➔ **Are public-based cloud solutions appropriate for the emergency services?**

➔ There is a policy gap in public sector cloud strategy – but it can be plugged.

BRITISH ASSOCIATION OF PUBLIC SAFETY COMMUNICATIONS OFFICIALS

JOURNAL BAPCO

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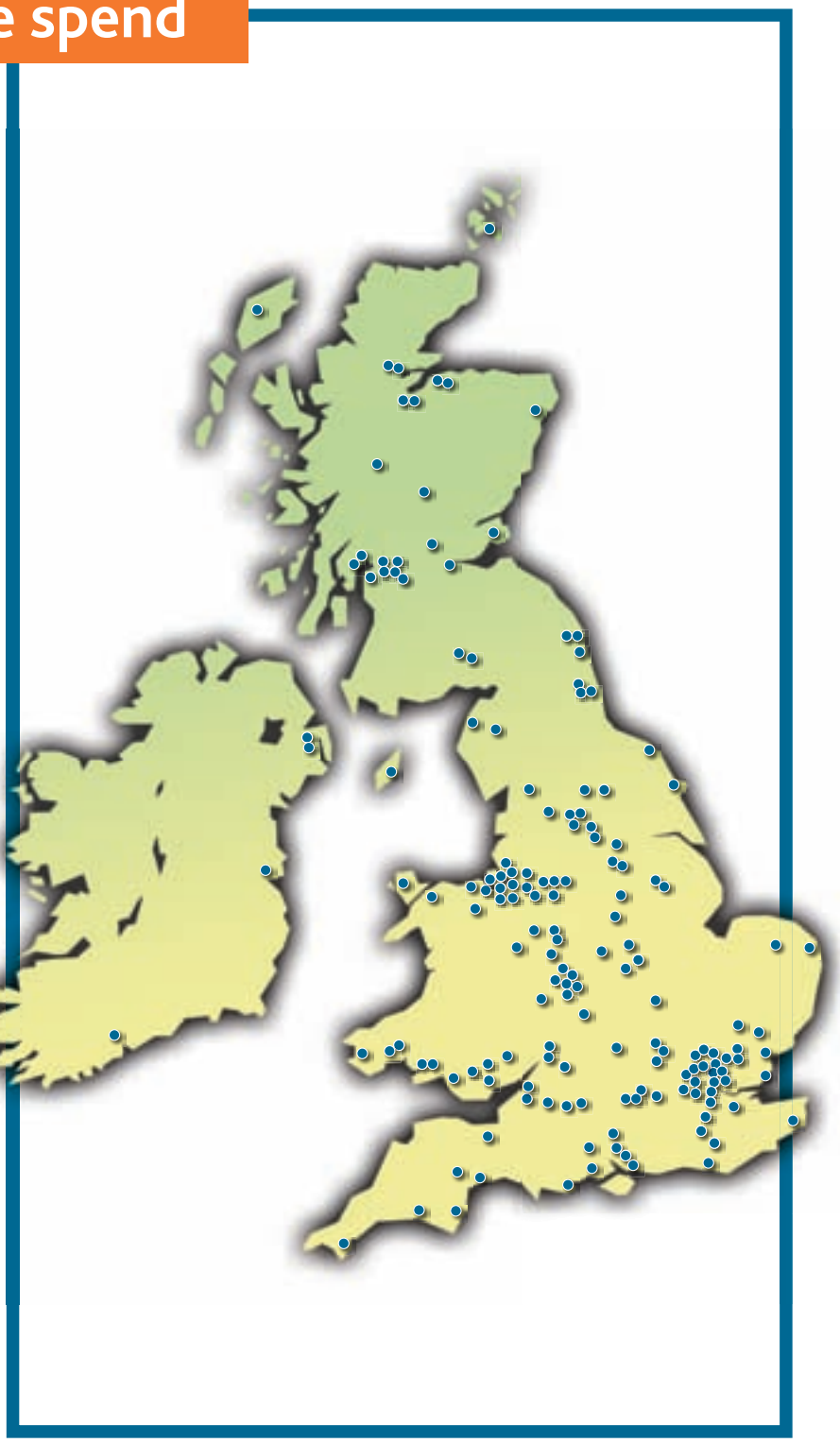

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President's address

Alan House, President

Following on from our annual conference and exhibition in April, and the presentation of a new constitution at our annual general meeting, the BAPCO Executive Committee has embarked on a period of review and change. One consideration will be the future style and location of our conference and exhibition. To assist us with our thinking I would very much welcome feedback from our members and our commercial partners. Previous feedback has kept the event in London with both segments more or less in the style favoured by the majority. I mention this as we have always sought to embrace the views of both attendees and exhibitors. This year, perhaps steered by the current economic climate and fresh thinking, I sense a change of views. I am keen to get a steer and to make future events match the needs and desires of the majority. We very much need your input to help us make decisions. I and other members of the Presidential Team would be pleased to meet with commercial partners to have a conversation on the subject and on BAPCO matters in general, not forgetting that the Commercial Advisory Group (CAG) is established to be the voice of commercial partners and which does have a seat on the Executive Committee.

Adopting a revised constitution in July will allow us to move further forward in re-shaping BAPCO for the future. We have commenced work to revamp our website and marketing material. We have improved our management information systems. We have made changes to our administrative procedures. We have begun a review of our membership categories and recruitment policy, completion of which will be facilitated by the adoption of the new constitution. Our events are now regarded as having Continuous Professional Development (CPD) status. Our EU project work is successfully increasing, as is our involvement with the APCO Global Alliance, which is not only contributing greatly to the development of communications for and used by emergency responders, but also firmly establishes the 'BAPCO' brand name in Europe and other parts of the world.

A busy time ahead, for the Executive Committee as we move BAPCO forward in a new direction. Your input to assist us will be valued and very much appreciated. We will keep everyone informed as we make progress.

999 VOIP LOCATION WEB

A UK wholesale voice and data communications provider has launched a new white label website through which its customers can provide location information to the emergency services, supporting Ofcom's recent extension of General Condition 4 to VoIP services.

Ofcom requires all PSTN, mobile and now VoIP providers to provide address information to the emergency services, so that a caller's location can be easily identified and help can be sent to the right address.

Entanet has provided a solution to this problem by developing a new website, which can be found at www.999-location.co.uk. Entanet's resellers' customers can log into the site using their VoIP account username and password and provide details of the locations for each of the VoIP numbers that they have, and update when needed.

Government to release spectrum

Plans for releasing large amounts of publicly-held spectrum have been revealed by Communications Minister Ed Vaizey.

The public sector currently holds around half of the most useful spectrum and the Government committed to releasing 500 MHz over the next 10 years in the Comprehensive Spending Review.

On March 31st the Government published *Enabling UK growth – releasing public spectrum*, which sets out how the Government intends to release the spectrum. It also contains an overview of public sector holdings, market demand and key next steps.

Communications Minister Ed Vaizey said: 'This is a long-term project to ensure industry is able to meet the growing demand for services that need spectrum.

'The use of smartphones and mobile broadband is set to increase rapidly. Releasing more spectrum over the next decade will be essential if industry is to meet that growing demand.

'We must ensure the public sector uses this valuable resource as efficiently as possible. If the public sector does not need it, then it should be released so businesses can use it to grow.'

The public sector uses spectrum for a wide range of services including defence, emergency services, transport and science. The document reveals the Ministry of Defence has already identified two bands – 2310-2390 MHz and 3400-3600 MHz – from which they expect to release 160 MHz of spectrum.

The Government has said that it will ensure that any future spectrum needs for public safety and national security are considered before any band is released.

The release of the 500MHz spectrum will be in addition to the spectrum that Ofcom has announced that it intends to release, including the 800MHz and 2.6GHz bands which Ofcom intend to auction in 2012.

Jersey and Guernesey fully interoperable

For the first time worldwide, systems between two separate states can be joined whenever needed.

New TETRA systems will allow Jersey and Guernsey to collaborate more effectively in public safety provision and emergency situations, safeguarding more than 158,000 residents.

The new systems will allow both communities access to an enhanced coverage area, including an area of the English Channel that separates Jersey and Guernsey. This enhancement will allow emergency services personnel to carry out rescues in areas that previously did not have radio coverage. In addition, Jersey's Motorola MTM5400 mobile will have gateway repeater capability, enabling users to temporarily extend the coverage area of the TETRA network through their individual handsets.

Motorola Solutions has installed Dimetra 7.1 TETRA infrastructure for both Jersey and Guernsey, allowing both to operate independent secured TETRA networks with push button interoperability between both islands' public safety communications systems. The unique interoperable systems were launched in April.

While Jersey has upgraded its TETRA system, which was installed by Motorola 10 years ago as one of the first TETRA systems in the world, Guernsey's TETRA network has replaced the previous system.

The Motorola systems cover more than 2,000 users across all public service communications.

Mobile payments

The UK's first contactless mobile phone payments service allows consumers to make purchases on the high street using their mobile phone.

