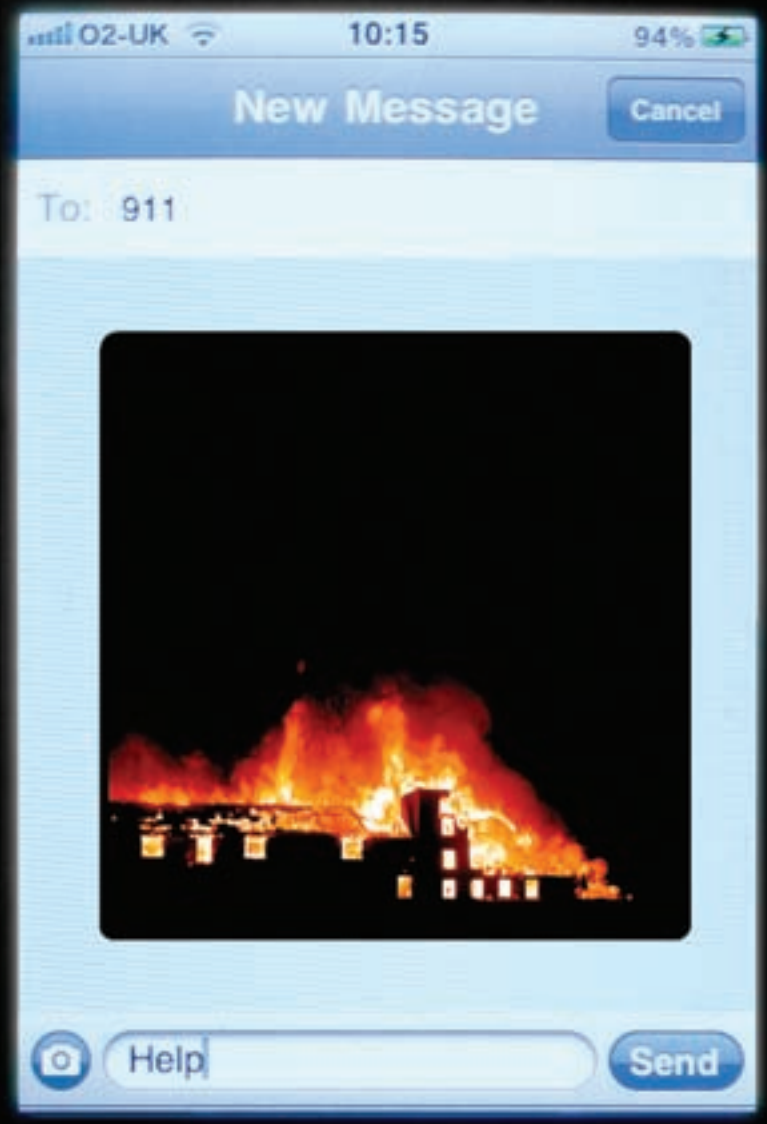
Top tips for ensuring a trouble-free procurement process for command vehicles.

European project bears fruit in achieving seamless communications.

Knowledge Exchange by and for Public Safety Professionals

JOURNAL BAPCO

Volume 17 Issue No 1 • January/February 2011 • £3.50



Text 911 for help

US leads in multimedia emergency response

CAPITA

SECURE INFORMATION SYSTEMS






Capita Secure Information Systems is the new name of SunGard Public Sector UK

As before, our mission is to provide solutions that maximise the intelligent use of assets and resources to optimise operational efficiency.

Its why we are driven to continuously improve our solutions and help our customers respond effectively to the public.

In 2008 our efforts were officially recognised when we received the Queen's Award for Enterprise in the Innovation category - for the continuous development of public safety communication systems.

The acquisition by Capita will allow us to expand our offering across all of the blue light services and we look forward to meeting with you and discussing your requirements at BAPCO 2011.

Capita Secure Information Systems
Methuen Park, Bath Road, Chippenham, Wiltshire, SN14 0TW
Telephone +44 (0) 8456 041999
Website www.capita.co.uk/secure-information-systems

THE QUEEN'S AWARDS FOR ENTERPRISE: INNOVATION 2008 TO SUNGARD PUBLIC SECTOR LTD

buying solutions supplier

Front cover artwork by www.blackcoffee project.com.

NEWS

FEATURES

REGULARS

Promoting integrated ICT for civil contingency responders

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President's address

Alan House, President

When I was asked to accept nomination to progress towards becoming the President of BAPCO, little did I think that I would move to that position so quickly. Hayden Newton found, shortly after becoming President in April 2010 that the pressures of his professional life required his full-time attention, and he reluctantly gave notice to the Executive Committee. Hayden, of course, did in fact take on the role of President early, when the previous President also found it necessary to step down early. Such is the pressure of working in the public sector services at this time, particularly in the 'blue-light' services who find themselves in an environment of review and financial restrictions as never before experienced. Having retired in May 2010, after 42 years with the fire and rescue service, I am perhaps better placed at this time to focus on BAPCO as my 'day job'. Over the past nine months the Executive Committee has operated with the thinking that change is necessary and that there is a need to refresh how BAPCO looks and operates. Also, to enable it to move forward to meet the challenges facing everyone, and further enhance its role in supporting those delivering response to the public in times of emergency.

What that change for BAPCO finally looks like is still ongoing, but the Executive Committee has every intention of re-shaping the organisation to make it fit for purpose. Together with our recently appointed Executive Director, Tony Antoniou, we are reviewing our purpose, our structure and everything we do, and will make changes, as appropriate to ensure that BAPCO is what out members and our commercial partners want to see for the future.

In doing this it is likely that we will please some and cause some discomfort to others, as that is the nature of change, but our analysis to date tells us quite simply that a no-change approach is not an option.

We will need to revise our constitution and our bye-laws, our image, our branding, our raison-d'etre, our website, our magazine and the style of our annual conference/exhibition.

We will have to have an ongoing business plan designed to take us forward as we meet the challenges ahead, and we will have to ensure we appropriately modify our relationship with our commercial partners. We will propose a number of changes at the AGM in April.

Having now fully taken up the role of President, I wish to thank Hayden Newton and also Ray Trotter for their past work. I would also like to thank the Exec for their support as I take on this new role. In particular, I wish to highlight the huge amount of work given by our Immediate Past President, Ian Readhead, whose guiding hand and wise counsel has taken us through some difficult decisions. His dedication to BAPCO and its aims have been a great comfort.

Finally, my message to our membership and commercial partners is simply that as President I want to lead the Executive Committee and develop the organisation as far as is practicable, at a level and in a direction that meets your needs and expectations. I would really welcome dialogue with you as we progress along a path of change and improvement. I would like to reflect how you would wish to see the shape and the style of the organisation.

The CAG column – FireControl out, collaboration in

Dave King, CAG Chair

In my last CAG column I discussed the use of outsourcing as a way of delivering services, particularly control room services and I used the example of FireControl project. Two months later and the project has been cancelled, stating the inability to have a technical solution delivered within an acceptable timescale. Does this mean there will now be a push away from outsourcing/managed services, with FireControl cited as the latest failed Government project? I am not sure, I certainly hope not, as this type of service delivery has many advantages and there were some good points to FireControl, let's no forget, even if the execution of the contract has failed.

However, one thing is certain, there will now be a lot of procurement activity in the fire sector with 46 FRSs deciding how to deliver control room services for the foreseeable future. How this will pan out will be interesting to see and as there appears not to be an awful lot of money available from central Government you would have thought collaboration has to be the order of the day. The consultation paper makes interesting reading with an obvious encouragement for collaboration. What is collaboration though? Regional control centres for neighbouring FRSs? Larger FRSs providing services for smaller ones? Tri-service? Private provider offering hosted services to any FRS? Public private partnerships?

Whatever the final outcomes let's hope everyone understands that this time solutions have to be delivered on time and on budget. The way to do that is not to tie everyone up in reams of terms and conditions based on one party's view on deliverables, nor to have it vague and insufficiently scoped. Rather, let's ensure everyone understands what needs to be done. What's the word I am looking for ? Collaboration.

Happy new year from the VP

Hi all,

As it's the beginning of a New Year I thought I'd start a new tradition for BAPCO – a quarterly update from the Vice President – with apologies to all my future successors!

For those who have no idea who I am – a short introduction! My day job is Head of Contact for Surrey Police and I also chair the Telecoms Sub-Group for Surrey's Local Resilience Forum. I've bounced in and out of the Comms world for much of my 27-year career and have been lucky enough to experience the role at every level on the way up! I've been a BAPCO member for about three years and part of the Exec team for the past year. I'm also Acting Chair for BAPCO South East – but more about that later.

Many members may be blissfully unaware of what's been happening in BAPCO recently, some may even be wondering if we still exist. Others have had a passing interest or some direct involvement with events and will therefore be more up to date.

Suffice it to say it's been a difficult time for everyone, resulting in changes to the Executive Board and a number of proposals on the table which are designed to modernise us during the future months and years.

Following Ray Trotter's resignation, Tony Antoniou (pictured right) was appointed as our Executive Director. He immediately set himself a task for his first '100 days' to address some of the finer detail needed to improve our support functions. This has included reviewing the technology as well as looking at our accounting systems.

At our recent Exec meeting in Kegworth, Alan House took the chair (in anticipation of Hayden Newton's impending resignation) with the team expressing their grateful thanks to Ian Readhead for steering BAPCO through its recent challenges. Ian will remain as Immediate Past President.

There were also significant changes proposed to the way BAPCO operates which included:

- Re-writing the constitution
- Rebranding (logo and possibly name)
- Broadening membership to wider public safety partners
- BAPCO's own awards
- Involvement with the newly formed Global Alliance
- Additional European projects to help future funding

The constitutional change proposals include removing the President Elect position, with the remaining three executive posts serving for two years rather than one to provide continuity (plus we figured it takes at least a year to learn the job!).

It will also look for ways to allow greater flexibility for involvement of commercial members, although we still very much want to remain a 'user-led' organisation.

Dave King (CAG Chair) put out an open invite to commercial members to join the CAG meeting and this will continue for future meetings. This is your chance to become more involved!

We're also reviewing membership fees to see how we can reduce cost for public servants and introduce

corporate schemes. It feels like we're going through the whole organisation like a dose of salts, and that's sometimes a good thing to do.

My own experience in the comms world has shown me that as a sweeping generalisation:

- Users don't understand technology – and what's available to them.
- Techies don't understand how the sharp end of the business works.
- Suppliers know what's out there now and for the future but get to talk to techies rather than users/decision makers.
- Decision makers don't understand much of all this.

Apologies to anyone who may not fit into those categories – but I suspect many readers will know exactly what I mean! All in all it's not the best environment to progress technology in the public safety industry.

The BAPCO Exec believes that this is a significant gap that we should be doing more to fill. We have real opportunity to draw all parts of the operational business and commercial partners together across a number of areas such as national accreditation for comms operators, BAPCO comment on industry standards and professional advice to decision makers in the procurement process.

In the current climate of austerity, we're well placed as a not-for-profit organisation to provide services to the public safety community.

Historically we've done this through the annual conference and regional events and road shows. Mindful that public servants are no longer able to travel or attend conferences, we need to find new ways of sharing best practice and providing platforms to demonstrate innovative technologies.

As budgets are stretched we're aware that staff are being asked to do more, meaning there is less time for the more 'peripheral' activities such as BAPCO.

Set against this backdrop, we the organisation work for existing members as well as making it an organisation that any self respecting public safety communications person or supplier would want to be part of. If you can help, please:

- Forward this colleagues
- Check out the website, www.bapco.org.uk
- Feed back thoughts and ideas to me at vicepresident@bapco.org.uk

All the best for 2011!

Sue Lampard

BAPCO 2011 – programme is finalised

The most important civil contingency IT and telecoms event of the year takes place at the Business Design Centre in Islington, London, 13-14 April. The conference has been finalised under the theme of 'Delivering lower cost incident management through technology'.

Designed to educate, inform and provoke debate and collaboration, the conference addresses how to deliver success at a time of exceptional demand, unanticipated threat and financial restrictions.

