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On page seven of this issue, Motorola Government & Public Safety Vice President Manuel Torres outlines the four main areas that form the basis for true mobile/voice data.

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recycle

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On track with Southeastern and South West

Airwave has announced that it has signed train operating companies Southeastern and South West Trains to its network. The railway organisations will provide their security officers with access to Airwave's public safety network to benefit the train companies by improving direct radio contact between security staff on patrol as well as enabling inter-communication with the British Transport Police (BTP) in pre-defined circumstances.

Previously, rail security officers relied on mobile phones to communicate with each other. In some instances this proved to be inefficient, due to patchy coverage, and insecure due to the risk from eavesdroppers.

Southeastern's Head of Crime and Security, Paul Nicholas, said: "Being able to communicate on Airwave's network allows us to increase both employee and customer safety whilst improving our ability to deal with the small minority of passengers that try and disrupt our train service."

Gloucestershire FRS chooses Cadcorp GIS

Cadcorp, a digital mapping and geographic information systems (GIS) software developer, has been awarded a contract to provide Gloucestershire Fire & Rescue Service (GFRS) with a new GIS based on Cadcorp SIS software.

The new system comprises licences of Cadcorp SIS Map Manager to provide users the ability to view, explore, query and present geospatial information and Cadcorp SIS Map Modeller for 3D-enabled map creation, editing, analysis and modelling.

Cadcorp SIS Map Modeller will be used by GFRS's CAD/GIS department for risk management applications while Map Manager will be used in the control room.

Collaborative work easier with XTS-400

BAE Systems has introduced a data guard programme called XTS-400 that allows sensitive information to be shared across secure network boundaries to allow safe collaborative working.

The XTS-400 has received accreditation to Evaluation Assurance Level 5 augmented, which is the highest level of assurance on any system either side of the Atlantic. This means that users such as the military or the emergency services who need to share information, but who do not all require the same access to data, can access material without time-consuming physical transfers between networks.

After the UK EAL certification was awarded, BAE Systems Programmes Director Mo Stevens said: "XTS-400 allows communities of interest the capability to share any information required, in often intense situations, with a high level of information assurance, thus reducing to a minimum the possibility of data loss. This is a significant step forward in demonstrating UK/US co-operation and interoperability."

President's address

Since last writing the President's briefing, Ken Mott the Executive Director of BAPCO and I have attended the APCO 74th Annual Conference and Expo in Kansas City, Missouri. It will not surprise you to hear that our parent body formed in 1934 attracts considerable support with over 2,200 colleagues who work in or manage communication centres in attendance. However, despite its maturity APCO, through its President, Willis Carter, was seeking to alter its governance arrangement migrating from a federal structure of over 50 chapters to a smaller board of directors. A year of planning has been committed to this change process, yet despite four days presentations and lobbying the vote which requires a two thirds majority, was lost by a mere five supporters. Although further attempt will be made over the next year to recover this position I sense the considerable frustration and anxiety as APCO seeks to create a decision making process that can keep pace with the evolving technology and politics that impact upon our business whilst sustaining the democratic rights of its membership. The APCO Global Alliance the body that unites America, Canada, Australasia and the United Kingdom also met. BAPCO was able to report the considerable work that it is now leading on behalf of the European Commission. Internally we briefed colleagues on the European e-Call Location Enhanced Emergency Assistance initiative, in particular the considerable deployment of such solutions by the private automotive industry, especially Mercedes, BMW, and Peugeot. Each solution is slightly different in so far as some use third-party bodies to handle both voice and data messages whilst others transmit the data and voice direct to the public services' answering point. Such is the progress that is being made by the private sector that there is a real danger that it will outpace the implementation of a public e-call standard set by the European Commission. The latter still has much to do with regard to unresolved issues such as the technological fit, a lack of political support (the UK and France have yet to sign the memorandum of understanding agreed by 17 other countries) and charging mechanisms. BAPCO continues to argue that we will not accept voice calls coming direct to our command and control facilities and that the ECC claim that e-Call will reduce fatal road traffic accidents by 50 per cent as lacking significant empirical evidence. However, you should not underestimate the impact that this technology will have on our area of business. Considerable added value will be possible as these technologies offer, amongst other things, turn by turn navigation, automatic crash response, stolen vehicle location, roadside assistance, and stolen vehicle slow down when the vehicle is being followed by police officers who instruct that activation of this capability is safe.

During our Global Alliance discussions we also took the opportunity to debate the spectrum issues facing public services in the UK, public emergency alerts, and website development. Far too much to include in this President's summary, but I wanted to assure you that we are busy promoting and delivering solutions within BAPCO.

Ian Readhead, President.

A big thank you from hospital

The BAPCO organisation has helped to raise £5.250 for The Great Ormond Street Hostpital Children's Charity Appeal Membership that was made possible by the contribution of individuals and commercial partners at the Gala Dinner held in conjunction with the BAPCO Annual Conference in April.

BAPCO President Ian Readhead made the presentation of the cheque to the hospital for all the dedication and outstanding care given to the nation's sick children and expressed his deepest gratitude to the individuals who had given so generously, adding, "A very pleasing conclusion to a very successful annual conference and exhibition!"

Accepting the donation on behalf of the charity, Victoria Webb said, "Thank you so much for all the hard work and effort you put into raising £5,250. Your fundraising is so important to us. It enables the funding of essential equipment that needs to be tailor-made for our young patients and ensures that we can continue to fund crucial research that finds cures and treatments making all the difference to the lives of sick children everywhere."

Crime map rollout intensifies

England and Wales will have access to the latest local crime information through new interactive crime maps as announced by Home Office Home Secretary Jacqui Smith.

The rollout follows the announcement made by the Home Secretary that every police force in the country has now delivered monthly crime information to the public on their websites. New interactive crime maps will take the rollout of local crime information to the next level.

The plan is for every police force to produce crime maps by the end of the year that will allow the public to see where and when crime has happened, down to street level for some crimes, make comparisons with other areas and learn how crime is being tackled by their local neighbourhood policing team.

Hampshire, Lancashire and West Yorkshire (along with the West Midlands) are currently the leading forces on crime maps, with other forces preparing to introduce them this year.

Home Secretary Jacqui Smith said: "By rolling out up-to-date, interactive crime maps we can better inform people about crime problems in their area and enable them to have much more of a say in what their local police focus on. This will help increase public confidence in the police and make communities safer."

An Oasis of interoperability

Shropshire Fire and Rescue Service is involved in a pioneering scheme, called Exercise Oasis, to help integrate Europe's diverse emergency response systems by making information instantly available to fire, police and ambulance control rooms.

Exercise Oasis is a four-year EU sponsored programme which has seen industry, academia and research institutions join with the emergency services to find solutions to interoperability across Europe. It is being heralded as the foundation to a European Emergency Response system.

Fire officers and control room operators from Shrewsbury HQ joined a 60 strong fire, police and ambulance contingent from across the EU to trial a state of the art computer software system designed for cross-border management of disasters.

In the Shropshire trial there were five traffic scenarios culminating in a complex incident in which a car crash triggers off major public order incidents in which houses were set on fire and an ambulance stoned with a near riot developing.

Fire, ambulance and police control operators linked information about the developing incidents via computer as silver command across all three services accessed the information remotely from home to get an over view and successfully resolve the crisis. A final trial will take place at Versailles near Paris in October.

Merseyside police officers choose Futronics solution

Following 12 months trialling a number of in-vehicle mobile data solutions, Futronics's solution has been chosen to meet the needs of the Merseyside police force.

With the Futronics eMC2 Core 2 Duo computer system, accessed by a bright touch screen on the dashboard, Merseyside police officers are able to access and run several applications, police databases and crime reporting software such as ANPR, PNC, DVR, and CCTV on a single platform. The touch screen also gives users control of lights and sirens, communications, cameras and SatNav – eliminating the clutter and equipment in the vehicle, and reducing distractions.

John Hampson, Head of IT at Merseyside Police, stated, "This is greatly assisting officers to work more effectively while on the road, cutting down on paperwork and visits back to the station, and giving them full access to all vital background information in real time."

DNA database raises concerns

A new report from Human Genetics Commission has said that the police National DNA Database should be placed under the control of an independent statutory authority and there should be a nationwide information campaign to explain why DNA samples are taken, how they are used and why they are retained.

Alice Maynard, chair of the working group set up by the HGC to commission the Inquiry, said: "We wanted to hear the public's views on the development of the national DNA database. We made a deliberate decision to recruit a diverse panel with a significant black and ethnic minority membership so that we could hear from a wide spectrum of people and especially those whose opinions are not often heard. They did not speak with one voice – but we did not expect that they would. Their report gives us a rich and valuable balance of views from which the HGC can proceed to a wider national consultation before we produce our own report to Government."

Maidstone the first town to carry out WiMax trial

Kent Fire and Rescue carried out an "open day" mock emergency on the 22nd of September with EADS.

Mobile WiMAX is a comprehensive, high-bandwidth wireless network that can provide faster download speeds than current technology, yet in Britain it is not currently widely accessible because spectrum is yet to be allotted to it.

As part of this trial, EADS is working with Kent FRS to enable firefighters to use the mobile WiMax technology. The system allows them to carry out real-time video streaming of incidents and to communicate with the control room and other appliances via the live video as opposed to voice. The mock emergency took place on September 22 and it aimed to demonstrate the benefits of the technology.

Brian Rae of EADS (pictured) explained to BAPCO Journal (at the time of going to press) that a mobile support unit would co-ordinate the WiMax system with ancillary cameras and deliver live images to Kent FRS headquarters. The system would also connect to the council's network of CCTV streaming to provide increased operational awareness to the control room.

"The quality of the images is akin to standard definition broadcast, and technically similar to what you get from a good fixed SDL communications link," commented Rae. "What we are trying to understand is how technology can make the job on the ground more effective, what can make a real difference to the emergency services."

The spectrum that is being utilised for the trial is being auctioned off by Ofcom so there is uncertainty as to future applications. EADS has expressed interest in working with whoever buys the spectrum both to explore future opportunities in mobile WiMax within the emergency services, and also to work towards solving problems that may arise when large numbers of people attempt to use the technology.

Rae added that although the police is already using some high speed wireless systems such as 3G, there were limitations in the

technology currently in use. "For mobile WiMax to be successful in this sector, it would have to be competitive with other technologies, such as 3G.

"We envisage it could be used in day-to-day operations, where cameras could be installed on vehicles to record incidents in the immediate vicinity, such as antisocial behaviour – not just for major incidents."

Fast incident risk data for Shropshire Fire

Fire crews at the Shropshire Fire & Rescue Service are being given improved access to emergency incident risk data, thanks to a new secure Virtual Private Network (VPN) implemented by Wide Area Networking comapny, CI-Net.

Updates to mapping information as well as building layouts and other incident specific data can be communicated faster to fire crews on route to calls, with increased reliability and fewer technical difficulties.

Risk data is sent to the county's fire stations over the new VPN and downloaded to touch-screen computers located on emergency vehicles or appliances via wireless network connections within each station. "The new network is designed to gives us a reliable, resilient infrastructure for the flow of information to the individual stations from our headquarters in Shrewsbury," said John Rix, Network Manager at Shropshire Fire and Rescue, adding, "The stations receive emails and admin information from HQ to support the day-to-day running of the service, including brigade orders that fire crews must adhere to. In addition to communication of emergency risk data (managed by the C&C Centre in Shrewsbury), the VPN enables the distribution of general administrative information to PCs in fire station offices.

Xplore Technologies Tablet PC is put to the test

In a dramatic head-on collision three parties (two officers and one civilian) were seriously injured.

Police Office Cari Ludrosky of the Cleveland Police Department, USA (Mobile Support Unit, with responsibility for MDTs in police cars) eventually discovered the vehicle's Xplore MDC, which was still attached to a piece of the dashboard. The piece had been placed in the boot of the car, under a pile of crash debris. Ludrosky didn't have much hope for the tablet PC, but she took it back to her vehicle, blew the broken glass fragments off of it, put it on her dock, and fired it up.

The only damage that this computer had suffered was a grass stain on the plastic, sustained when the dashboard had been ejected from the car and the whole works fell down, computer first.

Amazingly, the officer cleaned the computer up (she left the grass stain, feeling it gave the computer a little character) and put it back in service the same day. The computer is still being used to this day.

Lothian UNIFI

Lothian and Borders Police has completed the implementation of SunGard's UNIFI solution.

UNIFI is a suite of integrated modules covering a range of police business processes, from crime, custody and case preparation to management of driving document productions, vehicle defect re-certifications, and road traffic collisions. Lothian and Borders Police collaborated with SunGard to provide an interface to the Force's e-crime reporting tool and after one day 500 crimes had been created on the system.

Information on the move

Information on the move takes two forms; voice and data. The delivery of readily available and secure voice communications is well understood. The concept of mobile data, conversely, is often only equated to email on a pocket sized device. The true scale of mobile data is much wider than that, particularly when considering the unique needs of public safety organisations, writes Manuel Torres, vice president and general manager, Motorola Government & Public Safety, EMEA.

Like many organisations, and backed by Sir Ronnie Flanagan's *Review of Policing* report, the UK's emergency services are embracing the power of technology while on the move. At Motorola we see four areas that provide information on the move.

Assured mission critical communications

Through Airwave, the UK's emergency services already have once of the most advanced public safety voice networks in the world. A TETRA network provided by Motorola, Airwave gives the emergency services a high-capacity, ultra-secure and fail-safe voice and data communication service that is far more appropriate for public safety organisations than standard commercial networks.

Advanced applications and services

Perhaps the most widely used data service already in use is global positioning systems (GPS) to help locate and direct police officers, firefighters and paramedics.

Yet the data capability that already exists through Airwave also supports many more field services; police officers filing paperwork on the go and accessing databases such as the Police National Computer, as well as mobile fingering printing. Firefighters, for example, can view building blueprints while on the way to a blaze while paramedics can forward casualty information to prepare emergency departments.

These types of services on the Airwave network are inspiring a new generation of TETRA terminals. The Motorola TETRA PDA, for example, has a large colour screen, an integrated camera to capture images for use in reports and uses Bluetooth™ to connect to wireless devices such as printers.