Customers can make purchases £15 and under nationwide by simply tapping their Quick Tap mobile handset against a contactless reader at over 50,000 stores.

Using Barclaycard's contactless payment technology, customers will be able to pay for items anywhere they see the contactless payments symbol, including shops and cafes like Pret A Manger, EAT and Subway

Quick Tap will use a secure SIM-based approach to mobile payments, providing a single point of contact for customer care as well as ensuring enhanced payment security. The landmark launch means that in addition to using contactless cards or chip and PIN, consumers can simply tap their mobile phone on a contactless reader at tills in over 50,000 stores to make purchases £15 and under.

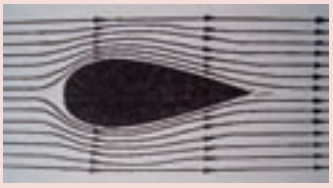
NPIA streamlines the procurement process

A new streamlined online procurement process being rolled out to forces across the country by the NPIA, is set to save the police service up to £30 million.

The National Police Procurement Hub is an 'Amazon-style' electronic marketplace that provides the police service with the ability to buy goods and services from approved contracts. It links purchase to payment, without having to use paper orders and invoices.

Although some forces use an electronic process for part of the procurement process, there is no other system that allows forces to do the whole process of ordering, buying, invoicing and paying online.

This new initiative is being



delivered by the NPIA having been endorsed by ACPO. It is being rolled out across all forces and is due to be completed by June 2012.

Airwave launches two-way messaging service

Designed specifically for emergency response organisations, TETRA Messenger runs over the Airwave Network enabling users to realise cash savings through enhanced resource deployment.

According to David Sangster, UK services director at Airwave: 'Customers will quickly record improvements to their operational performance as a result of better incident management. And, by managing workforce resources more efficiently, an organisation's performance increases, providing better service to the communities they support.'

The two-way text messaging device operates on the existing network and replaces outdated, analogue (POCSAG) paging systems and networks.

With the inclusion of status messaging, future location-based services and a panic button, TETRA Messenger helps improve the safety of their staff and extended workforce, and tracks their status on an ongoing basis. 'It is a robust messaging device with the added benefit of receipt acknowledgement. It is simple and easy to use and offers the user the functionality to store up to 40 pre-defined messages. TETRA Messenger also offers roadmap GPS functionality, is configurable and cuts all unsolicited messaging,' adds David. 'In essence, TETRA Messenger helps improve emergency response outcome and ensures that employers are able to meet their duty of care responsibilities. This confidence also means that emergency response organisations can provide their service in high risk areas.'

GOVERNMENT ICT STRATEGY

The Cabinet Office has published the Government ICT Strategy, which acknowledges there have been 'significant failings' in big projects, and that the Coalition is 'determined to do things better'. It sets out the direction of central government ICT and the key actions that will be delivered over the next 24 months. As expected, the initiatives are 'all about spending money better, rather than spending more'. The Chief Information Officer Delivery Board is expected to publish an implementation plan by summer 2011.

Latest version of CFRMIS 5 in Cambridge

Cambridgeshire Fire and Rescue Service has become the first brigade in the UK to implement Innogistic's new CFRMIS 5 (Community Fire Risk Management Information System).

The new version of this popular community fire safety solution is fully web-enabled and can be accessed via a web browser.

CFRMIS is now the most widely used fire safety software in the UK and is operational at over half of the country's Fire and Rescue Services. It is used across the entire spectrum of fire safety activities. This includes the collection, maintenance and management of accurate premises records for fire safety operations and risk intelligence. The solution combines a comprehensive premises records database with sophisticated job management tools for managing the whole fire safety inspection process.

The Cambridgeshire FRS contract was awarded to Innogistic following a competitive procurement tender. Tamsin Wain, Project Manager at Cambridgeshire FRS said: 'We were very pleased with the breadth of capabilities built into CFRMIS and were particularly impressed by the results that the solution has been achieving at other Fire and Rescue Services across the country. It is also exciting to be the first to implement the new web based CFRMIS 5.'

CFRMIS also offers an additional mobile data-collection capability which is deployed in the field using tablet laptops. This feature recently achieved 15% productivity improvements when implemented at Hampshire Fire and Rescue Service. On top of this a new Operational Intelligence module was recently launched which provides site specific risk information.

Avon and Somerset to trial Form Patrol

Avon & Somerset Constabulary is working with HeliMedia to trial a new method of completing and processing Witness Statements electronically using mobile devices.

The Electronic Witness Statement (EWS) solution, based on the mobile eForms application 'Form Patrol', will need to meet the stringent standards outlined by the National Policing Improvement Agency (NPIA) and the Crown Prosecution Service (CPS). The 'Form Patrol' trial is scheduled to run for a three month period using Panasonic Toughbooks, beginning in May 2011.

The trial is fully supported by the National Policing Improvement Agency (NPIA) and the Crown Prosecution Service (CPS). The results of the trial will form an integral part of a larger project working towards a fully electronic case file.

This solution means witness statements can be created digitally, with an electronic signature replacing the traditional, handwritten ink one. This will be captured via a mobile data terminal, with the witness using a stylus to sign the screen or an electronic pad.

The EWS will deliver a range of benefits throughout the criminal justice system:

- improving and speeding up the service for victims and witnesses;
- saving time in creating and processing statements for frontline officers;
- reducing the requirement of back office resources;
- providing faster access to information;
- automatically distributing signed statements to criminal justice partners, potentially in near real time;
- increasing the integrity and authenticity of statements through a 'lock down' at the point of being taken.

The introduction of the EWS solution is expected to improve business efficiency by eliminating the current manual paper process.

The three month trial will involve up to 100 officers and the results will be reviewed for a national standard.

Emergency Office wins Continuity award

ICM's Emergency Office solution has won 'Most Innovative Product' at this year's Business Continuity Awards, ahead of eight other finalists in that category.

Emergency Office is unique in the market as it allows staff to work and make calls from anywhere if their normal office is impacted by disaster, or if travel is impeded by adverse weather or travel chaos. Emergency Office turns any PC, notebook, or iPad into a secure virtualized version of an employee's corporate desktop. Via a standard home broadband connection it gives them instant remote access to their normal applications and data during a business disruption.

The latest release of Emergency Office also enables staff to automatically re-route phone calls to their own phone, mobile or softphone, and continue to benefit from the same corporate telephony features normally available to them in their office.

SMARTPHONE ADVICE – CESG

CESG – the UK's National Technical Authority for Information Assurance at GCHQ – has published risk management advice and guidance for the UK public sector on the use of smartphones in lower risk situations. Today's smartphones allow employees to connect back into their corporate networks and work remotely and efficiently. Government cyber-security experts at CESG have successfully worked with major smartphone platform providers on how best to secure their products. The result is guidance for UK Government departments and the wider UK public sector on how to secure smartphones for remote working.

Cyber 'firsts' from Cassidian

A number of innovative technology solutions that are 'world firsts' in the fields of cyber crime and cryptograph were unveiled by Cassididan during InfoSec 2011, which took place in Earl's Court, London, in April. These included:

• Ectocryp Blue – the world's first remotely operated cryptographic device that can transfer information classed as 'top secret' rapidly and securely over public networks minimising the threat of cyber attacks;

• HOTSim Cyber Security Simulated security training – computer network training courses which simulate proprietary network environment to allow operators to combat cyber attacks;

• TOFINO – world's first network security product to implement content inspection technology for industrial protocols. Winner of Frost and Sullivan award as product that best enhances customer value in the industrial automation and electronics industries.

Getting the royal Airwave

Airwave played an integral role in ensuring that vital communications between the emergency services took place without incident during the recent Royal Wedding in London.

According to David Sangster, UK services director at Airwave for London: 'We worked closely with the Metropolitan Police, City of London Police, London Fire Service, British Transport Police and London Ambulance Service, to ensure that there were no disruptions to the Airwave Network.'

On the day of the wedding, 6,000 users were connected to the Network, with some 3,800 users situated in or around the vicinity of Westminster Abbey and the Mall – a radius of 1 mile.

The network operated and remained stable throughout the day, witht the help of a specialised Airwave team deployed at one of the Network Management Centres.

SEPURA IN ROTTERDAM

Rotterdam Police, one of the largest police forces in the Netherlands, has decided to replace its ageing fleet of handheld TETRA radios with 4,000 Sepura STP8000 radios. This is Sepura's first contract with the Rotterdam Police, and was won through extremely close co-operation with Sepura's local partner, Abiom, during extensive end-user testing. According to Sepura, of particular importance was the water ingress testing carried out in the port of Rotterdam.

Data destruction

Data destruction experts are warning public sector institutions to thoroughly destroy confidential information following the latest security leak at NHS Birmingham East and North.

The Information Commissioner's Office (ICO) reported on the 27 April that NHS Birmingham East and North breached the Data Protection Act by failing to restrict access to files on their IT network. The breach meant that some NHS staff at their own Trust and two other NHS Trusts could have access to confidential information.

