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BAPCO Journal

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President's Address

It is my pleasure to write my first article for the *BAPCO Journal* as the new President of the Association. I should have officially taken up my duties after the AGM in April 2010 but have stepped in early to fill the President's vacancy which has just arisen.

2010 will present some significant challenges and opportunities for the Association. There is no doubt that public sector organisations will be under immense pressure to cut costs as funding is reduced. The Civil Contingency response sector will be required to be in a high state of readiness both in the UK and internationally, ready and able to cope with any large scale incident or natural disaster which may arise.

Well planned and developed integrated ICT solutions will help organisations cope with service change brought about by reductions in funding. This should provide greater opportunities for BAPCO to develop strategic objectives which use the core values and expertise within the organisation both in the UK and internationally. We should not let this chance of further growth and influence slip by, it may never come again!

Another significant event of this year is the Annual Conference and Exhibition which will be held between 20th to 22nd April in London. An exciting programme has been prepared which should suit all interests and nearly all trade stands have been taken. Do not miss this chance to network with friends and colleagues from around the world.

I look forward to meeting you in April.

Hayden Newton, President

The CAG Column

Welcome to the latest offerings from CAG – the Commercial Advisory Group of BAPCO. Tracey Mott and I have been busy seeking out new venues for the October Roadshows this last couple of weeks: I know it sounds a long way ahead but it is surprising how quickly the time catches up. We are sharing ideas for the roadshows with the Executive in order to provide some variety in presentations and some interesting suggestions have surfaced. The future of communications and information technology is widely advertised in "Towards a New Dawn" at the main exhibition in London in April, where less reliance on voice and more on data will be the focus. As just one example, a new completely automated plant is being built for an international company, which not only automates the various processes involved, but is also fully integrated with the telecoms, data and CCTV systems.

The system includes multiple workstations and two 52-inch, wall-mounted monitors allowing operators to visualise the entire process. Incorporating CCTV images along with other plant process and asset management information increases uptime, site security and reduces operational costs. The telecoms scope includes:

- CCTV: perimeter surveillance and plant asset monitoring, including video recording.
- Site security: access control and intrusion detection for site including perimeter fence, gates, turnstiles and buildings.
- Communications: fixed telephones and a site wide mobile radio system.
- Remote operation: from a remote location both production and site security visibility is provided.
- Public address: zoned systems for alarms and broadcast messages.
- Fibre optics: a dedicated fibre optic network for security voice and data communications.

Whilst this is but a small part of a system, it illustrates the idea of integration of many disciplines. The five-year-plan of many public safety organisations will look towards performing all of these functions wirelessly and it is in this theatre we hope to provide independent and reliable guidance.

Not much in the way of input from the regions except to say that the South West England and South Wales Region will be holding a seminar and exhibition on 23rd March entitled: "Visual Communications – Concept to Conviction" at the Council Offices in Bristol and you can book your place by contacting either Peter Prater on the SW and SW Regional telephone number or Tracey Mott at her usual contact address. Either way, your completed application should be with Peter by 17th of March.

Colin Evans, CAG Secretary

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New dates for ACPO-APA

The annual ACPO-APA Summer Conference and International Policing Exhibition will run on a later date line than previously published.

The ACPO-APA Summer Conference will run from 29th June to 1st July and is a closed session for members of the Association of Chief Police Officers and the Association of Police Authorities.

The International Policing Exhibition will run from 30th June to 1st July and is free to attend for all police, staff, associates and colleagues. Both events will take place at Manchester Central.

iManage Southampton

Southampton City Council has opted for a street gazetteer management system from Aligned Assets.

Symphony iManage will be used for the management of Local Street Gazetteer and associated street data. A new system was necessary to export data in a DTF 7.1 format that was also fully compliant with the Traffic Management Act EToN 5 Technical specifications. Integration with Pitney Bowes MapInfo's Confirm Street Works is also planned.

Powering up

Uninterruptible power supply system manufacturer Gamatronic has introduced the Mega Power Plus Modular UPS, which it describes as the "crown jewell" in back-up power.

Supplying 25-250kW of power, the

modular system can cut power supply losses in half from 8% to 4%, has an Ac/Ac efficiency of 96%, and by reducing heat dissipation can save up to £2,500 per annum per 100kVA (80kw) – less running costs.

Identifying targets at the touch of a button

An innovative new mapping and information system that promises to improve the efficiency with which response and recovery units initiate their operations has been launched by York-based data supplier Simunix.

The unique mapping interface of ZoneSearch makes it possible to identify target areas with the click of a button. There are three ways in which the user can perform a search, each of which provides the highest level of precision possible.

By selecting the Polygon Search function, a user can draw a polygon of any shape or size around the required search area. This can include non-addressable locations such as railway lines, fields and riverbanks. The Radius Search involves simply clicking on the map and setting the diameter of the radius.

Once the search area is set, the user selects the information they wish to search for. This includes people, businesses and points of interest. Results are then displayed in a table that can be downloaded as a .CSV file. Finally, the Map Search presents telephone, address and resident information in a small box as the user hovers their cursor over individual properties.

Simunix worked with Ordnance Survey during the development of ZoneSearch, which has kept costs down for many organisations, as the service uses data already available under the Mapping Services Agreement. Paul McAfee, Head of Business Development at Simunix, said: "One of our clients spent four hours trying to identify people and businesses in a semi-rural area after unexploded ordnance had been discovered in a field – it took ZoneSearch four minutes and found 10% more unique records".

Damovo audio/video recording

A secure interview and evidential recording system for the police has been launched by Damovo UK.

The CODES (Complete Online Digital Evidence System) solution aims to replace outdated analogue tape recordings and meet NPIA recommendations for ICT best practice.

CODES ensures compliance with current and future Manangement of Police Information directives, as well as the two new Police and Criminal Evidence Act (PACE) codes of practice, E and F.

Davmovo UK's CODES also offers video capture in addition to audio recordings.

Map support

Cadcorp has introduced a new incident support mapping application for the fire services market.

The Cadcorp Incident Support Mapping System (ISMS) extends the range of applications available to fire services that are based on the Cadcorp SIS – Spatial Information System product suite. It has already been deployed at a number of UK fire services.

Cadcorp's ISMS provides fire services with a stand-alone application to enable effective management of resources at major incidents through a simple and intuitive user interface. The system has been designed for "usability"; the straightforward, logical interface reduces the need for dedicated specialist users or complex training. The ISMS allows the user to rapidly establish the location of an incident using an in-built gazetteer. The precise locations of emergency services staff and resources can quickly be placed on a plan of the incident site to enable better decision making.

Fingerprint technology roll-out

Police officers across the country will soon be able to check an individual's identity at the roadside within two minutes, following the introduction of a new mobile fingerprinting device later this year.

The NPIA has signed a contract with Cogent Systems to supply mobile fingerprint identification devices which will allow police officers to scan a person's fingerprints while on the beat and check them against the national fingerprint database for verification.

This will enable faster identification of those whose details are verified without having to take up much of their time, and also quickly identify those who are known to the police. This will save the public's time, police officer's time and help increase the number of offenders brought to justice.

During the first year of roll-out, up to 3,000 new devices will be deployed to forces in England and Wales, helping to cut the number of trips police make back to the police station and giving them more time to spend on the frontline. For example, rather than arresting and detaining an individual to establish their identity, which can take up to several hours, it will take a couple of minutes.

As an example, officers stopped a man who produced an Irish passport as proof of identity. The officers then

checked his identity against the national fingerprint database using a mobile identification device and the results came back within minutes identifying the man as an offender who had fled the UK eleven years ago after being found guilty of raping an 11 year-old girl.

Risk solution a hit with fire

An operational intelligence solution that provides site specific risk information (SSRI) for fire crews has been developed by Innogistic.

The solution was designed in co-operation with UK fire services, 10 of which have implemented the software on an early-adopter basis.

The information will be capable of delivery straight to mobile terminals in fire applicances as well as to the new Regional Control Centres.

The SSRI has been built on the same platform as the CFRMIS Fire Safety solution which is already in use by 60% of the UK's Fire Services. However the new system can also work as a stand-alone module so it can be used by all fire and rescue services, not just existing CFRMIS users.

Noisy environments

A new in-ear radio headset with built-in intelligent hearing protection that allows team to communicate in loud environments has been designed by Swiss company Phonak Communications.

The new system – "primero DPC" – enables conversations in noise of up to 115dB, and hearing protection is also guaranteed if sudden impulse noises occur, such as gun shots.

Mountain Rescue contract

The Mountain Rescue of Scotland has awarded a contract to Radio Telecom Services to perform all maintanance and upgrades to terminals and infrastructure for the next five years.

The contract will focus on providing a comprehensive support service of a wide range of equipment and locations inclduing portables, mobiles, base stations and vehicles and their interoperability.

Casualty Reduction Partnership

Microbus in-vehicle computers are part of a new roadside monitoring initiative by Greater Manchester Police to reduce road traffic accidents.

Premier Hazard has equipped Smart Cars with industry-leading Microbus in-vehicle computers for Greater Manchester Police as part of their Casualty Reduction Partnership. The cars are deployed at the roadside to monitor traffic and to catch those drivers that are distracted behind the wheel. Drivers who are caught using their mobiles are sent a letter and, in many cases, also receive a £60 fine and three points on their licence. Those caught not wearing a seatbelt or driving without due care and attention will also receive a fine.

Although similar Smart Car solutions are already available, Premier Hazard found that users were concerned about adding more technology to the vehicle, such as telescopic camera masts and Digital Video Recording (DVR) systems that would potentially exceed the vehicle's axle weight limit.

Their solution to this problem relied on Microbus technology in two ways. Firstly, they cleverly designed and built a rugged 360 degree, pan and tilt zoom camera system into a mini Opti-max light bar. Initial designs have included non-Microbus cameras but the next phase of development will use the Microbus Sabre zoom camera which provides increased colour resolution and excellent low-light performance down to 1.0lux.

Secondly, they chose the Microbus M-PC2 computer with its own integrated DVR solution. The operator can control the camera via a joystick or the M-PC2's touch screen, and record primary evidential footage with timestamps straight onto the computer's hard drive. This can later be transferred onto external USB drives.

The system provides is said to save on weight and space compared to a separate DVR solution.

iR3 success

An award-winning initiative by Leicestershire Constabulary that is aimed at building public confidence, improving performance and creating efficiencies has been made available to all UK forces.

Developed by Northgate Public services, the iR3 resource and demand system enables forces to focus on priority issues whilst ensuring htat critical resources are effectively used.

The system links crimes and incidents to resources so that operational managers can plan and manage policing activities such as critical response and patrolling strategies. "This is about putting accountability into visible action for the local community. Community representatives are now able to see our achievements on an interactive map on a regular basis," said Superintendent Jez Cottrill, lead on iR3, Leicestershire Constabulary.

Kent ups its game

Primetech has provided the latest mobile satellite and auto-meshing wi-fi technology for a Critical Incident Command Vehicle commissioned by Kent Police.

Kent Police identified communications as one of the means of improving operational effectiveness. Critical Incident Commander, Chief Inspector Andrew Reeves explains: "We wanted to bring our communications technology in line with the increasing demands placed upon our Tactical Operations Department. Shaving off even a few minutes of response time can make a dramatic difference to the outcome of a demanding situation. Primetech has provided us with a custom built integrated video, voice and data communications system that can be rapidly deployed in any location, however hostile, and has a wealth of features that have not been available before."

The CIC Vehicle has the capability to establish a secure, auto-meshing wi-fi network in situations where no network is present. The wi-fi network remains continuously available in the harshest of environments with excellent load balancing ability and multiple power options. It also caters for authorised multi agency personnel and wi-fi enabled equipment to be moved in and out of an operational environment without interrupting the network.

Inside the vehicle, there is a 37" touch screen monitor for real time incident briefings and a sophisticated switching unit that allows any video service to be viewed on any screen within the vehicle.

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Future-proofing BAPCO

At the end of 2009 a distinguished group of BAPCO members and end users gathered round a table in RUSI's headquarters in Whitehall to discuss the possibility of the creation of a new strategic group of advisors for the BAPCO Association. The event, sponsored by Airwave, allowed for free discussion which revealed some of the strategic communications issues and thoughts that the UK's civil protection responders are – and will be – facing in the future. Below is a snapshot of some of the discussions that took place.