Assured wideband data

As working practices evolve to maximise the benefits gained from wireless data across TETRA, traffic will inevitably increase. Additionally, higher bandwidth applications will emerge such as enhanced mobile office, file downloads and video. These needs are addressed by a new generation of TETRA infrastructure: TETRA Enhanced Data Service (TEDS). It will deliver enhanced data across extensive areas, to allow organisations to connect field teams with new powerful applications. Motorola is currently rolling-out the world's first TEDS system with Nodnett, Norway's communication network for the emergency services.

Advanced broadband data

Where highly secure, wide-area network voice and data communications are concerned, TETRA remains the network of choice. However there is significant scope for the emergency services to benefit from wireless broadband technologies that provide ultra-high levels of capacity.

Wireless broadband networks can support the live recording and distribution of video footage, as well as mobile CCTV. Because it is wireless, it can be rapidly deployed to cover an entire area during a particular event, such as a conference or demonstration.

Using the wireless network, surveillance and evidence gathering footage taken anywhere in the area can be instantaneously shared with the operations centre. Selected footage or still images can also be easily distributed to other front line teams, through the Airwave network if security is required.

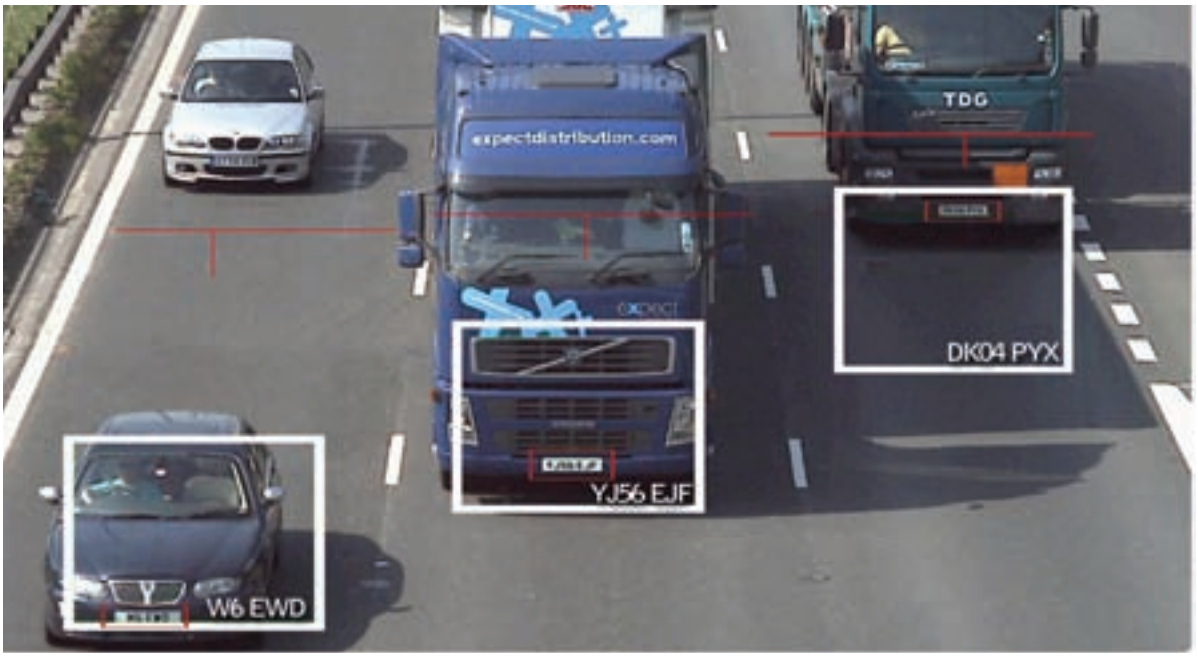
Once the event is over, the wireless nodes (that simply attach to street furniture such as lampposts) can be easily redeployed, making wireless broadband a flexible and cost-effective communications tool.

Motorola has already provided these types of systems to law enforcement agencies around the world, including work with the NPIA and Dorset Police.

The UK's investment in mobile technology gives the emergency services a significant opportunity, and brings with it the responsibility of long-term planning and usage. Consideration needs to be given to a host of factors including integration with existing IT, best suited mobile network technologies, an appropriate range of devices and ongoing maintenance. There also needs to be protection against proprietary solutions and an allowance for current and future applications.

By balancing the unique strategic and operational needs of the emergency services with a long-term approach, mobile voice and data can positively serve both the emergency services and UK citizens for many years to come.

Manuel Torres, vice president and general manager, Motorola Government & Public Safety, EMEA.



Launched this month, the Watchman HD system can deliver clear number plate images for multiples lanes of traffic.

Number crunching

You couldn't possibly describe ANPR as a new technology. First developed in 1976, the technology has been deployed at the roadside since the early eighties and is today widely used in both public and private sectors. So why is there such a buzz around ANPR today?

Bernard Green, CA Traffic MD, provides a simple, easy-access solution that avoids the headaches of installing and maintaining new ANPR systems.

The answer is simple – a raft of new applications have emerged for the technology while at the same time exciting innovation is taking place in product development. Together, these two trends are pushing ANPR to the top of the agenda.

One of the most exciting recent developments is the launch by Watchman this month (September) of a new state-of-the-art high definition (HD) ANPR system which allows up to four lanes of traffic to be simultaneously monitored using just one camera. The Watchman HD system uses a true two megapixel camera and, backed by some very clever software, can deliver clear number plate images for multiple lanes of traffic moving at high speed and in all light conditions.

Using a wide angle the high definition camera delivers, compared to the analogue camera, a huge image. According to Jim Barnard, Watchman MD, if an analogue camera were to cover the same ground the number plate image would be so small it would be unreadable. "What we are able to do with the high resolution image is expand it so that we have a very clear picture of the number plate."

The secret, he says, is intelligent vehicle tracking throughout the field of view. What this means is that the camera picks up the number plate as soon as it appears in the picture and then tracks it until it leaves the picture. "Effectively what we are doing is putting the brakes on the vehicle. If you have a single point where you read the number plate, you may have just one hundredth of a second to read it. What we are doing is grabbing the plate as it comes into view, then following it down for the full second that it is in the picture. So, if you have 10 or 12 frames per second, you will have 10 or 12 images, instead of just one snapshot."

What this adds up to is high level of read accuracy, typically in excess of 98 per cent. And this happens regardless of how many vehicles are in the picture at any one time. So, for a three lane motorway for example, which with conventional systems would have required one camera per lane, and additional infill cameras to ensure that vehicles changing lanes are picked up, there is now an option to use just one camera.

As you would expect, the number plate image is accompanied by an overview image. A new development in the pipeline which is scheduled to become available during the fourth quarter of this year is a completely new approach to the still overview image. Jim Barnard says that they will be replacing it with video footage.

The Watchman HD system will be offered in two versions. The LITE version is being aimed at the commercial world and the Watchman HD PRO is aimed at high volume users such as the police and local authorities and is designed to transmit data to a central server where it can be processed. Jim Barnard says that the PRO version can be tailored to suit the application. "We have done a lot of work to ensure that our HD system is backed by very

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PIPS Technology ANPR cameras have been deployed across London by Siemens Traffic Controls as part of a contract awarded by Transport for London to provide an enforcement structure for London's Low Emission Zone. The contract is for Spike+ cameras, already in use worldwide.

intelligent processing. All the software both for the back office interface and for the triggering device have all been developed in house using our own source code."

Jim Barnard and his team are, justifiably, very proud of the new system. As Jim Barnard puts it, instead of a fuzzy analogue image, users will have a clear HD picture. "You will be able to zoom in and even see the driver's face." And he sees some big advantages in having a complete field of view available when incidents occur. "The data records will provide an accurate picture of overall lane activity immediately before and after an incident. That means that vehicles contributing to the outcome but not necessarily involved in the actual incident can identified and, if necessary, traced."

While the camera, and the quality of the images it produces are very important, there is more to an ANPR system than simply producing an image. How and where the licence plate data is processed and stored are also major issues, particularly as systems become more common and more extended. CA Traffic addressed this issue earlier this year when they launched a new ANPR system, Evolution, developed around the concept of a web server based in-station system.

Bernard Greene is CA Traffic's MD and he explains that rather than simply offering stand-alone software with cameras, CA Traffic are offering a service. "When you buy an ANPR camera system and put it onto your server, there are all sorts of operational issues which have to be addressed such as IT involvement, firewalls, technical support, training and maintenance to mention a few. What we are doing is providing our customers with simple, easy access to data without all the headaches that go with installing and maintaining a new software system." This is a hosted service and the server doesn't care which client it is processing data for, says Bernard. "The client accesses the system via his desk PC web browser. The client can see the data, download the data and the service can continuously deliver data live into the client's own database management system." Access to the system is controlled by a combination of user name, password and IP authentication. Data within a client's area is segregated into raw data (number plate, time, date and location) and processed data (link journey time, turning movements etc). Access to either data is only permitted to authorised users. It is therefore possible for one agency to access journey time and another access the plate data and it is for the client to specify who can access which data tables.

At the heart of the CA Traffic system is a brand new fully

integrated camera capable of providing two-lane coverage. The technical development work was led by Dr Peter Billington, the architect of the Trafficmaster ANPR network. More recently, Peter has been the Technical Authority for the national ANPR and journey time measurement work of the National Traffic Control Centre.

CA Traffic say the system can work as an "average speed over distance" check and will provide a new approach to checking and monitoring localised speeding complaints. The cameras send the data direct to the server via GPRS or 3G and once in Evolution, the real-time data can be accessed.

The service can be used with fixed cameras where there is mains electricity but with mobile communications it can also be used for temporary surveys, or as a portable system mounted on tripod. Bernard says this means that a sophisticated ANPR system can be used dynamically to provide the full functionality of a static system but on a temporary basis. "This flexibility and ease of use has not been possible before and we are confident that what we are offering a unique and much needed product."

CA Traffic's camera is capable of providing two-lane coverage and was developed by Dr Peter Billington, the architect of the Trafficmaster ANPR network. Below: Parking and Traffic Technologies' new SmartReg Guardian.

SmartReg Guardian solution launched

In July Parking and Traffic Technologies launched SmartReg Guardian, a compact "point and capture" digital camera system designed to automatically read vehicle licence plates for intelligence monitoring, surveillance and enforcement. SmartReg Guardian has a simple "plug and play" design and is compact and lightweight – small enough to fit into a briefcase. Powered from a compact battery it can operate independently of an existing mains power supply or fixed telecoms. Data is transmitted wirelessly, either locally to a mobile display terminal, laptop/handheld device or remotely, via GPRS to a regional office for processing.

Tetra's next step: a European perspective

European Tetra networks have worked impeccably for more than 10 years but the focus is now turning towards the poor impact that these networks have had when it comes to cooperation between emergency professionals, writes Anders Mathiasen.

Anders Mathiasen is 31 years old and lives in Copenhagen. He has recently finished a Master in Business Engineering degree focussing on future trends and market developments in PSE Command and Control systems.

At the start of Tetra standardization by ETSI in 1988 the goal was primarily to replace old and low capacity analogue radio systems, and although that is now been achieved and different emergency personnel can communicate, actual collaboration between control rooms is still lacking.

Naturally, organisational issues play a role, but cooperation has also been hindered by the fact that most control rooms are planned as individual IT solutions focussing on individual organisations' needs, with poor capacity for control room cooperation. On the technical side, the main reasons include closed proprietary systems not designed for cooperation between several vendors.

Most European preparedness organisations have been faced with a basic choice.

One alternative is the one-fits-all system for all emergency organisations. This ensures cooperation and sharing of data but has the drawback that all players – independent of their specific needs – are forced onto a system which in the end has a major impact on resource utilisation due to the fact that it is not optimised for specific needs.

The other alternative has been to allow each organisation to select a system that is optimised for their specific needs, but which does not allow either vertical or horizontal integration.

However, political pressure in favour of a state of both national and regional preparedness, and which works in daily operations and major emergencies, is increasing.

Around Europe there is a political will to solve these organisational challenges and in Denmark a contract has been awarded for a national control room infrastructure and integration, which solves the technical challenges. Referred to as "The Danish Model", it defines a secure high-speed data backbone network and a disaster tolerant central server site for storing of critical data such as resource positions, status and task data. This ensures a common data structure across all organisations, but allowing individual applications that support the needs of the individual organisation as well.

The future

The three keywords describing future control rooms are flexibility, reliability and security.

Flexibility is a key word for future control room solutions, both in terms of upgrading with new, customised functionality, and in terms of following future changes in organisation/operational responsibilities (as well as cooperation requirements).

Many preparedness organisations have experienced investments in proprietary, closed systems that have bound them to the supplier. Minor additions to the systems have often been costly and difficult to implement. In many cases, the outcome has been a decision not to upgrade, and hence not to utilise the system optimally. And what's worse, not utilising own resources optimally in daily operations. Experiences across Europe show that if the system cannot be optimised, the result can be up to 50 per cent higher resource requirements for day-to-day operations.

Open, flexible and scalable control room solutions that support future changes in organisational setup are key in the future. Control rooms will be merged and split, new control rooms will be established and organisational responsibilities will change, leading to a requirement for dynamically changing control room network and functionality. This can only be ensured by implementing an independent control room infrastructure that has been designed for open integration and with open standards.

As a consequence, the dominant future control room integrators will be medium-sized companies that are large enough to ensure stability and future support, and yet small enough to provide the flexibility needed in the changing environment.

Next are reliability and security. Systems that are normally considered good enough for local, district or regional rollouts fall short when the issue is about national security in the context of terrorism.

As all communications and IT solutions will in the future have to be at "secure communication" level, companies accustomed to working to defence standards will be predominant in the future.

Due to the rising requirements for reliability and security, future key players will be defence companies who have a history of supplying mission critical solutions for national security and who base their control room solutions on secure and reliable technology arising from defence applications.

New types of organisations will be integrated into the preparedness cycle, and armed forces and homeland

security organizations will have to work together.

The Danish model

Denmark has chosen to keep abreast with developments by integrating all national preparedness organisations in one move. This means that besides blue light emergency services, other sectors such hospitals, homecare, defence and national crisis staff can quickly take part in an operation (depending on the nature and size of the incident).