The speakers at this year's conference are:

- Sir Ken Knight CBE, QFSM, DL, MIFireE, HM, Chief Inspector of Fire Services and Chief Fire and Rescue Adviser in England and Wales
- Commander Richard Morris, Metropolitan Police
- Kevin Taylor, Head of Olympic Communications Project, Metropolitan Police
- Richard Bobbett, Chief Executive, Airwave
- Tom Quirke, Vice President and General Manager, TETRA Business, Motorola Solutions (see p32)
- Andrew Hill, SERCO
- Edward Hamilton, Head of Information Security and Assurance, Analysys Mason
- Paul Kinsella, NPIA
- Christian Flachberger, Frequentis
- Jeremy Kemp, PA Consulting
- Andy McBain, Motorola
- Kieran Timmins, Merseyside Fire & Rescue Authority
- Duncan Swan, Analysys Mason
- Shaun O'Neill, Secricom
- Dr Ahmed Aldabbagh, QinetiQ (see p12)
- Cristina Parraga Nielbla, German Aerospace Centre (DLR)
- Graham Peters, Avanti Communications
- Gary Randle, Cadcorp
- Peter Prater & Reinard Vanloo, Frequentis

- Murray Barker, Nice Systems

The two-day event offers a wealth of networking and learning opportunities, and a unique opportunity to sample the latest technologies that will shape the future of the industry. An exciting new development in the exhibition hall will see representatives from the three emergency services working together in a live rescue scenario. The exhibition is free to attend and open to professionals engaged in incident management, civil contingency response, disaster relief, business continuity and information management.

Registration for the conference is open now, for more information visit www.bapco.co.uk.

Say goodbye to audio cassettes

The NPIA has negotiated a new national arrangement with suppliers that will help forces switch from using out dated audio cassettes to digital technology to record and store police interviews. This will speed up the interview recording process and free up police officer time which can be used on the frontline protecting communities.

The Digital Interviewing Framework Arrangement has been signed with three pre-approved suppliers; Capita Secure Information Systems Limited (formerly SunGard Public Sector); Damovo UK Limited; and Ultra Electronics AudioSoft Ltd. The framework will allow forces across the UK to buy the latest networked digital technology to modernise their interview process at a reduced cost. It also saves forces having to go through individual, lengthy and costly procurement processes.

Over two million interviews are carried out by the police service each year and around 90% are currently carried out on audio cassettes. In addition, interviews have to be transcribed, copied and delivered to relevant parties involved in a criminal investigation including police and lawyers. The whole process from interview to typed transcript can typically take three weeks.

Furthermore, the interviews have to be stored. Some forces can have as many as 750,000 filed away in a storage room and it's estimated that up to 200,000 tapes are used per force each year – all of which need to be filed away – which further takes up police time and space.

Clarity and focus at Counter Terror Expo

Counter Terror Expo takes place 19-20 April 2011 in Olympia, London. The event aims to deliver both focus and clarity to the complex and multifaceted task of protecting people and assets from those with the intent to do harm.

This critically acclaimed event provides a vital forum for debate and plays a key role at the epicentre of the development of future counter-terrorism strategy.

The event includes a high level conference with six streams featuring over 200 leading international speakers, and over 120 free-to-attend technology and practical workshops.

A unique, dedicated exhibition will also be showcasing counter terrorism and specialist security technologies.

For more information, visit www.counterterrorexpo.com.

FLOOD WARNING

The Environment Agency (EA) has unveiled plans for tailored flood warning services to be developed to better prepare utility providers, emergency services, insurers, retail and transport companies for flooding. Organisations can now obtain licences to use live EA flood warning data to develop specialised flood warning products and services. The EA hopes that these will help operators take more effective action to protect crucial assets from potential flooding and maintain essential services. For further information, contact EA or call 08708 506 506.

ICT spend to remain steady

Public sector investment on ICT is set to remain steady over the next five years in the face of the government's spending cuts.

New research by Kable, a provider of market intelligence on ICT for public services, shows that efforts to save costs in other areas and a redesign of many services will ensure that spending to support these will offset cuts in other areas.

UK public sector ICT overview and forecast to 2015-16 shows the sector is in the midst of a marginal decline, but that it is nothing like the scale of the wider spending cuts, and should be reversed to provide mild growth by the end of the period.

The headline figures are for the total spend, estimated at £17.99bn for 2010-11, to slip to £17.75bn in the next financial year, followed by another mild decline in 2012-13.

It is expected that by 2015-16 it will rise to £18.27bn, showing an overall increase of 1.5%.

Lexicon of Terminology

The Lexicon of UK Civil Protection Terminology establishes common, agreed definitions for terms used in the multi-agency arena of civil protection.

Since 2007 CCS has been working with a wide range of partners to build and maintain a single point of reference for civil protection terminology as one of the underpinning elements of interoperable communications and coherent multi-agency working.

The latest release, Version 2.0.1, published in January as an Excel spreadsheet is available for download. Readers are encouraged to cross-reference definitions given in their own organisation's documents and adopt the definitions given in the Lexicon.

According to the Cabinet Office, future versions will encompass a wider range of the terminology used across the range of integrated emergency management activities.

EXEMPLAR AWARD

Cambridgeshire Fire and Rescue Service (FRS) has received an award for the 'integrated application of addressing' at the 2010 Exemplar Awards in Sheffield. Cambridgeshire was one of the first organisations to adopt the National Land and Property Gazetteer (NLPG) with an early recognition of its benefits.

Sheffield Cllr Shaffaq Mohammed presents the award to Nicola Smith, Business Information Manager.

NPIA hails success

The National Policing Improvement Agency has reached a key milestone by helping forces equip a further 10,000 frontline officers with handheld computers three months ahead of the final delivery target. This now brings the total number of devices being used by police officers and police community support officers across the UK to over 50,000, exceeding expectations by 10,000.

The devices provide officers access to information and intelligence allowing them to act on it whilst on the beat. Working more efficiently and reducing trips back to the police station is on average freeing up officers' time by around 30 minutes per shift.

This achievement marks the ending of the NPIA's very successful three year Mobile Information Programme, which has seen the Agency working together with the police service, respond to the need for less bureaucracy in the police service and deliver a

solution to forces in a phased national roll-out, ahead of schedule and within budget.

The programme – which is managed by the NPIA on behalf of the Home Office and the Association of Chief Police Officers – draws to a close at the end of March 2011, and has provided forces with training advice and support and has run workshops to demonstrate the benefits of the devices to officers across the country.

Steria and the Cleveland Police Authority obtain high satisfaction

Steria has announced that its first 30 days of providing services to the Cleveland Police Authority has resulted in a 98.8% satisfaction rating for its call handling, as reported by members of the public.

It has been one full month since Steria began its tenure with the Cleveland Police Authority, delivering the Force's control room, community justice and back-office functions through a shared service partnership announced in June of last year.

In June 2010, Steria and the Cleveland Police Authority announced a partnership which sought to deliver €60 million (£50 million) in cashable savings through the delivery of shared business services. Steria began providing these services on October 1st 2010, including the launch of a new call-back system which asks members of the public about the quality of service they received and provides feedback on performance. Of the possible 5,202 questions relating to either speed of call answer or handling of calls, 98.8% responded either "satisfied", "very satisfied", or "highly satisfied" with the service they received.

Under the shared services agreement, Steria delivers key services including call handling; support for the preparation of criminal case files; and shared business services covering finance, HR, payroll, commissioning and fleet management. Delivering on its promise of putting people first, the partnership is well on its way to improving call handling and enabling officers to devote more time to frontline policing and community engagement, through reduced administrative paperwork.

Frequentis to help prepare for Olympics

Frequentis AG will be working closely with the Metropolitan Police Service (MPS) as London prepares for the challenges of the forthcoming Olympic and Paralympic Games.

Over the next 12 months, Frequentis will work with its partners to extend the MPS's Integrated communications control system (ICCS) and closed circuit television capability and increase accessibility to existing hardware. Further enhancements will include connection to the Airwave public safety radio network via new Vortex ports and a re-designed graphical user interface incorporating additional camera information and map control for camera selection.

Frequentis is the prime contractor responsible for the development and delivery of the MPS's current ICCS, which has been operational since February 2006. It also works in partnership with telent for the delivery of the MPS's automated personnel location System (APLS) where Frequentis is the technology architect, developer and integrator of the system which can report on the location and status of every operational officer.

The Vienna headquartered company has previous experience of working with communications systems for the Olympic Games having provided the Athens 2004 command and control centre with 30 work places linked to emergency telephone connections and analogue radio systems and the TETRA infrastructure provided by Motorola.

Staffs gets ACTIVE

Staffordshire Fire and Rescue Service has become the latest fire service to purchase PHOENIX, the workload and deployment tool from ACTIVE.

Staffordshire FRS were awarded £46 million in October 2009 after a successful bid for funding through the governments private finance initiative (PFI) scheme. The project will see seven fire stations rebuilt as well as the construction of an additional three stations in areas where there is need for additional resource.

Staffordshire FRS will be using PHOENIX to undertake a full analysis of all appliances, stations and crewing as part of their emergency cover review which will determine what the most optimal station locations and crewing arrangements are for the new fire stations. Using PHOENIX alongside incident data and lifestyle data, Staffordshire FRS will be able to instantly see the impact of any changes to the structure and provision of emergency cover in the county.

Jersey chooses Cadcorp for bigger picture

Jersey Fire and Rescue Service has selected Cadcorp's Incident Support Mapping System (ISMS) for deployment in their command support unit. The solution is already deployed in a number of UK fire and rescue services, where it provides a simple and intuitive means of managing resources at major incidents.

Will Stewart, Information Services Manager at Jersey FRS, explained the business drivers behind the decision. 'Last year we were faced with a wildfire which stretched our resources to the limit. We have a limited number of firefighters on the island, and tackling the blaze committed our resources for days at a time. Quite simply, in order to make the most of our limited resources, we need to know where our teams are at all times. We need to see the big picture – immediately and always.'

Kent County Council to implement OpenScape

Siemens Enterprise Communications has been selected by Kent County Council (KCC), as its technology partner to implement a user converged IP telephony and unified communications solution. The council selected the OpenScape Unified Communications Server (OUCS) architecture following a competitive tendering process which began last year.

The new advanced communications technology will assist KCC's working practices such as flexible working and will support the green agenda by increasing the use of technology to reduce travel requirements and enhance working with partners across the county.

Lisa Beck, Head of ICT Operations, Kent County Council, commented: 'The recent Government Spending Review directs the UK public sector to deliver efficiencies and the use of new technology which will be critical to achieving the balance of realising savings while continuing to deliver excellent services to the Kent citizen. We sought a partner that not only had the technology, but appreciated the challenges currently facing local authorities.'

Andy Clark, Director of Public Sector, Siemens Enterprise Communications, added: 'The Invest to Save programme has enabled Kent County Council to position itself as one of the most innovative and forward looking public sector bodies in the UK.'

BTP LIKES CHIS

The British Transport Police (BTP) has awarded a five year contract for abmpegasus Source Management – the covert human intelligence source (CHIS) management solution from criminal intelligence, investigation and criminal justice software solutions specialist, ABM.

Source Management will offer the next generation of covert policing technology to effectively manage confidential informants, delivering better value for the force and the public.

Source Management is used by 80% of UK police services.

Capita acquires Sungard Public Sector: £86m

The Capita Group Plc announced on the 23rd December that it had acquired SunGard Public Sector Holdings Ltd (SPS UK) for a consideration of £86 million on a cash-free, debt-free basis.

SPS UK, a UK business of US-headquartered SunGard Data Systems Inc, is a supplier of ICT, radio network services and communication systems to the emergency services and to central and local government.

The acquisition brings new market opportunities to the wider Capita Group, particularly in the area of ICT solutions and outsourced services to fire, police and ambulance authorities, while also complementing Capita's existing services for the public sector. SPS UK's largest clients include police forces and police administrative bodies, local authorities, the Highways Agency and Airwave Solutions.

SPS UK made an operating profit for its financial year to 31 December 2009 of £11.7 million on turnover of £110.6 million. Commenting on the deal, Paul Pindar, CEO of The Capita Group Plc said: 'This acquisition takes us into the business of supplying secure information systems to police forces and ambulance trusts, introducing new customers and opening up new markets for the wider Capita Group. This is a key new area for Capita and, given the cuts in funding which the sector faces next year, one which provides real opportunities for the Group to add value.' SPS UK will be known as Capita Secure Information Systems.

New team to target police back-office systems

Two of the UK's leading providers of IT systems for police forces, SunGard Public Sector and IPL, have teamed up to develop a joint solution for the police back-office systems of the future.

The new solution provides an architectural blueprint for IT systems to cover areas such as crime, intelligence, case and custody. SunGard and IPL will submit their solution to the Eastern Region Police Force's Athena project, a multi-million pound programme for the procurement of a state-of-the-art police IT system.