This latest case follows 2,565 data breaches recorded since April 2010, when the ICO first had the power to implement fines of up to £500,000. Approximately 59% of all data breaches are related to private companies. However 80% of all fines given out have been inflicted on public bodies, showing the serious nature of these issues.

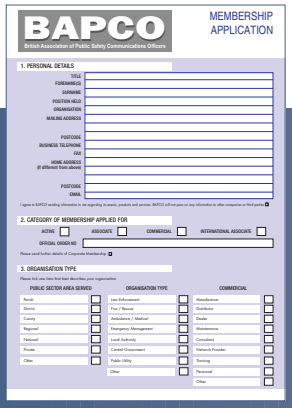
Anthony Pearlgood, commercial director of PHS Datashred, said: 'Public sector identity fraud is on the rise; the yearly cost of fraud to the UK has leapt to £38.4 billion. This is a question of national security, public institutions are now legally bound to protect our records and permanently destroy data when no longer needed.'

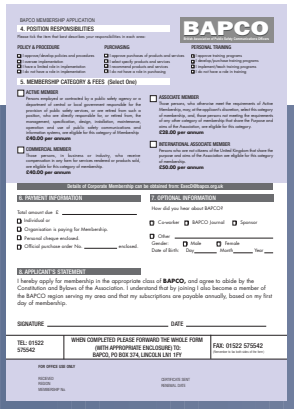
Emergency Scotland 2011 and Emergency Planning Symposium

The team behind the annual Emergency Services Show (held at Stoneleigh will be holding a new exhibition located in Scotland dedicated to Category 1 and 2 Responders. Emergency Scotland 2011 will take place alongside the annual Emergency Planning Society (EPS) Resilience Symposium 2011 on Tuesday 5th and Wednesday 6th July at the Scottish Exhibition and Conference Centre, Glasgow.

Emergency Scotland 2011 is Scotland's only exhibition for anyone involved in emergency planning, response or recovery. This free to attend event will provide a convenient opportunity for emergency services personnel and planning officers from Scotland, the North of England and Ireland to attend a dedicated exhibition.

The Emergency Planning Society Resilience Symposium 2011 will be tackling the theme 'Condition Critical: A Symposium for Resilience Professionals'. The Symposium offers a range of subjects with over 20 sessions aimed at tackling the most important issues in the resilience profession.





Launched in June 1993, **BAPCO** (British Association of Public Safety Communications Officials) has grown very fast and is now acknowledged as the association in the British Isles for all professionals in public safety and civil contingencies communications and information systems.

As a not-for-profit organisation, BAPCO is an independent, user led organisation that provides a forum for professionals in the field of public safety and civil contingencies communications and information technology to exchange information, ideas and experiences. In partnership with the industry it maintains regular liaison with manufacturers and other commercial bodies, such as consultants, to monitor developments in technology and future planning.

BAPCO is unique in Europe as the only multi-discipline, multi-level association for public safety communications and information systems managers, users, maintainers and providers. Through it's affiliation to the Associated Public Safety Communications Officials (APCO) in the USA, Canada and Australia/New Zealand BAPCO members become an important part of a worldwide network of public safety communications and information technology professionals.

Individuals experience, knowledge and expertise combined with that of other members worldwide help to achieve the goal of excellence in public safety/civil contingencies services.

Be a part of a unique organisation

Membership of BAPCO is open to all persons in the United Kingdom, the Channel Isles, Isle of Man and Ireland who are associated with the provision, maintenance, and use (managers, engineers, programmers, communications operators, end users, suppliers consultants) of civil contingencies communications and information systems. BAPCO members come from every type of public safety and civil contingencies organisations in the British Isles, including:

- Police Service
- Fire and Rescue Services
- Emergency medical services
- Emergency Planning and Management
- Volunteer Emergency Aid Organisations e.g. St John Ambulance, RAYNET, British Red Cross, Mountain Rescue etc
- Military
- HM Coastguard
- HM Customs and Excise
- First and Second line Civil Contingency responders.
- Emergency Breakdown Agencies e.g. AA, RAC, Green Flag
- Local Authorities
- Central Government
- Public Utilities
- Manufacturers
- Technical and repair services
- Engineers
- Consultants

BAPCO

BRITISH ASSOCIATION OF PUBLIC SAFETY COMMUNICATIONS OFFICIALS

All members are enrolled as individuals and enjoy privileges dependent upon their category of membership that reflects their current employment status. However, recognising that a public safety agency or a commercial company may wish to register more than one person as a member of the association, facilities do exist for corporate or group Memberships in which individual changes can be made as personnel changes occur.

The categories of membership available, with the annual subscription fee, are as follows:

1. Public Safety/Civil Contingencies Employees or Volunteer Emergency Aid Personnel

Active membership

Individuals employed by a public safety agency, department of central or local government having responsibility for public safety or a compancy described as responder by the Civil Contingencies Act or retired from such a position and who does not have a conflicting commercial interest, or who is a member of a volunteer emergency aid organisation. (Annual fee £40.00)

Associate membership

Persons who satisfy the above criteria but who do not want to be an Active Member (Annual fee £28.00)

Corporate membership

An agency that wishes to register more than two persons as members may apply for corporate membership. (Further details of corporate membership and annual fees are available on application to the association)

2. Persons employed in industry, consultants or who have an interest in communications or information technology within the civil contingencies area.

Commercial membership

Persons connected with industry providing communications and information technology systems or providing services as consultants in this field (annual fee £40.00)

Corporate membership

An organisation that wishes to register more than two persons as members may apply for corporate membership (further details of corporate membership and annual fees are available on application to the association)

3. International Members

The association has a commitment to the global exchange of information, ideas, and experiences and persons involved in managing, using, providing public safety communications and information systems who are resident outside the British Isles are eligible to apply for the following categories of membership.

International Associate

Annual fee £50.00

International Corporate

Further details of International Corporate Membership and Annual Fees are available on application to the Association

To find out more about what BAPCO can do for you and your organisation, visit:

www.bapco.org.uk

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THE BRITISH ASSOCIATION OF PUBLIC SAFETY COMMUNICATION OFFICERS

LTE adopted as the international public safety standard

A formal policy statement titled '4G Broadband Technologies for Emergency Services' has been passed unanimously by delegates representing public safety professionals from Europe – including strong support from BAPCO – North America, Asia Pacific and elsewhere around the world at a recent APCO Global Alliance meeting.

The Alliance's new policy statement reads: 'The partner associations of the APCO Global Alliance recognize that Long Term Evolution (LTE) is emerging as the leading standard in 4G technology; being adopted worldwide by the largest mobile communications service providers. Since LTE is a global standard, it is capable of providing emergency service agencies and governmental organisations with a cost-effective way to meet their broadband communications needs and one that gives them a greater selection of devices and applications – a capability that has been sought for years.'

According to the Global Alliance's policy statement, the benefits of LTE include the technology's all-IP architecture, spectral efficiency, and bandwidth flexibility to improve overall network economics. The policy statement explains that as commercial carriers build their own LTE networks, emergency service organisations (ESOs) that adopt LTE as the global standard for emergency broadband networks will be able to capitalize on research and development currently underway. 'The Global Alliance's actions today will further attract, stabilise and accelerate commercial development and investment in public safety broadband markets worldwide,' said George Rice, Executive Director of APCO International. 'The benefits of global standardisation for emergency broadband networks will create a rich ecosystem of devices spurred by the standards-based designs, open intellectual property environments, commitments from chipset manufacturers, large communities of developers and interest from consumer electronics manufacturers.'

APCO Australasia has also endorsed LTE as the global standard for 4G emergency communications broadband networks, and Dick Mirgon, Past President of APCO International, explained that the endorsement allowed the Global Alliance to influence the development of LTE standards in support of critical emergency services, amongst others.

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BAPCO 2011 – a melting pot for ideas and technology

In spite of restrictions on travel and time out of the office being imposed on some services, BAPCO 2011 attracted a good attendance of high-profile visitors who were keen to see current and future cost-saving communications and information management systems.

Several exhibitors commented that the profile of visitors was slightly different this year and they were delighted with new business and new contacts that they made at the show. Olaf Baars, Deputy Chief Fire Officer, Director of Service Delivery, commented: 'We're working with partners to establish the scope and feasibility for a new joint control centre and it's been great to be able to meet so many potential suppliers at BAPCO. Whilst there is still a way to go before we are in a position to place orders being able to talk to so many people in one place has saved us many days of telephone calls and meetings.'

The focus of the conference was 'delivering lower cost incident management through technology', and included discussions on reducing casualties; enhancing communications whilst reducing costs; forward planning for the 2012 Olympics; and dealing with cyber threats.

APD – £2m cost savings

Over on the APD Communications stand the *Journal* was spoilt for choice with a selection of interesting developments on offer, all of which could have a significant impact on public safety cost savings and efficiency.