Before the rollout of this new system began, Denmark was covered by more than 100 disparate analogue radio systems independently procured by each organisation. This meant that during larger incidents, an on-site commander had to carry up to five different radios to coordinate all the different personnel. The consequences were seen in 2005 when a fireworks factory situated in the city of Seest exploded. The commander had severe problems with coordinating the deployed fire services' efforts, because they were unable to communicate on their radios and had to rely on conventional mobile phones on a network that was heavily overloaded by worried civilians.

The Danish Model, called SINE (an integration of the Tetra system and a common control room infrastructure) is based on the principle of having an integration and infrastructure supplier supplying an open system allowing all parties to work together, all part of the same national preparedness family, and sharing data, positions and activities as required. But, at the same time, allowing each preparedness actor and local actors to have a control room functionality optimised for their daily operations.

The Danish Model as supplied by the largest Danish defence and security company Terma A/S for the control room- and Motorola for the Tetra part, is based on an open, secure and reliable control room infrastructure, which allows each Danish national preparedness organisation the ability to share the necessary data horizontally and vertically, both in daily operations and during large disasters. But at the same time, the flexibility in choice of functionality is high.

Control room infrastructure and parts of the control room functionality have been acquired centrally, and special functionality is acquired by the local authorities directly.

Horizontal and vertical integration down the line

The need for horizontal and vertical integration – as is known from the defence sector – has been commonly identified after years of experience with existing control rooms. Ideally an open control room infrastructure should be implemented as part of an initial implementation. However, adding an open infrastructure to existing control rooms would only be feasible if the infrastructure was designed for open integration.

The challenge here is not so much technical as commercial: existing control room suppliers could be reluctant to integrate with an infrastructure supplier to protect their business.

For more information about the Danish model, visit: www.sikkerhedsnet.dk (official website, in Danish).
Supplier information: http://www.terma.com /index.dsp?page=2914#

"As all communications and IT solutions will in the future have to be at 'secure communication' level, companies accustomed to working to defence standards will be predominant in the future."

Zetron gains Airwave certification

Mission-critical communications company Zetron has announced that its small to mid-sized control room system solution has been certified by Airwave for connection via the Motorola MTM700/800 and Sepura 3500 radios.

The certification for the DCS-5020 applies to connection to the Airwave TETRA network through one or more fixed TETRA radios.

Also new for the DCS-5020 control room system is an innovative graphic user interface (GUI) available in a number of different languages. According to Zetron, Latin, Chinese and Arabic characters are now available, providing operators with screen graphics and messages in their own language to increase ease of use and operator confidence.

Zetron has a library of different languages in service on DCS-5020 and additional languages can be enabled through co-operation with forces or system integrators. Where necessary Zetron can provide a file of applicable messages and an integrator can determine the preferred on-screen representation.

As of October 1st Zetron's owner Kenwood Corporation will be known as JVC Kenwood Holdings following the integration of JVC and Kenwood into a joint holding company earlier this year.

CCTV video manufacturer JVC Professional Europe is now working with Zetron to offer a wide range of video and audio control room surveillance products that can be integrated into security command and control room operations.

STORM in Scotland

Scotland is currently biting the bullet and planning to have all Scottish forces running the one Command and Control system. BAPCO Journal spoke with Tracey Lee, Head of Emergency Services Group at Steria, about the project and what it may mean for the rest of the UK.

"We expect that there will be quite a queue of people from England and Wales coming to see what has been happening in Scotland."

Tracey Lee, Head of Emergency Services, Steria.

Steria as a company is not new to C&C. It's STORM solution has been around for 12 years in various guises and before that another system had been in use for 18 years. In fact the company points out that STORM is the most installed C&C system in the UK.

Many eyes are keeping a close watch on what Steria is doing north of the border, because it could have fundamental repercussions on operational procedures everywhere.

ACPOS (Association of Chief Police Officers in Scotland) and SPSA (Scottish Police Forces Authority) are working together to ensure that all Scottish forces can operate on a single C&C system for the whole of Scotland, under ACPOS's Business Change Programme. Consolidating the IT systems is the number one priority of an agenda that started around 18 months ago. "Eighteen months ago we had four of the eight Scottish forces running STORM – now five – so the decision was made to move in a progressive manner with the remaining forces," explains Lee.

The National C&C project is lead by Deputy Chief Constable Tom Halpin of Lothian & Borders Police who has recently implemented STORM and has the vision and drive to make this a seamless national service. He says that he is inspired by the ability to share data with other forces and compare performance across forces.

SPSA is working with ACPOS to define and build a national infrastructure that STORM will operate on. The current local solutions will then be migrated to a single database. Lee remarks that there is much to do to ensure consistency, resilience and integration, but she is impressed with the determination of ACPOS and SPSA to make their vision happen – and quickly.

The Scottish approach to C&C has also been made possible by the Scottish Executive's focus on getting the maximum out of shared services in the public sector. Lee thinks that there are benefits other than pure cost savings in bringing together the various ways of working with C&C Systems. "Yes there are economies of scale but the cooperation benefits are understood – it will be easier for example to deploy resources across borders for mutual assistance."

C&C is a core business function and Lee admits that it is always a challenge to keep a local focus whilst delivering a national solution. Inevitably there will be questions asked when training and operational procedures need to be implemented. But she adds that this is normal for any process of big change.

Having a common C&C will bring benefits to the citizens too, adds Lee. "There is an impetus to provide the public with a service that they can recognise as being top quality. A part of C&C relates to contact management and being able to resolve enquiries in a way that help the public to feel that they have been treated fairly and professionally, even when an officer has not been despatched. For officers there are benefits too, as the information contained in STORM can be provided on handheld devices and in cars to provide more intelligence to manage incidents. Finally for the control rooms staff, the screens are easy to use, so they can focus on listening and responding to callers and not on the system."

When the project is complete, the question of regionalisation in the police may again raise its head in England, particularly as the ambulance service is proving that it can work – even if the process seems to be dragging its feet as regards fire. "We expect that there will be quite a queue of people from England and Wales coming to see what has been happening in Scotland."One thing is clear in Lee's mind, and that is that the influence of the Scottish Executive has been crucial in this project, and such a robust political will be fundamental in any kind of C&C regionalisation elsewhere.

Flare launched

PageOne introduces a suite of business continuity communication software for emergency response teams around the world.

The Flare system uses an assortment of IT media to simultaneously contact large numbers of people in such a way that messages cannot be ignored. In the event of a crisis, messages can be sent to mobiles, emails, landlines and pagers.

One of features of the technology is Flash SMS, explained PageOne's Clair Cawley. "Flash SMS is an ideal way of putting a message into somebody's phone in such a way that they cannot ignore it. With normal text messages you have to press "read" but these messages do not go into the inbox but flash into the screen – so you don't even have to unlock your mobile phone."

Another feature of Flare is two-way SMS technology, which enables recipients to quickly acknowledge receipt of an emergency broadcast. "This is useful to say, 'yes I have received the message'. It can be used as part of a response team so that responders can then transmit their ETA."

Also part of Flare is a system that automatically notifies a mobile workforce in a user-defined sequence. "Traditionally during an emergency if a person's phone was switched off, then those raising an alarm would use a call-tree method to find the next suitable person, and so forth," explains Cawley, "but with the Escalate system, if there is no reply to an alert then the message is automatically relayed upwards to the next person in the chain of command. Escalate will go through all the devices until it finds someone who responds with a key word."

The third aspect of Flare is the "areyousafe?" system, which enables staff to register their status quickly and easily in the event of an emergency, by calling a dedicated telephone number. "The incident dashboard allows administrators to monitor the status of their staff as a situation progresses. Users can distinguish between staff who have checked in and those who haven't," says Cawley. Within the "areyousafe?" module, callers are asked by an intelligent voice-recording system to confirm their identity and location, followed by their status. Confirming status is a process that takes around 30 seconds, and callers can also report in with their WAP phones.

Since the launch of Flare at the Business Continuity Expo in London (April 2008), PageOne has received interest from the oil industry, UK National Health Service, ambulance service and emergency planning sectors.

Changing perceptions

If the sources mentioned by a recently published report are to be believed, then public satisfaction with police services is moving in the wrong direction. Could technology help?

George Godliman is MD of Fortek Computers, a software house specialised in the design of IT solutions for the emergency services.

According to the report *A new beat: options for more accountable policing*, members of the public who've had contact with the police rate them lower than if they hadn't had any previous contact – in contrast with those from other public services who rate equivalent experiences with schools and hospitals higher than those who haven't had direct contact.

As regards the police, it is the follow-up contact that seems to be suffering the most – one survey showed 89 per cent satisfaction with initial contact compared to 58 per cent satisfaction with follow-up contact.

Are things really changing for the worse, or could there be another explanation? George Godliman, managing director of Fortek Computers thinks part of the answer could lie elsewhere. He thinks that here is a case of public expectation changing at a faster pace than the technology employed by the emergency services.

Technology used by private sector service providers (such as public utilities) has raised the bar to the point that the public sector now appears to be less efficient – even if this is not necessarily the case. "If there is a land line fault in a private household, for example, members of the public receive a very structured response from the line provider even if the service itself doesn't change and it still takes days to fix. But the expectations are met because the customer receives regular updates by text messages or phone calls to say that it is still being reviewed. This level of service is now becoming expected by the public and they expect the same from the emergency services.

Genuine emergencies where resources are despatched immediately are not the issue here, believes Godliman. "But in more complicated cases, optimising the response in terms of cost and response is a lot more difficult – and that is the area that has to be worked on. Callers expect the call handler to know that this is the third time they've called in three days. And showing that level of awareness can mean that the situation is successfully handled immediately, rather than having to send a policeman round." Godliman's point is that current C&C systems have applications that can help in raising public perception, but there are barriers. Many forces are still using legacy, proprietary systems, and are uncertain how to embrace more open system architecture or consider utilising commercially available technologies. "We have to recognise that there's one thing to have the right product and another to get it deployed in an organisation, because it often requires a faster rate of change than the organisation realises."

AVLS (Automatic Vehicle Location System) is one such example. Unfortunately, the exploitation of AVLS has been more challenging than expected, says Godliman. One thing is knowing where a police officer is (without having to ask him), and another is exploring how that knowledge allows the force to work differently. "There are two areas we are focussing on. Firstly, response optimisation. When you get an emergency it is nice to know where the officers are without having to ask, and that improves ability to respond. Secondly, as regards the Safer Neighbourhood Scheme, people want to see officers and most forces have schemes to encourage patrolling vehicles to visit certain locations. There are also agreements with the local police to spend a certain amount of time there. AVLS allows those schemes and agreements to be monitored."

Unfortunately officers do not necessarily want to be told where to go or indeed have someone check up on them. "The technology is here, but the challenge lies in the transitional period."

A new beat – some excerpts

A new beat: options for more accountable policing was published in June by the Institute for Public Policy Research. For the full report, visit www.ippr.org.uk.

"Opinion surveys show that public satisfaction with the police service has fallen since the 1980s, linked to a perception that the police have become less responsive to the views and priorities of local communities."

"The proportion saying that the police do a 'good or excellent job' fell from 64 per cent in 1996 to just 48 per cent in 2004/05."

"In 2004/05, those people who had contact with their local police within the previous year rated them more negatively than those who had not had contact (51 per cent of those who had no contact rated them to be good or excellent, compared to 45 per cent of those with recent contact)… These findings contrast with those from other public services: for example, direct users of schools and hospitals tend to rate those services higher than the public as a whole."

"According to one 2005 survey, while 89 per cent of people say they are satisfied with initial contact, only 58 per cent say they are satisfied with follow up contact."

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The case for managed services

Eric Pradier, Motorola Services' Vice President and General Manager, reviews the types of managed service arrangements that are available for critical communication networks and some of the issues that organisations should assess when evaluating the support they may need.

The Austrian Federal Government has constructed nationwide Critical Communications coverage for its blue light services. Due to the size and complexity of the network, TETRON (a company co-owned by Motorola and Alcatel) was instructed to build, own and operate the system with a 25-year contract. The contract has reduced costs over alternative proposals and ensures that government resources are focused on core performance rather than technical issues.

The operational case for deploying an ultra reliable and secure communication like Tetra for both the private and public sector is strong. However, governments and enterprises are faced with a prominent challenge: how best to construct, and subsequently operate, systems. For a growing number of organisations, managed services provide the answer.

Critical communications are especially suited to managed services: a claim substantiated by both practical and financial considerations. By calling on dedicated expertise, enterprises and governments can immediately acquire knowledge in how best to build, maintain and upgrade networks. It's expertise with cost advantages; managed service companies introduce high levels of efficiency to reduce CapEX and OpEX (capital/operating expenditure) and also offer performance guarantees. These are critical benefits. Enterprises are necessarily focused on solving the conundrum of driving costs from operations while simultaneously improving service, and governments must demonstrate value in an environment where expenditure is scrutinised intensely.

Organisations should assess where their competencies lie – do they have the skills to set up and maintain a critical communications network? If they have the capacity to create the necessary in-house resource, what might the costs be to do that compared to outsourcing? And what are the hidden costs such as people's time and technical support? Due to the versatility of managed service contracts, there are a range of options to evaluate.

Companies can use external support to advise them on the system they need and then build and operate it themselves. This model tends to apply to private networks where a single Tetra antenna, core equipment and end-user support can be delivered by a small group of engineers. Where regional or nationwide coverage is involved, a significant number of personnel are required to: oversee control rooms, monitor the network etc. It's unusual for organisations to have the competencies and the resource to invest in each of these areas. Consequently, managed services can be relied upon to provide all, or part of, these requirements.

Managed service contracts provide performance assurances; especially important for organisations with no prior knowledge of how to build, own and operate systems. Nationwide networks often have a lifespan of two decades or more and maintaining and upgrading them costs more than the initial build. With this equation in mind, customers have pressed for contracts that see managed service companies take on more responsibility. The objective of this is to ensure that risk is brought under greater control, and that uncertainties and rewards are more equitably shared between themselves and their managed service suppliers.