SunGard already supplies IT systems to the majority of UK police forces including Kent and Essex. SunGard and IPL jointly developed Kent's current core policing system (Genesis) and have subsequently supported and maintained it 24/7, since the mid 1990s. Paul Jobbins, director at SunGard Public Sector, said: 'This is an extremely important project and will form the foundation of future police back office systems. It was therefore extremely important that SunGard should work with a complementary organisation like IPL.'

O2 UNIFY IN JV

O2 and 2e2 have announced the creation of 'O2 Unify', a joint-venture that will provide businesses of all sizes with the opportunity to outsource their IT and communications needs to a single provider. This is a move that O2 says will add value to its customers, helping them tackle their business challenges and could drive efficiency savings of up to 30%.

The agreement with 2e2, a fast growing IT service provider, is the first time a mobile operator has entered into such an agreement. In addition to traditional converged solutions, spanning fixed, mobile, voice and data, 'O2 Unify' will launch on 2 April with a portfolio of services including Managed WAN and cloud data services.

For your agenda

The Centre for the Protection of National Infrastructure (CPNI) identifies emergency services as one of nine national infrastructure sectors responsible for the UK's essential services - those on which government, businesses and citizens depend for social and economic life and prosperity.

HMG place a high value and importance on protecting critical assets and services operations. Emergency services in particular must protect CNI assets they manage and control and also must respond effectively to incidents involving or impacting upon the CNI assets held by others.

A significant challenge for emergency services is how to maintain continuous assessment of risk as the nature of threats change. Adopting the Cabinet Office Security Policy Framework (SPF) is a useful security compliance target for local implementation of integrated CNI protective security as well as for non-CNI asset protection. Tailoring and customising the 70 SPF security requirements together with the ISO27001 Information Security Management System (ISMS) Standard to your emergency services' operating context will help you to minimise the likelihood of a security breach occurring, and provide you with a robust response and recovery process should you be unfortunate enough to experience one.

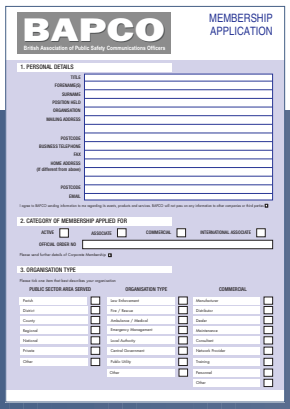
Developing an Integrated protective security strategy requires planning, management, implementation, operation and monitoring. Once in place it will increase protection of your physical, personnel and information assets and enable efficient and effective business operations and support services functions. Achieving this enhanced level of security requires some limited investment (at least in time and effort) to integrate protective security policies and processes across your organisation, your key service delivery partners and third party suppliers.

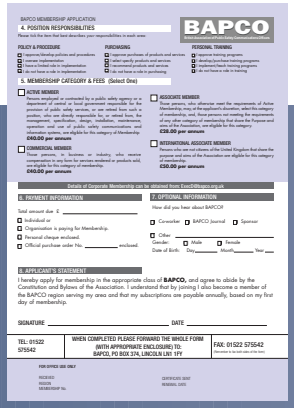
Threat assessments must consider both internal and external sources and actors. Whether you regard your partners and suppliers as internal or external depends on the nature of the service interactions you engage in with them.

The security landscape is changing rapidly (at national, regional and local levels). Traditional physical and personal security risks remain and there are new technology (eg social media and cloud services) and "cyber" security threats to understand and protect against.

Do you have a robust, efficient and effective integrated protective security strategy with continuous improvement enshrined within your culture? Is your security provision an enabler or a hindrance to priority services operations delivery? Can you demonstrate compliance to yourselves, your service partners and customers, and show that you have in place adequate, proportionate and pragmatic arrangements for managing risks to physical, personal and information assets?

Andy Preston is Associate Director with Mentis Management Consultants.


BAPCO
British Association of Public Safety Communications Officers
MEMBERSHIP APPLICATION
1. PERSONAL DETAILS
2. CATEGORY OF MEMBERSHIP APPLIED FOR
3. ORGANISATION TYPE


BAPCO MEMBERSHIP APPLICATION
4. POSITION RESPONSIBILITIES
5. MEMBERSHIP CATEGORY & FEES (Select One)
6. PAYMENT INFORMATION
7. OPTIONAL INFORMATION
8. APPLICANT'S STATEMENT

Launched in June 1993, **BAPCO** 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

promoting integrated ICT for civil contingency responders

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

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BAPCO

THE BRITISH ASSOCIATION OF PUBLIC SAFETY COMMUNICATION OFFICERS

Amendment of constitution proposal

In accordance with the present Constitution, please find below a copy of a letter sent to Tony Antoniou, BAPCO Executive Director, for the attention of all BAPCO members.

16th December 2010

Dear Tony,

Re: proposal to amend the constitution and bye-laws of BAPCO

In accordance with Section 2 of the Bye-Laws of BAPCO, I wish to advise you of a proposal to amend the Constitution and Bye-Laws of the Association. This representation is made over 90 days before the annual general meeting due to be held on the 13th April 2011.

The intention is to carry out a fundamental review of both the Constitution and Bye-Laws, modernising the content and making both fit for purpose. The Executive Committee and elected representatives have already commenced its review and the proposals will be routed through the Association's solicitor. The work is being led by the President, Mr Alan House.

It is very likely that the review will propose new language covering every paragraph of the Constitution and Bye-Laws. This will include amongst other things, new timeframes for the period of office held by elected representatives, having only three elected positions of high office (namely President, Vice President and Immediate Past President), making changes to the rules easier, removing language such as privilege and ACPO members and also articulating our new aims and objectives. This will provide a Constitution instead of Bye-Laws which are easy to understand, written in plain language, flexible and modern. This will also realise a considerable ground to the organisation which is now on a daily basis associated with a fast moving environment covering National, European and International issues associated with its business.

It is suggested that this correspondence is sufficient to meet the current Bye-Laws and because it covers all the content of both documents and this is work in action, no further narrative is necessary.

Please advise me if we need to do anything further to comply with the Bye-Law requirements at this stage.

Kind Regards,

Ian Readhead, Immediate Past President.

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Achieving multi-agency interoperability with seamless comms in multi-national crisis management

Earthquakes, floods and similar large-scale disasters require a multi-national/multi-agency response to effectively manage the resultant crisis. Local communications are often destroyed or severely impaired by the cause of the disaster. Yet, communications play a pivotal role in saving lives during such incidents. The EU-funded project called Seamless Communications for Crisis Management' (SECRICOM) recently demonstrated its latest technology solution aimed at the multi-national/multi-agency management of large-scale disasters.

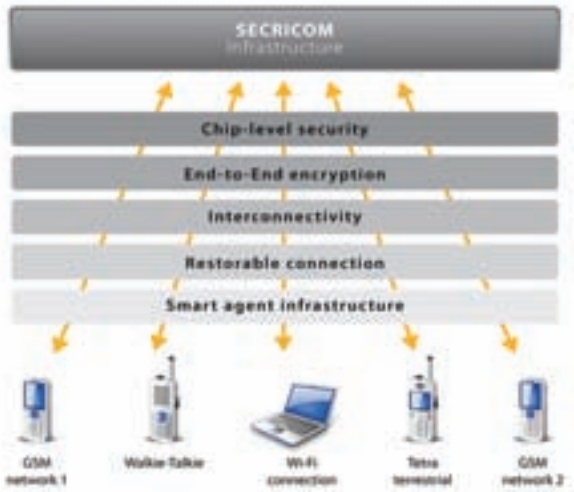
This article is written by Shaun O'Neill, BAPCO European Project Officer (pictured), and Dr Ahmed Aldabbagh, QinetiQ Senior Engineer.

In September 2006, the European Security Research Advisory Board (ESRAB) set the European security research agenda. This included the requirements for future communication infrastructure, summarised as follows:

- Secure against tapping and intrusion.
- Provisioning of enhanced connectivity between various networks and devices).
- Transmission of various formats of information including data, multimedia (voice, picture, video sequences, etc.), and geo-location, etc.
- Advanced search functions.
- Communication resilience and robustness against system failure.

The 13 European partners (including QinetiQ as project co-ordinators and BAPCO for user input) responded to the ESRAB call with a collaborative research project called SECRICOM (figure 1), aimed at the development of a reference security platform for EU crisis management operations. The SECRICOM solutions are based on five pillars:

- Secure encrypted mobile communication on existing infrastructures (GSM, 3G networks, etc) and secure push to talk systems;
- Improved interoperability among a number of existing communication systems, creating recoverable networks and seamless connectivity;
- Introduction of distributed systems for independent handling of information request and response which is more suitable for multi-agency/multi-national information sharing;
- Trust-based secure hardware enhancing confidentiality of data and privacy of users, and;
- Proofing against future user requirements.



Top: figure 1, the SECRICOM Consortium. Right: figure 2, the SECRICOM Vision.

The project is developing a number of complementary information and communication solutions which provide effective delivery of business and decision critical information within a disaster area, where collaborative multi-agency and/or multi-national response is often required. Such information is often carried over a diverse range of user business tools, applications and services including push-to-talk (PTT) voice, telephony, video, imagery, web, databases and collaborative tools.

To date, the project has conducted a series of demonstrations during the year 2010 (QinetiQ in Portsmouth, Jan 2010; BAPCO in London, April 2010), which have helped de-risk aspects of the user-oriented vision of "any information service from any agency, received using any end device technology in any environment over any bearer of communication", see figure 2.

Civil protection (CP) NATO event 2010

In September 2010, the SECRICOM project took an active role in the CP NATO Event which was held in Sielnica (Banská Bystrica) in Slovakia and saw 79 organisations from over 25 countries participating in the event. The event was designed to bring together a multi-national audience drawn from government decision maker/planners, practitioners, industrial organisation and academia who are actively engaged in civil protection. It comprised two activities, namely a conference supported by a technology exhibition and a series of live exercises focused on a particular type of large scale incident.

The SECRICOM project was invited to participate in the event's conference as well as the exercise which was focused upon the multi-agency multi-national management of a large scale crisis based on a Chemical, Biological, Radioactive and Nuclear (CBRN) incident (see figure 3).

At the technology exhibition, the SECRICOM project team gave practical demonstrations of typical multi-agency multi-national information exchange using PTT voice, imagery, email messaging and instant messaging from a range of access devices such as desktops, laptops, mobile phones, tablets and PDAs. The team created the project's Technology and Capability Demonstrator (TaCD) at the exhibition thus implementing a miniature version of the project vision. SECRICOM's innovative Multi Bearer Router (MBR) was employed to form a 'network-of-networks' (NoN) which acted as the underlying communication infrastructure. PTT voice and other information services were then layered over the MBR-managed NoN.

At the exercise, the SECRICOM team scaled up the TaCD to cover the exercise arena. The team used a tent to set up a representation of a Deployable Command Post (DCP), where management and control of the multi-agency multi-national communications were conducted (figure 4). A satellite link was added to provide out-of-theatre communications from the DCP to the offices of two project partners in Spain and Poland. The team employed a number of relay nodes around the exercise arena to ensure connectivity for all users; and issued different handsets to the actors taking part in the exercise.

In both the exercise and exhibition, inter-connectivity between the user access devices was achieved using combinations of WiFi networks, local area networks, GSM and the internet. To emulate realistic intermittent communication conditions during a typical disaster, various bearer systems were manually interrupted during the process of user information exchange (PTT voice and data services). The SECRICOM's MBRs facilitated end-to-end communication resilience by consistently maintaining optimum connectivity by rapidly switching communication traffic (in an automated fashion) between the different sets of communication networks and links employed.

The CBRN exercise was based on the scenario of a dirty bomb exploding on a bus parked in a busy town square with multi-national CP agencies responding to the emerging crisis. The Austrian Fire Brigade, the Association of the Samaritans of the Slovak Republic, Slovak Civil Protection and the Slovak military participated in the exercise. During the exercise, the actors employed the project handsets to conduct PTT voice communications as well as data (figure 5).

The handsets are commercial-off-the-shelf products, commonly found throughout Europe, and were selected as a representative sample of those devices which are currently in use or judged as being of potential use in large scale crisis operations. They included legacy analogue land-mobile-radios, GSM/3G handsets, PDAs, tablets, and laptops. All communications were managed from the DCP. IP played a central role in the process of communication acting as a vehicle for end-to-end traffic delivery.