Managing Director of APD, Steve Denison, said most of APD's work at the moment was aligned towards saving initiatives for its customers. One such project has culminated in Wiltshire Police cutting communications costs by over half a million pounds over the next five years. This has been achieved by the introduction of VoIP software that allowed the force to pool its Airwave ports, thereby enabling the elimination of 22 of them. Each port can cost £4.5-£8K per year in Airwave rental costs. 'In terms of where the police are now, this is a cracking win. No-one has to go, there is a hard cash save, and in many cases they get more flexibility because if one port goes down then that workstation is not out of action – they can just connect to another Airwave port or even a TETRA radio terminal.'

The CORTEX Software Integrated Communications Control System (ICCS) shares ports between control rooms and even between collaborating authorities. This latest generation of APD's pooling solution is totally software-based and therefore easy to deliver. During the past few months the solution has been rolled out to six UK police forces enabling a total five-year saving of over £2m, with more roll outs planned in the coming months.

A mobile control room solution called CORTEXremote was used by Gwent Police for the first time during the Ryder Cup 2010. It provided operators with the same functionality found in a fully equipped control room – all within a PC with broadband internet connection.

Another highly significant development, explained Steve Denison, was Gloucestershire Police's adoption of a CISCO IP telephony solution, which merges emergency and non-emergency call handling with TETRA, over VoIP. 'Communications are traditionally conservative and now we are seeing the emergency services start to adopt more current technology. We are the first company to have gone

RAPIER-SHARP CAMERAS

Microbus introduced IP network-enabled ANPR cameras specially developed for ANPR-recognition systems over LAN/WAN video networks. Adding embedded IP encoding inside the Rapier 25 and 50 cameras offers ANPR providers significantly lower implementation costs and flexible networking capabilities whilst maintaining the all the remote setup capabilities for camera, lens and IR configuration.

through this process with CISCO and CORTEX is the first ICCS to be formally approved by CISCO to handle emergency calls.' The system will be rolled out to the first UK force over the next few months with future roll-outs to other forces planned later in the year.

In another section of the stand, APD Steve Loftus talked about the One Box driver and vehicle data management project which is being driven by ACPO ITS (Intelligent Transport Systems) Group. Following a competition held by the ITS Group, APD's solution was selected as being the closest match to the One Box Team's goals and was exhibited at HOSDB Expo 2011. The result is APD's DVMS (driver and vehicle management solution), a tool that combines the INCA2 and reporting software to provide automated management information and alerts on driver/vehicle performance in real time and post event; a way of measuring fuel consumption with a view of reducing it, as well as emissions; journey data recording; real time information of driver behaviour; and real time notification of vehicle faults. 'The project is about driver and vehicle data management; identifying how the vehicle is being driven; whether it has been serviced at the correct intervals; and the big one – fuel economy,' explained Steve, adding that decreasing the fuel consumption in the 47,000 police vehicles across the UK would result in massive savings.

Two trials will be carried out initially, one with Fife Constabulary and another with the Met Police.

Frequentis and the post-FiReControl future

Understandably following the demise of FiReControl a much-talked about theme for the show were control rooms for the fire service. Frequentis aimed to inspire fire brigades with a wide range of technology solutions and delivery options through an impressive suite containing five demonstration pods.

The first pod highlighted how technology can ergonomically support the operator in order to ease call handling and dispatch. At this pod, all system functions were accessible in one – maximum of two – clicks, with the emphasis on a single means of communications as opposed to multiple devices for a variety of functions eg radio dispatch, telephone dispatch, and source management. 'There are so many systems in the control room, and we provide what is called a safety framework – basically a safety-centred architecture pulling together all the different components that don't necessarily come from Frequentis,' said Markus Seifter, Senior Expert/PreSales.

The second pod focussed on how situational awareness aids the dispatch decision – in this case an iPhone is used as a mobile interface to show where relevant personnel are, via Automatic Personal Location System (or iAPLS).

The third demo pod highlighted the potential extent to which field-based resources could be brought in line of two-way exchange with HQ. In practice this means making all the information that is available to a control room also available to mobile devices, through – for instance – the use of Frequentis' integration network. This would mean that a chief could visualise control room operations live via a tablet or laptop, while physically in a different location eg in a meeting. Underpinning all the demo pods was what Frequentis called the 'future working position', which the company defined as 'where the operator is empowered to concentrate on the job rather than the tools, and demonstrates workflow during a multi-agency incident using a state-of-the art, scalable integrated platform.'

Lastly, Frequentis addressed the thorny issue of funding and ownership options for this type of technology.

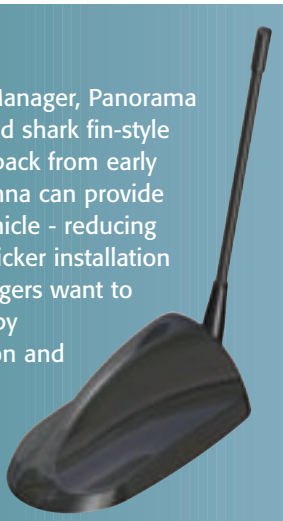
Interestingly, the traditional model where the emergency service has a set contract and owns the kit with its own service organisation is not the only answer for the future, according to Frequentis' Georg Berger, UK Director of Operations – even if it is one of the options offered. This leads to another funding option, whereupon Frequentis offers operational support but only at times of significant organisational change – when expert help is needed.

In the next option, Frequentis acts as an outsourced umbrella organisation running a group of suppliers for the emergency service. In this scenario IT-related calls from users are forwarded on to Frequentis.

Lastly the fully managed service option is where Frequentis operates the entire technical side. In Saxony, Germany, the company delivered the kit for the police, fire and ambulance side, as well as the people to run

PANORAMA ANTENNAS

John Thomson, Technical Sales & Support Manager, Panorama Antennas, explained how the new multiband shark fin-style antenna had received extremely good feedback from early adopters and show visitors alike. 'This antenna can provide four functions with only one hole in the vehicle - reducing damage to the vehicle and making for a quicker installation time, thus reducing cost overall. Fleet managers want to retain best residual value for their vehicles by reducing holes and damage, whilst operation and comms managers need to have best performance by having antennas on the roof - this new antenna helps to address both of these conflicting requirements!'



The five demo pods on the Frequentis stand remained busy throughout the show – they aimed to inspire the fire service through different technology solutions.

AVIWEST SNIPE TRANSMITTER UNIT

The UK Office, a first-time exhibitor at BAPCO, introduced a new wireless video streaming system which uses the data capacity of the 3G mobile phone network to get live, detailed, high quality video pictures back to command and control centres from incidents and events. The Aviwest SNIPE Transmitter unit is small and portable. It has a broadcast quality video codec, and can utilise up to four 3G data channels which it bonds together to maximise data bandwidth.

helpdesks and repair, for a monthly fee. In this case the ownership remains with Frequentis. 'Here in the UK the model is similar as seen with Steria and the Cleveland Police, and we have been doing exactly the same thing in Germany,' said Georg. 'We are now looking to see what fire brigades will be doing next. We know it is politically difficult for a brigade to talk about and consider shared ICCS , but we can cut our cloth according to the service requirement.' Georg, who recently moved to the UK from Frequentis' HQ in Vienna, finished by saying he was impressed by the kind of changes that are possible to discuss in the UK.

PageOne – 25 years old

Thanks to sponsor PageOne, visitors to the show were able to witness first-hand a series of live demonstrations performed by the Hazardous Area Response Team (HART) and Hampshire Fire Urban Search and Rescue (USAR) specialists. The last demonstration by Hampshire Fire, minutes before the closing of the exhibition, involved a rescue-at-height for PageOne's Director of Marketing Clair Cawley, who (revealed to a colleague) 'is terrified of heights'. *The BAPCO Journal* managed to catch up with Clair before the ordeal, while still having two feet on the ground, and she explained some of the work that the mobile messaging solution specialist had been doing over the last few months. 'Our focus has been looking at applications that enable organisations to do more with less, as well as understanding how our customers really use our services.'

This has entailed working on integrating paging functionality with existing command and control systems. The beauty of the service is that administrators are presented with a map that specifies responders closest to the point of interest, enabling them to send targeted messages. Based on the required skill set, administrators can also select and contact specific individuals. 'This is part of the new two-way Responder technology which we have been introducing to our customers.'

Other new features include a dynamic rostering application, which allows responders to book themselves on or off depending on their shift. This can also be managed by the control centre; 'Again this is part of our two-way messaging functionality, and is in trials at the moment.'

The concept of two-way paging is opening up all kinds of possibilities for public safety, such as the introduction of lone worker capability. 'It has been a big change for us, and that it is a fabulous product we realised from the moment we launched it last year.'

Congratulations are also due to PageOne, who is celebrating its 25th year anniversary. 'We are looking at what we will do to mark the occasion – we have some exciting things round the corner that look to celebrate past and present innovation.'