Managed service companies have responded to this demand by offering two distinct models to suit different business or government needs: "turnkey" and "build, own and operate" agreements.

Delivered to a pre-agreed price, timeline and benchmarks (eg call quality and capacity), turnkey projects remove risk and control costs during the design and contruction of communications system. With turnkey projects the infrastructure vendor often remains involved in areas such as spares management once the system has been handed over. The network operator then oversees the majority of maintenance and upgrade requirements.

Build, own and operate: "Inception to retirement" schemes where companies construct, own and maintain systems are becoming popular. In this case the vendor is responsible for the network and in return there is a charge for network access and maintenance over extended periods. With an understanding of their financial liabilities, public safety organisations can focus on service delivery.

Also, all emergency services can access infrastructure to extend cost and performance returns. The build, own and operate model is also applied in the private sector. Complete Tetra systems that come with dedicated support and assistance to customise applications are available from companies such as Motorola. Alternatively, businesses can opt to use infrastructure constructed for national public safety systems by leasing space.

Qualifying the UK's response

Communications Inter-Operability in a Crisis was published in January 2007, in response to the London Assembly's report on the July 7 bombings. Left: new Research Analyst in Emergency Management, Jennifer Cole.

A successful response to large scale emergencies depends on the interoperability of the many responder agencies involved. Understanding the UK's capabilities in this field is just one of the subjects on the remit of the Royal United Services Institute's new Research Analyst.

An adequate response to any large-scale, multi-agency emergency, be it a terrorist attack, flooding, a chemical accident or foot-and-mouth disease, often depends on the efficiency of the communications network and the ability of all the agencies and organisations involved in the response to communicate with one another – both technologically and organisationally.

This is something that the Homeland Security and Resilience Department of the Royal United Services Institute has long since recognised. Communications interoperability was a major issue in the US emergency services' response to the terrorist attacks of 11 September 2001, and has been identified as a major concern in UK emergencies as diverse as the 1987 King's Cross underground fire, the 1989 Hillsborough football disaster and the 7 July 2005 bombings on the London transport system. While the situation does improve with each emergency, there is still a need to analyse subsequent responses and to keep research into new technologies high on the agendas of both the public and private sectors.

Therefore, six years after establishing its Homeland Security and Resilience Department, the Royal United Services has formalised its research into emergency response and crisis management with the creation of a new research position: Research Analyst, Emergency Management. The establishment of the post is the culmination of 18 months work into emergency response issues by Jennifer Cole, who joined RUSI in January 2007 as editor of its monthly publication Homeland Security and Resilience Monitor, with research responsibilities for annual workshops on Command and Control and Emergency Response. Cole's research interests have since expanded to include the Role of the Media in Emergency Response and the role of the third sector in facilitating and promoting community resilience. The new job title of Research Analyst, Emergency Management, formalises this research aspect of her role and gives a clear point of contact within the Homeland Security and Resilience Department for external organisations that are keen to engage with RUSI.

Since joining RUSI, Cole has carried out research into such diverse subject areas as the co-ordination and management of multi-agency response; volunteer integration into emergency response; and multi-agency communication during emergencies. In particular, during analysis of last summer's floods, Cole looked at the management and communication of requests for mutual aid, and the integration of multiple agencies such as the Fire and Rescue Service and the Royal National Lifeboat Institute into the inland flood rescue operations, including how this was co-ordinated through operations centres such as the National Flood Command Centre set up by the Fire and Rescue Service in Worcestershire and the RNLI's central information room in Poole. During this time, Cole has also attended and observed a number of inter-agency emergency planning exercises.

As this side of RUSI's research is relatively new, it is not as well known as some of Institute's work into more military subjects but it is a significant and growing area of interest. RUSI is keen to use the establishment of the new Research Analyst post to reach and engage with members of the emergency response community who may not yet be aware of the institute or its relevance to them.

As part of its efforts to improve RUSI's profile amongst the emergency response community, the institute will be exhibiting at the Emergency Services Show in Stoneleigh Park, Coventry on 19 and 20 November.
This will give responders and suppliers the chance to speak with Jennifer, discuss emergency response issues and learn more about the institute's research programmes.
To make an appointment with Jennifer, email her on jenniferc@rusi.org.

BAPCO Journal readers can subscribe to RUSI's homeland security and resilience journal (Monitor) for £100, a 40 per cent reduction on the usual subscription rate of £180. Email subscriptions manager Michelle Forward on michellef@rusi.org before December 31 2008.

Integrated communications technologies deliver interoperability

Interoperability is the key to delivering an effective multi-agency response at the scene of large scale incidents. To achieve this requires the adoption of a wide range of voice, data and video technologies.

Excelerate pioneered the concept of providing high speed IP connectivity via satellite broadband on vehicles within the emergency services sector and has introduced many additional innovations.

Excelerate Technology has become the leading supplier of satellite and wireless-based communications solutions that improve the way that emergency services personnel communicate when responding to major incidents or attending major events. The company is focussed on developing and delivering innovative technologies that improve incident management and enable Category 1 responders to achieve interoperability and share information with other blue light services to meet their responsibilities under the Civil Contingencies Act.

Whether retrofitting existing vehicles or building bespoke command and control units from the ground up, Excelerate provides a complete single source solution with full training and support provided to complement its expert design, development, and supply and integration capabilities. The company also operates and manages its own satellite and private GSM network. At its International headquarters near Cardiff in the UK, Excelerate Technology ensures the delivery of high quality bandwidth, which is tailored in real time to suit specific client needs, budgets and service level requirements.

Excelerate pioneered the concept of providing high speed IP connectivity via satellite broadband on vehicles within the emergency services sector and has introduced many additional innovations. It has been responsible for equipping some of the largest and most advanced mobile command and control vehicles for organisations such as Royal Berkshire Fire and Rescue, Strathclyde Fire and Rescue and South Central Ambulance Service NHS Trust (SCAS).

Excelerate Technology, which has just achieved ISO9001 accreditation, has also equipped a wide range of smaller vehicles, including a new fleet of incident command and control vehicles for the Garda in Dublin. The first one to roll off the production line was on display at the recent National Association of Police Fleet Managers Show 2008. This contract was awarded by Wilker Auto Conversions in April to provide a comprehensive range of mobile satellite and communications technology and each vehicle has been equipped with 98cm transportable satellites, skydomes, VPNs and CCTV cameras for use both day and night. This will provide fast, secure and seamless data, voice and video communications with the Garda's Dublin HQ and other command centres, whether static or on the move. The Mercedes Sprinter-based incident command vehicles are currently being shipped and Excelerate Technology will be providing operational personnel with a comprehensive training programme.

Also on display was a new Ford Transit-based mobile incident unit, that will be officially handed over to Kent Fire and Rescue Services after the show, and a larger 15 ton major incident command unit belonging to Royal Berkshire Fire and Rescue Service. The RBFRS unit is equipped with a full complement of voice, data and video technologies, as well as being configured for on board conferencing. It also features an operational area designed specifically to increase RBFRS's resilience in the event of their central control rooms ever being compromised, allowing the mobile unit to take over as part of their business continuity strategy.

According to David Savage CEO of Excelerate Technology: "The wide range of vehicles that we had at NAPFM showcased

our ability to provide effective technology solutions for a wide range of applications. It also provided the market with a glimpse into the future to see what a multi agency command village might look like at a large scale incident and how interoperability can be delivered."

Satellite Communications

Mobile satellite communications are essential to achieving interoperability and enable the use of a comprehensive suite of cutting edge voice, data and video solution to be rapidly deployed within four minutes of arriving at serious incidents such as CBRN and HAZMAT, as well as others requiring category 'A' response regardless of location.

Command and control vehicles can also be equipped with ruggedised, touch screen PC terminals which enable STEPS (Strategic Emergency Planning Software), GIS and other specialised applications to be run wherever the vehicles are deployed. All such applications can be updated in real-time using the satellite links to ensure that vital operational decisions can be made using the latest, up to date information. A wireless network also enables personnel using laptops to access tactical plans or information from STEPS anywhere within a 100 metre range of the main ICU. This range can be extended almost indefinitely using Excelerate's self-powered, rapidly deployable mesh wireless nodes.

For maximum resilience, vehicles can communicate directly with each other as well as their appropriate HQs and other locations.

Voice Communications

In addition to normal VHF, UHVF and eventually Airwave communications, additional and more resilient voice communications can be provided. Excelerate's RapidNet Private GSM enables each command vehicle generate its own private GSM field enabling personnel to maintain communications totally independently of existing mobile network providers. As well as supporting existing handsets, fully secure GSM handsets with built-in encryption can be provided that can operate on any available GSM network including the onboard RapidNet Private Network. This will provide full telecoms capabilities in situations where either none exist or are unavailable and eliminate the reoccurrence of the communications problems experienced during the 7/7 incident as highlighted in the London Assembly Committee's report.

The Excelerate Communications Management System (ECMS) also provides satellite and GSM-based VoIP (Voice over IP) PBX switching functionality. VoIP handsets function as fully featured extensions of any PBX and use the mobile satellite links to route calls under normal conditions when the vehicle is stationary. GSM provides essential backup as well as enabling communications to continue when vehicles are on the move. ECMS also enables different voice devices including UHF and VHF radios, cellphones and VoIP phones to be patched as well as providing real-time voice recording of all voice communication channels.

Video Links

Command and control units can also be equipped with dual function cameras giving normal, high quality colour CCTV with full PTZ (pan, tilt and zoom) as well as thermal imaging. CCTV cameras transmit live video for viewing on any of the large or small screen monitors by Silver Command Staff operating at the scene of an incident or streamed via secure satellite links to a secure video server for online access in virtual real-time by authorised personnel using internet-connected PCs anywhere in the world. Also available are body worn cameras that can be used by field personnel to transmit high quality pictures from inside buildings, tunnels or other areas where there is no line of sight. This is achieved through using the latest COFDM transmission technology in addition to wireless, 3G and GSM.

CCTV cameras transmit live video for viewing on any of the large or small screen monitors by Silver Command Staff operating at the scene of an incident or streamed via secure satellite links to PCs anywhere in the world.

HART

Interoperability was also at the core of the recent HART initiative and Excelerate Technology recently unveiled the first of the newly designed and built Mobile Incident Response vehicles. Excelerate was appointed technology supplier nationally for the HART contract after successfully completing a pilot scheme with London Ambulance. According to Mark Rainey, CBRN HART co-ordinator for London Ambulance: "This MIRV represents a significant step forward from the prototype we have been trialling since December 2006 and successfully deployed at more than 250 incidents. The vehicle has already received an overwhelmingly positive response, which is a significant endorsement of what has collectively been achieved by the project team. Construction is to the highest quality throughout and the improved technology installed has the resilience to deliver a rapid response in any environment."

"This new generation of HART vehicles will provide high levels of real-time information and resilient communications to enable ambulance service personnel on the ground to make more effective decisions and enhance patient care at major incidents," concluded Mark Rainey.

The first vehicles, now widely recognised as being the most comprehensively equipped incident response units ever deployed by ambulance services worldwide, are destined for West Midlands, West Yorkshire and North West NHS Ambulance Trusts.

"We are incredibly proud of this new generation of Mobile Incident Response Vehicle and the capability it gives our clients which is the result of more than two years development. The effective partnerships formed with the NHS and coachbuilders W.H. Bence have ensured that the design, build and technology systems used are a quantum leap ahead of the previous generation of vehicles," concluded David Savage.

"This new generation of HART vehicles will provide high levels of real-time information and resilient communications to enable ambulance service personnel on the ground to make more effective decisions and enhance patient care at major incidents."

Mark Rainey, CBRN HART Co-ordinator, London Ambulance.

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When collaborative potential is key

Left to right: Matt Bennion-Pedley, Finance Director of Wiltshire Police, and Raj Singh, Regional Director (Public Sector) of HCL Technologies.

In December 2007 the announcement was made that Wiltshire Police would be investing £2.1m on a mobile and remote working solution from HCL Technologies, a company little known in the UK emergency services sector. With the implementation period now nearly over, BAPCO Journal spoke with HCL and Wiltshire Police to find out more.

"We think we can save up to £6.5m per year. And even if we are 50 per cent off in our prediction, that is still £3.25 million from the £2.1 million we spent."

Matt Bennion-Pedley, Finance Director, Wiltshire Police.

Finance Director of Wiltshire Police Matt Bennion-Pedley explains that it was the expandability and collaborative potential of HCL's offering that most impressed him. HCL's solution is not a licensed product whose costs grow with the numbers of users, but one that offers the ability to add large numbers of additional users, be these Wiltshire officers or from partner agencies or neighbouring forces, for marginal additional costs. "That was a key element in our decision to go with them."

Wiltshire is looking at the future and whilst the first phase of its mobile information project doesn't allow automatic sharing of data with neighbours, the potential and capability is now in place for this to happen. The hope is that in time, officers from surrounding forces will be able to access Wiltshire intelligence systems – or indeed any of Wiltshire systems – and vice versa. "We are keen on being able to integrate neighbouring systems as well. So that is why we wanted a collaborative platform, to have the option to move forward."

Wiltshire now has 60 users testing the system "to destruction", and who will train other officers in due course. "They are using the majority of the system, but there are a couple of things we have not switched on yet, such as on-street printing of penalty notices etc. This is because we are looking into other options such as providing the notice by post or email. We are trying to avoid having to ask our officers to carry even more kit," says Bennion-Pedley.

HCL's platform is compatible with a multitiude of different systems on the market, so linking with different information sources can be easily arranged, either within the Force or with neighbouring forces/partner agencies.

Bennion-Pedley is confident that the investment will be recovered in terms of increased productivity. "We think we can save up to £6.5m per year. And even if we are 50 per cent off in our prediction, that is still £3.25 million from the £2.1m we spent."

The force is using two main devices, one geared towards the operational officer (the HTC P6500) and another towards management level and heavy email usage (the HTC TYTYN). "We insisted that solution had to be device-agnostic, and HCL helped us choose the device and manage the deal. At least 80 per cent of the devices in the market are compatible with our mobile solution, so this gives us great flexibility moving forward."