One of the first issues was the question of how the emergency services deal with the adoption of new technology, and how that approach has been handled by vendors and end users alike.

In broad terms, the traditional approach by technology providers has been to engage the end user community in regards to their future requirements, followed by the provision of the perceived solutions two or three years later.

The end result, however, has sometimes been that while such desired solutions have been developed and duly provided – and operational benefits gained – these benefits have been relatively marginal in comparison to potential end-to-end business benefits. "And people will start to question the return on investment," said one delegate.

Following the realisation that in many cases the real "cashable" strategic savings lie not in isolated solutions, but rather in so-called "mundane, boring stuff" such as streamlined paper processes, some vendors have decided to change their approach. "There is a role to fill in looking at how technology is implemented, examining true organisational benefits and not just operational ones."

One speaker suggested that an example of this could be the way the police service approached the role of mobile data functionality – a project whose political expediency, it was argued, came at the cost of true operational benefits. Another speaker agreed, saying that even today in many cases police officers will put away their PDAs and take out their paper pads to fill in speeding tickets even though a more efficient technical option was literally in the palm of their hands. These tickets were then passed on to office bureaus, making any business benefit from the £80m roll out "negligible".

The trend does not appear to be going away, and still many people do not to look at wider business benefits, "People's eyes glaze over when we talk about end to end business processes, because it's not their job."

Simon Pilling, Chief Fire & Rescue Officer, West Yorkshire Fire & Rescue.

Sharing technology – a viable option?

There is an argument that the three blue lights could potentially share their equipment and bandwidth at mid to large incidents, thereby making considerable budgetary savings. "One thing that needs to be understood is what assets and capabilities each blue lights brings to different incidents.

"At the moment the HART project for the Ambulance Service has a very capable command truck, with satellite

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Visitors to BAPCO 2010 will already know Imass as a leading provider of integrated software solutions for UK Public Safety organisations.

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The Royal United Services Institute (RUSI) – an independent think tank engaged in cutting edge defence and security research – was founded in 1831 by the Duke of Wellington.

communications and 3G, but only the HART team can use it. Thames Valley Police has bought from the same company a similar capability, and they cannot share the capability that they bring although it's exactly the same. You have the situation that when a fire brigade's incident command vehicle arrives, the police have to bring their own command vehicle. They can't even link the two to increase their coverage, and they are all fighting for that capacity.

"In effect we should be saying, look, why are you bringing you own command truck, when fire has got one and you are both paying the same price each month for that bandwidth, and not using it to the limit. Why not share that capacity to the full?"

Could a similar pooling of resources also be brought to bear in the realm of IT, in the same way as Scottish police forces have done? The problem here is that in sizing terms, explained a delegate, Scotland's police is comparable to West Midlands, and the complexity that would face pooling the back-end IT resources of 43 forces would be problematic to say the least.

And yet this has been done before, with Airwave. "And the reason this was a resounding success is that on the eve of the contract being signed there were some chiefs who were still refusing to sign up, and they were made to tow the line. It's the same with the Police National Computer, so why can't that type of thinking be applied to other areas?"

Resilience – day-to-day vs stand-alone

"Because every one of us will be screwed down by public finances over the next three years we have to highlight how technology can assist us in meeting the challenges ahead, and getting more added value from what already exists."

While the idea of shared technology and shared bandwidth raised more questions than answers, common ground was found on the idea that there should be no dividing line or difference in the usage of technology both on an everyday basis and one-off large scale events. "It has to be a holistic approach, not thinking 'this is emergency stuff, and that's business as usual'. In operational terms if different agencies are working together smoothly during small events, and sharing information on a day to day basis, then the same technology and work practices will have a better chance of standing up to the challenges of a major emergency."

This, pointed out another delegate, ran contrary to the thinking in the past where it was an accepted axiom that alternative technology and different types of cooperation were necessary for major incidents. "Well actually we don't need (a separate response)."

It was felt by many, additionally, that until the time that all category one and category two responders were communicating with each other on a daily basis, a true multi-agency, interoperable programme would be unlikely to succeed. "Multi-agency means just that. It means local authorities, environment agency, all the local people that get involved."

Lessons have not been learned from the past, eg from salt suppliers sharing their strategic overview, and the current emphasis of civil contingency is still all-too-focussed on the blue lights. Significant gaps exist particular in the shape of senior members from local government associations and the Environment Agency.

One delegate provided a recent real life example, which involved hazardous materials on a lorry. "We ended up with fire, police, Environment Agency, and two local authorities, and nobody actually wanted to take it on. Everyone tried to push it in another direction, because there's nothing nationally that says, Fire Authority, or Environment Agency, or Local Authority, it's you. And that's why we get all these gaps and confusion that can fester. If at least on the communications side we can keep emphasising that it all depends on effective communications day to day, we can start to improve how people co-operate."

Getting key players to discuss these points and push them forward is key. Ironically however there seems to be a gap in the shape of senior police officers, who don't appear keen to engage either with technology or with technologists.

A potential solution to engage this crucial audience is to link technology with the potential savings that can be made through wise investment. Given the difficult economic climate and the political signals in the air regarding future funding reductions in public services, there is a potential opportunity for technology that genuinely brings value. It is precisely this point that needs to be emphasised across the spectrum of both end users and suppliers in the foreseeable future, if the full benefits of technology are to be achieved.

"First of all you have to find people with an enthusiasm about it and that's not easy. And secondly, they have to feel like they are making a real difference. Because every one of us will be screwed down by public finances over the next three years we have to highlight how technology can assist us in meeting the challenges ahead, and getting more added value from what already exists."

While reports such as Jan Berry's point to technology as a crucial way of reducing bureaucracy, unfortunately there is no historical evidenced way of how that can be done, pointed out a delegate. However, linking a reduction in bureaucracy to cost savings is currently very hot in people's minds.

Communications: strategic vs coal face

A senior serving fire officer raised the concern that while there was a big push at strategic and tactical level on multi-agency communications, this was not the case at operational level, where a "huge void" existed. "And

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Jeanette Innes, Assistant Director, Head of Communications Resilience, Civil Contingencies Secretariat.

when the mushroom cloud goes up that's where it's all important. All the planning and preparation beforehand is very important, absolutely, but that's happening at strategic and tactical level, not operational." Some disagreement from the Ambulance Service was raised on this point, where the opposite case was suggested, "and that probably demonstrates the lack of joined up approach."

At grass roots level there needs to be more understanding on how different organisations operate and what their needs are. So as well as how a responder uses his technology, what does another responder do at a scene, for example a fire officer? "For instance do they know that in the fire service the silver commander is quite often at an incident, while in the police they are in the command room? It is simple things like that."

One department to unite them all

Ears pricked up when it was suggested that three services plus non-blues would never collaborate effectively whilst each sat under different departments. "Frankly it's a nonsense to try and force all three together because whatever we do locally we have different models of governance. When you sit under a department that doesn't seem to talk very well with the Home Office or indeed the Department of Health, how on earth are we meant to collaborate?"

Tony Morris, Senior Emergency Management Adviser, West Sussex County Council, BAPCO Vice President (at the time of the roundtable).

The HART team came up yet again, in the context that its creation came about without collaboration with the experts ie fire service, who work in hot zones. "We got to the situation where we were having presentations by the HART teams on what capability and equipment they had, because we hadn't been told."

This highlighted that as long as there were different funding streams fighting for the same public money there would be a three-track approach to future collaboration.

On the other hand, if budgets were to be pooled across services, particularly in the current economic crisis, the net result would be a strong buying force across all emergency services.

History shows that a single Government area of responsibility to pull the three together is unlikely, pointed out another delegate, given the difficulties faced with the failed amalgamation of police forces.

At this point the mobile data project was brought up yet again, in the context of the difficulties involved in standardisation. "There has been no harmonisation, and the end result ranges from people who've bought Japanese war-surplus technology to space age stuff. There is no commonality, standards or interoperability. It's just been a complete free-for-all. If the Home Office cannot sort out the police, how will it address the more important issues that you've raised?"

The problem in uniting agencies is not limited to the UK, however. In Chicago, which has the largest command and control centre in the world for police and fire, there is a "nice, long wall between the two organisations, using the same command and control capability, but complete separation between the two."

The only collaboration that is currently happening at police chief level is collaboration with other police officers, at local level, as regards eg servicing the fleet, joint approaches to operational situations, and sharing resources. "But I have a degree of pessimism how far you go down that route because personally I don't detect the enthusiasm in policing, where the focus is more on how do we do more for less, and enhance capability by ensuring resources with a neighbouring force.

"What makes it harder now is that you've got regionalisation to a degree, with colleagues from fire and health, but the police service is talking about a different structure that won't be co-terminus in any way. And that's why I'm pessimistic, because there isn't the joined up thinking at national level to drive it."

The elephant in the corner: spectrum

It is vital that industry and emergency responders stand together on the issue of free frequency, especially if a proper joined up response is to be offered. It was suggested that there are two separate issues, one on why spectrum should be freely available, and secondly on the management of spectrum. "It's been made an expensive commodity and it is so poorly managed by the people tasked with managing it that there is a chance there is no body of knowledge of what exactly should be available for sensible use."

In order to be persuasive in the debate it will be necessary to clearly articulate what it is emergency services want in relation to their statutory requirements, and to evidence why they want it. "It won't be enough to hold a finger in the air, which is historically what's happened."

The reason that spectrum is being auctioned is to ensure efficient use is made of it and organisations don't grab more than they require. There is understandably some contention with the way it is being handled however, particularly as regards having a public safety organisation bidding in a commercial environment.

"The public service cannot get into an auction because everyone knows how much money we've got. It's like going to an auction and you know how much is in my wallet, and what my limits are. This is like money laundering, it is going from one element of the public purse to another and it's not sensible.

Continued on page 16

Shared services set to save the day

Shared services via a single, high-speed secure network for all three blue lights would deliver greater efficiency and cost savings, writes David Astley, head of health and emergency services, Virgin Media Business.

The entire public sector is up against the wall. Tasked with improving quality and meeting challenging efficiency targets, the emergency services community is no exception. In a December 2009 government white paper, police forces in England and Wales were given the mammoth task of making annual savings of £500m by 2014.

Whilst this represents a challenge it also offers the opportunity for a revamp of how services are delivered. Shared services have been hailed as the hero that's set to save the day, and they have a lot going for them. A single, high-speed, secure network that delivers the communication platform for the fire, ambulance and police forces across a region would deliver greater efficiency and cost savings than if each individual service has its own network.

Transforming the emergency services

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Delivering brilliant customer service is our top priority. We've got big ambitions and central to our plans are our customers. We are going a lot further than just changing the name above the door from ntl:Telewest Business – we are pioneering the next steps in delivering personalised solutions that best suit our customer needs.

And doing that comes down to the people working for us. Luckily then, we've got fantastic, dedicated people by the bucket load.

A signpost to how our people are helping to affect change in the public sector is our work with The Hampshire and Isle of Wight Partnership. The pathfinder Public Sector Network (PSN) project demonstrates how investment in a shared public service delivery network can benefit the overall bottom line as well as citizens. We delivered a super fast Next Generation Network that not only connects the 15 local authorities in the area but also incorporates the fire service's networking needs, saving money and allowing joined up Government.

Working with our locally based teams, the new network will result in much faster communications with the emergency services and ultimately a better service for the public. As so many organisations within the area will consolidate their network into this overarching infrastructure, there are significant cost savings and economies of scale. Looking beyond the efficiency gains, this translates into potentially saving lives, showing the human impact of improved communications.

Delivering the public sector networks of the future

Compliance with the new PSN guidelines is high on our agenda. The PSN vision is to create a single virtual private network across government agencies and public sector bodies using existing commercial infrastructure. We're already heavily involved through our work with the Hampshire and Isle of Wight partnership. And as the UK moves towards conformity with the October 2010 deadline, we're aligning our investment to ensure that our network continues to lead the way.

It's through continuous innovation, quality services and really focusing on what customers need that our organisation has become the telecommunications partner of choice for the emergency services across the UK. By listening to our customers, investing in what they want and delivering the technology to underpin their changing needs, we aim to continue this journey into the future.