Sepura – fit-for-technology vehicles

A demonstration Volvo on the joint Sepura and Microbus stand showed a smarter, simplified way of fitting technology onto police vehicles – and doing it only once.

Sepura is working together with a number of partners, including Volvo Special Vehicles, BMW Authorities, Microbus, and Carnation Designs on an integrated solution that pulls together all the different components that form the technology backbone of the modern public safety vehicle.

Jonathan Hamill, Regional Director for the UK and Ireland at Sepura explained more: 'This integrated approach seeks to avoid the situation where forces have to undertake separate, time-consuming and costly installations of the separate components. The customer's ultimate goal is to take delivery of a pre-cabled public safety vehicle, leaving minimal work to complete the installation at their premises, such as the fitting of the TETRA transceiver itself. Our shared customers can then draw confidence from the fact that, under the auspices of the Sepura Solutions Partner programme, the respective partners share information and collaborate to provide a least risk and best value solution.

A major additional benefit of this approach is that it increases the re-sale value of the vehicle, as disruption and alterations to the vehicle to accommodate extra technology are kept to an absolute minimum.

The demo vehicle at BAPCO promoted a forward-thinking approach to a fully integrated and high specification public safety vehicle. All technology was neatly hidden underneath a retractable screen in the boot, and remotely controlled via a touchscreen and button interface in the dash area. The display also hosted Sepura's virtual console, which allows the user to operate and control the radio via the touch screen. A secondary control option further declutters the installation – Sepura's Handset Based Console – combining a radio console and a telephone handset.

The companies' integrated approach has helped to resolve a number of issues. For example, Carnation has designed a special module that interfaces with the CANBus to allow keyless running, which prevents the battery of the Volvo vehicle from going flat when equipment such as the blue lights have been left running (e.g. when the police turn up at an incident and leave them flashing).

The sophisticated and logic-controlled power management system also ensures that, should the power start to fail, there would be a "graceful degradation" of services, with the vehicle's radio, the key communications

lifeline, being the last thing to switch off.

As for cost, Jonathan admits that the initial outlay may be higher, but forces will benefit in terms of better whole-life cost: 'My opinion is that customers will see reduced installation costs and will obtain a higher resale value at disposal, whilst realising powerful business benefits in service.' Sepura would be pleased to demonstrate or loan its Technology Demonstration vehicle to interested parties – please contact Jonathan Hamill to discuss this.

More innovation came in the form of a jointly designed solution which provides an electronic recording solution for the police procedure of 'stop and search'. Sepura worked with Greater Manchester Police and Northgate Public Services to design this powerful solution which allows Stop & Search data to be recorded and submitted electronically, via the Sepura TETRA radios by the Police Officer on the beat, to Northgate's back office application. The solution has been made possible through the recently introduced Crime and Security Act 2010 and the amendment of the Police and Criminal Evidence Act (PACE) code A, where the national requirement to record 'stop and account' was removed, the recording requirement for 'stop and search' was simplified and electronic recording was permitted.

Jonathan demonstrated how the new app worked on a radio – The Police Officer completes a simple form, recording national recording information, e.g. where '12' may represent a search for stolen property etc. The data is sent to the back office system along with the GPS location and ID of the officer, creating a unique record. 'The police officer can then issue a business card, and advise the member of the public that a copy of the record is available on request at a designated police station within the next 12 months.'

Planning for the Olympic Games 2012: Commander Richard Morris, Met Police

Commander Richard Morris, Metropolitan Police, heads the joint ACPO/MPS Olympic and Paralympic Policing

The Volvo demo vehicle on the joint Sepura/Microbus stand: all technology is neatly hidden underneath a retractable screen in the boot (left), and remotely controlled via a touchscreen and button interface in the dash area.

Coordination (OPC) team, the coordination partner for all the police-led projects in the Olympic Safety and Security (OSS) Programme and support function to the ACPO Olympics business area. The Safety and Security programme is housed within the Olympic Security Directorate, in the Office for Security and Counter-Terrorism at the Home Office.

Richard went into some detail explaining the OPC's terms of reference, remit and role as a coordination agency for England and Wales' 43 forces, ACPO, and other safety and security stakeholders including borders agency, fire and ambulance. It also has a remit north of the border into Scotland through ACPOS.

From the jubilations of 6th of July 2005 the threat of terrorism has been uppermost in the team's minds when planning for 2012 – which is why the Olympic Safety and Security Programme is housed within the Office for Security and Counter-Terrorism. 'We have a risk-assessed approach but the key one is the threat of terrorism. That said, I will add straightaway that this is a celebration of sport and not a celebration of security. It is a sporting event with a security overlay and as a security organiser we have to make sure we are not allowing security to get in the way of athletes and spectators.'

While there is no doubt that the Olympics represents the biggest policing and security operation this country has ever known, it must be remembered that the Olympics are not the only event in town during that summer (eg Notting Hill and the Queen's Diamond Jubilee), and that business-as-usual policing must take place too.

Events are taking place outside London, which means the team has to also to coordinate security activities in Essex (mountain biking), Hertfordshire (kayaking and canoeing), Thames Valley (rowing and canoeing),Dorset (sailing), Surrey (cycling), and Kent (cycling), as well as football in Cardiff, Newcastle, Coventry, Manchester and Glasgow. 'And just because a force doesn't have an Olympic venue doesn't mean it doesn't have an Olympic event.'

Additional security measures may also be necessary at athletes' training camps.

Precious Olympic funding is allocated on a risk-assessed basis, through an Olympic safety and security strategic risk assessment which not only numbers the risks but also deals with how the risks can be mitigated via funding and activity. 'There are 27 projects in total and we put as much mitigation as we can to reduce the risk of these things happening or, if they do happen, to reduce the impact.'

MULTI-BLADE FUSE HOLDERS

Co-star launched a range of multi-blade fuse holders with an LED warning light used to provide power and protection to comms equipment installed into emergency service vehicles. The warning light helps the communications engineer to quickly identify which circuit is broken and helps get the vehicle back into service as quickly as possible.

Back in 2005 it was felt that the sheer scale of the Olympics called for a new way of policing – not so, said Richard. 'After labouring under that planning assumption we soon worked out that this wasn't the best way of doing business. Because although this is bigger than what we have done before, we like to think that we are actually quite good at policing sporting events – and that includes partner agencies.'

In the end it was decided to base plans on a business-as-usual basis, with enhancements where necessary. As with other sporting events, it will be the organiser's responsibility to provide security within a sporting arena – in this case LOCOG – and outside the buildings it will be the police's: 'That is not to say that there won't be any police in the venue – the police will be at hand if a crime has been committed or something else falls in our remit. But we are not the first port of call.'

AC Chris Allison, MPS, is the National Olympic Security Coordinator (NOSC) and the head of the ACPO Olympics business area – a role supported by Richard and the OPC. This is a new role created to ensure all forces and secondary organisations have plans that dovetail 'reasonably well' to form a cohesive national plan. NOSC takes no part in command and control decision, but is there to assure Government that command structures will 'talk to each other' and to provide overall coordination. A NOSC Board is made up of representatives from each organisation, creating a forum for planning discussions and debate.

In Games-time, the NOSC sits in the new National Olympic Coordination Centre; the NOCC on the 12th floor at New Scotland Yard. Richard sits with LOCOG, ODA, and the Olympic Security Director and Home Office in Canary Wharf. Richard pointed that the fact that NOSC is co-located with the Specialist Operations Centre has enhanced the relationship with Assistant Commissioner of Specialist Operations John Yates. 'Should a bomb go off, John takes the lead on behalf of UK counter terrorism policing with the NOSC supporting where possible. If nothing happens, Chris remains the national coordinator for general policing.'

COBRA will be running throughout the Games with meetings taking place every day, and a strategic intelligence function has been set up – the Olympic Intelligence Centre – charged with disseminating information to partners.

After touching upon some of the security challenges involved with the torch relay, Richard highlighted the number of parallel Olympic-related events that will be taking place around the country, eg live big screen viewings of events. 'There is a limited pot of cops so we need to plan effectively – not to try to stop people from celebrating, but rather to coordinate it effectively.'

Demand and resources was one of the concluding themes of the presentation: 'The main way of filling gaps in our policing picture is through tried and tested mutual aid, via forces volunteering to second officers.'

The ACPO Police National Information Coordination Centre (PNICC) is implementing the mutual aid project, and Richard said that although a lack of officers was not going to

be a problem – specialist resources such as firearms officers could be. 'We are working closely with Chiefs and police authorities to ensure that the specialist assets in police forces are not completely degraded, so they can help out in 2012.'

Concluding, Richard said that the Olympics were a good opportunity for the UK police to showcase itself; 'Without wishing to appear complacent, we are quite good at laying these events and British policing is admired throughout the world. We need to remind ourselves of that to keep our confidence up.'

