput data bearers, this would allow us to deliver that type of information to the vehicles in real time.

Is the Gateway primarily a solution for the Fire & Rescue Service?

We have delivered the Mobile Data Communications Gateway into the police and are working on an ambulance solution in Europe.

We picked up our first major end-to-end client recently in Gent, Belgium, with our sister company Cassidian. Gent Fire Brigade run a paramedic response service and we are looking to work with them to enhance their system to be configurable so the ambulance side will have similar components but with ambulance-specific requirements, such as patient telemetry and records.

A South American Police Force use our Gateway to monitor 20,000 hand-held radios, again via our sister company Cassidian. This contract is a huge reference for us!

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