For more information please visit:
www.virginmediabusiness.co.uk or call: 0800 052 0167

"And as the UK moves towards conformity with the October 2010 deadline, we're aligning our investment to ensure that our network continues to lead the way."

"I think there is a real opportunity for us to influence the debate but we have to take some of the high ground and say why it is important that the various services don't have to compete in the way it is envisaged."

Ian Readhead, ACRO's (ACPO Criminal Records Office) Director of Information, BAPCO Past President

"Government should stand up and clearly articulate that because they own the spectrum, and provided we can evidence why we need it, they can provide it to us. And if that means cap us, or take something off our budget to accommodate that, I haven't got a problem. But to suggest that we can go and participate in an auction is daft."

The solution is for ACPO, CFOA, BAPCO, ASEC (Ambulance Service Chief Executives Group) and other stake holders to go forward with a joint voice and a common strategy, which currently seems to be lacking. It was suggested that the organisation to lobby should not be Ofcom, who are merely following Government's lead, but Business Innovation and Skills (BIS), which is the lead department for telecommunications. "They should be having this conversation with the Treasury."

The Future Communications Programme, run by NPIA, were not taking up this issue as their efforts are currently concentrated on working on interoperability.

The other problematic issue on spectrum is simple. How to predict what future requirements will be, especially in light of the Airwave TETRA retender, and the current explosion in data usage? "And technologists are so clever that the user community is always behind the times. Secondly, one cannot just be lead by user requirements because ordinary officers on the street are often comparing their needs with consumer technology they already have at home."

The debate on spectrum finished on a high note, however, with a clear message on BAPCO's future role. "I think there is a real opportunity for us to influence the debate but we have to take some of the high ground and say why it is important that the various services don't have to compete in the way it is envisaged. And I think we could sway that debate – but we have to pick the areas very wisely where we think we can influence debate, against the backdrop of the realities of our organisations."

Present round the table: invited by BAPCO

- Olaf Baars (Chair), Deputy Chief Fire Officer, Berkshire Fire & Rescue, BAPCO President (at the time of the event)
- Jennifer Cole, Head of Emergency Management at the Royal United Services Institute
- Jeanette Innes, Assistant Director, Head of Communications Resilience, Civil Contingencies Secretariat
- Patrick Mercer, Conservative MP, Newark and Retford
- Tony Morris, Senior Emergency Management Adviser, West Sussex County Council, BAPCO Vice President (at the time)
- Hayden Newton, CE of England Ambulance NHS Trust and Ambulance Service Network, BAPCO President Elect
- Simon Pilling, Chief Fire & Rescue Officer, West Yorkshire Fire & Rescue
- Ian Readhead, ACRO's (ACPO Criminal Records Office) Director of Information, BAPCO past President
- Jose Maria Sanchez de Muniain, Managing Editor, *BAPCO Journal, Fire & Rescue magazine, Industrial Fire Journal*
- Hannah Sharp, Senior Policy Officer – Science and. Technology, Association of Police Authorities
- Ray Trotter, IT Manager, East of England NHS Ambulance Trust, Chief Executive, BAPCO
- David Webb, Chief Fire & Rescue Officer, Leicestershire Fire & Rescue
- Nick Welsh, Information Assurance and Technical Adviser, Civil Contingencies Secretariat

Present round the table: Airwave (sponsors)

- Rupert Cazalet, Public Affairs
- Josh B Earle, NPIA Liaison
- Malcolm Eastwood, Fire Resilience Client Director
- Phil Hobson, Futures and Innovation Strategy
- Roger Marsden, Director, Home Affairs
- Justin Paul, Head of Market Development (Police, Fire Ambulance)

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)

FOR OFFICE USE ONLY

RECIEVED
REGION
MEMBERSHIP No.

CERTIFICATE SENT
RENEWAL DATE

BAPCO

THE BRITISH ASSOCIATION OF PUBLIC SAFETY COMMUNICATION OFFICERS

President Elect takes up challenge

BAPCO President Olaf Baars has with regret resigned his position as President of BAPCO for personal reasons.

In accordance with the provisions of Section 5.1 of Article Five of the BAPCO Constitution, the current President Elect, Hayden Newton, will immediately take over the role and duties of the President until the next Annual General Meeting which is scheduled for 22nd April 2010.

At that time, and again in accordance with Section 5.1 of Article Five of the Constitution, Hayden will then continue as President for a further 12 months.

Life President Ken Mott will represent BAPCO at the APCO Australasia Annual Conference and Exhibition from 14th to 17th March 2010 and at the APCO Global Alliance Meeting scheduled to be held during that event.

BAPCO 2010 Roadshows

Dates for the 2010 Roadshows are as follows:

- 6th October: Hamilton
- 20th October: Doncaster
- 3rd November: Windsor

The theme for the roadshows is currently being reviewed by the Executive and a first outline of the content of the program will be published in the next few weeks.

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Position vacant

Vice President
Position vacant

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Seeing the bigger picture

Satellite broadband enables more effective sharing of information to enhance operational outcomes, writes David Savage, Founder & CEO, Excelerate Technology.

Experience has shown that maintaining effective communications is essential if successful operational outcomes are to be achieved in a wide range of environments. What has also become clear is that responders can no longer continue to rely on traditional GSM and terrestrial networks which, in the event of a major incident, are often unavailable due to geographical or coverage constraints, network overload or even failure.

Satellite-based systems have proved to be the most effective way to maintain communications and avoid the problems experienced during the 7/7 incident as highlighted in the London Assembly Committee's report. Different solutions provide access to high speed broadband services, whether on the move or at the incident ground, enabling operational personnel to securely transmit or receive vital data without having to rely on terrestrial infrastructure. This allows every level of a command structure to be kept informed with real-time data wherever they are deployed. Satellite broadband also enables responders to meet their statutory duties under the Civil Contingencies Act to maintain operational functionality and interoperability.

Excelerate Technology provides a range of automatically deployable satellite platforms that are now a standard fit for the new generation of mobile incident command units and rapid response vehicles currently being specified across all blue light services throughout the UK as well as being retrofitted to existing vehicles. The company also supplies satellite broadband solutions to local authorities and government agencies to meet diverse education and business continuity applications.

The use of satellite broadband is now firmly established despite the fact that it has mistakenly been perceived as a high cost option and therefore not suitable for the tight budgets being operated by emergency services. Whilst this may once have been the case, the reality is that these days, once the hardware has been installed, satellite broadband is now one of the most cost-effective options. Excelerate can also tailor the service provided to achieve the perfect balance between budget, user requirements and any SLAs.

West Yorkshire Fire and Rescue Service's new command unit (above and top right) includes a multi agency briefing area and three 42" touchscreen displays. Gwent Police's ICU (opposite) has been designed for all civil contingencies throughout the region.

Command and control

Satellite broadband is now routinely fitted on mobile incident command units (ICUs) used by the UK's emergency services and provides Silver Command with the tools needed to achieve higher levels of situational awareness and reduce risk. It also enhances the ability of incident commanders to make critical decisions in rapidly changing dynamic situations and deploy personnel in the safest and most effective way.

West Yorkshire Fire and Rescue Service's new command unit is one of the latest vehicles to be deployed and uses a roof-mounted transportable satellite solution to provide a resilient stand-alone broadband connection into the communications suite at the front of the vehicle

where operational personnel have access to secure telephony, internet and email facilities. There is also a multi agency briefing area with high impact safety seating and three 42" touchscreen displays that run specialised command support and emergency planning applications as well as being used for video-conferencing and the viewing of real-time video or television news channels. An additional 42" touchscreen display has been mounted externally within a separate compartment enabling larger scale briefings to be conducted.

"This new command unit was developed in partnership with Excelerate Technology's experienced technical experts who provided important advice on the technologies that would deliver the greatest operational benefits," stated Nick Smith, Group Manager at West Yorkshire Fire and Rescue Service. "It will enable us to build a full operational picture that will empower commanders to make faster, more effective decisions and enhance the management of major incidents throughout West Yorkshire."

The ICU is also equipped with RapidNet, a Private Mobile Network system provided by Excelerate

Technology to enable a GSM network to be generated at the scene of an incident to deliver full telecoms capabilities irrespective of the presence or capability of any incumbent national cellular network. It also provides full recording of all voice communications.

Four cameras, two of which are dual-thermal for day/night operation, have also been installed to transmit live video into the ICU for viewing by silver command staff operating at the scene of an incident. Body worn camera systems are also carried on the vehicle to deliver high quality, interference-free images regardless of line-of-sight. Using COFDM telemetry, these powerful systems enable high quality images to be received from personnel operating inside buildings or tunnels where traditional transmission technologies will not work. All live video images can be streamed over the secure satellite links to a video server for online access in real-time by authorised personnel at HQ and other locations.

Multi-agency operations

Satellite broadband also improves the way that the emergency services and other responders work together in a joined up way. This can be seen in action in South Wales where a new ICU, developed by Excelerate Technology in partnership with a team from Gwent Police's Emergency Planning Department, has been designed to provide a tactical silver command solution that ensures preparedness for all civil contingencies throughout the region. The vehicle will also be deployed at large scale public events such as the forthcoming Ryder Cup and the Ebbw Vale Eisteddfod.

"We worked hand in hand with Excelerate Technology to develop a bespoke solution that has met all our tactical, strategic and technological requirements within available budgets," commented Simon Leonard of Gwent Police's Emergency Planning Department. "We are extremely proud of our new mobile ICU which will enable us to better serve our local community and improve public confidence in our work."

In one of its first deployments, the ICU played a pivotal role during Operation Utah, a large scale multi-force operation in December 2009 that targeted travelling criminals involving over 150 police officers from 6 forces and representatives from the DVLA, Department for Work and Pensions, VOSA, HM Revenue and Customs, Her Majesty's Court Service and the Environment Agency. The ICU provided essential communications throughout the operation which resulted in 32 vehicles being seized and 13 people arrested.

Portable satellite solutions

Excelerate Technology also provides a range of lightweight, portable and automated satellite units which are used for a wide range of emergency services and defence applications. These rapid deployment satellite terminals are quick and easy for a single person to operate with motorised set-up and antenna positioning. The range includes standalone or vehicle-based BGAN solutions for bandwidth applications requiring global coverage up to 500 kbps for use on the move. These systems are all exceptionally easy to use without requiring special training and integrate with all standard local area network infrastructures.

Founded in 2001, Excelerate Technology has become the leading supplier of voice, data and video solutions to the emergency services using satellite and wireless-based technologies as a direct result of its extensive operational expertise and proactive approach to working in partnership with clients on every project. The company also maintains close working relationships with leading specialist coach builders which have been key partners in delivering a wide range of mobile incident command units and rapid response vehicles that are now in daily use by police, fire and ambulance services across the UK.

"We are extremely proud of our new mobile ICU which will enable us to better serve our local community and improve public confidence in our work."

Simon Leonard, Emergency Planning Department, Gwent Police.

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Top marks at Airwave Academy

Since going live on the Airwave network Devon & Cornwall's officers realised that the network had much more to offer and were keen for the force to get as much as possible from it. The result was the Airwave Academy pilot for improved radio usage.

"We are pleased that Airwave is being so proactive in helping build upon its capabilities to deliver real benefits to the police and the public."

Tim Bishop, Airwave Development and Services Manager, Devon & Cornwall Police.

As Tim Bishop, Airwave Development and Services Manager at Devon & Cornwall Police said: "Feedback from our officers showed there was a knowledge gap in how the handsets were being operated and that the radios were not, in all instances, being used to their full extent." The next step for Devon & Cornwall was to approach Airwave to see if they had any advice on how officers could improve their operational knowledge of the functions available over the network.

Prior to being approached by Devon & Cornwall, Airwave had noted that many police forces in the UK were not using the service to its full potential. As Andrew King, Airwave Academy Manager, puts it: "many forces in the UK had not had refresher training since the service was first deployed. Due to this some operational errors had crept in to the way in which the handsets were being used. We were keen to support our customers in ensuring they were enjoying the full benefits of our service, and it is for that reason that we established the Airwave Academy."

The Academy, launched in December 2009, is a training programme for all users of the Airwave national radio communications service including the police, fire and ambulance services. It has been designed to help Airwave's customers by training users in how to work more efficiently and effectively within the Airwave network service. The training sessions, tailored to the requirements of each individual customer, allow customers to maximise their existing investment in the network while realising measureable operational efficiencies and improved safety for frontline users.