Radio communications planning for the Olympic and Paralympic Games: Kevin Taylor, Head of Olympic Communications Project, Metropolitan Police

Introduced (tongue-in-cheek) as the 'anorak section' of the presentation by a female senior BAPCO exec member, Kevin's talk focussed on the Airwave enhancement project for London 2012 – but not the Apollo system that was delivered by Airwave for LOCOG. The project is multi-agency and covers all responders who use Airwave, and is managed by the Met Police, answering to the SRO and the NPIA, but with funding from the Home Office.

The project has taken £40m from the security budget and

(understandably) is regarded as important due to it providing the primary inter-operational technology for the emergency services.

Kevin outlined the many challenges associated with radio communications planning for such a large event. These included identifying the key stakeholders and carrying out an initial requirement capture: 'Getting the new requirements was very important because understanding

Commander Richard Morris emphasised that the Olympics were to be a celebration of sport, and not a celebration of security.

PageOne sponsored a series of live demonstrations performed by the Hazardous Area Response Team (HART) and Hampshire Fire Urban Search and Rescue (USAR) specialists. The last demo involved a rescue-at-height for PageOne's Director of Marketing Clair Cawley.

what the cost of the project was likely to be was not only important but essential. Government insisted we come up with an outline cost before starting to talk budgets. We came up with a fairly extensive statement of requirement which had to be reviewed in a number of places.'

After negotiating a best and final offer from Airwave Solutions, the project moved towards approval for its business case.

Central for the success of the project has been that it has accounted for the needs of all emergency responders. Stakeholder engagement has been crucial and Kevin highlighted that this covered 40,000 users, from police officers to ambulance workers, fire officers, MOD – all at every level of command and control. 'Technology often fails because people don't believe it will operate as you want it to. So we have to make sure people know how it works and why they should have confidence in it working.'

The capture of new requirements followed a cyclical shape consisting of consultation, analysis and review. The process started in 2008 and towards the end of the process an initial cost and review was published; most of 2009 was spent refining this. 'The general profile requirement said we needed a general systems capacity uplift in certain areas,' explained Kevin, launching into what he called the 'anorak' section of his presentation. 'That is five Erlangs in central London, so a very large capacity uplift.'

Capacity in other areas wasn't such an issue, but coverage was. 'In Dorset for instance we needed coverage over the sailing area in the bay and that had never been done before by Airwave Solutions, so it was groundbreaking activity they have achieved.'

The team also had to verify that there was sufficient outdoor coverage in all Olympic venues and some of the accommodation sites eg in Surrey. 'One of my primary issues now is in-building coverage, making sure it works in the venues and that is a sub protect in its own right being developed at the moment.'

As for equipment, there are addition radios in London for mutual aid officers, in addition to extra new marinised radios for use out on the water in Dorset, as well as a few for the torch relay.

Control room services have mainly applied to the main operations rooms in London and Dorset where ICCS operates, and here Airwave interfaces have been provided and integrated. After going into further detail on the ('astoundingly' quick and) successful approval of the final business case by the Home Office, Richard talked about the several challenges involved with network delivery, in particularly site acquisition. 'Airwave addressed that by expanding their site acquisition unit.'

Spectrum was an issue as there weren't enough frequencies to support the project, and additional spectrum had to be purchased over 12 months. 'It is worthwhile anybody doing a radio project realise that the acquisition of spectrum takes a long time.'

Richard finished by going through the lessons learned;

- Preparation pays – allow enough time for requirement capture and the development of the business case.
- We are not alone – this project is about dependencies and affects almost every single other of the Olympic projects within the security directorate. Having friends in high places helps.
- If people don't believe it will work then they won't use it.

London 2012 – A cost effective approach to critical communications: Richard Bobbett, Chief Executive, Airwave

Richard began his presentation by reminding the audience of the salient facts that sat behind the Airwave communications network; namely its secure and resilient nature, and that Great Britain is the only country in the world that has achieved this. Other facts outlined were the 99% coverage of Great Britain's landmass and the interoperability capability afforded by the network.

Value was then mentioned, and Richard asked the audience to take a step back and hear the evidence. The OGC had carried out a full transparent review of all the Airwave accounts a few years back: 'And they actually said that they found a return between 7 and 8%. They also went on to say that that was the low end of the expected range for a supplier of these types of systems, technologies and contracts…. So from a supplier's side we are not making excessive returns.'

As to why Airwave is priced as it is, Richard suggested the answer lay in the specification for resilience, coverage, and interoperability, but added that Airwave would continue lowering costs via new technologies, as well as work with responders to reduce costs via innovation. 'But you need to look at it from the other side – the user side… if you treat Airwave as a replacement for your analogue system, you will not get value for money.' The network enables emergency services to change the way they operate; 'It enables you to protect your operatives, enables you to have a single-man working.'

Richard went on to address a report that said that the Airwave network was near collapse in Cumbria during the shootings; 'I actually read the report and it actually said that

Apollo is a separate TETRA network that has already been delivered to the LOCOG family for the London 2012 Olympics.

this was a fantastic piece of kit if we use it properly. I go back to interoperability. It would appear that the officers didn't know the talk group set up and weren't able to use other processes properly. There was an operational issue.'

Coming on to the Olympic & Paralympic Games, Richard talked about the scale of an event involving 205 heads of state at the opening ceremony alone. 'We have already significantly increased our coverage. When I look at the number of channels we are delivering to London for the Games, there will be nearly three times the capacity we had in London a year ago.'

He then went on to introduce the concept of the Apollo network – a separate TETRA network that has been set up and delivered for the LOCOG family (eg events stewards, hospitality personnel, VIP) and which is similar to the Airwave network. 'You can set up talk groups that move across the two – but it is a completely separate network and will have no impact on the coverage that we've put in place.' Apollo will enable LOCOG to control their stewards to an extent not possible during any other Olympic event. 'We have delivered the system now, so it is ready for every test event. The first 200 handsets are in the hands of LOCOG.'

Richard ended by emphasising that, just as for the blue services nothing happened by accident when it came to planning, the same was the case for Airwave. 'We work with you in consultation and if you look at some of the events the amount of consultation is huge.'

During questions a member of the audience asked what the plans were for use of Apollo after the Olympic & Paralympic Games, as a legacy of the Games. Richard said that he would be keen to talk to organisations that felt that a mission critical network would serve their purposes and indeed such conversations were already taking place.

Another delegate asked about where the blue lights should go from here in terms of communications; 'If I were a betting man I would say it will be on an LTE platform, and the US have already started to lead the way on this. But they are still 10 years' away from having mission critical voice of the standard you have today, and I think that underpins any safety and security system you will need.'

Sustained public safety communications: from threat to normality: Tom Quirke, Vice President, TETRA Business, Motorola Solutions

While some of Tom's points had already been covered during an exclusive interview in the January/February issue of *BAPCO Journal*, there was some additional and thought-provoking content during the conference.

Defining mission critical communications as 'hours of boredom punctuated by moments of terror', Tom began his slot talking about the pivotal role of voice communications during an emergency. 'Voice delivery is the way we communicate, and it does not fail in situations of high stress. In our team we have designers and behavioural psychologists and when you ask them how people act in high stress, they say that it's voice that works, and that the capability to read diminishes very quickly.

'That prefrontal cortex shuts down when the adrenalin starts kicking in, which is why you train your officers to be instinctive in what they go and do.' And that is why, Tom went on to explain, technology had to be second nature and never get in the way of a mission.

Following detailed comparisons between data and video in terms of 'need to have' vs 'wish to have' technology, Tom went on to share feedback from users in the US as regards expectations for their radios. 'I ask them to compare their values for different things – so, radio or a gun, which would they carry? And it is instantaneous; "I've used my gun once in 20 years, I use the radio 20-30 times a day." Then I take it up a level – "what about radio vs bullet-proof and stab vests?" And again they say, by the time that that has kicked off, you'd better have called for back up and have emergency support. Lastly I ask, "what about a car?" In many parts of the world officers are on foot patrol, but in the US 95% of the time you cannot be a police officer without having a car, so this becomes a tough one. "Wow," they say, "I cannot choose between both, I have to have both." So then I say to them, which needs to be more reliable? And they say; "If the car breaks down I can always use the radio to get someone to pick me up."'

Tom touched upon some of the issues that blue lights will have to consider as regards LTE and the opportunities it will deliver, such as video and data. One interesting point regarded how future data and video structures might look, and he concluded; 'You will be starting from TETRA there are lots of variables out there but the simplest and most intuitive is to say, wherever voice goes data goes. So when a talk group for TETRA is changed, the same will happen to TEDS and video. That is logical, and it follows that when I change the priority for a person for voice, the same happens for data. TETRA will drive everything – it will drive how officers talk with LTE, and how they talk with command. And all of it will have to be highly interoperable between networks, devices, applications, and agencies.'

Tom finished his presentation by encouraging the public safety world to make its voice heard and ensure that it gets its own spectrum for a private broadband network for public safety.

Thinking of moving to a cloud?