Once roll out has been completed and information sharing opportunities explored, Wiltshire intends to use

its solution to explore other innovative applications. "We want to use our devices to get customer feedback from the public, as well as to explore other elements such as resource deployment. The devices will allow us to draw information about customer satisfaction and productivity right across our user base."

Taking a gamble

Wiltshire originally found HCL through the UK government's Catalist Specialist Solutions framework. HCL had partnered with one of the Framework's approved suppliers, Bath-based IPL.

Although HCL Technologies is not a small company (its global annual revenue surpasses the $1. billion mark), back in 2007 it was new to the UK police market. "They said to us that we might be nervous about their lack of footprint in this sector," remembers Bennion-Pedley. "So they offered to demonstrate two of their processes on our devices, at their risk and cost."

Raj Singh is the Regional Director – Public Sector for HCL Technologies. He explains that Hertfordshire is another force that is now going live with stage one of its mobile data programme (ie PNC, Stop and Search, mapping solutions etc), and by October 2009 its 2,100 officers will be "mobilised".

So how does HCL's solution differ from others on the market? Singh says that HCL's approach is different. "We go in with a process led solution that's driven by the business and not by the technology. We came up with a best business process repository that goes as far as the smallest activity, taking into account legal and regulatory requirements."

It is here where many forces struggle, explains Singh. "It is easy to carry on with the same processes, but sometimes you need innovation and this is what we believe we have brought to the police market."

In the time that HCL has been involved in the police market, it has noticed two general categories of police force. "Some just want to mobilise their solution, so basically do on the street what they did previously from their desktop.

"Then you have forces that are driven by a desire to make a real difference."

Singh adds that forces that fit into the former category may struggle in the future, because funding patterns are likely to change as police authorities lose the appetite to increase the local taxes that forces have been so heavily reliant on. "They will either be forced to combine with other forces or to drastically cut their expenses, while increasing their productivity gains – cashable and non-cashable ."

Forces like Wiltshire and Hertfordshire – who are driven by efficiency gains – are the ones that Singh believes will be in a formidable position to weather the uncertain future. "As a result of their business process approach with a single integrated value chain owner, they have developed a solution that fits their business strategy and will be agile to responding to changes in their operating business environment."

The fact that both the contracts with HCL are 5.5 years long means there is an ongoing maintenance programme and if changes are necessary they can be leveraged from other parts of HCL's business. "We have 1,000 plus people dedicated to the public sector, and we can pull people from other parts of the business. Normal integrators don't have that kind of resource pool at their disposal ."

HCL's next strategy is to create a national holistic shared solution for other forces. "We would love to take many forces and work on a common solution."

"Some [forces] just want to mobilise their solution, so basically do on the street what they did previously from their desktop. Then you have forces that are driven by a desire to make a real difference."

Raj Singh, Regional Director, HCL Technologies.

Mobile data – decision time

In May 2008, the NPIA announced the allocation of £50m for police mobile computers and following that, the Home Office has just announced the provision of a further £25m. The additional funding is to help police forces distribute a further 15,000 handheld devices, taking the overall total to around 30,000. Peter Harris, Head of Mobile Data at Arqiva's Public Safety Group, writes about the decisions now facing many forces throughout the country.

"The additional funding from the Home Office shows further commitment from the government to provide access to much needed, top of the range technology for UK police officers. Through the mobile data trials Arqiva has undertaken with some of the largest forces across the UK, including Strathclyde Police, we know just how critical this technology is in helping officers meet targets and, most importantly, increasing their visibility on the streets. Ultimately, less time spent at the station ensures more time out on the beat and more effective use of existing resources.

"Following the success of these ongoing trials Arqiva was selected in a tendering process to supply what will be by far the largest deployment of police mobile data services in the UK.

"As highlighted in the recent government Green Paper, mobile computers can help Forces to reduce bureaucracy and paperwork. While allowing officers access to critical information sources, such as the Police National Computer and the Voter's Register, the devices also store information on a central server for easy retrieval and reporting. This enables the police to complete forms, which have been transferred onto the computer, whilst out on the beat.

"Forces will now be able to apply for the additional funding to invest in the technology on a much wider scale. However they need to make sure they choose the best solution available to meet their needs. They need to ensure that the mobile data solution chosen can be tailored to suit both the Force and each officer within it. This is crucial as the different components and software available are suited to different roles within the police service. Taking the right route to implement mobile data quickly and effectively is also essential. Forces must opt for a supplier that will offer experience, expertise and a personalised rollout, rather than automatically committing to a standardised approach.

Peter Harris, Head of Mobile Data at Arqiva's Public Safety Group.

Not just for talking

Two-way radios are mainly used for communications but not many people are aware of the full potential of digital radios. Applications are transforming the role of the radio and the market is slowly waking up to that fact. We speak with Danish application company Zonith.

"With digital radio the sound quality is better, the DMO-range is longer, but the real evolution from analogue to digital is in the possibility to add applications", says Kristian Theilade, Product Specialist at Zonith A/S, a leading TETRA application development company based in Denmark.

According to Theilade, only the imagination restricts what can be achieved through digital radio terminals, and emergency services aren't yet even close to seeing the full potential of this upcoming technology.

Volunteer fire brigade communication expanded

Some of the applications accessible today allow a variety of medias to work together, and this is the case with volunteer fire brigades.

Volunteer fire brigades often use pagers to alert firefighters to a call out, and up to now both pagers and emergency radio systems have mostly been analogue or at least parallel systems with no automatic coordination. Because the systems are now turning digital new opportunities are available. Different communication platforms like TETRA, GSM and POCSAG can now work together through automatic dispatchers.

"TETRA can be coupled with almost any other media through software, and it is possible to control and monitor all kinds of technical installations and alarms."

Kristian Theilade, Product Specialist, Zonith A/S.

An example of this is when a 999 alarm is raised and the emergency dispatcher's information is sent via a local automatic dispatcher. Some information may be required to be dispatched three or more different ways. An automatic dispatcher has the capability to cross-reference with a watch's schedule and then send a pager only to the firefighters on duty. Using TETRA SDS text messages the dispatcher can also relay emergency information to the radios of the commanders, as well as paging the same information to the volunteer firefighters. For volunteer firefighters that live in areas with bad reception – or work in another town or city – SMS messages can also be sent as backup to ensure the call reaches everyone.

As a result, when firefighters arrive at the fire station they are better informed than before, as from the pager the scale and type of emergency will be evident. It was these exact benefits that impressed Finn Laukamp, vice-commander of the fire brigade in Aabenraa, in a trial exercise in Denmark. "Getting all the information in text from the first moment makes it much easier to prepare mentally and practically for the task ahead".

Remote control and monitoring device

Most people associate radios with voice communication, but there is nothing to prevent radios from being used as remote controls.

TETRA applications can be – and are already being – combined with telemetry. It is now possible to control and monitor surroundings through a TETRA radio terminal. It is possible that the use of digital radio applications can and will change the life of firefighters – all the way down to how they open the fire station gate.

With a well-designed application, and a little help from a remote telemetry and control unit, a firefighter can open a gate at the press of a soft-key on the radio. In this way any selected technical installations can be controlled through a TETRA radio, saving precious seconds. This solution is already used in many different businesses, and is found to be very practical in remote technical installations.

PMR applications are lifesavers

Indeed, much more is possible and applications and the demand for even more sophisticated functionalities will continue to grow and push the development forward.

Radio manufacturers are already aware of the potential and are initiating application partner programs. Sepura is one example of a radio manufacturer that is integrating applications, such as easy access menus and lone worker protection in its radios. Combined with an indoor positioning system, lone workers and people operating in dangerous environments can be found and quickly helped. Kristian Theilade from Zonith explains, "TETRA can be coupled with almost any other media through software, and it is possible to control and monitor all kinds of technical installations and alarms. You can do it from where you are standing, through the interface of a TETRA hand-held radio."

Theilade stresses that TETRA radio could be even more versatile. He adds that tragic events could be avoided with the knowledge and technology we have today, and has no doubts that there is a future in software applications for TETRA.

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A solution for when every second counts

Carl Hancock, Executive Marketing Coordinator of Aligned Assets, explains how technology designed for the British Transport Police could be used within the Fire and Rescue Services.

"With the NLPG, the BTP can increase response times and achieve far better location identification, and with SinglePoint the extraction of essential information is accomplished far quicker and with greater accuracy."

There are many elements that go toward creating the efficiency and life-saving capabilities of the modern fire service. One element that is often forgotten by members of the public – because of its lack of visibility – is the vast quantity of information that backs up and underpins all its operations.

This vast array of varying data is of vital importance to the efficient workings of the FRS. Information about fire hydrants, property key holders, properties with chemical risks and of course full, accurate location data all play a part in this. Much of this information is held in different systems, each tailored to the specific requirements of that data, which results in each system having to be acessed separately in order to extract that information. When time is critical, the inefficiencies of this way of working can become apparent.

Because of the specialist requirements of each database, it would be too much of an undertaking to integrate all these systems into one: some FRS are now looking to the work done by gazetteer specialist Aligned Assets for the British Transport Police (BTP), in the form of a piece of software called SinglePoint. This new technology works as a single portal through which multiple gazetteers can be searched on simultaneously, thus removing the need for manual multi-system searches.

The BTP Example

The BTP was the first emergency service organisation to recognise the National Land and Property Gazetteer (NLPG) as a definitive source of address data in England and Wales. As with the FRS, location identification is essential to BTP's work, but in addition to this it also holds large amounts of non-addressable information (some of which is held its own in-house gazetteer and some, such as names, that are held within a gazetteer supplied by QAS).

This additional information – often specific to a transport remit, as well as much that would be generic to all police forces – is as essential as accurate location identification. It is, however, not the information individually that is important, but the combination of this information. For example, the NLPG can be used to increase mobilisation times to a location, but if this location is a residence then information regarding the residents will also be required.

To obtain all this information at once, the BTP began using SinglePoint. SinglePoint was adapted to search the NLPG and the other gazetteers, with the option to select which databases were to be searched at any one time ie the option to search all gazetteers, or to search only the NLPG and another, or only the NLPG etc. Basic searches look very much like the standard Google search for a word or phrase, while an advanced search carries specific fields such as postcode or street name.

Because speed is essential to achieving efficiency, SinglePoint was constructed to be able to return searches in sub-second time (depending on the number of gazetteers being searched). To aid the user it categorises the search results (unlike Google's pages and pages of results) so that relevant categories can be expanded and information more easily found. For example, a search for "George Street" would not return every result with George Street but rather George Street London, George Street Birmingham, etc. A click on one of these options would then list all results for that category.

With the NLPG, the BTP can increase response times and achieve far better location identification, and with SinglePoint the extraction of essential information is accomplished far quicker and with greater accuracy.

Although SinglePoint was constructed with adaptors specifically for the gazetteers used by the BTP, the

flexibility of the adaptor technology allows for SinglePoint to be used by any organisation with multiple gazetteers.

Perhaps even more than in the case of the BTP, it is essential that a FRS knows as much as possible about a location that they are attending. SinglePoint can offer extensive information about a property, such as if the building is divided into flats or has more than one name (often the case with commercial properties).

In the case of residential properties additional information regarding hydrant location is clearly useful, whilst commercial and industrial premises are likely to have a plethora of additional information.

Preparedness is essential for the FRS and accurate knowledge can be the difference between life and death. The firefighters that can access information quickly will be able to perform their duties with less risk to themselves. Command and Control centres will be able to access this information as soon as the 999 call comes in, and transmit it directly to the firefighters allowing them to prepare in advance for whatever they might face.

The old adage states that knowledge equals power and in the case of the FRS this knowledge equals the power to save lives. In life and death situations the speed by which this knowledge is obtained is of the utmost importance, which is the very power of SinglePoint. Though technology can never replace the men and women of the FRS, via both sub-second searching and removing the need to access disparate systems manually, those men and women have a new tool in their arsenal.

"SinglePoint was adapted to search the NLPG and the other gazetteers, with the option to select which databases were to be searched at any one time"

BlackBerry picking

Thames Valley Police is currently equipping 1,100 police officers and community support officers with BlackBerry phones. With over 50 per cent of UK forces going down the BlackBerry route, BAPCO Journal talks to Research In Motion to find out what makes these smartphones so popular with the police.

Research In Motion (RIM) is a manufacturer and marketer of wireless solutions for the worldwide mobile communications market. RIM Senior Manager (public sector) Graham Baker says that one of the problems associated with adopting mobile technology is that these projects are – naturally – driven by those who already have technical and IT skills, and who naturally want to use these skills. "The risk is that the project then becomes overcomplicated for those who don't have a technical background." The BlackBerry solution, adds Baker, overcomes this hurdle by being intuitive and easy to use. "Police typically spend half a day training on the BlackBerry before being deployed on the street, so the cost of officers' time is minimised. You can imagine that the public would not be happy if it learned that officers had to be taken off the street for a week in order to learn how to use the latest gizmos."

Unlike other mobile data handsets which are rotated between officers in-house, BlackBerry smartphone are typically issued to each officer as their own device. That, believes Baker, provides additional security benefits when it comes to auditing the logs to the Police National Computer and checking officers are complying with guidelines.

Other benefits include the fact that BlackBerry smartphones can be wirelessly configured and provisioned by the IT department, saving large amounts of time for wide-scale deployments. "This reduces administration and the support effort required to implement the devices, which distinguishes this solution from others on the market," points out Baker.

Data security is a very current issue and Baker is keen to highlight that the BlackBerry solution is the only mobile platform to have been approved to restricted information level by CESG (the Information Assurance arm of GCHQ, the Government's National Technical Authority), for network-to-device information sharing.

With one in seven officers in the UK now using a BlackBerry smartphone, it is perhaps not surprising to learn that a major attraction has been its ability to integrate easily to back office systems. Remote applications accessed by forces such as Thames Valley now include:

- video witness and custody photographs
- missing persons database
- PNC
- COBWEB (warrants, court orders and bail database)
- webview of duty management system
- briefings information
- neighbourhood crime notifications.

Many devices in the BlackBerry smartphone range include a digital camera, which means that a Thames Valley PCSO can take a photograph of graffiti as part of an Environmental Visual Audit and upload it remotely, without having to travel back and forth from the station with a camera.