During the exercise, various demonstrations of the SECRICOM interoperable solution were conducted between the responders within the disaster zone; the DCP; and over the satellite to the remote the out-of-theatre users in Spain and Poland. The demonstrations included voice calls and data exchanges which represent typical information exchanges that can take place during a collaborative multi-agency multi-national operation in response to large incidents.

The exercise was witnessed by the invited international audience of over 100 guests, who subsequently toured the SECRICOM DCP taking a close look at the SECRICOM solutions being developed for crisis management.

Figure 3: CP NATO CBRN exercise arena.

Project achievements from the event

SECRICOM's active role in the CP NATO live exercise provided evidence to support the following achievements:

- Multi-national multi-agency information exchange within the context of interoperability over multiple communications bearers using commercial-off-

Figure 4: SECRICOM's deployable command post.

Figure 5: achieving four-agency interoperability. Figure 6 (far right): the interoperability stack.

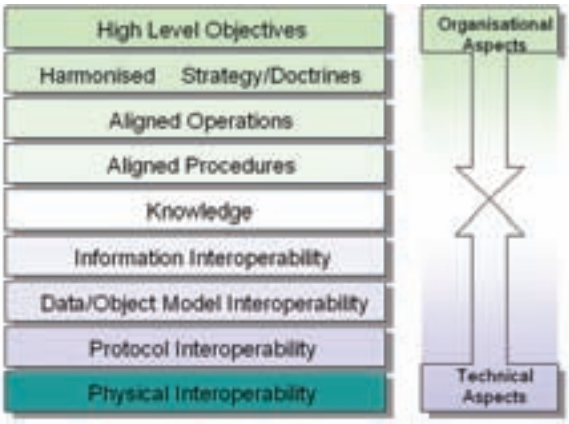
the-shelf products;

- Delivery of resilient voice communication over IP using a network-of-networks with a business-focused MBR acting as the binding routing technology; and
- Strong potential for procurement cost reduction through the convergence of services onto one common IP network.

SECRICOM at BAPCO Conference 2011

The SECRICOM project will be presenting at the BAPCO 2011 Conference, where the project's latest technology development and solutions for crisis management will also be exhibited. The SECRICOM project cordially invites all interested parties from both the user/practioner and technology fields to visit its stand, observe its solution in a rolling live scenario, take a close guided tour of the exhibited technology and have any questions answered.

The SECRICOM project will run for a further 1.5 years, where focus will be made on confidentiality of information exchange, system integrity and network monitoring as well as the theme of interoperability. The project aims to hold its final demonstration in April 2012.



OTHER BAPCO PROJECTS: PROJECT ALERT4ALL

This is a consortium led by the German Space Agency, based outside Munich. This project will be looking at the critical communication processes between emergency services and other authorities particularly at the commencement of incidents and how technology can assist those processes. The project will also be examining how such technology might assist the 'warning and informing' process between authorities and members of the public at large in times of crisis. Of particular interest in this area is the inclusion within the research of the public's use of the latest social networking technologies, such as Facebook and Twitter.

Consortium members:

- German Space Agency
- German Red Cross
- Avanti Communications – UK
- BAPCO
- Tecnosylva – Spain
- Editsoft – Portugal
- Tecnalia-Robotiker – Spain
- University of Stuttgart – Germany
- Defence Research Agency – Sweden
- Federal Office of Civil Protection and Disaster Assistance – Germany
- Eutelstat – France
- Institute for Broadcasting Technology – Germany

This is a 30 month project commencing 1st March 2011. BAPCO's involvement includes taking the lead on the development of scenarios and user requirements and to advise on other aspects of the project where required. The user community will also be heavily involved in the dissemination of information during the project and in the development and presentation of the project solutions. BAPCO is delighted to be one of two user organisations in the consortium and is looking forward to working closely with the German Red Cross, thereby enhancing working relationships and widening user knowledge and contact networks across Europe.

PROJECT 'HELP'

The full title of this project is: 'Enhanced Communications in Emergencies by Creating and Exploiting Synergies in Composite Radio Systems.' This is a technical project which is looking to make better use of wireless communications technology in emergency and disaster relief management. HELP wants to define and establish foundations for the development of network and spectrum-sharing concepts between PMR networks and commercial networks by means of the identification of state-of-the art systems and technologies.

The BAPCO role through its chairmanship of the international user group will be to provide scenarios and a greater understanding of user requirements to enable the engineers to build these solutions.

This project commences on 1st February 2011 and is of 15 months duration.

There are five consortium partners:

- Technical University of Catalonia – Spain
- BAPCO
- EADS Defence & Security Systems – France
- DataX Sp – Poland
- Joint Research Centre – EC.

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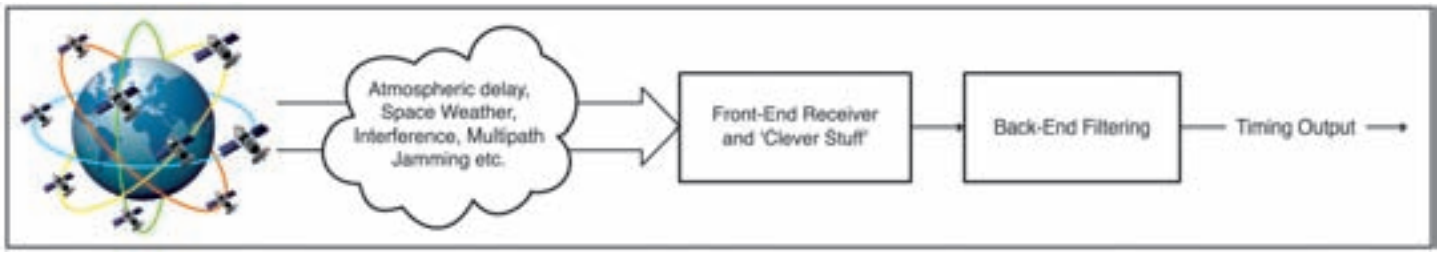
Why PNT timing really is everything



The increased threat of GPS interference (natural or man-made) means modern and next generation coms systems are becoming more susceptible to the loss of the GPS reference. Lessons should be learned from the inherent reliability of national fixed wire telecom carriers, writes Charles Curry, MD of Chronos Technology.

Figure 1: signal path from the GPS constellation to the timing ouput.

All communications technologies require time or timing with appropriate accuracy, stability and reliability to operate effectively or at all. Stability of radio communications transmission, constant digital traffic flow, time slot alignment and traditional services over next generation infrastructure are some of the features that good time and timing bring to communications networks. Aligning, synchronising or syntonising timing to a common 'clock' was made easier with the emergence of a reliable global source when the GPS system became commercially usable. One of the first telecommunications networks to recognise and adopt GPS as a timing source was BT in the mid 1990s. Since then there has been a growth in communications systems and hence applications needing precision timing, many with GPS as a commodity source of 'time', often, unfortunately with little attention to issues of reliability or vulnerability of GPS hence causing vulnerabilities for the infrastructure itself.

Position navigation timing (PNT) technology

In order to comprehend how PNT – (practically only GPS for the present) technology is implemented for timing, the essential architecture of a PNT timing system must be understood. Figure 1 depicts a simplified architecture.

A vulnerability and susceptibility analysis of the architecture can be focused into three main areas. Transmission medium, front-end 'clever stuff', and back-end 'filtering'. The transmission medium defines the path the PNT signal takes from the satellite (or transmitter if terrestrial eg eLoran) to the receiver. The front-end 'clever stuff' defines manufacturers' intellectual property that is bundled up with the GPS engine to limit vulnerabilities to (for example) multipath. Back-end 'filtering' is used specifically for cleaning up the timing output and may deliver a frequency (eg 2.048 MHz in Telecoms, 10 MHz in DVB) or a UTC aligned 1pps signal for other applications such as power systems.

Transmission medium

Natural and man-made phenomena in the signal path from a GPS satellite to the receiver define the susceptibility of a PNT timing system to non-deterministic events.

Natural phenomena include 'space weather', which includes the disruption to the ionosphere caused by solar activity. This is potentially more disruptive to location than timing since 1 nanosecond of delay equates approximately to 30cm of position.

Man-made phenomena include jamming, meaconing and spoofing. Jamming is the most likely activity which will impact a conventional industrial use GPS timing system. Meaconing (delaying and rebroadcasting) and spoofing (false signal) which effectively rebroadcasts erroneous satellite ephemeris are more likely to be encountered in battle theatre situations although accidental meaconing could be caused by the proximity of a GPS antenna with poor impedance matching. Jamming can be split into four broad areas: accidental, criminal, red team deliberate (eg terrorist), and blue team deliberate (eg intentional jamming to defeat a perceived threat of covert tracking).

"Jamming is the most likely activity which will impact a conventional industrial use GPS timing system."

Front end 'clever stuff'

Defined here as the intellectual property that GPS silicon or equipment designers develop to enhance the ability of the receiver to use the GPS signal. This will normally impact aspects like speed to first fix, operation in locations with poor satellite visibility, low signal strength, multipath issues, resilience to interference etc. This article will not address this area in any particular detail as it generally impacts location and positioning more than timing. It is however worth observing that GPS systems optimised for location and positioning accuracy generally do not perform sufficiently well for timing applications.

Back-end 'filtering'

Back-end filtering is a critical aspect of a GPS timing receiver which will define susceptibility to jamming and interference. To simplify this element – consider the types of oscillator which are effectively used as flywheels – temperature compensated crystal oscillators (TCXO), oven-controlled crystal oscillators (OCXO), rubidium (Rb) atomic clocks, and chip-scale atomic clocks (CSAC). These provide varying degrees of protection against loss of GPS signal, called holdover. The amount of holdover varies from none (TCXO), to up to months (Rb & CSAC), illustrated in Figure 2.

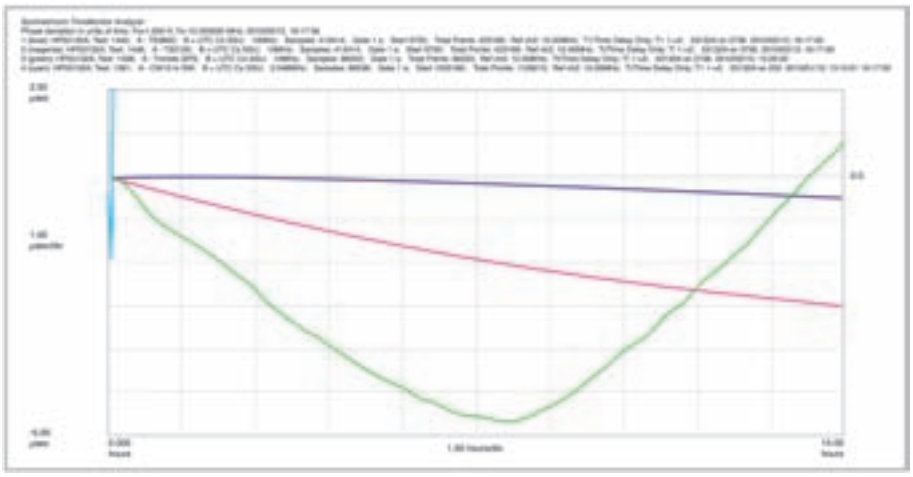


Figure 2: comparison of time error in holdover between TCXO (cyan), low stability OCXO (Green), high stability OCXO (magenta) and Rb (blue)-based GPS timing receivers.

Use of time

How does a network use 'time' to manage traffic flow and also how is that 'time' is implemented into the network?

Network packets 'flow' around telecom networks at a constant rate. The actual speed is determined by the transport layer and can be as fast as ~40 Gbit/s in the highest speed optical transport networks although 100 GbE is under development. All timing has to be traceable to a common clock within any one network.

The types of timing error that must be managed are constant traffic speed errors and varying traffic speed errors (wander). Constant speed errors result in traffic arriving at a switch or aggregator faster or slower than it is being clocked in. Wander is a variation in traffic speed – so may cancel out if not 'too large for too long'. However wander sometimes gets amplified as it passes from none network element to another – eventually becoming 'too large for too long' and resulting again in traffic loss as a buffer empties.

If a buffer overflows slips occur, which result in loss of data at an equipment or network boundary and the impact is becoming more significant in the move to all digital telecoms infrastructure.

All mobile networks use their own national switching and transmission systems to manage traffic at the core. But mobile networks have other challenges associated with timing. These include base station timing for radio frequency stability and call hand-over management, migration to 4G/LTE services Ethernet backhaul, use of third party backhaul and call time stamping are setting new challenges and driving timing accuracy to ever tighter tolerances.