When Devon & Cornwall spoke to Airwave about their concerns, the Academy had been newly established and the force was keen to use it for training its officers. The force signed up for a pilot to start in January 2010.

The first step was to identify where in Devon & Cornwall's jurisdiction the pilot would run. A survey was conducted across all of Devon & Cornwall to identify which locality had the lowest satisfaction levels with the Airwave service. The survey identified Plymouth as the area that would potentially benefit most from the Academy and the pilot was scheduled to commence there from 11th January.

Airwave will be reporting back on the findings of the pilot in a subsequent issue of BAPCO Journal.

Airwave tailored a programme that would meet the specific requirements of the officers in Plymouth, to improve end user operation of handsets across seven core functions:

- Direct Mode – a way to extend network coverage
- Transmit/Inhibit – important when using equipment
- Changing Talk Groups – a common function
- Status Codes – a key driver for resource management
- Defective Handsets
- Emergency Button – supporting safety
- Engineering Screens – fast resolution of service issues

To gauge individuals competency levels, Airwave sent a knowledge check survey to each of the 800 personnel taking part in the pilot.

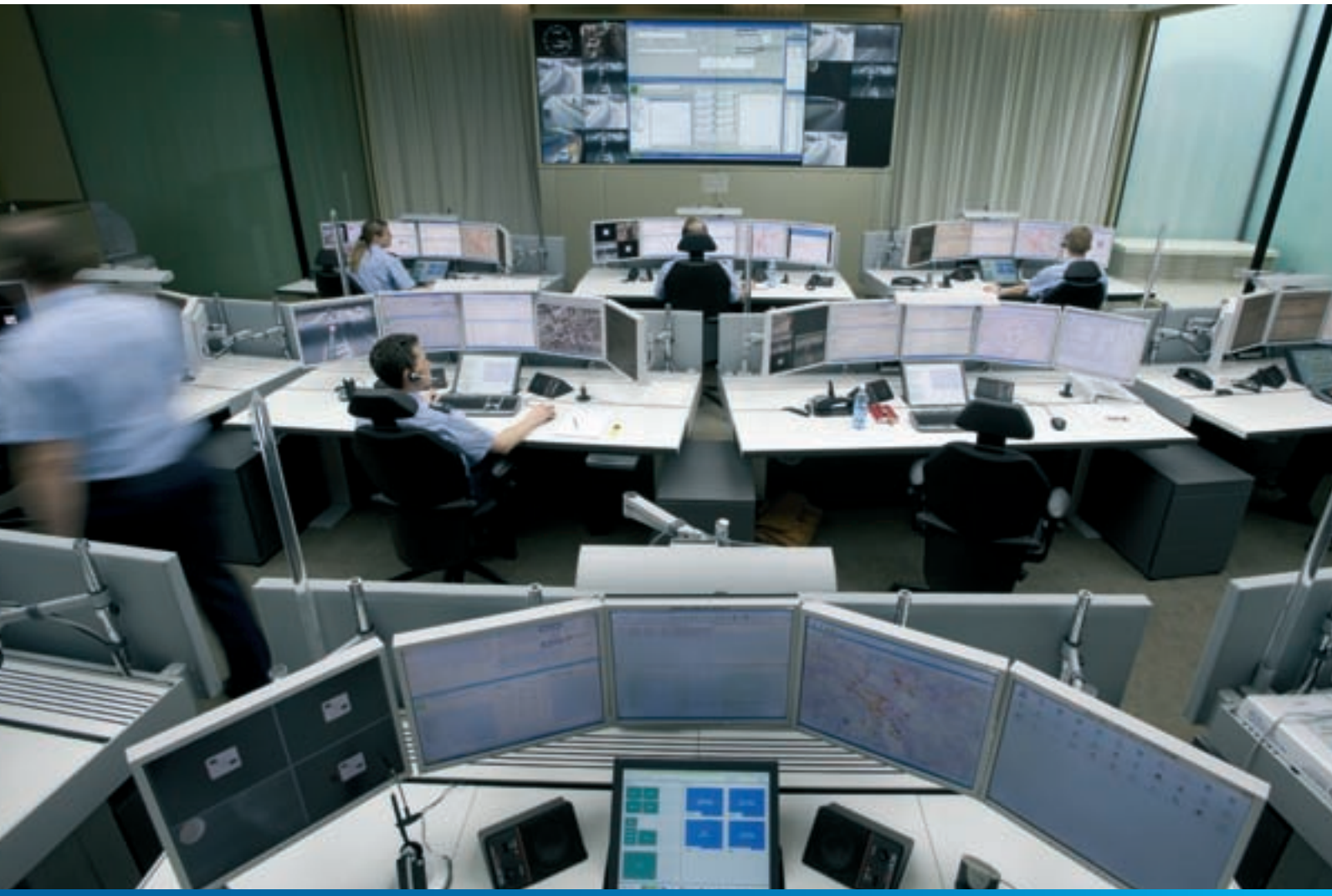
This was supported by a strong internal publicity campaign from Devon & Cornwall in order to underline to frontline officers the importance of gaining a full understanding of the Airwave service. Tim Bishop remarked that the success of the pilot was, to a great extent, due to the success of the communications plan around it, which secured the buy-in of officers to the training.

In just a two-week period, 70 per cent of the officers targeted by the knowledge check survey had completed the forms. Based on the replies from the knowledge check survey, Airwave alerted each officer about which modules they would train on.

Initial indications are that the training has been a success. One of the most critical success factors was ensuring the co-operation of all officers involved in the training. Tim Bishop noted a positive response. "Anecdotal evidence has shown that officers found the content of the modules engaging and they appreciated the structure of the course, which allowed them to fit it around their daily operational duties. We are due to survey our officers to review the training and we fully expect the feedback to be excellent."

The long-term success of the project will be measured in two ways. Firstly, Devon & Cornwall wants to see a reduction in calls to the support desk for assistance in using Airwave. This will save both officers' and support desk operatives' time, freeing them up to concentrate on their main duties. Secondly, it wishes to reduce the number of near-miss calls – instances where officers incorrectly use the emergency button. As Tim Bishop states: "The emergency button is the main health and safety function of the Airwave service. Its proper use is vital for frontline officers and the public they are serving as it allows the control room to deploy backup immediately and send it right to the spot the officer is at. With the Academy training modules we are confident that all officers will now have an appropriate understanding of the proper use of this vital tool.

CREATE A SAFER WORLD



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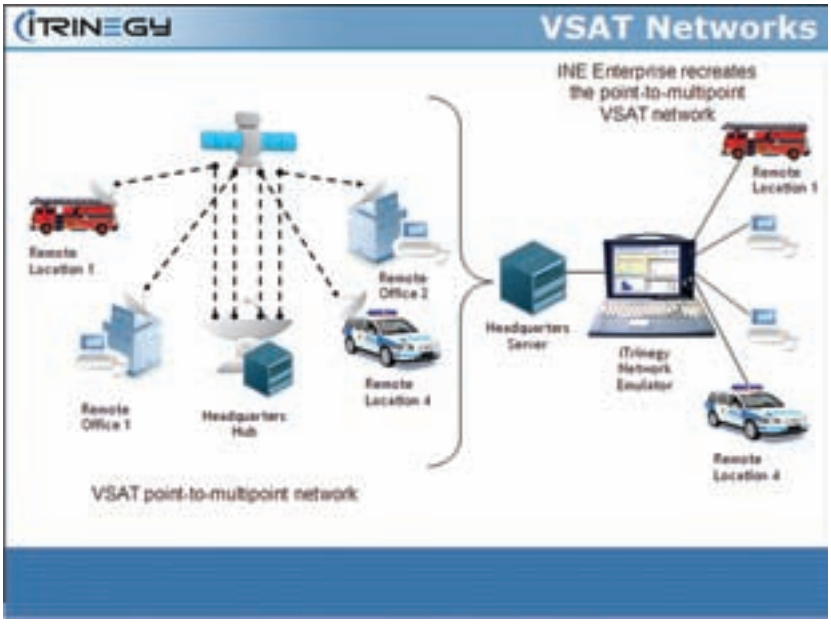
Testing network readiness

The convergence of voice and data in the emergency services means it is vital to be able to robustly run mission-critical data applications on mobile data. While the benefits are unquestionable when signal is aplenty, how do you know what your kit will do in adverse conditions? Enter the network emulator.

INE can recreate sat and radio networks in a variety of a situations, all from the relative comfort of a laboratory.

One solution is to conduct repeatable tests with a network emulation tool. The traditional approach to introducing adverse radio conditions in a test situation has hitherto been limited, involving creating radio reflections and interference in a laboratory, using radio reflectors and radio sources, believes Saffron Walden-based iTrinegy. The company asserts that the traditional approach is flawed, because such testing is difficult to repeat with exactly the same conditions (eg in terms of reflectors and radio sources).

iTrinegy has developed an alternative, a network emulator (INE-Enterprise) part of the iTrinegy Network Emulator (INE) range that recreates the behaviour of radio networks, and which enables the full and repeatable control of conditions such as data loss and interference. iTrinegy's Frank Puranik emphasises that INE is not a simulation tool, but an emulation tool – and there is a big difference: "In a military context, a simulation would be a war game contained in a computer, where certain assumptions are made and the game plays itself, emulation is a real tool that you plug hardware into. For example the police might have an in-car system with a small computer gathering data, with a primary application and a variety of other applications from different vendors, going out via the radio and Airwave network, ending up in the police network, where it can access other computers such as PNC etc. In an actual field-based system test you have to have the car; you have to move the car; and you have to put the car in various bad locations in order to replicate the variety of networks utilised. INE also allows for different radios to be directly plugged into the INE 'box', which is also connected to a network – for example simulating Airwave. You can then say, 'I want the conditions to be really bad'. The testing takes place in the lab without the cost of a field test, and you can plug multiple units into it."



INE can also recreate satellite and radio networks in a variety of situations, such as inside buildings, in bad weather conditions (eg when lightning strikes), even replicating the network effects of a bomb going off (to test communication contingency plans, for instance). iTrinegy's client base is formed mostly of vendors who supply the emergency services with communications software, and who want to ensure that the applications are network-ready and will work via TETRA or VSAT (A Very Small Aperture Terminal) Satellite Networks in the most demanding of circumstances. "It is crucial to test the applications 'live' with those networks. The very nature of networks means coverage can fluctuate and if a solution is not robust enough, data will be lost. Our traditional non-wired market has been the military, where people are moving through difficult terrain and where signal is being lost and gained continuously, and the applications have to be strong enough to handle that. Admittedly, if they cannot communicate they cannot communicate and nothing is going to change that, but they should at least be able to pick up where they left off."

The company is now increasingly engaging with end users in the emergency services, who are reporting communications problems such as reflection (the most common), which disrupts communications in high rise glass buildings in densely populated areas. Worryingly, there seems to be an increasingy trend from end users' feedback regarding their applications hitting mission-critical markets that are not ready, for example: "I was talking to one emergency service that said they felt as if they were debugging the application they had been given, and that as far as they were concerned it was not ready for prime time."

And it's not just end users who could benefit from network emulation-type testing. iTrinegy believes many suppliers are entering the costly Airwave Lab certification process for their products before they are ready. Using INE Enterprise, that testing could have been done in-house to ensure the product is truly "network-ready", making the Airwave certification process a virtual certainty at the first attempt. "Taking this approach means they will save both time and money by not having to re-engineer the product after first rejection by Airwave and then paying a second time to go through the certification process once more."

Setting the standard for multi-agency communications

Special profile of the Isle of Man's unique Emergency Services Joint Control Room.

The Isle of Man (also known as 'The Island') is unique in that its Emergency Services Joint Control Room (ESJCR) is just that – a single command and control centre whose highly trained, specialist operators are all able to handle any call and dispatch resources for any of the Island's three emergency services.

This truly multi-agency control room is enabled by Intergraph's I/CAD command and control system as the hub for a state-of-the-art IT infrastructure that supports police, fire and ambulance, 24/7. I/CAD, which on the Isle of Man has recently been upgraded to its latest version, is integrated with TETRA digital radio communications and other core applications including automatic vehicle location and remote fire station resource management.