Mobile Information Project Manager at Thames Valley Police, Keith Gough, believes that ultimately deploying a BlackBerry is about enabling front-line officers to police smarter, not harder. "Being able to access police computer systems via BlackBerry smartphones means less time spent travelling between stations."

"You can imagine that the public would not be happy if it learned that officers had to be taken off the street for a week in order to learn how to use the latest gizmos."

Graham Baker, Senior Manager (Public Sector), Research in Motion.

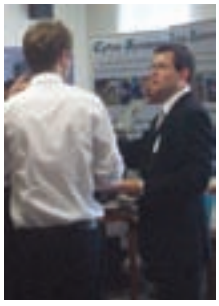
A BAPCO record?

The South West BAPCO Conference held at Police Training Centre in Hamble was very much a "back to basics" affair with talks focusing on large issues and major concerns of the BAPCO organisation. One talk even prompted 25 minutes of debate – a possible BAPCO record.

Deputy Chief Constable Ian Readhead: What is BAPCO?

The incumbent president elect of BAPCO, Deputy Chief Constable Ian Readhead, explained the history and necessity of the BAPCO organisation. He opened by telling a story about when he explained, in court, what the police force was like when he joined in the 70s. This was a time before radios and taped interviews and when an officer had to receive beat information by being at a telephone box at a certain time on his shift to receive information from his station chief. The judge stopped him and said, "you are describing something like Life On Mars. No-one in this court can imagine a police officer now doing this." Ian told this story to emphasis how much policing has changed, especially with regards technology.

Ian explained that his force, Hampshire, has over six terabytes of data on storage – three times more than the largest library in the world, the Library of Congress in Washington. This rise in data over the last few years has made the role of BAPCO even more important in bringing together the users of this technology and the companies that provide it. The rising need for cross-bearer terminals is something that BAPCO will play a leading role in, as it brings together expertise from leading technology companies and decisions markers in the public service who can outline what they need from such devices. Ian added that BAPCO is an organisation run by people alongside their main job and this underlines the dedications, commitment and importance of the organisation.



Exhibitors at the event were: Advalus, Cyfas Systems, Innogistic, HTK, Voice Recorders, SunGard Public Sector, Arqiva, APD Communications.

Dominic Robertson, Airwave: Now and in the future

Dominic Robertson explained some of Airwave's background and the possibilities for the future. Starting with some statistics Dominic outlined that Airwave has 230,000 users, 300 customer organisations and 3,500 base stations as well as a resilient architecture to cover any potential problems. The Airwave network is now in place across the entirety of UK emergency services and can help officers carry out PNC checks in seven seconds as well as providing guaranteed communications at periods of high traffic. Both planned and unplanned events, such as the G8 Summit in Scotland, or the London 7/7 attacks have shown Airwave can cope with high demands placed on its service and it is a definite benefit to the emergency services.

The future for Airwave, Dominic explained, is to work on incorporating the transmission of data alongside voice, as mobile data terminals become standard pieces of kit. The interoperability of Airwave means that increasing the data capacity of the network would be of great benefit to emergency organisations. Furthermore, he highlighted the recent announcement of an Acceleration Package from the NPIA to help forces increase their take-up of devices that work on the Airwave network. With the Airwave contract worth £3.1bn and scheduled to end in 2015 it is important that it is extended as far as possible.

The question and answer session at the end of Dominic's talk turned into a long debate that covered several interesting topics.

The first topic was how the Airwave contract is reviewed. Nick Deyes from the NPIA (who manage this contract), explained that the contract had a "value for money" test built in so that it's cost could be challenged and either decreased or extra technology could be added on for lower costs. Ian Readhead added that while Airwave had helped improve communications for police officers there were still a high number of devices not being used.

From here the debate moved on to the dangers of relying on technology too much and that the idea of "keep it simple" needed to be remembered to ensure technology didn't lead purely because it was there. However, as others commented, among them Ian Readhead, many officers now come to see one of the requirements of being a police officer was to have access to top of the range technology

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Dominic Robertson, who has been with Airwave for two years, said the future of Airwave was to work on incorporating data transmission alongside voice.

to help them do their jobs better. It was then suggested by another delegate that potential future recruits may well base their decision to apply to the police on what technology they would have access to.

This led onto an interesting debate about the pros and cons of giving officers unlimited access to the Internet at work: while social networking site Facebook is useful for vetting people on the internet the trouble is officers have had to be disciplined after using the site to "show-off" about their jobs, when they should be on patrol.

This debate about officers misusing technology also touched on the fact many were still using their radios for "meaningless chatter" and that this was taking up unnecessary space on the Airwave network. The highly engaging debate carried on well into the time allotted for Peter Prater's talk but, as Chair for the day, he said it was better to let the assembled members debate. He even thought the 25 minutes or so of discussion could be "a BAPCO record". It was certainly an interesting part of the day that underlined the importance of the regional meeting – as Ian Readhead had said in his earlier talk.

Phil Pimlott, South Central Ambulance, Divisional Director of Hampshire NHS Trust: Past, present, future

After lunch it was the turn of the Ambulance Service to explain about their role and how they are moving forward. The resizing of Ambulance Trusts has seen it decrease from 37 services to 11, and this has help improve the efficiency within the system. Phil explained that where as before there were 49 different types of ambulance in operation there is now a far more standardised system to ensure vehicles can be sent across forces without the need to retrain drivers and paramedics in their use.

Furthermore the ambulance services' call handling processes have undergone a redevelopment within the implementation of "Call Connect". This system is designed to give all call centres a level playing field with regards the managing of call and response times. Eight minutes is the allowed average time to respond to a "Class A" call (ie life threatening), so it is important performances are measured from the same time, and Call Connect ensures this.

Phil then explained about Drive Zone Data. This is a system that ensures an ambulance is always within six minutes of a location in its patrol zone. This data is mapped by GPS and can helped alert a driver if they move to far. Additionally Phil added that around 60 per cent of cases that are taken to A+E don't require hospital treatment but that when an ambulance turns up they expect to be taken. To counter this many forces deploy Rapid Response Vehicles (RRVs), which are modified estate cars, that can not only attend an event faster than an ambulance but help relieve the burden on hospitals by being able to deal with a problem at the scene.

Phil said the next stage in the development of the call handling process was to improve the transmission of data from the call centre to the drivers in the ambulances. Currently it can sometimes take up to four minutes for data to be sent through to paramedics and this can sometimes be too slow. Ideally technology will be adapted to allow data to be sent instantaneously. Currently there are four trusts using TETRA and it is hoped the rest will be online by

December 2009. Lastly by increasing the data capability in ambulances paramedics would be able to work on their training portfolios while sitting in the ambulance waiting for a call, by being able to access email and online forms.

Steve Kemsley, Olympic Security Directorate: The challenges ahead

The final talk of the day was a fascinating look at the planning that is currently taking place for the management of security at the 2012 Olympic and Paralympic Games. Steve Kemsley spoke about the multi-agency Olympic Security Directorate's role to provide a safe and secure games but without influencing the look and feel of the event. The Directorate has been set up to bring together experience and expertise from partners in the emergency services, Government departments and other police forces. The sheer size of the games underlines the task facing them: over nine million tickets are expected to be sold.

Steve added areas that become training homes to certain teams, such as the Israelis, would need to ensure they have the necessary security to deal with it. Their respective Local Authorities will need to ensure coordination with their local police, prior to guaranteeing any safety requirements. Not only this but with Notting Hill Carnival, the Queens diamond jubilee celebrations, the start of the Premiership football season, and Wimbledon, it will be a very busy time for police and emergency services to secure the summer of 2012. Despite this it must be "business as usual" and day-to-day policing must remain at the same levels.

The IT management of the games runs on a strict basis, imposed by the International Olympic Committee (IOC), which means that after 2009 there is an "IT lockdown" on Games-specific IT, and no new systems can be implemented for the running of the games. This is done to ensure new systems that are not fully tested do not fail at a critical time. This means that despite the games being four years away, there is actually only around a year to ensure all systems are implemented and assigned for the management of the in-venue security of the games.

Steve underlined though that despite the huge pressure and work that was to be done the Olympics is an event owned by the IOC and it is the job of the Olympic Security Directorate to ensure that while the event is safe and secure, their presence doesn't affect its look and feel.

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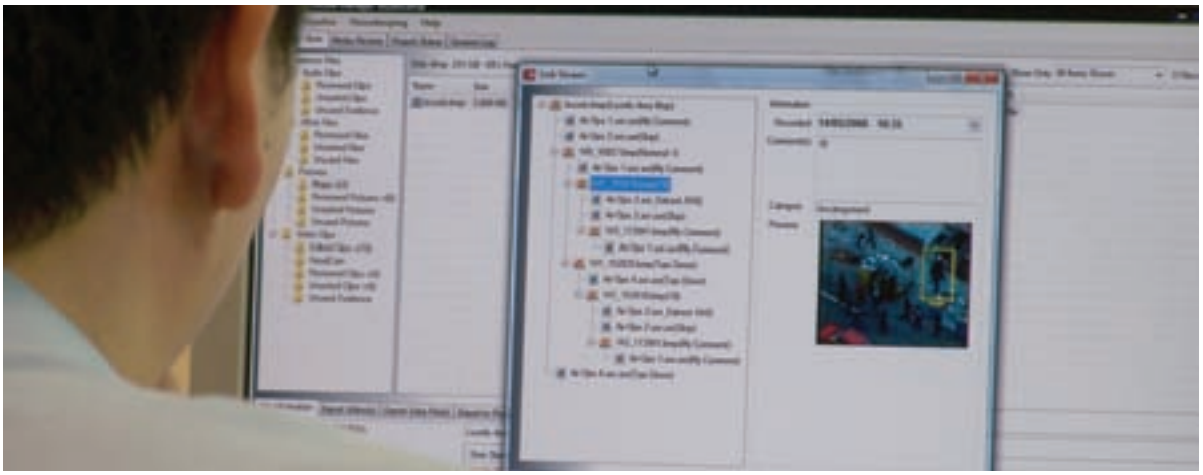


On May 6 The Guardian ran a story in which it quoted Detective Chief Inspector Mick Neville from the MET as saying, "CCTV was originally seen as a preventative measure. Billions of pounds has been spent on kit, but no thought has gone into how the police are going to use the images and how they will be used in court. It's been an utter fiasco: only three per cent of crimes were solved by CCTV. There's no fear of CCTV. Why don't people fear it? [They think] the cameras are not working."

DCI Neville had actually said only three per cent of street robberies in London were solved using CCTV, and The Guardian did quote this in their introduction, but the damage was done and the "three per cent" soundbite was the main talking point. The BAPCO Journal decided to follow up this story in depth and talk to both the man who's comments caused the debate, as well as some leading CCTV companies to find out just what CCTV can achieve, and what the future holds for this technology.

"In some ways what was said is true," says Mike Wilks, CEO of Scyron, "there are not enough systems to cope with the amount of CCTV cameras on the streets. This doesn't mean it is bad to have them there, it just means we need to make sure we are getting the most from the technology.

"As a company we don't believe monitoring the public for the sake of it is worthwhile, we believe the benefit comes from turning the information into evidence." Mike continues, "one thing we have to consider is that we need to treat CCTV as the third forensic science, alongside fingerprints or DNA evidence." Scyron's Digital Evidence Management Operating Network (DEMON) software is designed to do just that and was designed in conjunction with West Midlands Police.

The DEMON suite of software helps turn footage into potential evidence very quickly, and is designed to be admissible in court. Furthermore, rather than having officers trawl through hours of footage to find just a few seconds of relevant evidence, the software has a series of tools to speed up this process. The process is improved because the search functions run through the meta-data, rather than the actual video. By making the search function more instantaneous and user-friendly it will make it easier for officers to use it and find potential evidence.

The benefits of this are clear, as Mike explains: "if you can turn footage around quickly and confront people with evidence you can secure more guilty pleas, which saves time and money and means officers can be on the streets, rather than searching through endless footage. Because DEMON was designed with a 50-50 split between our staff and police personnel it has been designed with their input so that it has functions they need to do their jobs as effectively as possible. They told us almost 70-80 per cent of cases have the potential for CCTV footage to be beneficial, but time and effort means it can't be fully taken advantage of. However, with the DEMON software this should change."

Another way to improve the use of CCTV is to move to "IP-surveillance". This involves either using network cameras, or converting analogue CCTV images using a

Mike Wilks, CEO of Scyron, explains that Scyron's Digital Evidence Management Operation Network software (top) has been designed to treat CCTV as the third forensic science.

video encoder as both transmit digital images over an IT network. Images can then be accessed throughout an organisation or across the globe via the Internet, but are managed securely to deny unapproved access. IP-surveillance or "network video" as it is also known, also opens up a world of new live and stored applications, such as motion detection and people counting.

Axis Communications, a major company for network video, is enjoying success in areas such as education, retail and transport where technology is being continually upgraded and a host of analogue/IP solutions are now providing improved security.

IP-surveillance applications such as motion detection allow incidents such as graffiti, bullying, vandalism and theft to be captured and recorded – it can also be programmed to send a text message to a designated mobile to alert the user to the presence of an intruder. Axis UK managing director, Phil Doyle states, "the scope of the technology is increasing all the time. The cameras can be accessed in the same way as a computer or server. You can even turn lights on and off by logging into a camera from a remote computer, PDA or mobile phone and see if you need to activate or deactivate something." The increased quality of footage allows for better evidence as well and Phil says that megapixel technology is the latest development on this, allowing cameras to pick up details in far greater clarity.

Axis also ensures that its network video cameras and encoders have minimal impact on an organisation's IT infrastructure through the use of H.264 transmission protocol that compresses data down to smaller file sizes by removing superfluous information.

Phil explains more: "by compressing the data but keeping its quality you can effectively double your storage space or half the bandwidth requirements to store and view data remotely. This allows you to keep footage on your server for longer, with increased quality and with applications to search the video, evidence gatherers can get through it far more quickly."