Many user computer systems now require traceable and accurate time-of-day to timestamp financial transactions, call time and duration or time stamping of alarm events amongst others. Whilst NTP (network time protocol) servers exist on the Internet – this is not secure enough for mission or commercially critical applications. So NTP servers are implemented within organisations' networks eg the financial community, mobile operators, government networks etc. The effectiveness of an NTP transaction is dependent on the variation in timing and is generally good enough for accuracies of a few tens of microseconds, but to achieve better performance as is being increasingly required, PTP must be used with an active client designed into the application and the server or 'grandmaster' located reasonably close to the client.

These NTP servers and PTP grandmasters will usually use GPS as the source of UTC traceability and back this up with generally a high grade OCXO or Rb. Loss of GPS would result in the master clock losing time accuracy and so the vulnerability becomes application dependent.

Conclusion

Given the increased threat from some form of GPS interference (natural or man-made), the key message of this article is that modern and next generation fixed and mobile communications systems and applications are becoming more susceptible to the loss of the GPS reference. Even high spec Rb cannot hold up requirements for very long. With the drive to less expensive hardware solutions and the commoditisation of GPS technology, the situation is unlikely to improve.

Whilst new timing technologies ie SyncE and PTPv2 are emerging, a move to low cost GPS timing 'engines' may seem less complex and more cost effective, but depending on the application, may have serious consequences if GPS was lost.

"With the drive to less expensive hardware solutions and the commoditisation of GPS technology, the situation is unlikely to improve."

Lessons should be learned from the inherent reliability built into national fixed wire telecom carriers who not only use the highest spec Rb, they also build in 1:1 resiliency, network backup to an independent reference and support contracts to ensure that the risk of two failures at the same time in a critical path are minimised.

This article is an extract from Dependency of Communications Systems on PNT Technology White Paper, written by Charles Curry, Managing Director Chronos Technology, and submitted to a study by the Royal Academy of Engineering.

A dash of simplicity

During last year's Emergency Services Show satellite broadband specialist Excelerate unveiled its answer to simplifying the management of complex technology in mobile emergency command vehicles. BAPCO Journal caught up with CEO David Savage to find out more about the DDMI.

The DDMI can be configured to be the default screen on board a command and control vehicle, with automatic activation when the vehicle is switched on.

Excelerate's new Digital Dashboard Management Interface display is specifically designed to simplify and join together the plethora of disparate technologies found in today's modern command and control vehicles. This can include wireless radio, laptops, wireless nodes, CCTV cameras, TV displays, satellite communications, and TETRA, amongst others.

Command vehicles fitted with the Digital Dashboard Management Interface (DDMI) will enable operators to monitor at a glance the functionality of every IP based technological component on board – and in the field. David Savage, CEO of Excelerate, explains more: 'These types of vehicles have many display screens and video screens. The main DDMI host screen acts as checks and balances – it shows the status of all the different comms systems, networks and devices. In effect if the buttons are all green then there is nothing to worry about. If something is amber, blue or red, then it needs to be investigated. A red status could mean something as simple as the particular system has not been switched on.'

The system is constructed on a layering principle, each layer representing different types of functionality. One layer for example displays the icons related to all video display systems on board (eg whiteboards, plasma screens, display screen etc). The display and video feed screen allows an operator to change which screens are connected and can see any feed by simply using the intuitive drag and drop capability of the DDMI – including live feeds from the field.

While an interface that is simple and intuitive to use in the heat of the moment is perhaps not exactly revolutionary – even if tremendously useful – the DDMI goes much further than that through a remote viewing functionality.

There are two benefits of the remote functionality. Firstly, the DDMI can be accessed remotely using satellite broadband from authorized locations, so an officer at HQ can remotely view the same information that is displayed on the interface. 'The whole point of having a broadband link is that theoretically you can link together incident rooms in HQ with command vehicles, so they can see what is going on and communicate. As long as there is enough bandwidth then a fire chief can see what operational personnel using video technology is seeing 12km down the Channel Tunnel, for example, be it from his desk or even hotel room, on his iPad,' explains David.

The second benefit is that Excelerate can remotely access the interface and take corrective action if something is not working. 'Operators can concentrate on the incident and we can concentrate on everything working well. We utilise the onboard broadband as the core bearer and use GSM as an automatic fail over.'

Additional functionality includes a PBX that enables different types of radios and mobile phones to be quickly and easily patched together and linked into conference calls, again via simple drag and drop icons. This has been made possible through a system developed for the national ambulance service HART (Hazardous Area Response Teams) program. 'What we developed as part of the HART interface is the ability in each vehicle for all voice comms to go through a central comms hub, converting each to the same standard so they can all speak to each other. So if a call comes from an Ambulance Trust, it can be patched through to someone at an incident 800 meters away on their UHF radio, simply by dragging/dropping icons.'

Should there be an issue or action that requires the operator's immediate attention, an alert system pulses red for guidance to the appropriate screen. One such instance could be a call via the PBX system, giving the operator the option to take or forward the call onwards. 'This assists with the management of all systems and prevents the need for one operator to be reviewing multiple screens at all times or even require more personnel.'

David adds that Excelerate's clients will also have the option to configure the DDMI as the default screen on board their command and control solution, so that it is activated automatically once the vehicle's systems are switched on – avoiding configuration changes by unauthorized users.

The DDMI will be offered as standard in new integrated solutions orders; David says that this makes sense for the company due to the savings involved in running/fixing diagnostics/technical problems remotely. 'Our engineers can also interface together other technology that we haven't supplied, but this is likely to be chargeable depending on our engineer's time required to do so.'

Siveillance launched in the UK

Siemens has launched a portfolio of intelligent command and control security platforms for the first time into the UK – BAPCO Journal finds out what the new products can add in terms of operational value to a market that is arguably well served already.

So why launch a new command and control platform into the UK? David Pickles, UK Head of Siemens Security Solutions, explains that the timing is right because the UK has now reached a certain level of connectivity, with legacy systems now being replaced with digital solutions that enable higher sophistication.

This is key because what makes the new portfolio of products (Siveillance Command, Siveillance Vantage and Siveillance SiteIQ) unique is its integration of security and command and control. The security aspect relates to functionality such as CCTV, alarms, access control and perimeter protection.

The command and control aspect revolves around three display screens. The first is a GIS map display of all resources in an area, displayed in 2D or 3D, for instance location of hydrants or police cars in a particular area. The second screen displays all current incidents, and the third displays the status and availability of resources. The computer aided dispatch function lists prompts for existing emergency calls, and can also provide access to specific information such as hazmat databases. All actions are automatically logged in the system.

The system includes Siemens Command Mobile, which connects mobile data terminals (eg in cars) to the main HQ system, providing real time updates from the field.

The underlying concept is that the Siveillance range will not only act as a security platform but also manage incidents to their conclusion. Also relevant to the timing of the launch is market demand, and David says that clients are now requesting and expecting more functionality from their systems. 'They want to be able to further integrate processes and policies, and they want it to be traceable.'

What Siemens believes will make their new technology attractive to the ES is the fact that it is built on the premise that it can be used for sharing command and control information across different agencies. 'It allows all stakeholders to communicate instantly, rather than operate as separate units, which – as was seen during the London 2005 bombings – is an ongoing challenge, especially when as many as 15 stakeholders need to be kept informed during the course of a major incident.'

The Siveillance Command solution has been built with the big picture in mind, and with an eye fixed on the future. 'What if we had a central command platform that had built in links with all the emergency services and related stakeholders such as underground, street surveillance, etc? Such a platform would have provided better management of the London bombing, and our solution can be quickly scaled up or down.'

Such a system has already been installed by Siemens for the Dubai Civil Defence, where management of command and control sits side by side with street surveillance. Rather than physically putting all the different agencies together in one room, in the UK the model would instead be based on providing readily available access to incident information. In a police incident that escalated to requiring ambulance attendance, for instance, the system would quickly request that presence and provide the relevant information, allowing the ambulance service to organize its resources accordingly. This type of functionality, explains David, takes into account the many organizations that require incident information – but to a lesser degree in terms of detail – but don't want to pay for a full-blown command and control system. 'The great challenge is for organisations to lower costs whilst reducing risk and improving operations and security. A technological step change is needed to enable all sectors to meet both current and future security challenges, as well as maximize their investment in technology.'

David is keen to hear what the ES think of the Siveillance concept (see it on You Tube), and it is worth noting that the technology is field tested and as well as in Dubai, it is used in Hamburg (seamless integration of police, fire and ambulance in two separate locations), and Bodo Airport in Norway (advanced wide area network solution).

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Could one COP unite all agencies?

Nearly two years ago BAPCO Journal reported on a software solution that provided a common operational picture that – crucially – could be shared across multiple agencies. West Yorkshire FRS is today the first emergency service to take on the Gaist Command Resource Platform (CRP) as part of a new command and control unit purchased from Excelerate. Gaist's overall aim is to create the first web-based national multi-agency collaboration platform.

The beta system of the Command Resource Platform being trialled by WYFRS with all blue lights, and with observers from CLG and local authorities.

The command and control software that West Yorkshire FRS is integrating into its ICU has a number of benefits, not least of which is that it is highly portable, adaptable, cost effective and designed for rapid deployment. Gaist CRP has been designed to provide a common operational picture either for a single agency or multiple agencies, with all Bing GIS mapping held securely on the Bing server.

Crucially, the system is not limited to major incidents use, and indeed it has been specifically designed to be used in day-to-day tasks such as risk management assessments, asset management, and home fire inspections (amongst others), and can be extended to provide a full corporate web GIS.

In addition, Gaist CRP provides shared access to major emergency plans, whilst linking together ICUs to all stations and partner agencies.

Steve Berry, who retired from West Yorkshire FRS in August last year after 31 years of service, is now working with Gaist on the implementation of the new system at WYFRS. He explains the difference the new system will make to WYFRS: 'Previously the people inside the incident command unit could be working 20 minutes behind what was going on in the incident ground. You would be waiting for information to come from different sectors, essentially via a system of runners. The new system will allow the commander to work in real time because the information will be provided instantaneously via mobile handheld devices in the field.'

What is more, the system will not just be used for command support: 'Gaist CRP links to a number of West Yorkshire FRS data sources, which means anybody on the internal network can access it and use it for training, risk assessments, debriefing using the incident timeline – the possibilities are vast.' As an example, Steve points at home fire safety visits: the system can be set up to show which premises have received home fire safety checks in the past 12 months.

> "We'd rather have a widely used, low cost service, used by all CAT1 and CAT2 responders, because we think the real value is that everyone can talk to everyone else."
>
> *Steve Birdsall, Gaist.*

Gaist will be training 24 people in WYFRS to disseminate the training to command unit staff and supporting officers, as well as control staff.

So what is it about the system that WYFRS like? Steve Birdsall, CEO of Gaist (and an ex-retained firefighter), continues: 'Apart from the fact that the only ICT required is an internet connection, the number one issue is the system's intuitiveness. In the incident ground everyone is under a lot of pressure, and they don't want to be learning how to use a complex GIS or document management system – they want rapid access to key information on demand.'

Secondly is the cost, and Steve Birdsall points out that traditionally, similar systems have been expensive due to individual licensing structures where even having 20 users has been costly. 'Our system at entry level allows for 500 users, which means it is aimed firmly at a corporate level where it can be used for daily business – it must be remembered that business as usual operations is only a phone call or downpour away from a major protracted incident.'

Richard Hagger, Station Manager Ops Response, WYFRS, explains where his brigade is with the new system: 'The beta system was trialled at an interoperability exercise involving all the blue light services with observers from local authorities and CLG on the 28th January. The FRS

were able to show the position of their resources, cordons, wind direction, and decontamination point on the aerial view of Leeds/Bradford Airport. This view was also available to the police and ambulance via a web browser facilitating information sharing in real time. This proved a great success. This system will be a major step forward in incident and risk management.'

The multi-agency integration capability of Gaist CRP is being warmly welcomed by the blue lights community, adds Steve, because it enables fire services to integrate the system further afield, such as with local COMAH (control of major accident hazards) sites, meaning common operational pictures could be shared between public and private command and control organizations such as at major industrial sites.