The ESJCR – the first of its kind in the world – takes all calls whether 999, emergency or radio for the three emergency services, as well as dispatching the best available resources. It has handled 191,712 emergency events since its initial go-live on 19th April 2004 and managed 91,314 999 calls, achieving an average time to answer of 1.74 seconds against a five-second target. Over 2.6 million non-999 calls have been handled by ESJCR during the same period.

The multi-agency control room and TETRA network have been developed as a joint, £11.7 million project. It is now one of the Isle of Man Government's biggest success stories and has led to the Communications Division, part of the Department of Home Affairs, being acknowledged as a world leader in this field.

HRH Prince Andrew during a visit to the control room in 2009.

Integrated communications

The benefits of introducing an integrated communications set-up helped keep the project on course during the initial planning and commissioning process. "A culture change was needed to get all of the emergency service providers on board and build their confidence in the overall vision," explains Communications Division Technical Director Robert Williamson.

Significantly, the Isle of Man Government recently agreed to set a communications budget for five years to support forward Communications Division planning. "The real success of TETRA and the ESJCR is their impact on community safety," says Robert Williamson. "The integrated system means that the police, fire and ambulance services can be called at the same time to an incident such as a road traffic collision, saving time and lives. All our government agencies could, if they had to, talk to each other."

The Island's communications infrastructure is currently used by 21 Isle of Man Government organisations including its emergency services, utilities and transportation, civil defence, customs, forestry and housing, local government and environment departments – and has handled over seven million calls since go-live. "Thanks to technology, we are fully integrated," says Division Manager Jane Quayle. "Unlike many regions of England, we have full communications interoperability. In the case of a major incident our department of transport could talk immediately to the electricity and water authorities, for example. Using I/CAD's integrated command function we can create a major incident talk group which is then managed as a silver or gold command, with all communications within that group monitored.

The TT Week challenge

The multi-agency set-up is also of benefit for major events, notably TT Week, when the Island's population increases by over 50%. Annual leave is cancelled across the board as all divisions must run at full capacity in order to cope with the huge increase in workload.

Overseeing the strategic and operational planning for TT Week is a massive undertaking, with road closures, prohibited areas, the one-way system and special events to consider in addition to regular agency duties. Working in partnership with other emergency services, race organisers, marshals and volunteers, Isle of Man Constabulary officers concentrate their efforts on road safety, crime prevention and maintaining public order.

The many roles performed by the Isle of Man Fire and Rescue Service are also thrust into the spotlight by the unique demands of TT Week.

Planning is undertaken year-round, with members of the Community Safety Team visiting properties registered

under the Homestay scheme. Fire safety inspections are carried out at various government and private properties ahead of the race period, including community areas such as campsites. Hotels, flats, licensed premises and entertainment venues are also risk assessed as part of the prevention and protection policy.

The Isle of Man Ambulance & Paramedic Service begins planning early in the year for the TT. Considerations for the day-to-day management of the TT take into account available resources to best provide not only emergency but routine responses to patients requiring treatment and transportation.

Communication is crucial during the TT period and the Island's radio system and I/CAD-powered Emergency Services Joint Control Room play a prominent role. All police officers, fire crews, marshals, race controllers, vehicles and helicopters use TETRA. The network typically handles over 150,000 calls during TT fortnight.

Specialist control room team

This is also a testing time for the ESJCR team and their Intergraph I/CAD command and control system. "I/CAD was developed from the outset to support unified command and control environments and enable event and major incident management" says Howard Papworth, Executive Director, Intergraph SG&I Western Europe. "In terms of complexity and flexibility the Isle of Man's command environment is probably the most demanding, worldwide."

At the heart of the process, ESJCR's operators are specially trained to handle both call taking and dispatch, for multiple agencies, with each call presented to the screen in a different colour depending on the agency chosen by the caller: "If it's red, the operator then knows it's going to be a fire call," Jane Quayle explains. "The next one could well be ambulance or police."

ESJCR's approach is collaborative, as it lets the Island's three emergency services set their own level for their area of operator training, which lasts a total of six months. "Our operators are civilians," says Jane Quayle, "And our training programme is quite a long process. We send them out to each of the services for them to get a feel for the way the three agencies operate. For example they go off on exercises with the fire service – perhaps to a car where they have to cut victims out of the wreckage.

"In the case of police we ensure that they know as much as possible about the different forms of crime, to let them know what our front line officers are dealing with, and they travel with our ambulance crews in live environments.

"We have a very strict recruitment scheme. We run assessment centres, and there have been officers from other forces that have not passed the assessment."

The network typically handles over 150,000 calls during TT fortnight.

A fire-friendly camera

Body-worn camera technology and related applications are now beginning to creep into the fire service. Jose Sanchez talks with Mark Calkin of 802 Global.

It is easy to see why the body-worn camera solution now widely deployed on the streets has not been of particular interest to firefighters. Video footage from an incident that has to be downloaded back at the station is not much help to a firefighter looking for victims inside a house fire. Too little too late in operational terms – if nevertheless a useful tool for later training and debrief purposes.

However the latest solution from 802 Global involves live transmission – and live transmission that uses the same technology that is used in outside TV broadcast ie of good quality at 25 frames per second. What's more, the additional 'wow' factor comes from the fact that the live transmission isn't just for open air incidents where transmission and signal are aplenty, but in difficult environments such as in tunnels and complex buildings.

"What we've developed has even surprised us," says Calkin. "We did a trial at Belfast International Airport with one of these cameras inside an old fuselage that was on fire. We were not expecting to get too much back because the body of the aircraft is pretty much a Faraday cage*. But in practice we got very good images back to the receiver in the command vehicle."

In another trial inside a 1.7km long tunnel with a 120-degree bend, the live transmission again performed well from end to end. "We are happy that in a rail tunnel where the walls are lined with re-enforced concrete or engineering bricks it will work well." In more complex tunnel environments such as those of London Underground, the solution would be combined with an Ethernet Extender cable reel, which would be rolled down from the receiver in the tunnel to another receiver at the mouth of the underground station. "Wireless communications in general only go around three 90-degree bends, so once you get to a fourth bend it is defeated. But cable works well and the reels are easily deployed."

To summarise, 802 Global's Samix Camera System comprises of two elements, the COFDM Video Transmitter (CVT) and the COFDM Video Receiver (CVR) unit. Images can be relayed from the transmitter directly to a receiver unit where they can be viewed by other responder personnel such as sector commanders. Images can also be sent via radio mesh to the incident command unit. Video images can then be further distributed using satellite technology to remote locations such as HQ or Gold Command.

"Our preferred method is to relay back to Gold via sat comms because it supports good quality and frame rate. Streaming can go across via the Internet or a VPN (virtual private network) service. Also, because there are concerns about sat comms, you can also relay via 3G and modems, but there are limitation of bandwidth and frame rate. But you can happily send back three frames per second on this, which creates good situational awareness."

According to Calkin, Samix works well for a number of reasons. For one, it uses a balance of the "right kind of frequencies and power"; secondly, the COFDM modulation technology works well in this type of application (it is the same as used by outside TV broadcast cameras, as mentioned), and it uses dual antennae diversity, so the receiver constantly monitors the signal strength on each antenna and utilises the best one. This process happens thousands of times per second such that the receiver can perform at an optimum level from a reflected transmitted signal that is constantly changing. The result is the best picture possible, even from a weak signal.

While the technology used by Samix is not necessarily revolutionary, what is new is the fire-friendly way the technology has been put together. The system is extremely rugged (IP67 certification imminent) so it can be used in a variety of incidents, whether during wide-area floods or confined space rescue environments. It has also been designed to be intrinsically safe, so it can be deployed in potentially explosive environments (ATEX certification is expected in Q2 2010). It is easy to operate ("one button and you're on"), and a single cable from the camera to the transmitter carries both power and the live streaming.

In addition, any thermal imaging camera with video output can be plugged into the transmitter to stream live images back to command.

It is understandable why 802 Global is excited by the potential of the technology in terms of firefighter safety and effectiveness, and it appears that others may be getting excited too. Calkin has been working with two fire brigades that have seen demonstrations and have carried out small-scale trials with prototypes, and more trialling is planned. Last month in February a trial took place with South Wales FRS USAR on board a ship in Cardiff docks. Later this month a longer trial takes place in the south of England, and Northern Ireland is also gearing itself for a trial in a large salt mine complex. "We have a lot of interest from brigades that want to take it for more serious trials for a week or two at a time. It is really very good and very encouraging."

**A Faraday cage, or Faraday shield, is an enclosure formed by conducting material or by a mesh of such material. Such an enclosure blocks out external static electric fields. The reception of external radio signals through an antenna within a cage can be severely reduced or even totally blocked by the cage itself.*

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Lightning – it could be you

A lightning strike or sudden power surge could easily knock out the entire command and control structure of a station – and if you believe your organisation is protected already, it might be time for a rethink. Jose Maria Sanchez de Muniain talks to expert Mario Vesuvio.

To understand the risk it is necessary to grasp some of the principles of the power network. Mario Vesuvio, who has been protecting MOD critical infrastructure for a long time, thankfully explains the basics in layman's terms.

Take an average house in a small village surrounded by six houses, and imagine that the maximum amperes each house is restricted to is 100 amperes*. The power supply to the entire village may be around 1,000 amperes to cover for the six houses (100 amps x 6 houses), plus 400 amperes to account for volt drop due to distance between power lines, lighting and other.

Let's take a typical morning situation, when people awake, the power demand is typically low around 10-20 amps per household, (fridges, freezers, electric heating consuming power overnight) but when the showers and kettles go on there is a peak demand requirement on the internal domestic network – typically well over 100 amps (for milli seconds in bursts) even if 100 amps is the allocation per house.

**The three most basic units in electricity are voltage (V), current (I) and resistance (r). Voltage is measured in volts, current is measured in amps, and resistance is measured in ohms.*

Example of overvoltage in the domestic network

The way electrical appliances work, within the 10/20 micro seconds that a 13-amp electrical kettle is switched on, it demands at least five times its fused capacity, in order to take the water to boil factor as soon as possible. "It does this by pulling more current than it is fused at – even if this sounds like a contradiction, usually five to six times the power or greater. For less than half a second you will see 65 amps go into a kettle – but it doesn't last any more than that, so the fuse will not trip," says Mario.

That is what is called a "surge event", and it happens every time any device is switched on. In an office scenario, the surge event could be caused by a kettle or a hand dryer (the worst culprits – they are rated at 35 amps and they could pull 250 amps for half a second), and the worrying case is all electronic equipment in a building experiences this surge event too: "every computer and laptop will get a little ping/knock on the motherboard when the kettle goes on." If you then think that is bad, an air conditioning system could be rated at anywhere upto 400amps in an full office system!

A critical shortage/overvoltage

Back to the scenario of the house in the village. Imagine a neighbour decides to put in a new wall, and a tractor is used to dig up the earth foundations. The tractor's bucket picks up the mains power cable by accident (containing around 1000 ampere), and pulls. "At the

point of failure the electrical energy/amperes will try to "jump" over to maintain connection, and they will pull additional current to do this – possibly up to five or six thousand amps in this case."

Meanwhile, all the circuits in the village are open, each expecting 100 amps. But for half a second or greater, they will suddenly experience anything up to 5,000+ amperes, knocking out fridges, washing machines, computers – everything. "That is called a critical short-circuit – overvoltage, and it happens extensively in all areas. But buildings don't always 'see' it because buildings can often dissipate the energy due to their size."

Whilst the analogy used here is of a digger breaking the cables, many other overvoltages are generated in thousand of different ways. These types of overvoltage do not always go unnoticed either. Small devices (usually fire alarms and PC equipment) will fail when this happens. "And people don't know how it happened, because they don't realise there's been a massive over voltage that has affected the building."

A critical surge event typically lasts around 20 microseconds, but because a fuse does not notice anything until an overvoltage has been through it for over half a second, it will not trip. "So there are 30 microseconds to play with until the fuse sees it."

At this time, it is worth pointing out that critical systems like those used by the police could be on the same grid as the house in the village. There is currently no obligation on these mission-critical buildings to be protected against these types of surge events or transient overvoltage (TOV).