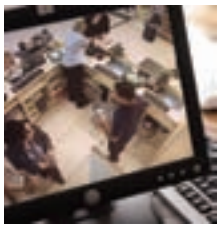
Axis uses a range of applications that are designed by outside partners to give added value to the hardware it manufactures: "With digital zoom and colour filtering you can make searching through video far more efficient, for example if you know the person you want to find was wearing a red jumper you can set the camera to highlight any moment when a red jumper is on screen. Functions like that are giving surveillance cameras their added value that was previously lacking."

A further benefit of IP CCTV is that allows for far better network infrastructure. As Dave Astley from NTL Telewest explains, "NTL have around 65 per cent of the UK covered, especially in urban areas, so it is possible to supply the IP software so cameras can be accessed on a network, rather than having huge banks of TV screens in one room. Furthermore you can link the IP CCTV to VoIP systems and messaging software and the system can cope with it as it has the capacity to do so."

By increasing the capabilities of CCTV there is increased potential to make them work as active security devices so that rather than merely recording incidents, they can actually alert the operators to potential incidents. Dave says, "by setting parameters on a camera you can make it alert you to people walking through invisible 'trip wires' in places they shouldn't, like at a railway station, or if an object is stationary for more than two minutes, such as a suitcase, the system can sound an alarm to alert the operator who can then instantly rewind the tape to see why the object hasn't moved. Functions like this make the whole system more efficient and dramatically reduce how long everything takes."

The secure, legal storing of CCTV information is vital to ensure it can be used in a court of law. BAE Systems' Universal Video Management System (UVMS) creates an audit trail of the data and time stamping so the footage is admissible in court.

The UVMS software also has the ability to link both IP



Megapixel technology, as used by Axis Communications, is the latest CCTV development and it allows cameras to pick up details in far greater clarity.

Airborne drones

As CCTV and related technology continues to improve, the scope of its uses increases too.

Tellemachus is a company that provides systems which allow CCTV images and audio to be instantaneously accessed remotely utilising various wired and wireless networks.

Having recently partnered with MW Power – a company that produces flying "drones" – Tellemachus is now providing the equipment that ennables the footage captured from the air to be viewed remotely. Peter Wood from Tellemachus explains, "In terms of our technology the drones are just another camera source from which to receive/send video to virtually anyone, anywhere, who might need it."

Cameras in the air are currently most often used attached to helicopters at the cost of thousands of pounds per hour, and often the footage is not used to its full advantage. "At the Buncefield incident, the police had a helicopter in the sky recording the scene but we believe that the Fire & Rescue services had very little access to this live video footage. With a drone viewing an incident, we can transmit the live video footage to those who need it whether they are static or mobile. We believe this provides far more benefit in the management of an incident," says Peter.

Tellemachus also provides a new mobile surveillance and camera system called Equinox that allows cameras to be quickly deployed in virtually any location, and record & transmit video and audio footage. Peter explains the benefits: "with this system you can set up cameras in areas that are not covered by fixed cameras, or for temporary requirements such as anti social behaviour or events.

"One of the problems with fixed CCTV is that if criminals become aware of the positioning they can simply move out of its vision. But with a mobile solution you can counteract this by setting up cameras where you need them. Furthermore as they transmit their video and audio wirelessly, you don't need to spend thousands investing in cables or wait months to get the cables installed."

BAPCO Journal CCTV poll – your votes are counted

The *BAPCO Journal's* online poll last month asked, "For what purpose is CCTV most useful?"
The results were as follows:
- Post-incident evidence gathering:43%
- Crime prevention: 21%
- Incident crowd monitoring: 18%
- Not a lot, the technology needs improving: 18%

This suggests that, as most people seem to say in the article, improvements in CCTV need to focus on making sure the handling of video evidence is the top priority.

If you missed out on voting, sign up to our E-Newsletter and we'll make sure you never miss it again – visit www.bapcojournal.com.

Jamie Wilson (top), of NICE Systems, believes that expert CCTV operators need to work in harmony with the latest technology in order for CCTV to evolve.

and analogue CCTV cameras into one manageable system, as Nick Swift from BAE explains: "one of the benefits of UVMS is that it makes the role of the operator so much easier by linking all cameras into one piece of software. With our system an operator can just drag and drop a camera they wish to view onto their screen and they can search through footage from the IP cameras using a time and date function. As it's a very intuitive system and simple to use an operator can be trained on it in about one to two hours. Because the system is fully scalable, it can handle huge amount of cameras linked together – from 10s to 100s of cameras – making the job of the operator as simple as possible. Additionally they can use a map system to click on any camera on the network to view that camera."

A further system offered by BAE, called Advantage.Net Plus, enables the "teaming up" of cameras from across user groups – local authorities, commercial organisations, transport companies – so that incidents can be monitored more closely.

The UVMS and Advantage systems have proved popular in over 100 areas. Nick adds, "the Advantage system makes it a lot easier for information to be gathered by the operators, allowing them to access cameras owned by different user group. There are still some issues here, such as how to work out who has ultimate control of a camera, when it might be needed by two organisations, but we are working with customers to help them resolve this operational issue.'

The need for expert CCTV operators to work in harmony with the latest technology innovations is something that Tim Giles of NICE Systems believes is a fundamental in the evolution of CCTV. "It is important to provide the benefits of technology to the CCTV operators as they are the ones who are tasked with watching live incidents unfolding and to send resources as required. This is an area of CCTV that would be hard to quantify as to its 'success' but has certainly made policing a lot easier as officers can now be directed to an incident and told what they will face."

NICE Systems provide the incident management system, NICE Inform, that manages multiple forms of evidence – CCTV footage, audio, digital images, fax messages etc - generated in the control room into one secure platform. Jamie Wilson, also from NICE Systems, says, "With NICE Inform you can really narrow down search parameters when reviewing CCTV footage as well as annotating or tagging information for other officers working on a case to review. This means they can see the right parts of the information."

NICE Inform is also designed to accommodate emerging technologies such as body worn cameras. As Tim notes: "It's often said there are four million cameras in Britain but with almost everyone carrying a mobile phone with video capability on it, in reality there are a lot more cameras that can be used to present evidence to the police. The ability to add this information alongside CCTV footage and tag, annotate and place it in a system where it can be used and stored helps streamline the whole process of incident information management."

Setting the record straight – DCI Mike Neville

"CCTV can be better, it needs to be handled better and managed better – currently criminals aren't scared of CCTV but they should be."

DCI Mike Neville, Operation Javelin, Metropolitan Police.

The *BAPCO Journal* spoke to DCI Mike Neville, the project manager of Operation Javelin Catching Criminals Caught on Camera, which covers both VIIDO and the Met Circulation Unit, to follow up on his comments from The Guardian and to ask him what he saw as the main barrier to the effective use of CCTV.

"CCTV can be better, it needs to be handled better and managed better – currently criminals aren't scared of CCTV but they should be. With DNA and fingerprints criminals know it can lead to convictions. It should be the same with CCTV – if you're on a bus, why would you a commit a crime? It's an environment full of CCTV yet people still do because they don't fear the cameras. We need to organise systems so that footage is handled correctly and will result in convictions. Our VIIDO unit at the MET is proving to be a success by outlining clear official procedures we have set down that should be followed for the use of CCTV as evidence. In Islington (North London) they have been following our guidelines and from April 2008 of the first 25 Tier 1 (Serious Violence) and Tier 2 (Serious Acquisitive) solved, 20 per cent were done so by CCTV – compared to 12 per cent for DNA and 4 per cent for Fingerprints. In another inner London borough not using VIIDO, 16 per cent of Tier 1 and 2 crimes were solved with DNA and fingerprints, but none with CCTV. At the end of the day improved cameras with megapixel technology are all well and good but we need people not machines to improve the use of CCTV so that it becomes feared by criminals and can prove far more useful than it currently is."

The next issue of *BAPCO Journal* will feature an exclusive report on the MET's VIIDO unit.

Building in evolution

CyberTech International has been involved in the development of software for digital storage and analysis of telephony and radio communication for 20 years. BAPCO Journal speaks with Luisa Pollini-Kommu, CyberTech's Marketing Manager for the UK, about some of the latest developments in the field.

"Now you can graphically add bench marks to a visual timeline of a call, for example, at the point where the crime victim started talking."

Luisa Pollini-Kommu, UK Marketing Manager, CyberTech.

For Pollini, at the heart of telephony recording for the emergency services is security – ensuring that call recording is absolutely secure. As regards CyberTech's Recording Solution the company uses 256-bit Rijndael AES audio encryption that allows its calls to be used as admissible evidence in court – key both for the police and the ambulance service.

"In the past such security was not available but now it is fundamental, both in the sense that it cannot be tampered with, and of who is allowed to play back recordings." In Pollini's view, systems need to be put into place giving access only to those who should have it. "In the old days you had to wait for days to get okayed, but now it is a fairly immediate procedure. Also, previously you had to go through tapes and tapes before identifying the call, but now it is much easier thanks to the inbuilt solutions which allow you to do all sorts of things."

Pressing a button to play, then stopping and rewinding a taped call is in the past. "Now you can graphically add bench marks to a visual timeline of a call, for example, at the point where the crime victim started talking etc. You can also add text notes to that bench mark, and you can search for key words in the text. These are now becoming standard solutions."

A trend evident in emergency services is to proactively seek in-built technology that can improve interactions with the public. "Especially as regards the evolution of call handlers. The services are looking for solutions that have in-built evolution capabilities to ensure that the service provided is of the best quality and that training needs can be identified easily. Here is an in-built solution that basically allows the supervisor to have a consistent flow of information regarding the quality of call handling."

One such example of future proofing can be found in call archiving. And an aspect that makes CyberTech unique, says Pollini, is that its solution allows services to easily scale up. "If you need ten terabytes of hard drive then that is easy to do, and you can scale up the number of channels and the archiving capabilities. The challenge is to provide sound structures that allow not just for the growth of the service but also for flexibility to the changes in the outside world."

Recent solutions: Yorkshire Ambulance Service

Yorkshire Ambulance Service's virtual call centre handles around two million calls per year, 600,000 of which are emergency calls. All calls are recorded, and YAS audits three per cent of all calls for quality assessment and identification of training needs.

YAS uses CyberTech Recording Solution to support its virtual call centre. Radio, VoIP and telephone conversations are recorded and stored at five sites. "We chose CyberTech's recording solution because it provides us with optimum risk management and operational flexibility to match our requirements. Its intuitive user interface makes it very easy to use and allows us to achieve total resilience and reliability by storing calls locally at each site as well as remotely, archiving them to our existing storage servers," commented Assistant Director of Information Management and Technology David Johnson. The Solution comprises networked recorders at each site, providing up to 56,000 hours of local on-line storage.

Gloucestershire Constabulary

CyberTech provides Gloucestershire Constabulary with a resilient digital recording solution and the XQ quality management solution to meet National Call Handling Standards.

An ambient recording solution for the Constabulary's control rooms is also in place, where proximity microphones can be invoked during major incidents to record commands and discussions that take place in the control room. This means an incident is recorded continuously, allowing real time playback of an entire incident, including telephony and radio traffic, via CyberTech's Incident Replay application.

Gloucestershire has also expanded its functionality, as Police Sergeant Mark Woodward commented; "We are moving to a Raid 5 archive system that provides the potential for storage of a rolling seven years' worth of immediately available online recordings. We are experiencing increasing demand for older material to support high profile cases and the expansion will provide efficiencies and high quality service in support to the criminal justice process."

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Interaction analytics

Recording the interaction between the public and the emergency services is not a new concept by any means. But there are still quite a few things that the emergency services could learn from the private sector, not least of which is interaction analysis technology.

"If you randomly collect calls you statistically get average calls, so you don't get a good picture. So what we say today is that you should record everything and use interaction analytics (IA) technology."

Jamie Wilson, Marketing Manager, NICE Systems.

Where the private sector goes the public sector follows and so it is no surprise that technology used by "contact centres" ("call centres" are yesterday's term) to improve the efficiency and effectiveness of caller interaction is now being seriously considered by various emergency services.

Jamie Wilson, Marketing Manager (Public Safety) at NICE Systems, says there are two reasons for this. Firstly, to improve interaction quality, and secondly to analyse the areas where a call handler may require some coaching.

NICE has had such a solution on the commercial market for a number of years now, called NICE Perform, and it is used successfully by globally recognised brands such as Federal Express in the US.

Readers will be familiar with the phrase, "your call may be recorded for quality purposes" when calling a service provider, and it is reasonable that contact centres listen to a sample of such calls. However, the large contact centres require a more organised approach, he says, if only because the volumes of calls can be huge. "We advocate total recording of all calls. There is a well-known issue where if you selectively record, you get a number of good calls, bad calls and average calls. If you randomly collect calls you statistically get average calls, so you don't get a good picture. So what we say today is that you should record everything and use interaction analytics (IA) technology."

With IA it is possible to tag calls according to specific requirements. In the commercial world, it may be when a competitor's name is mentioned, or if someone says they don't agree with a price. "In the public sector it could be the word 'crash', or 'burglary'. You can also spot heightened levels of emotion. It is even possible to link calls with what an operator is doing. Lingering on a particular screen may mean they need some coaching."

Behavioural parameters can be set for tagging too, "Here in the UK we typically take it in turns to speak, but in stressful situations those parameters are broken."

The tags allow supervisors to build a picture on all interactions relating to their staff, allowing them to correct weak areas. "Agent number one, for example, may have 20 per cent of calls in the 'excellent' category, 60 per cent in 'acceptable', and 10 per cent in 'bad'. The manager can then recommend some coaching or training, an important part of performance management."

But as far as Wilson is concerned, the exciting part of NICE Perform – at least in the context of the emergency services – is being able to focus on and acting on what the caller is saying. Being able to focus on calls where certain key words are mentioned – for example "bomb", or a certain area in the city – could have huge advantages, believes Wilson. "A lot of the police forces already have the performance management solution in place. They are capturing the information and evaluating it. But we are offering the next level."

Andy Cowhig of Storacall says his company has been in this sector since 1969.

The Storacall Perspective solution

The recording of telephone calls that are handled by emergency service call centres is a vital way of making sure that the service provided by operators is maintained at a high standard. Storacall, a company that has been in this sector since 1969, provides a range of services that allows call centres to improve their services and store large amounts of calls for a variety of purposes.