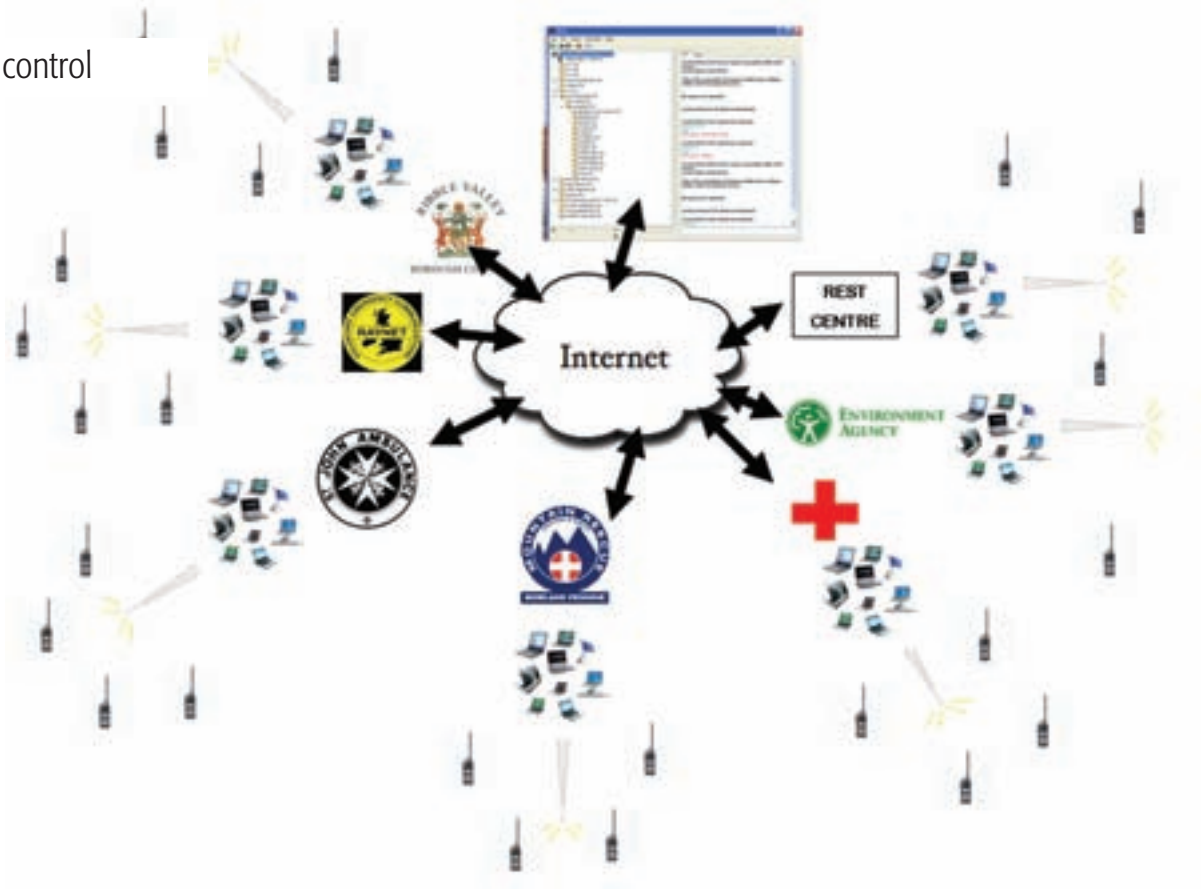
The multi-agency aspect of Gaist CRP is already proven in a different environment, and today most of the councils in the north of England are using a version of the system to upload all street works information – including road closures due to weather etc – onto one common platform that is also available on the Internet to the public. 'Road Explorer UK is a free service which is being championed by a number of councils including the North West, North East, and Yorkshire and Humberside Traffic Management Groups.'

Having all the councils working on one platform is part of Gaist's business strategy, and the company hopes to leverage this commonality with other useful tools. 'The problem previously with this kind of technology was that it was very expensive, either for command and control or traffic information systems. Furthermore, this kind of investment was usually centric to one organization because other related agencies usually couldn't afford it, which meant the benefits could not be propagated.

'We've turned this on its head, because we believe that having one big expensive system that might only be used by 10 or 15 organisations nationally does not further the multi-agency agenda.

'We'd rather have a widely used, low cost service, used by all CAT1 and CAT2 responders, because we think the real value is that everyone can talk to everyone else. And once everyone is on the same platform, with a common way of thinking and the same protocols – then the whole agenda of multi-agency collaboration will follow naturally.'

Gaist's CRP system has been selected to play an integral role in Project Radiance, sponsored by the Cabinet Office and DSTL (Defense Science and Technology Laboratory) which aims to demonstrate to the emergency services community that 'commercially off the shelf' systems such as the Gaist CRP can deliver a significant step change in incident management capabilities. It will be demonstrated by the Cabinet Office in a high profile exercise at the Home Office Scientific Development Branch (HOSDB) Exhibition in March 2011, where the CRP system will be used to integrate a number of responders including an air sea rescue helicopter with Gaist CRP being used in the on-boad command suite.



By using the Internet EARL can securely connect different UHF/VHF radio networks commonly used by the orange light services.

Maximising existing radio networks

With Lancashire County Council now on board, word is fast spreading about a new application that quickly and cost effectively provides interconnectivity between UHF and VHF radio networks and computer networks. Jose Sanchez de Muniain caught up with Simon Land of ARL Communications to get the latest on EARL, a technology that is increasingly being adopted both for day-to-day business as well as crises.

EARL (Emergency Area Radio Link) is designed to provide secure, interoperable radio and VoIP (Voice over Internet Protocol) communications for first responders and event communications. This includes radio to computer (and vice versa) voice communications; computer-to-computer voice and data; radio network to radio network voice coms; and various other permutations.

At the heart of the technology is internet connectivity (via GPRS, 3G and 3G+, ADSL, Enterprise, BGAN Satellite), which means that a lap top with a connection to the internet either wireless or mobile can access the EARL system and provide access anywhere in the world. This means that, theoretically, an officer on holiday in Barbados could chat with a mountain rescue volunteer at the top of Snowden, the one with his lap top, the other with his radio. Or, more likely, a council officer could quickly send messages to all refuse collectors in an area from his PC.

The concept behind EARL originated in Ribble Valley Borough Council in Lancashire, to improve the communications assurance side and business continuity capabilities of its department, as per the Civil Contingency Act 2004. Simon Land, a founding partner of ARL as well as an deputy chair of Durham's local resilience telecoms subgroup, continues the story: 'They came across a piece of software that worked very much like video conferencing on Skype, and then started tweaking it. Ribble Valley got to the point where they could start talking about it with other Local Resilience Telecom Sub-Groups, and I quickly realized that with some additional investment the functionality could be expanded. We then founded ARL and offered to develop the product, on the understanding that all emergency planners in Lancashire would receive the finished product.' The end product is now used by Lancashire County and Unitary Authorities emergency planners, interfacing with existing VHF and UHF radio schemes – meaning that each scheme can be accessed anywhere from anywhere in the world using almost any PC with as little as an encrypted USB stick and the correct passwords.

'This was the intention from the beginning – rather than invest in a new radio scheme or new equipment, use what there is in place already and take over from there,' adds Simon. 'We are currently working with mountain rescue teams in the North East, where they are looking to install repeaters across the whole county, and interlink them using

EARL. The benefit here is that if mountain rescue wish to do so, they can provide access to the network to other people, achieving interoperability easily.'

In terms of hardware, all that is needed is a gateway (in the form of a base station interface) and a connection to the internet. 'It is a bit like Skype, but it is fully secure as it is hosted inside a government building. It can also be connected to any radio scheme as long as there is a microphone connection on the radio.'

While the system can be used to connect to TETRA schemes, Simon clarifies that due to the security surrounding Airwave, in the short term this may not be feasible: 'We initially saw this as an orange light solution – but it is suitable for all responders .'

There is potential for the technology to be used for critical infrastructure applications, explains Simon, where the mobile phone network is used to transmit information machine to machine – eg to indicate water levels at a pumping station. In the scenario where the mobile network fails, potentially a member of staff would need to be sent to a reservoir to inspect the meters. 'If there is no mobile phone network then the only way to report to silver command is using satellite phones or IBIS radios – which are few and far between.' Some utilities with their own radio systems could use EARL to communicate directly with silver command: 'And potentially if there was an incident involving the majority of society, people like taxi drivers with a radio scheme could even watch a meter and report on it, using a quick deployable gateway.' The portable gateways are the latest addition to the EARL portfolio, and consist of a small box that connects to any network satellite or 3G. Interestingly, because voice data transmitted across EARL uses very little bandwidth, it is cheaper to transmit this data across satellite than it is to make a normal satellite call. 'It is charged per megabyte, and we use so little it is very cost effective. If you turned you satellite phone on for 24 hours it would cost a fortune, but for data it would be very little and it would be there all the time.'

Simon sees EARL as a cost effective way for blue and orange light agencies to be truly interoperable. He points out that incidents don't respect borders, and in the event of a rail incident on the border between two counties, using the EARL system responders such as St John Ambulance, emergency planners and Red Cross could communicate instantly. 'Rail passengers are normally taken to a local school where information is usually communicated by mobile phone or RAYNET (Radio Amateurs' Emergency Network). With EARL, the school's broadband would enable communications between the people managing the emergency centres and all parties involved.'

"It is a bit like Skype, but it is fully secure as it is hosted inside a government building."
Simon Land, ARL.

Incident-free buying

Incident command units are expected to pack a stronger techie punch – while at the same time budgets are getting tighter. How can emergency services ensure that procuring that ICU runs as smoothly as possible? BAPCO Journal speaks with Project Design Engineer James Dale of vehicle conversion specialist Bott.

"We've seen a customer hanging up a white board on an older vehicle, and hitting a cable with one of the screws."
James Dale.

What is your top tip for ensuring the procurement process runs smoothly?

Sometimes a pre-tender consultation takes place which enables companies to meet the end users and go through the specification prior to tender release. I would suggest such a consultation period always takes place prior to releasing tender documents, as companies can pick up more information from those meetings than from the tender documents, which are often down to interpretation.

A few years ago London Ambulance tendered for major incident response vehicles. They held a conference in Millwall Football Club because the tender was for three sets of ten vehicles. We had the opportunity to see existing vehicles and a prototype, and a seminar afterwards explained how the tender would run and how potential suppliers should conduct themselves within the tender.

Those few hours and the seminar gave us a very good feel for the project, as some of those specs can run to 70 pages just on the conversion itself. Being able to read the spec in conjunction with photos taken on the day is a great help, as is meeting with the technology solution providers.

Do mistakes occur at tender level?

That is another benefit of the pre-tender consultation – if a bit of information is omitted you get the opportunity to ask questions, whilst after the tender is released it will not be questioned. However, the omission may lead to problems later in the design stage, and could affect the financial side.

An example could be that not enough information has been provided on the spec regarding a power system. A power system that supplies 4kw may be required, but the tender may not specify whether it be a portable generator or an in-built silenced unit. A portable generator may only cost £1,500, while a top-of-the-range inbuilt Fischer Panda generator would cost in excess of £10,000.

Presuming Bott wins the tender, what is next?

When designing any project there are some key requirements to consider, particularly around third party involvement. Typically when doing ICU conversions we need access to key partners such as the IT telecoms provider, fleet manager, end user, procurement manager, etc. We like to operate a one stop shop where we effectively project manage the whole conversion, and get all the parties round the table so that there will be no conflict later. It is also important because the supplier of mobile comms may not necessarily have the expertise in the integration of technology into a vehicle, and not realise it is not as simple as bolting something on the roof.

What kind of considerations are there regarding technology integration?

It does come down to basics. We look at how the items will be used, powered, stowed, and how they interact. Size and weight are crucial, because for stability you can't go travelling with heavy objects high up in the vehicle. You have to consider how that vehicle acts when it is moving, and what would happen if there was a head-on crash at 30mph – are the fittings strong enough.

A general design layout from the end user is always helpful, as well as information on what equipment is required, and how many crew members will be operating it. But we like to have some flexibility in terms of the actual stowage and restraint equipment, as we have agreements with electronics and power suppliers and we can generally get a more cost effective solution. A lot of forces already have contracts in place with telecoms suppliers, and that is not a problem as we've generally worked with them before.

What single piece of equipment has the biggest impact on the final design?

Power systems are the main part of a conversion, and the numerous systems available all have an impact on design.

Certain aspects generally determine what power systems we use, such as available pay load, space availability, noise level, vibrations, generator use – is it remote control from a panel, or will it be offloaded and run away from the vehicle.