Lighting strikes and power surges – an electrifying story of confusion

There is an old BS standard (BS 6651) which is still current in existing buildings that protects against lightning strikes. Unfortunately, this standard does not cover the internal systems; it makes a recommendation for power protection, but is not obligatory.

The BS 6651 is designed for the protection of the external fabric of the building and it has little to no requirement for the internal power or data systems. It does, however have what some might call a built-in flaw – coinciding and working with the 17th edition wiring regulations, which states "a cross bond between the external lightning protection system (faraday cage) or the steel which may be used in the construction of the building and deployed as a faraday cage must have a cross bond onto the internal earth bar of the main power supply."

This stipulation applies both to the BS 6651 on lightning protection and to the newer standard BSEN 62305 on lightning and surge protection.

The internal system mentioned above is where all the building's earthing and power needs are sourced, so in effect what these standards are doing is asking people to connect the external lightning protection system to a generic earthing system – and this is usually located in the main power supply panel board.

In the event of a lightning strike, buildings with this type of protection can wave goodbye to their electrical and electronic equipment, emphasises Mario, even if they are "protected" from lightning. And to add insult to injury, the latter standard and its former standards have all used the same principles for the past 50+ years, which makes the probability of many ES buildings having said cross-bond in place, extremely high.

"Many people think they are protected against lightning because they have 'surge protectors'. However, these devices will usually be a Type 2 low level, surge arrester, not lightning coarse arresters. These will sustain a transient overvoltage or a surge event, but not against direct or indirect lightning strike. Also, there are questions around how long these devices last for, and unfortunately there is no physical way of testing them. This means that there are many buildings that people think are protected, but in reality may well have lost up to half of their protection over a number of years."

Thankfully a new BS EN standard has now come into play and is harmonising the two. Introduced over two years ago – and this is mandatory for all new builds – it stipulates that electronic lightning protection is fitted on power supplies and all service lines (ie power, data, telephone), thus stopping any lightning from coming into a building and terminating the building's ability to function in its primary role.

"Many people think they are protected against lightning because they have 'surge protectors'. However, these devices will usually be a Type 2 low level, surge arrester, not lightning coarse arresters. These will sustain a transient overvoltage or a surge event, but not against direct or indirect lightning strike."

Mario Vesuvio, Managing Director, First Power & Surge Protection.

What about existing ES buildings?

As a company, First Power and Surge Protection, offers two options. One is to conduct a full risk assessment, then basically design and install a brand new protective system according to the new (sensible) BS EN standard. This, admits Mario, is often cost prohibitive for public service organisations which is why there is another option – a "hybrid" if you like. "What we do is apply the old BS standard, test it to ensure it meets its test parameters, re-evaluate it, and effect any remedial works that might be required. We then look at all the service lines, power, data and telecoms, and then install Type 1 lightning protection combined with Type 2 surge arrestors, in effect providing part 4 of the BSEN documents profile to ensure we offer protection to the power network and earth system from critical surges from the grid and direct/indirect lightning strikes."

The protective equipment is fitted onto the main panel board of the building, as well as on the earthing system. It is also fitted onto sub panels that handle external equipment such as external lights. Additionally, highly sensitive and critical electronic equipment such as end circuits and multiplexes can be fitted with Type 3 surge arrestors, which will provide the end touches to a fully coordinated system.

Once such a system is in place, even a direct lightning strike will go unnoticed by all the sensitive equipment inside the building, and its primary function will remain mission critical.

And the bottom line? Well, Mario emphasises that it needn't cost the earth. Fully protecting the house in the village would give you change from £500. And what's more, he is confident that any ES that draws upon the company's expertise on lowering power demand and usage by voltage optimisation – power factor correction – could cover the cost in around 12 to 18 months.

A data-sharing success story

The use of web-based data sharing technology has helped the Croydon Business Crime Reduction Partnership reduce shoplifting by 26%.

Croydon Business Crime Reduction Partnership is a proactive partnership between retailers, business owners and key local authorities such as the Metropolitan Police and Croydon Council.

Once labelled as having the highest rate of shoplifting in the UK, Croydon Business Crime Reduction Partnership (CBCP) was created to provide a safe and secure town centre for customers, staff and visitors to Croydon. Working in partnership with local retailers and business owners as well as a number of local authorities, CBCP has significantly reduced crime in the area, achieving a 26% stock loss reduction for May-August 2009, compared with the same period in 2008.

The Partnership has been using web-based data sharing technology NBIS (National Business Information System) by Hicom, which enabled the organisation to share crime data between members, track offenders and produce detailed reports and analysis on criminal activity in the area.

Croydon Business Crime Reduction Partnership is a proactive partnership between retailers, business owners and key local authorities such as the Metropolitan Police and Croydon Council. The partnership also includes local transport agencies such as taxi companies, car parks and the British Transport Police and works in collaboration with other business crime reduction partnerships throughout the UK. CBCP is separated into three sectors: Business Watch, Pub Watch and Travel Watch.

Each Watch monitors anti-social behaviour and criminality across particular sections of the Town Centre. Business Watch focuses primarily on the retail and business sector of the day time economy, whilst Pub Watch focuses on the town's pubs and nightclubs and is currently being extended to include late-night take-away and fast-food outlets. Travel Watch operates across the town's transport scheme and includes the Cab Safe scheme and local taxi companies along with all car parks located in the town centre.

In order for CBCP to improve Croydon town centre and reduce levels of criminality and anti-social behaviour, the partnership required a sophisticated data sharing system in order to gather and store intelligence on the most prolific and active offenders involved in crime, disorder and anti-social behaviour. Alan McWilliams, Business Crime Reduction Manager at Croydon Business Crime Reduction Partnership explains: "One of the key ways we are tackling crime in the area is by using Hicom's NBIS system to share data between the various different agencies involved in the partnership. It is well-recognised that prolific offenders and shoplifters in particular, often operate on a national scale, moving around the country stealing from one town centre to another.

"A key advantage for CBCP is that NBIS is a national system capable of tracking the movements of known offenders throughout the country and sharing this information with other UK crime reduction partnerships."

McWilliams adds: "By sharing information via a tool such as NBIS, all partnerships linked with the system are kept up to date on the movements of prolific offenders as they travel around the country. Wherever these offenders appear, that partnership needs to be aware that they are operating in their area. Using NBIS each partnership can find valuable information on these individuals and take the necessary precautions and actions to limit their criminal activity. By sharing information amongst partnerships, local authorities, the police and other law enforcement agencies, we can effectively target people and reduce crime.

"CBCP went live with NBIS in April 2009 and has so far experienced great success with the system. Following our initial training on NBIS, the Croydon Town Centre Inspector and I have discovered 34 offenders on NBIS that were currently living in Croydon but that we were previously unaware of as offending in the town. By acting on this information and checking on local police records we found that seven of the 34 flagged were offending in Croydon but had managed to stay off our radar. Those seven individuals were then followed up by

the police who took the appropriate action against them. This would not have happened had we not been using NBIS and shows that sharing information is the best thing that partnerships can do in order to target offenders and reduce criminality and anti-social behaviour in the area.

"Having access to specific information on an individual's behaviour allows us to target criminal activity quickly and more effectively. If the authorities are not aware that the individual or group of individuals are offending in the area then it is more difficult to catch them. However, by interrogating a national system such as NBIS we are able to monitor people's behaviour across the country and stop the offender before one shoplifting incident turns into twenty."

Hicom specialises in providing crime reduction and risk management software solutions to retailers and corporate business sectors. Through its long term association with the Business Information Crime System (BICS), Hicom has developed NBIS as an advanced concept of business crime management. The network has an assurance level of EAL4 in accordance with HMG Infosec Standard No1 (IS1)[c] for data integrity, confidentiality and availability. There are now over 70 towns, cities and shopping centres throughout the UK connected to either NBIS or BICS.

McWilliams continues: "The reporting capabilities of NBIS are very useful, as the comprehensive management reports created by the system can be presented to criminal boards to show current patterns and trends of criminality within the area. By creating in-depth reports using NBIS, we are able to see where the current shoplifting hot spots are. Because the reports provide detailed information we are able to see exactly which shops are being targeted and at what time, helping us to work with retailers to put preventative measures in place throughout the stores to reduce the risk of theft."

One way in which CBCP disseminates key information to its members is via a weekly e-newsletter. McWilliams explains: "The e-newsletter is a great way of informing stores and local authorities of offender activity that is happening in other town centres throughout the UK. This enables the partnership to give retailers in Croydon a heads-up on the latest scams and 'hot' items being stolen, so that stores are aware of what may affect them."

McWilliams concludes: "By using NBIS to share information between partnerships and the local authority we are achieving great success in reducing the levels of crime throughout Croydon. We have experienced a 26% reduction in shoplifting over the past year, which is in part due to our use of NBIS. By looking on and interrogating the system we are able to pass information and intelligence onto stores and advise them on how best to protect themselves and their stock."

"The reporting capabilities of NBIS are very useful, as the comprehensive management reports created by the system can be presented to criminal boards to show current patterns and trends of criminality within the area."

Alan McWilliams, Business Crime Reduction Manager, Croydon Business Crime Reduction Partnership.

Achieving PDA buy-in

Crucial to the delivery of any new project is getting all parties on board. In the case of a police force, that means not just the Chief Constable and the IT Director but, most importantly, the end user – police officers at all levels. Special report from West Midlands.

"It's fair to say that we have officers who took to the devices differently; some found it extremely easy to use, whilst others took a while longer to get used to it. Officers have appreciated the consultative approach that we have taken."

Martin Taylor, Business Change Manager, West Midlands Police.

Regular readers of *Bapco Journal* are more than aware of the implications of the Gershon review, the ambitions of the NPIA and the political drive that will continue to push for the adoption of technology in policing. Whilst the public (and politicians) regularly cite the desire for more bobbies on the beat, it is technology that is increasingly facilitating this goal.

A concern of West Midlands Police was that the blind roll-out of new Personal Digital Assistants (PDAs) would, at best, be a useful addition to a PC's kit and; at worst, the devices would be left unused in the locker. The approach taken by the force was to trial various devices in different operational areas and officer rank. A fundamental objective was not only to test which applications worked best or what functions proved most valuable, but to gain buy-in for the project from the officers who would use the device.

Pilots began in early 2009 with 64 officers (sergeants, constables and police community support officers) in the Handsworth and Wednesfield neighbourhoods. Whilst the capabilities and usefulness of various devices were assessed, every aspect of how officers related with the device was considered. This included how they chose to wear the device – be it on their jackets or on belts.

West Midlands narrowed the competition as to which devices and software best suited officers' needs and discussed their merits with other police forces. A final trial of two solutions is now underway in the original neighbourhoods and has been extended to include traffic and public protection units. The HTC P6500 device supports both solutions including Arqiva's Police Mobile Data Solution, which provides a private wireless connection with the control room as well as direct access to the Police National Computer (PNC), the electoral roll and internal force intelligence databases. The devices provide functions that have been identified by officers as particularly helpful to their day-to-day work: custody images, camera, command and control logs, stop and search, internal telephone directory and visual handbook.

The devices have proved both useful and popular, particularly on special operations. Operation Utah is a joint undertaking with Warwickshire Police Force as well as other government agencies including the UK border agency and the DVLA. This successfully assisted officers to process identity checks on vehicles, uncovering illegal activities ranging from stolen cars, out of date tax discs and MOTs as well as invalid insurance.

Officers were pleased by the efficiency the devices provide, as PNC checks can be conducted quickly and avoid the need to queue to communicate directly with the control room. It is this streamlining of processes that has won over many officers. In the words of one acting inspector from Handsworth: "I had many encouraging comments from my own staff using the devices (PDAs) on Operation Utah and the other officers who were seeing them for the first time. One of my officers said that it was the best ANPR (Automatic Number Plate Recognition) operation he had worked on because of the devices."

Commenting on this feedback, Peter Harris, head of mobile data at Arqiva Wireless Access, said: "West Midlands' approach of piloting our mobile solution can be a template for other forces keen to empower officers with the confidence to use technology, and to make their time on the beat more effective."

With the West Midlands trials ending in April this year, Martin Taylor, Business Change Manager responsible for their implementation, summarises officers' views: "It's fair to say that we have officers who took to the devices differently; some found it extremely easy to use, whilst others took a while longer to get used to it. Officers have appreciated the consultative approach that we have taken. By deliberately asking for continued feedback from the outset of the trials, this has empowered officers to feel they can truly influence the development of the solution as functionality is added that really helps them perform their role more efficiently."