Edward Hamilton of Analysys Mason questions whether public cloud-based solutions are an appropriate solution for emergency services, coming to the conclusion that on the whole the required security controls are not there.

The move towards cloud services appears to be relentless, and numerous IT organisations are now developing and deploying hosted platforms, infrastructure and applications to provide cloud services. Cloud services are a natural evolution of traditional IT outsourcing and hosted solutions and organisations' desire to further reduce IT costs. They appear to offer all the benefits of outsourcing without the traditional risks of customised IT development or commercial off-the-shelf (COTS) deployment, for the following reasons:

- The services and applications already exist and have been deployed, which minimises the risk of the cost overruns that affect so many IT projects
- Most cloud-based IT services require no capital investment and have only minimal up-front configuration charges, which enables enterprises to budget for these services
- Enterprises require only limited in-house IT skills to use cloud-based services, and can redeploy valuable IT assets elsewhere
- Services can be deployed quickly, which allows enterprise IT departments to be more responsive to stakeholders.
- Cloud services can be either public or private solutions.

Public cloud solutions are a much more recent development than private solutions and are delivered over the Internet. Clients procure a solution as a service, and can undertake minor adaptations to tailor it for their business. Private cloud solutions are typically more expensive than public services, but have the advantage of permitting greater customisation of the applications, platforms and infrastructure. A third-party supplier provides a tailored IT solution (as a service – Software as a Services or SaaS) that is located in the supplier's data centre and accessed over a wide area network. Private cloud solutions have been in existence since the 1960s when outsourcing started. A more recent example of private cloud solutions is the UK government's gcloud.

Emergency services are used to procuring private cloud solutions from organisations that provide specialist IT applications and business processing outsourcing (BPO) solutions, typically for human resources, payroll, finance, etc.

When making the transition to cloud services, all organisations will need to manage the additional risks they encounter. Some of these risks relate to security – for example, compliance with legislation and regulations within the relevant country, region and industry, as well as security concerns regarding confidentiality, integrity and data availability. The risks are particularly significant for emergency services, as this is one area of critical national infrastructure where any compromise of confidentiality and integrity or the lack of availability could have a direct impact and potentially cause loss of life.

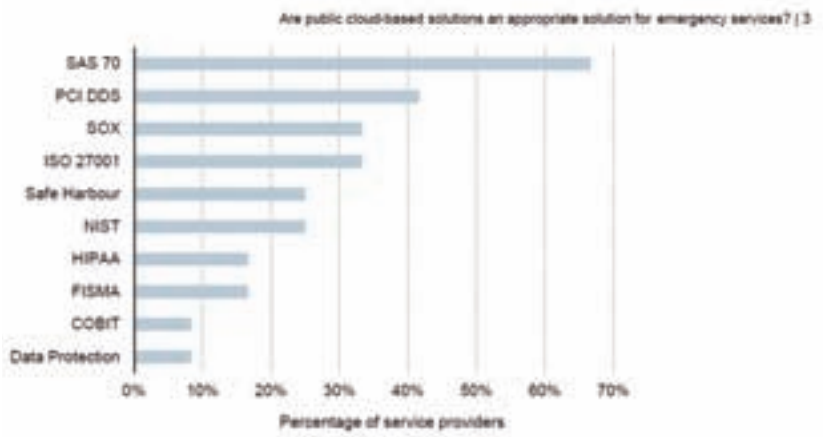
Examination of recent security breaches shows that few breaches arise due to a compromise within the organisation that is responsible for holding confidential data: many are related to a third-party supplier. As such, it is essential that any supplier has the appropriate technical and security management controls in place and works with its clients to mitigate risks. Can this level of security be provided by public cloud service providers?

To provide assurance that the security risks associated with cloud service provision are being appropriately managed and mitigated cloud service providers have selected to comply with or become certified to a wide range of security standards. When Analysys Mason undertook an assessment of these standards we found that Statement on Auditing Standards No 70 (SAS 70) was the most-commonly adopted security standard (see Figure 1). SAS 70, Sarbanes-Oxley (SOX) and many of the other security standards shown below are only relevant to organisations based or headquartered in the USA. For an emergency service operating elsewhere, these certifications only provide a generic indication of the level of security.

Cloud service providers with a mature attitude to security will maintain a balance between technical security controls and security governance. From our research it appears that the technical security controls provided by cloud service providers are generally appropriate and conform to recognised security practices. However, our assessment revealed that the management of risks associated with client data was generally poor. In particular, the majority of public cloud service providers have not yet defined how their security governance would integrate with a client's security team. For example, it is unclear how providers would report

Edward Hamilton, is the Head of Information Security and Assurance at Analysys Mason. He has 18 years' experience working within IT and telecoms, of which the last 14 have been providing information security services to clients in both the public and private sectors.

Below: Figure 1 – security standards followed by a selection of cloud service providers [source: Analysys Mason, 2011].



any data breaches they detect. Waiting to include such news in a monthly status report would clearly be unacceptable security governance for an enterprise, let alone for an essential element of a nation's critical national infrastructure. Cloud service providers need to offer integrated security governance that allows two-way communication to a defined service-level agreement (SLA).

For emergency services, the confidentiality, integrity and availability of their IT systems and data are essential. Emergency services typically have a mature set of technical security controls and governance procedures. When procuring IT services they expect providers to meet their security requirements, but this is something that public cloud service providers are currently unable to demonstrate. A highly revealing way of assessing the level of maturity of a cloud service provider's security is to read its service contract. The typical contract terms offered today might be acceptable for an individual or a small business. However, an emergency service or government body requires robust service levels, regular service meetings, service credits, and the ability to terminate the contract when a service persistently fails to meet the SLA. The majority of contracts offered by cloud service providers today simply do not incorporate appropriate security and other governance controls to meet the requirements of emergency services or government bodies.

In conclusion, we believe that the level of security governance currently offered by public cloud service providers makes it challenging for emergency services to transfer any core IT services to these providers. Public cloud service providers must refine their security offerings to make their products and services appropriate for emergency services and other organisations in highly regulated industries; otherwise, these organisations will continue to procure dedicated solutions for hosting at their own location, or private cloud solutions that allow them to specify appropriate governance controls.

The public sector's drivers for change

Chris Mayers, chief security architect, Citrix, believes there is a policy gap in public sector cloud strategy and he identifies a new cloud computing strategy that could help the public sector catch up with the private sector.

Chris Mayers, principal security architect, Citrix, is responsible for promoting security, developing security strategies and advocating the secure enterprise. He works with enterprises and government bodies to explain how Citrix's end-to-end virtualisation technologies can help keep resources safe.

Since the 2010 general election, the coalition government has accelerated measures to take control of the public sector deficit and to set a course to begin paying off the national debt by 2014. By not raising taxes significantly, the pressure has fallen on reducing public spending and so for public sector organisations to maximize the efficient use of resources, while minimizing the impact on front-line services

Even before the recession, the government has striven to increase the proportion of shared services across public sector functions. Government departments, arms-length bodies and delivery organisations all have common activities and assets, and this has resulted in unnecessary duplication and costs. A 34 per cent reduction in funding for back office functions is driving major streamlining and collaboration in central government and its arms-length bodies.

The infrastructure for these shared services can be substantial. Large ICT infrastructures demand high initial capital investment with long-term maintenance contracts to secure both a return on investment for suppliers and value for money for users. The UK Government is in no position to make such large investments itself for all its services today – and it is no longer necessary when the private sector has already made the investment. This is what cloud computing offers.

Cloud computing is a proven technology: it reduces costs, speeds up service delivery, and provides a secure base for shared services. In short, it has a vital role to play in satisfying exactly these pressing government needs.

However, differences between organisations mean that they will need to apply cloud computing in their context, to gain those efficiencies. Recognising this, the government has announced recently it will publish a new cloud computing strategy.

Taking a hybrid approach

UK and international perspectives show why cloud computing in the public sector still lags behind the private sector today: there is a policy gap.

The Cloud Industry Forum (CIF), the industry body for cloud computing providers, conducted a survey of end users in early 2011 on adoption trends. The research demonstrated that use of cloud computing has grown rapidly and shows that the technology has now taken hold in the UK. Overall, 49% of private sector organisations use cloud for some of their ICT solutions. However, this figure drops to 38% for the public sector.

Specifically, project management procedures, governance practices, concerns over data security, procurement regulations, and integration with legacy systems; all these inhibit public sector organisations adopting cloud computing. Government cannot sidestep these issues – the new cloud computing strategy must determine how to deal with them,

It is also clear that a single approach to cloud adoption is just not feasible in the public sector. Some services cannot – or should not – be transferred into the cloud. The cloud computing strategy will need to act more as a

framework for public sector adoption, rather than a plan for centralised delivery.

Compare the US government's Federal Cloud Computing Strategy, published in February 2011.