Generally a tender will specify a noise limit and whether it is mounted on anti-vibration mounts, which indicates the

type that will be used. Other factors are whether the generator will be air-cooled or liquid-cooled. If liquid-cooled, then it can be kept in an enclosed compartment, which reduces noise levels. Liquid-cooled is one of our preferred choices on high spec generators as they require very little ventilation. Air-cooled units require access on the side of the vehicle to suck in the air.

And in terms of technology?

Satellite systems, LCD screens, radio systems, sound systems – we have to ensure none of them interfere with each other. Something as simple as a mobile phone can interfere, and it all has to be taken into account. For Cornwall Fire we had to install a roof-mounted air conditioning unit, and we had to take into account the distance between that unit and the satellite system to avoid electrical interference.

How can forces future-proof their vehicles?

Typically ICUs are expected to operate for 10-15 years, but in this current climate this could be stretched and a key concern when designing and converting a vehicle is how technology will change and what technology may be installed later when there is budget. Grampian Fire, for example, had a limited budget for their ICU, but as satellite and additional radio equipment could be added in the future we built a frame that could handle that.

We try to future-proof as much as possible. Wiring is generally held in three separate trunking compartments for electrics, comms and cat leads – all accessible. For areas that aren't accessible we ensure panels are removable.

We use modular design storage, with shelf units and end frames with consistent pitches and holes, so additional drilling is not necessary for adding modules.

We have seen many older conversions where the cabling has been fed behind carpeted plywood, which means you cannot access those wires if something goes wrong.

TOP TIPS FROM BOTT

- Hold a pre-tender consultation.
- Use a framework agreement.
- Leave some flexibility in the overall design.
- Leave as much response time as possible for tenders: 60 days at least.
- Future-proof: purse strings may be relaxed later.
- Specify in the tender that all equipment and wiring is readily accessible.

Business intelligence for the public sector

Intergraph consultant Nick Chorley explains why business intelligence is a smart idea for public safety.

"BI is not a new technology: in 2009 analyst Gartner measured the BI market at $9.3 billion, and its research has identified it as a continuing management priority."

Nick Chorley, Intergraph.

Business intelligence (or 'BI') is an umbrella term that refers to a range of software applications used to analyse an organisation's raw data. Many sectors are already using BI to improve company decision making, cut costs and identify new business opportunities; and according to CIO.com, executives often use BI to identify business processes that are ripe for re-engineering.

However, to date BI's penetration of public safety and security organisations has been very limited. Why? A 2010 survey conducted by The Economist Intelligence Unit identified culture as the main barrier to implementing information strategies in the public sector. Perhaps, but the performance-enhancing and cost-cutting potential of BI technology are worthy of public safety consideration.

BI consists of several related activities including data mining, online analytical processing, querying and reporting. It allows the user to quickly access a wealth of data from systems such as CAD and RMS (records management).

BI tools 'mine' the data hidden within complex database structures and integrate it into an organisation's business processes. The user can use BI systems to generate and present quality reports from CAD and other public safety applications; view and explore information from those applications, and do up-to-the-minute performance monitoring using intuitive dashboards. For example: a police agency needed to quickly access critical blue light dispatch call information; however creating reports from its computer-aided dispatch CAD system took more than 14 different steps to generate a report. Using Intergraph's Business Intelligence for Public Safety solution the agency can now more swiftly access and analyse critical data on emergency calls, run reports in minutes with one click, and monitor police performance more efficiently.

In another case a US federal agency, which investigates murders, fraud, drug-related crimes and people who steal secrets and sell them to other countries, has recently shifted its focus to not only investigating and solving but now also preventing crimes. It uses BI to analyse trends in criminal behaviour that then allow it to take proactive measures against crimes, before they happen; and because BI is suitable for non-technical users, non-IT staff are able to analyse information, increasing productivity.

Being a latecomer to BI may be good news for public safety, as developers have had time to iron out the costly deployment complexities that have sometimes dogged this technology in other markets. The Business Intelligence in Public Safety solution achieves this by combining public safety, application-specific information from Intergraph's command and control software with Business Objects' BI infrastructure software. The result is a commercial off-the-shelf BI solution for public safety use. The underlying information sits in a single pre-configured warehouse and reporting universe, which acts as a foundation and has been created from command and control data, but which can also be extended to include other related or derived data, such as call handling data from a telephone switch.

In a BI environment of this kind the user sees only familiar public safety terminology on their screen – but (actually) every term they see and use relates to the underlying database. This process gives the organisation access to a large amount of additional, highly structured information that is considerably more dynamic than simple reporting, but without the deployment issues referred to above.

BI-generated information can also be distributed through a secure, pre-configured Web portal that allows controlled access to a wide variety of users such as command staff, mobile officers and crime analysts. This type of specialist, dedicated BI environment improves the organisation's analysis, planning and operational decision making. It maintains information for media/public; and it improves resource allocation because it promotes better distribution of workloads and equipment, helping the user to deploy resources based on real-time, accurate shift information.

Performance monitoring is carried out with the help of intuitive, highly graphical, non-technical management dashboards with associated analysis engines. These allow the public safety user to relate their strategies to goals and metrics, measuring performance in real time and over time.

Using BI, budget planning reflects actual staff requirements, workloads and other very real information. Operational problems are flagged earlier for action, and steps to optimise performance are highlighted. In these and other ways, BI has the potential to help the public safety user achieve operational excellence, and cut costs.

Data helps target new recruits

Leveraging the full potential of your socioeconomic data is one way of getting the biggest bang for your buck. BAPCO Journal talked to Nicola Smith of Cambridgeshire FRS to find out how some creative manipulation of Experian's Mosaic Public Sector database is resulting in a recruitment drive that is not only pin-point targeted but could result in significant savings in recruitment.

When Cambridgeshire FRS's Business Information Manager Nicola Smith saw that the new version of Experian's Mosaic Public Sector of demographic information had been refined and modified she realized that the changes could lead to some new applications for the fire service.

Mosaic Public Sector is used by most UK fire and rescue services, and it provides a detailed understanding of individuals' demographics, lifestyles and behaviours, classifying all UK citizens into 69 types and 15 groups.

Cambridgeshire FRS has been using Mosaic for a number of years primarily for home safety fire checks, matching real incidents to demographic data in order to target communities most at risk.

The question for Nicola was whether the new database could be harnessed to better understand the types of people who would be interested in becoming retained firefighters – and more interestingly, find out where they lived. It is widely recognised, retained firefighters are notoriously difficult to recruit and yet they can constitute the backbone of emergency response in rural areas.

If such profiling could be carried out, and the geographical areas identified where these potential recruits lived, then any recruitment exercise could be much more targeted and cost effective way,.

Nicola takes up the story: 'Our methodology was to take our existing retained personnel data, including addresses, and match it to the Mosaic database. This gave us a profile of the trends in types of groups that we were currently attracting to these posts.'

Nicola's team then did the same with full time firefighters: 'Having profiled the entire operational component we were able to appreciate the differences between the two groups. We then took the position of each fire station and displayed it against the Mosaic households within a five-minute travel time as one of the prerequisites of being a retained firefighter is that they live within five minutes' of the station.'

The end result was two-fold. Firstly, it revealed the geographic locations of the types of people that matched the profiles of retained personnel already employed in

Cambridgehsire FRS profiled its entire operational staff to understand the differences between full-time and retained firefighters.

nearby stations. Secondly, it also revealed profiles of people that didn't necessarily match those of retained personnel nearby, but did match the profiles of full time operational firefighters. 'This showed that the concept of working for the service would appeal to that type of person. We then looked into what it was about the fire service that appealed to that particular profile – for example was it the inclination to give something back to the community, or the fact that being self-employed they could be flexible with existing commitments?'

So how has that better understanding been used in real life recruitment? 'We understand now that different people might be attracted to the service for different reasons which therefore allows us to target them better, for example by holding a community-based event and ensuring that firefighters from that particular profile are present at that event, so you have like-minded people conveying the message.'

A large part of the project has involved discussing the results of the analysis with existing crews and seeking their feedback. 'We've marketed the Mosaic concept so that our personnel can look themselves up on it and report back whether they think it matches with their expectations. We've had very good feedback so we are confident the project will come to fruition.'

NEWS FROM EXPERIAN

BAPCO Journal catches up with Jo Munton and Bruno Rost of Experian to find out the latest developments from the data analytics specialist.

Experian has introduced a new service to assist in enforcement investigations surrounding fire safety legislation offences and breaches. In addition to this enforcement capability, the service provided by Experian, can also be used as a preventative tool to prioritise high risk properties. "If a business is not maintaining its fire precautions then the fire service might want to intervene before an incident occurs," says Bruno. These incidents may be an automated fire alarm, a maliciously set fire or a fire to a commercial property, all of which are costly in terms of turn out and resource allocation to a fire and rescue service.

The attraction for the fire service is that Investigator displays past incidents of fire safety breaches associated with business owners: "If a business is not maintaining its fire precautions then the fire service might want to intervene before an incident occurs," says Bruno.

The next development relates to the Mosaic Public Sector database, a people classification system that divides the UK population into 15 key socioeconomic groups and 67 individual types, explains Experian's Central Account Manager for Community Safety Insight, Jo Munton. Most fire services use the data to identify households most at risk of fires: "It has proved very effective in allowing the fire services to prioritise home fire prevention visits and maintain their hydrant servicing programs."

Experian has added a mapping tool called Micromarketer Xpress to Mosaic Public Sector, allowing the households most at risk to be visually mapped onto a screen. "This enables the information to be used by central command in a more strategic way, such as in planning the activities of the fire crews based on the risk propensities at household level."

On a practical level, a fire crew involved in a fire prevention event at a school can – using Micromarketer Xpress – maximize its time by identifying and visiting at-risk households on the return journey to the station. At present the mapping is being used as a physical print out taken with the crews; "What it does is provide a clear and visual steer to those on the ground on where the most vulnerable groups are," summarises Jo, adding that South Wales Fire and Rescue Service has implemented this process using hand-held devices deployed to each fire station.

At a time when cost savings and efficiencies are at the heart of emergency services' radar, Jo and Bruno are keen to champion the resource allocation capabilities of Experian's data analytics products.

"In the latest cost cutting cycle decisions relating to fire stations need to be evaluated

correctly, and we do have the capabilities to assist with integrated risk management plans."

The combination of data and mapping tools, explains Bruno, can contribute in making a successful risk management plan, something Experian has been doing in the private sector for some time. "We are working with Waitrose who are palling to increase their range by 9%," says Bruno. "It is basically a combination of looking at the dynamics between supply and demand, analysing what is being supplied in a number of retail outlets, and mapping that out digitally. We can see the whole demographics of a catchment area, and ascertain whether it sustains the retail provision on offer. The same principle applies to libraries, GP surgeries, and fire service command areas."

The types of projects that Experian could assist with include providing drive times to/from particular locations and providing in-depth demographics on a particular catchment area.

Tomorrow's multimedia storyboards

The US is leading the world by taking the first steps to allow people to not only call emergency number 911 but also to rapidly send videos, photos and data. The repercussions of this are expected to be massive – not only in terms of response, but also in terms of incident replay and reconstruction, says Paul Collins of CyberTech.

At the end of 2010 the news came that the Federal Communications Commission would be seeking public comment on how the so-called Next Generation 911 (NG911) project would help the public obtain emergency assistance using advanced communications technologies. It acknowledged that in some emergency situations, texting could be the only way to reach out for help. This in addition to the fact that many people with disabilities rely on text messaging as the primary means of communications.

During the 2007 Virginia Tech campus, for example, students and witnesses tried desperately to send texts to 911 – these were never received, even though they could have resulted in responders arriving on the scene faster, and with first hand intelligence of the emerging situation.

Apart from real-time rapid response with on-the-ground information, as well as texting for help, benefits of NG911 could include the ability of emergency calls to be made by devices rather than human beings – eg environmental sensors capable of detecting chemicals, highway cameras, security cameras, and personal medical devices.

In the US some command and control rooms are already accepting multimedia – be it images from an RTC, of a suspect, or text messages from a victim. In the not so distant future this will become the norm, believes Paul Collins of CyberTech, and the UK will also need to address this issue, including the capability to use this new data in a comprehensible manner. By the time that happens here, the technology that CyberTech is now launching will be fully embedded in departments around the world – in the form of IRIS (Incident Replay and Investigation). 'What the police want to do is to be able to reconstruct an incident using all the media available. They will need an application that can play back audio from a call or radio, and extract all the multimedia data such as jpegs or video, and bring it all into their work station. They will want to present it as evidence in court, and be able to play it at court like a video clip.'