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Algiz 7 Ruggedised tablet

This rugged tablet PC is small, light and fast, with multiple connectivity options and a wide range of functionality. Its distributors say that it is a good solution for those who work with detailed maps or other visuals and need a larger display than a handheld, or who need full Windows PC functionality,

The Algiz 7 features an impressive Intel Atom 1.6 GHz processor, with a massive 64 GB SSD and 2 GB of DDR2 RAM. It runs the state-of-the-art Windows 7 Professional operating system, so it works with all the top PC applications including in-built GPS navigation functionality.

It can use Bluetooth for short-range wireless connection to other equipment, or 802.11 WLAN for network synching. The fully integrated IPWireless TD-CDMA antennas and modem provides high-speed 3G data transmission and anytime-anywhere.

Visual information in the field can be collected with the built-in two-megapixel camera with LED flash. Weighing in at a mere 1.1kg, this compact tablet features a 7-inch widescreen touch display and a hot-swappable 2400 mAh dual battery pack allows the user to change batteries without shutting down.

Lighting up the way with the Hydrus Luna

Mobexx has added the Xenon flash-equipped 2T Hydrus Luna to its range of customisable ultra-rugged hand held computers. This standard-setting extension to the Hydrus range can light up poorly lit offices, dark warehouses and overcast skies for clear, sharp image capture using the hand held's built-in five-megapixel imager/camera.

The wireless IP67/IP68 rated Hydrus Luna is designed to work in the harshest environments and like the standard models within the range can be readily customised to suit users' specific needs. A long-life battery provides up to 40 hours working life on a single charge, making it possible to perform a wide range of demanding mobile computing activities out in the field. The long working life of the battery also eliminates the need for in-vehicle charging.

The versatile hand held is infinitely expandable and works with a range of data capture modules, including low and high frequency RFID, as well as proximity readers.

Features include:

- Imager and Xenon True-Flash-System – captures images and barcodes in dark or low light environments with an integrated 5MP imager and a powerful, software controllable Xenon photo flash.
- Dual smart battery system - 36 WATT-hours ~ dual 2500 mAh batteries (5000 mAh total) offer the longest battery life in the industry. Both batteries have a charging circuit and a meter to monitor battery condition during charging and discharging.
- Ergonomic case – designed for easy data entry via keypad or touch screen.

Dell's Latitude XT2 XFR – the smallest multi-touch

Dell's Latitude XT2 XFR is hailed by the company as the industry's smallest 12.1-inch rugged convertible tablet PC with a multi-touch display.

The company says the Latitude XT2 XFR has been designed following feedback from a variety of end users, including defence, law enforcement and homeland security and utility companies. The result is a convertible tablet that can adapt to changing mission requirements and withstand harsh environments.

Features include:

- at 1.5 inches (38.1 ml) it is the thinnest 12.1-inch rugged convertible tablet
- weight starts at 5.4 pounds (2.45 kilograms) with four-cell battery and solid state drive
- meets MIL-810G standards for operation in harsh environments, and IP54 level of moisture and dust
- Intel Core 2 Duo processors with up to 5GBiii of DDR3 1066 MHz memory.iv
- performance from minus 10 degrees to 140 degrees Fahrenheit.

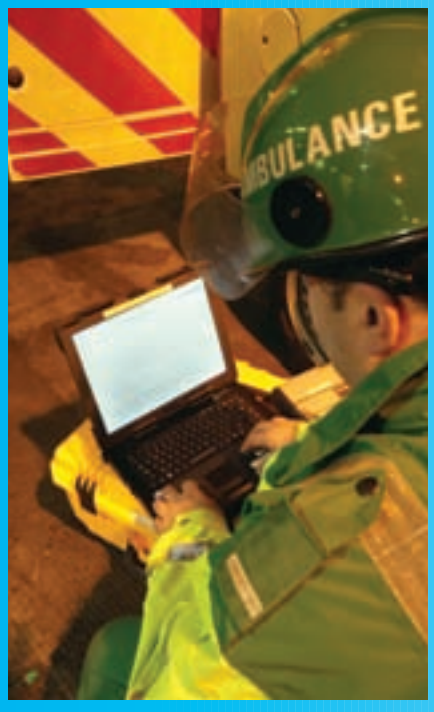
Scottish Ambulance opt for Special Ops solution

Scottish Ambulance's National Risk and Resilience Department is in place to plan and respond to major and large scale emergencies and is compiled of a team of highly trained staff, including paramedics that make up what is called a Special Operations Response Team (SORT).

The Service uses its SORT with Rapid Response Vehicles in many parts of the country to ensure the fastest possible response to 999 calls. The vehicles deliver an early intervention for scene assessment and emergency treatment before patients are transported to hospital by an A&E ambulance, explains Brian Hunter, Resilience Manager, Scottish Ambulance "To ensure that Tactical and Operational Responders are able to deal with emergency patients quickly and efficiently, ultimately saving lives, it is essential that they can instantly gather information about a scene they are visiting. Getac rugged notebooks are used by Special Operations Hazmedics to access information regarding the clinical effects of hazardous substances on people exposed to those substances, remotely. This allows the right treatment to start from a very early stage. Plus we access various NHS and other databases.

"The Getac notebooks are also used to access Ambulance Service policies and procedures, as well as intranet services.

"We have been using GETAC notebooks for many years. Recently we have introduced Getac V100 rugged notebooks to our new forward command vehicle. They are used to access major incident command software used by ambulance officers at the scene of an incident via Wi-Fi which allows us to deliver information instantly. Now we are able to send information from the inner cordon back to the command vehicle and from there to the ambulance services strategic coordinating centre."



A commanding presence

Growing numbers of emergency services throughout the UK now have incident command units containing enough high tech communications, imagery, display and computing technology to manage a small army. The benefits of these new technologies are not disputed: the question now is how best to train and manage staff to get maximum benefit from next generation ICUs and their powerful technologies. Stephen Prendergast reports.

Above: HART Forward Command Vehicle. The UK's emergency services have recently seen the introduction of some of the most technically advanced mobile Incident Command Units (ICUs) in the world, featuring satellite broadband communications, PBX intercom systems, backup independent GSM networks and imagery. Photo by www.justinedesmondhotography.co.uk.

The UK's emergency services have recently seen the introduction of some of the most technically advanced mobile incident command units (ICUs) in the world. These vehicles feature satellite broadband communications, PBX intercom systems (allowing different types of mobile phones and radio to communicate with each other), backup independent GSM networks (in case main GSM networks collapse under the pressure of a major event) and wireless imagery – from mast cameras, infra red CCTV, mobile cameras and body-worn cameras.

Combined with the use of wireless laptops (for deployment around incident grounds), access to virtual private networks, emergency databases, gazetteers, mapping, the Internet and aerial and satellite imagery, all these technologies combined give next generation ICUs enough command and communications capability and resilience to direct a small army.

One of the leading developers – and perhaps the leading pioneer – of the development and integration of high tech communications and display systems in ICUs in the UK has been Excelerate, the Cardiff-based command communications company which began exploring the potential for satellite broadband communications in 2001, well before the market knew much about the potential of this technology for emergency management.

Gradually awareness of the power and benefits of satellite broadband for emergency management has grown, and there has been a boom in the market in recent years. Fulfilling this demand for ICUs in various different configurations, Excelerate has worked in close collaboration with coach building partners such as Bence (for projects such as the Department of Health's national ambulance service HART – Hazardous Area Response Team – programme, Royal Berkshire Fire and Rescue Service, South Yorkshire FRS and Gwent Police); Cebotec, a leading Scottish coachbuilder (for services including Fife Fire and Rescue) and Wilkers (for a fleet of four Irish Garda ICUs).

According to David Savage, Excelerate founder and managing director: "During the last 15 months our order book has increased from £2.4 million to £13.1 million, so based on that and the new activity we are engaged in, we are seeing significant expansion in our business, and this does not include international interest."

Savage also thinks that, given the critical priorities emergency services have to prepare for, investments will continue to be made in high tech command vehicles despite budget austerities: "As there is no alternative to achieving what our customers want to do without these technologies, and given the gravity of the incidents that need to be managed better – from floods, to major accidents to terrorist incidents – then we are confident that, although there are bound to be some effects from budget cuts, the vital services and technology to give operational commanders and personnel all the information they need to make faster, better informed and more accurate decisions, and share what is happening and what needs to be done, will only become even more established."

According to Savage, once users begin to use some of the systems provided in the portfolio they begin to see the potential of others: "Nearly all the communications solutions in our portfolio are capable of being used as single standalone products, even though we develop most offerings as part of an integrated requirement. For example, most of our emergency services customers specify CCTV systems that use both standard and thermal cameras, where live video is required to be onward transmitted in real time for viewing anywhere in the world.

"Then, having seen the potential of these cameras for improved surveillance and video communication, our customers inevitably think of further ways to deploy such equipment in standalone applications. The picture is similar across the whole range of our product portfolio as our customers let their imaginations loose."

This has certainly been the case with Strathclyde Fire and Rescue Service, which was an early adopter of satellite

broadband for its first command unit, acquired in 2004 (three forward control units were also added later). According to Kenny Fraser, FireLink Project Manager for Strathclyde Fire and Rescue Service: "The Emergency Services function in an environment where, it must be recognised, cost may not always be the primary consideration. Satellite bandwidth, on first sight, may not appear to be an affordable option. When we investigate what advantages it brings then cost does appear secondary. SFR also has extremely competitive arrangements in place with our provider, which seriously reduces our annual costs.

"I would say, therefore, that having constant access with sufficient bandwidth to meet, not only our operational need, but also which can also be used for a whole host of SFR commitments, is an obvious benefit. We have a very geographically challenging area, and the ability to take our broadband to any location within Strathclyde, without any fear of loss of connectivity, is possibly the greatest tangible benefit. The operational resilience this delivers assists SFR in ensuring service delivery no matter what the demand is."

The adoption of advanced incident command unit technologies is still in its early stages in the UK, with many services still assessing options before acquiring vehicles and systems, but several emergency services have already become "early mature" users of the technologies. Two of these are the HART teams being set up by the Department of Health, and Strathclyde Fire and Rescue Service.

In the case of Strathclyde FRS, according to Kenny Fraser: "As early adopters you may think that SFR have charged ahead with technological innovation and drastically changed the way we operate. This is not the case. Certainly the introduction of satellite broadband to the incident ground brings with it improved efficiency. The transfer of information and onward dissemination is obviously enhanced. SFR makes more use of video technology on the incident ground and manages the transfer of this video, from cameras mounted on our Aerial Rescue Platforms, via the satellite on the forward control unit, back to the corporate network, where it may be viewed from any of many locations.

"Video on the incident ground is the major change within SFR. We have not progressed a great deal further as yet but have plans to integrate other solutions, including FireLink, to further enhance incident command and management."

It is still early days, however. "The use of satellite within the Tri-service environment has not been in evidence. It has possibly been overshadowed by the FireLink project and Airwave within the police. As we see roll out in all FRSs and Scottish Ambulance there is now potential to have meaningful dialogue in joint working and information exchange. Interoperability is not a new concept. The emergency services have been demonstrating this successfully for as long as they have been jointly attending incidents. There now exist mechanisms to enhance this interoperability and possibly share common data."

The small army command analogy is perhaps most pertinent to the substantial command, communication and control resources provided throughout the UK by the UK Ambulance Service's fleet of 12 Hazardous Area Response Team (HART) mobile incident command units known as MIRVs (Major Incident Response Vehicles). Part of the Department of Health's national HART programme, designed to support paramedics operating inside the "Hot Zone" inner cordon of major incidents (something the ambulance service was not equipped to do previously), the HART is one of the best examples of how advanced command, communications and coordination technologies can be deployed to support improved emergency response.

Once vehicles have been specified, built and delivered, the challenge then becomes how best to train and exercise emergency service personnel, with new doctrine, protocols and multi-agency understandings and arrangements required to generate maximum benefit from these major investments. Excelerate provides a full training package as part of its contract arrangements.