Andy Cowhig from Storacall explains some of the benefits: "By being able to record calls and store them you can use them for quality monitoring, bookmarking certain sections that were particularly good or bad, and saving them for future reference or training. And as the calls are encrypted and compressed they can be used in court as evidence. The system can store up to one million three-minute calls and so is able to hold plenty of example calls for training or potential evidence." It also allows managers to listen and mark the call handling of their staff and provide a clear audit trail so staff can understand why they were given certain feedback.

Storacall's Perspective software allows call-centre trainers to see how people are handling calls by showing the contents of the agent's screen remotely, "This system has another benefit as it means a trainer can see where people are going wrong, rather than having to get them to come forward and ask for help, which people are sometimes reluctant to do – this all makes for better trained, more confident staff," adds Andy.

The Storacall system can also be used in a range of unique environments. "In areas such as Heathrow or the London Underground our system can be used to record all announcements that are made so that the companies involved can prove they gave the correct information, or that in an emergency they gave people sufficient warnings and in time, if they are accused otherwise."

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Protection jamboree

Now in its third year, The Emergency Services Show takes place in Stoneleigh Park, Coventry, 19-20 November. It combines combines an extensive exhibition and dedicated conference.

"We are very keen for colleagues from the First Responder Community at all levels to get in touch and work with us"

Detective Chief Superintendent Michael Hallowes.

Axess International – covert action

After a successful BAPCO show in April 2008 Axess International is hoping its first Emergency Services Show – to be held in Stoneleigh Park, Coventry (19-20 November) – will be a similar experience. Hari Sandhu, director, commented, "We will be exhibiting at the show alongside our sister company Euroenergy Resources Ltd. One product will be an earpiece that is designed to look like a normal Ipod headphone that can be used covertly to PMR handsets worn on the body.

"Furthermore we will also have a wireless Bluetooth headset for radio transmission and a speaker microphone device being trialed in Scotland that can take digital stills or video." Axess will also exhibit equipment used to analyse battery performance and ensure batteries are used to their full potential. "We will be offering a free earpiece for new customers registering with us."

Crusader – whiteboard power

Crusader will be showcasing their range of interactive whiteboards at the show. These can be used for either training or emergency incident management and are currently used by more than 40 police, fire and ambulance services across the UK.

Richard Evans of Crusader says, "We will have our Promethean Interactive whiteboard, incorporating the latest software, on display so people can see exactly what current technology is capable of. We've installed this recently for East Midland Airport's Fire and Rescue service for training purposes, along with a voting system, like those used in Who Wants To Be A Millionaire. It allows users to interact with training and briefing materials they may watch." The whiteboards can also be used to view data securely at multiple sites, so meetings can be held across the country without people having to travel, a huge cost and time saving device, notes Richard.

Matrix Display – conferencing software

Matrix Display will have a highly interactive stand which will have a range of their technologies on prominent display. Two 42" plasma TV screens that will be showing videos of Matrix's conferencing software and Ian Wallington from Matrix says, "our conferencing software means meetings can take place in real-time across the TV screens and can massively cut down on carbon footprints by reducing the need for personnel to travel huge distance for meetings." The company will also have its Digital Signing systems on display: "With this system you can send messages across networks to multimedia screens in police or fire stations, for example, to inform staff of news or updates." explains Ian.

NPIA presentation – the 2012 Olympics

The National Policing Improvement Agency (NPIA) will be giving a talk at the show's conference concerning the opportunity the 2012 Olympics will provide for the emergency services to demonstrate progress on interoperability. Detective Chief Superintendent Michael Hallowes leads the multi-agency Interoperability Programme and will be providing an insight on what has been achieved so far and the challenges ahead.

"We are very keen for colleagues from the First Responder Community at all levels to get in touch and work with us. We want their views on what the priorities should be for the Programme, particularly around what doesn't work well now and needs to be improved, especially if it helps make our jobs a great deal safer."

Tetranet – rugged hardware

Tetranet supply a range of rugged mobile communication hardware that they will be displaying on their stand at the show, from handheld PDAs to tablet laptops and in-vehicle equipment.

Steve Greer from Tetranet says, "We will have a range of our equipment on our stand so that people can have a feel of their weight and see how they work. The range has a variety of weights and sizes so the products can either be used in situ or the lighter, rugged versions can be used at temporary incident rooms when an emergency needs coordinating. These products are designed to be able to withstand any knocks they may take in the course of an incident so the user doesn't have to worry about them."

BAPCO Journal will be exhibiting in Coventry and we look forward to seeing you there.

BAPCO

British Association of Public Safety Communications Officers

MEMBERSHIP APPLICATION

1. PERSONAL DETAILS

TITLE	
FORENAME(S)	
SURNAME	
POSITION HELD	
ORGANISATION	
MAILING ADDRESS	
POSTCODE	
BUSINESS TELEPHONE	
FAX	
HOME ADDRESS (If different from above)	
POSTCODE	
EMAIL	

I agree to BAPCO sending information to me regarding its events, products and services. BAPCO will not pass on any information to other companies or third parties ❑

2. CATEGORY OF MEMBERSHIP APPLIED FOR

ACTIVE ☐ ASSOCIATE ☐ COMMERCIAL ☐ INTERNATIONAL ASSOCIATE ☐

OFFICIAL ORDER NO

Please send further details of Corporate Membership ❑

3. ORGANISATION TYPE

Please tick one item that best describes *your* organisation

PUBLIC SECTOR AREA SERVED		ORGANISATION TYPE		COMMERCIAL	
Parish	☐	Law Enforcement	☐	Manufacturer	☐
District	☐	Fire / Rescue	☐	Distributor	☐
County	☐	Ambulance / Medical	☐	Dealer	☐
Regional	☐	Emergency Management	☐	Maintenance	☐
National	☐	Local Authority	☐	Consultant	☐
Private	☐	Central Government	☐	Network Provider	☐
Other	☐	Public Utility	☐	Training	☐
		Other	☐	Personnel	☐
				Other	☐

BAPCO MEMBERSHIP APPLICATION

BAPCO
British Association of Public Safety Communications Officers

4. POSITION RESPONSIBILITIES

Please tick the item that best describes *your* responsibilities in each area:

POLICY & PROCEDURE

- ❑ I approve/develop policies and procedures
- ❑ I oversee implementation
- ❑ I have a limited role in implementation
- ❑ I do not have a role in implementation

PURCHASING

- ❑ I approve purchases of products and services
- ❑ I select specify products and services
- ❑ I recommend products and services
- ❑ I do not have a role in purchasing

PERSONAL TRAINING

- ❑ I approve training programs
- ❑ I develop/purchase training programs
- ❑ I implement/teach training programs
- ❑ I do not have a role in training

5. MEMBERSHIP CATEGORY & FEES (Select One)

❑ **ACTIVE MEMBER**

Persons employed or contracted by a public safety agency or a department of central or local government responsible for the provision of public safety services, or are retired from such a position, who are directly responsible for, or retired from, the management, specification, design, installation, maintenance, operation and use of public safety communications and information systems, are eligible for this category of Membership

£40.00 per annum

❑ **COMMERCIAL MEMBER**

Those persons, in business or industry, who receive compensation in any form for services rendered or products sold, are eligible for this category of membership.

£40.00 per annum

❑ **ASSOCIATE MEMBER**

Those persons, who otherwise meet the requirements of Active Membership, may, at the applicant's discretion, select this category of membership, and, those persons not meeting the requirements of any other category of membership that share the Purpose and aims of the Association, are eligible for this category.

£28.00 per annum

❑ **INTERNATIONAL ASSOCIATE MEMBER**

Persons who are not citizens of the United Kingdom that share the purpose and aims of the Association are eligible for this category of membership.

£50.00 per annum

Details of Corporate Membership can be obtained from: ExecD@bapco.org.uk

6. PAYMENT INFORMATION

Total amount due £ _____

- ❑ Individual or
- ❑ Organisation is paying for Membership.
- ❑ Personal cheque enclosed.
- ❑ Official purchase order No. _____ enclosed.

7. OPTIONAL INFORMATION

How did you hear about BAPCO?

❑ Co-worker ❑ BAPCO Journal ❑ Sponsor

❑ Other _____

Gender: ❑ Male ❑ Female

Date of Birth: Day_____ Month_____ Year____

8. APPLICANT'S STATEMENT

I hereby apply for membership in the appropriate class of **BAPCO,** and agree to abide by the Constitution and Bylaws of the Association. I understand that by joining I also become a member of the BAPCO region serving my area and that my subscriptions are payable annually, based on my first day of membership.

SIGNATURE _____ **DATE** _____

TEL: 01522 575542	WHEN COMPLETED PLEASE FORWARD THE WHOLE FORM (WITH APPROPRIATE ENCLOSURE) TO: BAPCO, PO BOX 374, LINCOLN LN1 1FY	FAX: 01522 575542 (Remember to fax both sides of the form)

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CERTIFICATE SENT
RENEWAL DATE

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THE BRITISH ASSOCIATION OF PUBLIC SAFETY COMMUNICATION OFFICERS

Resilience seminar and exhibition

BAPCO South East Region
The *Telecommunications Resilience Seminar and Exhibition* will be held on 26th November 2008 at Minerva Centre, Roundbush Farm, Burnham Road, Mundon, Maldon, Essex. The programme will look at national and local work to improve telecommunications resilience and to ensure that responder organisations can meet their obligations under the Civil Contingencies Act. Among the speakers so far confirmed is Jeanette Innes who is the Senior Programme Manager, Telecommunications Resilience at the Cabinet Office.
This event has been kindly sponsored by Samdale Associates.
To register your interest please contact Tracey Mott, admin.manager@bapco.org.uk .
The full programme will be emailed to BAPCO members in the South East Region once confirmed.

The BAPCO 2008 Roadshow,
The Future for Information Sharing will be held on three dates, contact Tracey Mott, admin.manager@bapco.org.uk:

Wednesday 1st October, 2008
at The Yew Lodge Hotel, Kegworth DE74 2DF

Wednesday 15th October, 2008
at Barton Grange Hotel, Preston PR3 5AA

Wednesday 29th October, 2008
at Blunsdon House Hotel, Swindon SN26 7AS

Scotland Event, 25th February 2009: call for papers
The event is to be held at Strathclyde FRS Headquarters, Hamilton (for requests, contact chair.scotland@bapco.org.uk).

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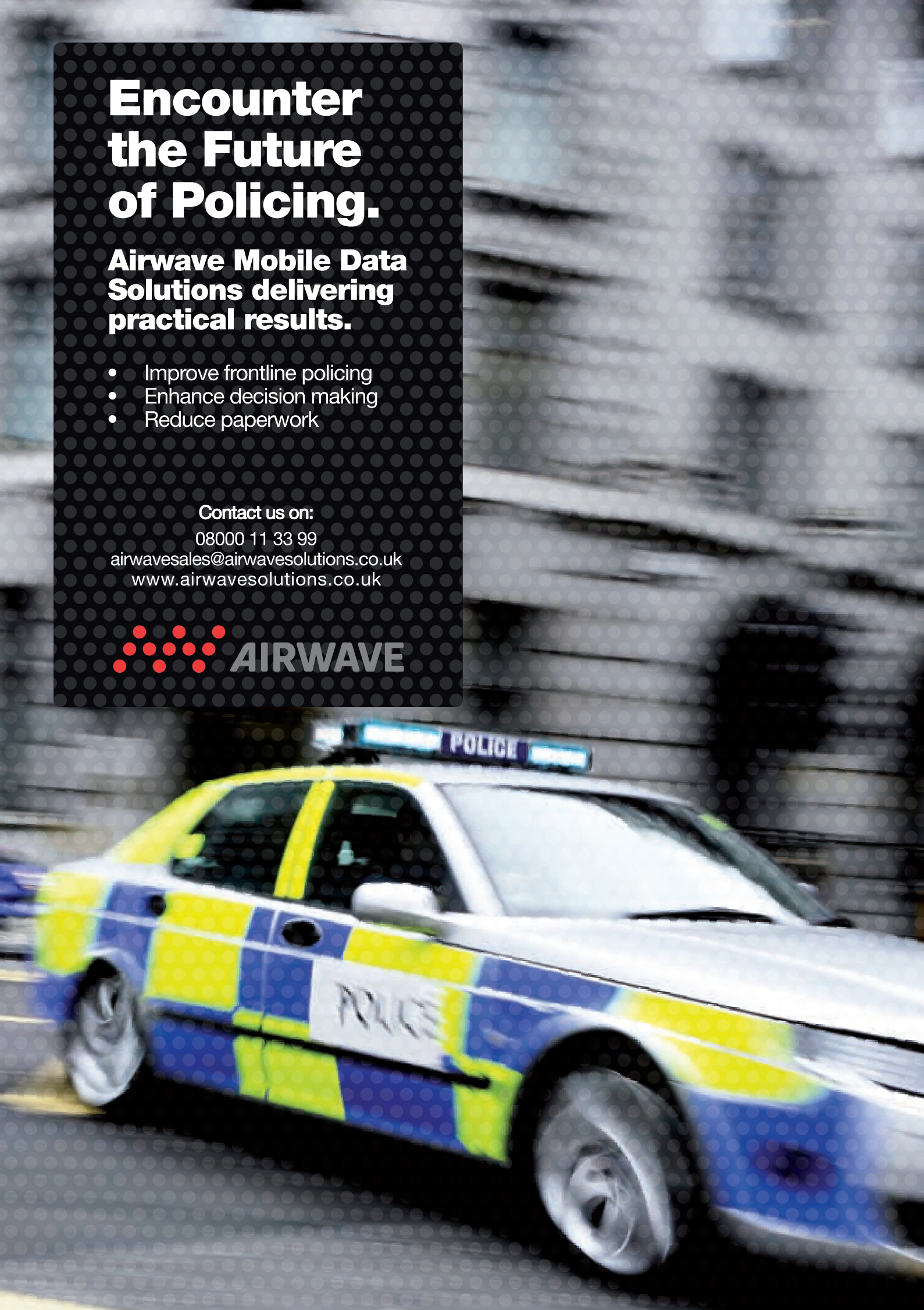

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