First, the Federal Strategy laid down a 'cloud first' policy. This means that all government agencies are required to evaluate safe, secure, cloud computing options before making any new investments. With the trends in cloud adoption detailed earlier it may appear that considerations of cloud solutions is standard practice. However, the same research discovered that there are still a significant proportion of resellers that do not raise cloud computing as a solution to end user needs (38% of resellers according to the CIF Adoption and Trends 2011). Furthermore, great caution regarding data security in the public sector can lead to unnecessary rejection of cloud as a solution. By insisting on 'cloud first' the US Federal government has ensured that cloud adoption will always be considered, helping to overcome misplaced fears over its use.

The US Cloud Strategy has also established an 'approve once and use often' policy. As in the UK, there are many public sector organisations that have traditionally procured ICT solutions independently of each other, resulting in significant duplication and financial waste.

This 'approve once and use often' policy is a single process for approval of applications based on cloud computing; organisations can then use them without repeating the same procurement process.

The UK government is considering a similar approach, but there have been some concerns that current EU competition regulations could be obstructive. A suite of framework agreements – similar to those that exist in parts of the public sector for traditional technology and commoditised products or services will need to be outlined in the new cloud strategy.

The US Federal Strategy has also recognised four cloud models that different organisations can adopt as their needs require. This acknowledges that existing ICT systems may have contractual, legacy or other issues that make a full and immediate transition to the cloud impossible. The four models are:

- Private Cloud – the cloud infrastructure is operated solely for an organisation. It may be managed by the organisation or a third party and may exist on or off premise.
- Community Cloud – the cloud infrastructure has shared concerns (eg mission, security requirements, policy, or compliance considerations). It may be managed by the organisations or a third party, and may exist on or off premise.
- Public Cloud – the cloud infrastructure is made available to the general public or a large industry group and is owned by an organisation selling cloud services.
- Hybrid Cloud – the cloud infrastructure is a composition of two or more clouds (private, community or public) that remain distinct, but are linked by technology that secure access between them.

Citrix has discovered that many of its customers are not ready to migrate their data centres over to the cloud. Nevertheless, the applications currently in their data centres could migrate – and this would offer significant, rapid, efficiency savings in its own right. This also maintains data storage within an existing secure data centre, while using the cloud for service delivery. Therefore, this hybrid cloud approach is attractive, given careful planning.

First, some applications depend on other services or data which reside in the on-site data centre. These applications should be decoupled so that they can work in the cloud without migrating or duplicating the shared services.

Second, the in-house data centre and the cloud represent two distinct infrastructure environments. But a common set of processes, tool, and people must be applied, or the efficiency gains will be lost.

Third, network security policies between a cloud provider and the internally managed data centre may not match. Organisations must select a cloud provider that can address this issue.

The hybrid cloud approach shows that the transition to cloud computing can be gradual and systematic, allowing ICT professionals to control the project risk that accompanies any change. Alongside the new cloud computing strategy, this will remove the remaining barriers to efficiency.

Beating the budget with technology

The Scottish weather was for once behaving itself with only occasional light rain putting a slight dampener on arrivals. The day started at 9:30, February 23, as 49 delegates and exhibitors met up at Strathclyde Fire and Rescue Service HQ in Hamilton, writes Steve Dobson, BAPCO Scottish Region Committee.

CFO Brian Sweeney (SFRS) opened the event and welcomed the delegates in his usual inimitable light-hearted way, making reference to SFRS (which could stand for Scottish FRS and not just Strathclyde FRS) – a dig at the proposed restructure of FRS in Scotland. Brian also informed all present of his long standing interest in BAPCO and the achievements of the association. He spoke about the possible changes to the structure of Fire and Rescue Services in Scotland and how Scotland is looking at the lessons learned from the RCC project in England, making reference to the RCC as being an exercise in 'how not to do it' and 'a well done' to the contractors for 'filling their boots'. He then went on to speak about the early days of mobile data in the 90s when Strathclyde used ruggedized PCs designed for use in a tank, and that were too big to fit in the cab of a fire appliance. He stressed the importance of the need for information that was required by fire fighters to assist their decision making at incidents and that communications is always identified as a consistent problem after all incidents. He added that BAPCO is well placed to advise and lead on all communication and IT matters, and that reliable information governs the pace of how incidents progress.

> "Scotland is looking at the lessons learned from the RCC project in England, making reference to the RCC as being an exercise in 'how not to do it'"
>
> *Brian Sweeney, SFRS.*

Andrew Walker (Syntech Systems) gave an interesting and informative presentation on 'Optimising Airwave', and with the use of graphs and data explained how costs can quickly escalate if Airwave usage is not controlled. He made reference to all services having the equivalent of 'teenagers with contract mobile phones' out there with Airwave radios that are 'freely spending' their parents' money. His presentation pointed out the many pitfalls that can be easily overcome to reduce the cost to an organisation and ultimately the tax payer.

Kenny Fraser (Strathclyde FRS, also BAPCO Scotland committee member) gave a professionally-produced 3D walk-through presentation on the benefits of using Mesh technology both to enhance fire ground communications for firefighters and for information-sharing at a large urban incident. He stressed this can be achieved using COTS technology and not a bespoke solution.

Dr Ahmed Aldabbagh (QuinetiQ) senior engineer and Shaun O'Neill (BAPCO) project officer gave a joint presentation on the achievements realised by project Secricom. How its 13 EU-wide partners are investigating the use of currently available technologies to optimise and maximise the achievable benefits to society during a major crisis with a specific focus on crisis management across state borders. (The outcome of the project was showcased at the annual BAPCO conference at Islington.) Emphasis was placed on not relying on a single communications provider, but to look towards open standards based on a core IP network and standard technologies to realise the goal and meet the requirements set by this important project.

Prior to lunch the AGM of the Scottish Region elected the Chair and Committee members for the next 12 months.

Suitably refreshed the delegates returned to the excellent McGill theatre for the afternoon's presentations which commenced with Jeanette Stewart, senior manager and ICT consultant, Analysys Mason, who spoke on the topic of 'Optimising future ICT choices'. Jeanette emphasised how the future market for business applications is expected to grow but within an environment of cost benefits and service improvement. Indicating a move away from managed services to self-build with organisations sharing cost such as the costs of fibre circuits and cloud computing. She made reference to a review taking place in Scotland to consider the effectiveness of IT procurement for public services with a

Thanks to the following exhibitors; Radio Telecom Services; Cyfas Systems; Panorama Antennas; APD Communications; Analysys Mason; Frequentis; Maxa Technologies; Sonic Communications. Special thanks to Tracey Langmaid (BAPCO administration) and Colin Dalziel for all their good work in arranging this successful event.

mind on invest-to-save rather than technology for technology's sake.

Ricky Gray, consultant and retired deputy chief constable of Strathclyde Police asked the audience to consider the question: 'Is Scotland ready for joint control rooms?'. In his previous life Ricky gained a vast amount of experience in the introduction and use of Airwave in a large police force. In this era of financial restraints he said it was "too good a recession to waste" with £42 billion disappearing from the Scottish budget over the next 15 years and the possibility of there being only one police force and one fire service in Scotland, pointing out that we already had one ambulance service already. Ricky then went on to give a presentation on joint control rooms in Holland explaining how this was achieved and that the Dutch experience in his opinion should be looked upon as an example of best practice. Scotland was an ideal size to implement something similar, with a population of 5 million and organisations accustomed to working closely together.

Shaun O'Neill, BAPCO, gave an update on 'BAPCO – the year ahead'. He explained the changes in the presidential and executive teams with the arrival of the new chief executive Tony Antoniou and a change in focus with the executive committee looking at amending the constitution to more reflect a modern and forward-looking association. Shaun outlined the broad objectives of our association. We should be conscious of the economic climate and further engage with members – especially Cat 1 & 2 responders and local government employees such as emergency planning officers – as well as remain a customer-focused organisation. He also spoke about the new and exciting web portal that is currently under construction.

Simon Land, business development director, ARL Comms, informed the audience on the benefits of using VoIP over many different bearers, including the Emergency Area Radio Link (EARL) system over any radio bearer. He explained how this can create interoperable communications between all emergency response organisations using broadband; their existing infrastructure; and two-way radio communications equipment. His presentation included a case study of this system and a demonstration with a call to one of his colleagues in a remote location.

Peter Hudson, senior project manager, Digital Mobile Radio Association, explained the benefits of using the DMR standard (ETSI) to enhance current PMR spectrum use and how this standard has been defined for use within a multivendor environment. It was not a replacement for TETRA but designed for users who deploy analogue VHF/UHF radios to achieve a doubling of capacity in existing licenced channels. How this standard now accounted for 70% of digital radio sales across Europe and was expanding all the time with features such as GPS data, IP data and priority call control.

Colin Dalziel the BAPCO Scotland region (re-elected) Chair brought the days proceedings to a close at 15:40 by thanking all the speakers, exhibitors and delegates for their attendance, and our host Strathclyde FRS for the use of the excellent facilities and the quality of their catering.

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