In the same way that consumer film editing software functions, users of IRIS will be able to extract the relevant multimedia from a central repository and add it to an electronic storyboard. The storyboard will automatically arrange all the different media streams into the correct time slots, thus creating an easy to understand case file, as well as allowing officers to add notes and interview transcripts.

One stream could entail a particular radio comms, another the microphone in a control room, another some CCTV footage, another phone calls, another mug shots, etc etc.

Crucial to the new technology is the additional integration of mapping, so that the geographic location of where a photo was taken or a radio call made can be added to the incident reconstruction.

The number of live channels or streams will be unlimited, and in the case of preparing a file for court the officer will be able to pick out the relevant encrypted and fingerprinted data and either burn it to disk or save it to a hard drive.

The potential benefits of the new technology revolve around time savings and accuracy in the collection of evidential information; as well as enabling incidents to be resolved faster and more effectively. 'A program is exported with the data so the data can be replayed in court, but the data cannot be modified,' adds Paul.

Interestingly while showing the technology to UK police officers Paul has encountered some extra applications that have been suggested. 'They were thinking they could use it during an incident. So as an incident pans out with new data, transcripts, photos, etc, you could integrate live video streaming, or even embed images taken by the press.'

Paul Collins emphasizes that although the technology may sound futuristic, what makes IRIS special is not the capabilities it delivers, but its usability. At the heart of the system is an interface that has been designed in partnership with emergency responders. 'Our USP is a simple user interface that makes it easier for an untrained operator to use. We've moved away from complex functionality towards simplicity, because people don't necessarily have time for training, and the functionality may also be used infrequently.'

CyberTech's new user interface will also be replacing its current voice recording and playback product, as per used in call centres throughout the UK, but users will not be able to tap into the extra multimedia functionality without further investment and integration.

The new technology will be on show during BAPCO exhibition, 13-14 April at the Business Design Centre in London.

"We've moved away from complex functionality towards simplicity, because people don't necessarily have time for training, and the functionality may also be used infrequently."

Paul Collins, CyberTech.

The future for public safety telecoms

Tom Quirke has been responsible for the introduction of Motorola's next generation strategy and now leads Motorola's TETRA organization. He shared with Jose Sanchez de Muniain the six areas that Motorola believes will define the next generation of public safety, including a suggestion for how BAPCO could lead the way in lobbying for mobile broadband spectrum for public safety.

"The huge difference video would make to agencies is being realised – one day they will be completely reliant on it so they need to make sure they have secured the spectrum now. "

Tom Quirke, Motorola Solutions.

Voice communications will continue to be the lynchpin of mission critical users well into the future, which means the investment that has been made in Western Europe into TETRA is solid. 'Those investments are right for the future because voice is probably the most effective communications tool in the world and the most tailored one to public safety needs,' believes Tom, Vice-President and General Manager for TETRA Products & Solutions Organization at Motorola Solutions. Looking forward, there are six key areas of development that will deliver the next generation of public safety communications.

1 Mobile broadband

In the US the decision has been made to allocate spectrum to public safety agencies in the 700Mhz frequency for LTE (Long Term Evolution) Public Safety Broadband (PSBB).

The reasons behind this are that mobile broadband supports a set of applications that are difficult to provide by other means. 'If you look at TETRA with MSPD (Multi-Slot Packet Data) and TEDS (TETRA Enhanced Data Services), you can probably do 90% of the applications you need – for example database lookups.' Where LTE will come into its own is for when high speed video links are necessary. 'The US chose LTE to get economies of scale and to have control of cost. LTE will become the standard for PSBB in North America and I think it will set the agenda for the world.'

Public safety organizations in the US are battling for 10Mgz up and 10Mgz down – at the moment they have five up and down, explains Tom. 'They are advocating a private network because they wish to have total control of that network, a point of view that is inherent in public safety.' Within Europe, there is no spectrum assigned for PSBB and although there is activity looking at future needs, the public safety users need to make their voice heard – if not then the only option would be to rely on commercial networks.

2 Video

The main application for mobile broadband will be video, which significantly improves situational awareness – and so decision making. During legal proceedings video transforms the jury into the witness, which leads to more successful prosecutions and reduces overall costs by allowing judicial services to be completed more quickly. 'More importantly, it is also seen as deterring crime. In Los Angeles we deployed a wireless video system that reduced crime in an area by 40%. The counter to that is that people say crime then moves form one area to another, which means more cameras need to be placed.'

The alternative to having fixed video cameras everywhere is to have cameras on mobile devices, either on an officer or in a car. 'I'll give you an example of where that would have been useful. During hurricane Katrina on occasions first responders ended up using CNN TV footage to deploy resources. But what they didn't know was that that video feed was 24 hours old. I met with one of the officers that was there and he said that it was hard to convince people how bad the situation was over the radio. He said if he'd had a camera he could just have said "take a look at this", and everything would have been maxed up very quickly.'

The caveat that cameras are in a sense too useful, leading to a metropolitan area with hundreds of cameras leads to Tom's next component of the six-part vision.

3 A strong command and control

With so much visual information coming from many different sources, it is highly likely that incident managers can become overwhelmed. Too often the video becomes noise because there is just too much to take in. TETRA has been exemplary at enabling strict priority communication protocols for both voice and data to ensure that the right information is available to make better decisions. Similarly video will have to adopt prioritization and work in tandem with TETRA.

Almost certainly TETRA will set the information flows – if a voice talk group is updated then all multimedia information must instantly reflect this. So a strong integrated command and control is needed to take all the information and analyse it by real time analytics and data correlation. This vital information then needs to be packaged and sent to the right the person at the right time. A strong integrated command and control will be required to unify voice and multimedia.

4 Workforce mobility

Next generation telecoms will have to do more than provide new capabilities like video for public safety – they need to

provide higher levels of efficiency and drive down cost.

For instance, quickly ascertaining the true identity of a person can save a lot of cost. A biometric device that attaches onto a mobile computing device is one example of how it is possible to quickly increase efficiency whilst helping deliver strong ROI. A situation involving a shoplifter can result in an officer having to take the offender to the station in order to establish their identity and to determine if there is an outstanding warrant. 'Taking a suspect into a station could take four hours and lead to lots of paperwork. In the US this can equate to $4-6,000 per individual, for one police department. A biometric attachment to read ID cards, check fingerprints for example could save all that, and the device could also print off the court summons there and then.' However it should be noted that the amount of data required could be handled by TETRA (TEDS) today, so this is not a solution that needs next generation broadband.

5 Collaborative devices

There will be an increase in demand for 'collaborative' devices – eg ones that interact with dedictated voice devices – but just how the market is going to move is still unclear. Whatever the device of the future, it will have to be ergonomically fit for purpose (eg operated with gloves), rugged and ready for use in many different situations – ruling out pretty much every device in the consumer market.

Tom adds that a common misconception is that smart phones are widely used in the enterprise world, 'But in the task-specific world we don't see that. We see very rugged devices that are doing one specific task over and over again – and we think it will be the same for the public sector.'

6 Interoperability

'If I am on one network talking to colleagues and I have a broadband channel available, I don't want to think about what bearer I am on, what type of info I am sending, how do I upload video. It has to be intuitive and has to be secure. So the two networks will have to be very tightly coupled in how they work, especially between agencies. There are a myriad different profiles for different incidents, and when these are expanded to other partners – such as utility companies, then it comes back to using commercial networks. If I'm using a commercial network, how do I co-ordinate between cellular operators – not to mention the public safety network? A lot of co-ordination is involved, and a lot of associated costs in making network to network calls. The question is, do I need a private network? Or can I just use a cellular network?'

Tom makes a distinction between dispensable and indispensable communications, where data is something that could be dispensed with. Or could it? 'A few years ago

"The question is, do I need a private network? Or can I just use a cellular network?"

"The main point for lobbying groups would be to emphasise this is a once in a generation opportunity, and the decision will have lasting impact on the nature of public safety in the future"

GPS was "nice to have". Now it is regarded as essential. The co-ordinates turn up at the command and control system in seconds, and the requirement to alert other resources in the area, via GPS, is absolutely essential. Those co-ordinates could be used in the future to control all the cameras in the vicinity to pan tilt and zoom to the exact spot of the officer in distress. We can demonstrate this today and when I show that to a police chief they are impressed because of the safety implications. Clearly this technology has to work every single time. When I ask them if they want to do this on their own future network or use a cellular operators' network, they say "we own that, it's an officer's life. We own everything to do with offers' lives". We can make that work.'

Which component will come first?

A reduction in manpower and the drive for efficiencies inevitably means that police officers will have to carry out work alone, which will make them more vulnerable. Cast iron, life-saving technology will become a higher priority, which is why investment in TETRA coverage and devices will continue to be the primary investment. TETRA will be at the center of all next generation of technologies.

As for data, decisions will need to be made in clearly defining what is 'nice to have' and what is mission critical. 'Nice-to-have could go on the cellular network, and what you don't want to lose will have to go on a mission critical network. That doesn't mean an LTE network right now – modest amounts of data can go on TEDS, which is not trivial to install but is easier than putting in an LTE network. Remember 90% of all applications can be served by the TEDS, and being part of TETRA interoperability is assured. Video drives a broadband decision.'

For video to become a reality a broadband network will be required – particularly if it is to be used by mobile users. In order to have secure LTE, however, private spectrum will be necessary and for that to happen public agencies will need to lobby for it – probably at pan-European level. 'The main point for lobbying groups would be to emphasise this is a once in a generation opportunity, and the decision will have lasting impact on the nature of public safety in the future.'

An alternative option to a private LTE network would be a commercial LTE network. 'But you have to ask yourself about the costs for the police in sending high quality video with high priority. These networks are commercial entities and it might turn out that the police are the biggest users. And you'd be charged on data use, so not good news.'

In the short term Tom sees changes taking place in workforce mobility – rugged mobile computing devices being deployed by the police, with appropriate security.

What is going to be around in the long term is TETRA, regardless of discussions centering around voice-over-LTE. 'It is unclear what the final usage of VoIP will be, as GSM continues to be primary carry of voice communications. Certainly cellular VoIP represents a miniscule fraction of cellular voice communications, and may have a long road to eclipse GSM which enjoys huge scale advantages.'

Far too many mission critical requirements have been built into TETRA that are not available in voice-over-IP, eg the capability for one radio to talk to another radio in a scene, regardless of whether a network exists or not.

That kind of direct mode communication capability is something that Tom doesn't envisage winding its way into LTE broadband standards, mainly for commercial reasons.

In summary, Tom highlights that workforce mobility is possible today, as is secure data, but a broadband network will be required to make full use of video (TEDS can deliver low frame rate video). 'And then I think we'll see a shift from consumer devices to more rugged devices, and then again to devices with combined functionality in the future.'

He concludes by suggesting that while the UK has long been a leader in public safety telecoms, the evidence suggests that the US is now taking the lead. 'The huge difference video would make to agencies is being realised – one day they will be completely reliant on it so they need to make sure they have secured the spectrum now. That dialogue has been muted in the UK and Europe.

'BAPCO could rally together all the different public safety organizations. This could really define BAPCO over the next five years. This is where North America is further ahead, because they were discussing this four years ago.'

INVESTING IN PUBLIC SAFETY

At the beginning of the year, Motorola split into two completely separate – and individually listed – companies. The mission critical communications part of Motorola, which includes all TETRA-related products and services, along with public safety wireless broadband solutions, is within the company now called Motorola Solutions. Consumer-orientated mobile devices are in the other company, called Motorola Mobility.

Motorola Solutions is led by Greg Brown, CEO. In EMEA the company is led by Manuel Torres, and in the UK, Motorola Solutions is headed by Iain Clarke. With an annual turnover well in excess of $4 billion, Motorola Solutions is 'born' as one of the world's largest companies; for example, it still has the capacity to underwrite entire nations' investment in public safety networks. 'Motorola Solutions remains utterly committed to failsafe communications, including TETRA and complementary public safety technologies such as MESH,' says Iain Clarke. 'That means we're very much active around the world with public safety networks, from infrastructure and terminals through to complete managed services. We're also providing TETRA networks for a range of safety-conscious industries such as transport, oil and gas and shipping as well as providing these types of industries, as well as retail and manufacturing, with barcode, RFID and mobile computing technologies.'

Motorola Solutions will be able to build on its integrated critical communications to central and local government as well as emergency services and other public safety organizations which are seeking further efficiencies with standardised operations under the government's Comprehensive Spending Review.

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