HART is also a useful model on how incident command unit crews should be trained and exercised – to an agreed national standard – to deliver maximum benefit from the powerful technologies supplied. A total of 12 HART teams will be operational by April 2011, and most are already in post. Each team is made up of 42 staff. All teams have uniform sets of vehicles and equipment, and all staff are trained in common techniques for CBRN and urban search and rescue response. Each team's set of vehicles comprises three vehicles: one mobile incident response vehicle (MIRV) with satellite broadband and other sophisticated command and communications equipment, plus two response vehicles carrying all the necessary specialist equipment. Each MIRV is equipped with dual function CCTV cameras giving normal and thermal coverage.

The satellite network is managed in real-time from Excelerate's Cardiff-based headquarters, to ensure that sufficient bandwidth is available to meet specific requirements at all times. The vehicles can be connected using a fully meshed wireless network with rapidly deployable self-powered mesh nodes using hot swappable batteries that give up to eight hours of use.

Voice communications are provided in two ways. Firstly, RapidNet Private GSM can be generated by each command vehicle to maintain communications with field-based personnel at all times without requiring service from the main network providers. This will provide full telecoms capabilities in situations where either none exist or are unavailable and eliminate the reoccurrence of the communications problems experienced following the 7/7 bombings, as highlighted in the London Assembly Committee's report.

And the benefits of all this high tech wizardry? They are tangible. HART teams and vehicles are regularly deployed on a range of day-to day incident types, and remain ready and trained for major CBRN attacks requiring a higher level, joined up national response.

Gwent Police's new ICU has already been deployed to a number of major incidents and played a pivotal role during Operation Utah on 11 December 2009. This large-scale operation targeted travelling criminals in Gwent and involved more than 150 police officers from six forces and representatives from the DVLA, Department for Work and Pensions (DWP), VOSA (Vehicle Inspectorate), HM Revenue and Customs, Her Majesty's Court Service and the Environment Agency. The vehicle provided essential communications throughout the operation, which resulted in 32 vehicles being seized, and 13 people arrested.

Opposite: Command technology suite, HART Forward Command Vehicle. HART is a useful model on how incident command unit crews should be trained and exercised – to an agreed national standard – to deliver maximum benefit from the powerful technologies supplied. Photo by www.justinedesmondhotography.co.uk.

"We have a very geographically challenging area, and the ability to take our broadband to any location within Strathclyde, without any fear of loss of connectivity, is possibly the greatest tangible benefit."

Kenny Fraser, Strathclyde Fire and Rescue Service.

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BRINTEX EVENTS

Providing easy access to vital information

How do you make operational information, relevant mapping and data regarding an incident, both large one-offs and small day-to-day ones, available to all agencies involved – and that includes utility companies, highways agencies, police, fire, ambulance, local resilience forums – without breaking the bank? Jose Maria Sanchez de Muniain talks to Gaist.

One company thinks it has finally cracked that problem, with a product called Gaist Emergency, which has been developed by the technology company Gaist Limited working closely with Microsoft.

Gaist's MD, Steve Birdsall, believes there are two issues at the core of the current situation: "First is the plethora of data that is collected by each responding agency, and distributed in-house. What we wanted to do is allow decision makers to access vital information directly. Unfortunately, as technology has become more complex, the distance between the data and the decision makers has lengthened considerably. Decision-makers are disconnected from that data by complicated databases and GIS (Geographical Information Systems) systems that require experts to assimilate information and interpret it.

"Next there is the issue of distribution. We also wanted to develop intuitive ways to publish the information in an appropriate way to various groups instantaneously."

Steve Birdsall is no stranger to GIS as he has enjoyed a long career working with specialist survey systems used in military applications, oil exploration and transportation. Birdsall recognised, however, that embedding traditional GIS technology into Incident Command Systems brings with it limitations and difficulties in terms of cost, ease of deployment and training.

Gaist initially approached the problem of Incident Command from both a micro and macro point of view, analysing how incidents are managed at the coal face with current technology on a:

1. Localised, day-to-day, single-incident basis
2. Wide-area, large scale major emergency basis such as flooding, which has associated implications such as mass evacuation and pooling of common resources.

It quickly became clear that any multi-agency collaborative tool, running in real time, had to use the Internet as the backbone for connecting the various responding agencies, if it was to be deployed at a cost that is realistic to these agencies.

Gaist therefore wanted a system that combined the mapping power of GIS with the instinctive and easy to use interfaces common in modern internet based consumer-mapping products such as Google Earth and Microsoft Bing.

Gaist Emergency uses Microsoft Bing as the mapping platform, which plays a big role as the user interface to many elements of the solution, while Gaist hosts the high value software that manipulates the data populating the maps.

Resilience, a vital aspect for this type of solution, is also being addressed and Gaist is working with Microsoft to deploy a local mobile Virtual Earth Server specifically designed to provide secure access to powerful Bing maps without the need to connect to remote servers. This brings two benefits to the table, explains Birdsall. The map tile server can be held on a simple external disk drive which means it is portable and can be accessed by a mobile device such as a laptop or PDA. This makes it ideal for mobile response units and Incident Command Units. In addition, the system uses smart client software flexible enough to allow operation without high bandwidth Internet access: "If you lose connection to the Internet you still have all that information held locally until synchronisation on reconnection."

Secondly, being able to synchronise data between different physical locations means that multiple agencies are able to share and contribute to a common operational overview without the need to host any ICT other than an Internet connection.

An online demonstration set up by Gaist with BAPCO Journal reveals an aerial map of Blackpool, where Gaist has been working with the local council to develop a comprehensive asset management and public information service.

Steve Birdsall explains that Gaist wanted a system that combined the mapping power of GIS with the instinctive and easy to use interfaces common in modern internet-based consumer-mapping products such as Google Earth and Microsoft Bing.

Multi-agency collaborative tool

"We want users to be able to establish a Command Centre anywhere with no more than a laptop and mobile 3G Internet connection within three minutes."

Steve Birdsall, MD, Gaist.

Gaist's software, due to its collaborative nature, is now finding followers in local Councils and other government agencies such as the Highways Agency. The Gaist system is able to accept feeds from existing systems such as local street work management systems and publish them onto a single information portal including traffic camera feeds, whilst at the same time allowing traffic managers to post real-time information to update the public and stakeholder organisations.

Gaist has designed the system to allow very rapid access and interactivity from any number of agencies and automated data feeds, so that a common operational picture (COP) can be constructed and shared with minimal ICT. Secure and appropriate access is maintained using password protected profiles that filter data such that specific user groups have access to appropriate data only. Birdsall said: "We want users to be able to establish a Command Centre anywhere with no more than a laptop and mobile 3G Internet connection within three minutes.

"Take the recent flooding in Cumbria, for example, where redirecting traffic became a big issue. The highways authorities needed to establish strategic diversions very quickly across the road network, to ensure large volumes of heavy traffic did not use roads that could not handle them. With this system, diversions and traffic information could be posted instantly and, in theory, streamed to in-car sat nav systems." Gaist also has the ability to mass broadcast sms, email and recorded voice messages to pre-defined user groups or members of the public that have registered an interest in certain alerts, such as flood warnings. Indeed, almost any kind of geographic information can be handled by the system, including CAD files, floor plans and interactive 3D models.

Filters can be added to the maps – Birdsall highlights a socioeconomic filter that shows indices of depravation, carriageway grading (ie the condition of roads, for maintenance planning), gritted routes, current streetworks and many more – to make sure users have the right amount of information. "The point is that although masses of information can be available, it is not all relevant to a particular responder agency."

The Gaist Emergency System provides a common operation picture for all Cat 1 and Cat 2 responders and NGOs. Gaist is also in the early stages of a project that will bring together 19 responder agencies, within one region, onto a single system supported with a dedicated radio network.

Gaist Emergency can also be integrated into the Gaist INCA (INcident Command Administrator) system, designed by serving Fire Officers to provide an intuitive and valuable interface for the management of incidents.

In tactical mode, Gaist INCA enables a Sector

Commander to manage local information; fill in a risk assessment on a tough book or PDA, which is then sent automatically into the Incident Commanders Interface.

The technology is communications-agnostic so whether via 3G, satellite communications, or any other local area network, information can be transmitted and automatically uploaded into the live system. Incident ground communications can therefore now be brokered silently and electronically around the incident ground, reducing voice traffic and allowing the Incident Commander a degree of control and visibility that has not been possible before.

Intuitive colour coding on Gaist INCA shows whether receipts of particular documents have been acknowledged (eg risk assessments, requests for equipment etc) and this information is fully time stamped and available in logs and audit trails.

An Incident Commander, explains Birdsall, can record a key decision and decide at the time of submission whether certain information is visible to headquarters only, or whether it can be broadcast to all fellow responders in a particular sector(s), which means that information need not be transmitted via voice communications.

Still in tactical mode, a separate screen (after clicking on a clock icon) reveals the communications that have taken place in relation to an incident on a map (including voice traffic), interspersed with all the relevant command decisions that have been taken. This creates a highly informative timeline of events as they unfold.

Another screen shows when resources were requested, en route, arrived and deployed, giving an Incident Commander a live update of on scene assets and the ability to determine if equipment has been deployed or is available for use.

The system can also be configured to capture more subtle information such as "hot wearers" ie firefighters that have entered a smoke and heat filled environment. "This kind of information is important because, fortunately, due to fire prevention measures, there are fewer fires so firefighters can go a full year or more without wearing breathing apparatus at a live incident. Capturing information such as this informs and enhances the targeting of training to maintain competence levels for these types of safety-critical skills.

"We believe that the Command Interface should be tailored to the organisation that is using it. Command and control styles have evolved over many years, often through tragic circumstances. Software should be deployed to aid the Incident Commander in decision making, give him or her access to vital information as and when it is required, and provide the ability to publish or share information to key personnel instantly," concludes Birdsall.

The technology is communications-agnostic so whether via 3G, satellite communications, or any other local area network, information can be transmitted and automatically uploaded into the live system.

A PENY for them

Charles Clark, Board Member at the Youth Justice Board and former Deputy Chief Constable, Essex Police, explains how the Police Electronic Notifications to YOTs (PENY) scheme supports a reduction in youth reoffending.

"And, so far so good. The system appears to be working. During 2006-07, 86% of victims were offered the chance to take part in restorative justice, of which 97% were satisfied with the outcome."

Youth crime is always a headline grabber but figures support the fact that the current approach is working with the level of youth reoffending at its lowest since records on its frequency began in 2000. There are many measures that have contributed (and continue to do so) to this trend and youth offending teams (YOTs) and their key partners are at the heart of this drive for improvement. YOTs include representatives from the police, social services, health, education and housing. Their job is to identify the needs of each young offender as well as the problems that make the young person offend, and to measure the risk they pose to others. This enables the YOT to provide and facilitate suitable programmes to address the needs of the young person, so they can be rehabilitated.

Of course, with so many different organisations involved in making these decisions there is an important requirement for information sharing and that is the premise behind PENY – Police Electronic Notifications to YOTs. Here we have a national solution to improve the use and sharing of information between 43 Police forces, the British Transport Police and the 157 YOTs using Criminal Justice Secure Email (CJSM) or other secure routes. This process means all parties now have the opportunity to communicate with each other faster, more securely and more consistently than ever before.

What is PENY?

For those that are unfamiliar with the PENY process, the process ensures that police communicate with YOTs by sending agreed information on under-18s within 24 hours of police disposal or decision. In partnership with the National Policing Improvement Agency (NPIA) and the Youth Justice Board's Wiring Up Youth Justice (WUYJ) programme, the process took advantage of a fast and secure online system, enabling the police to send accurate information about vulnerable young people to professional colleagues in a quick and streamlined way.

Police officers are now advising their local YOTs speedily, securely and electronically when they reprimand a young person, give them a final warning, charge them with an offence, or give them a penalty notice for disorder. The speed of the process means that the young person has immediate understanding of the consequences of their behaviour and allows quicker interventions to help divert young people from further offending.

This timely access to accurate and detailed police information is central to the work that YOTs carry out with young people who offend, providing supervision and support where it is most needed.

Marcus Beale, Deputy Chief Constable in Staffordshire, comments: "In PENY, the Wiring Up Youth Justice programme has delivered a tightly focused tool, which has allowed the consistent exchange of relevant information between the police and local Youth Offending Teams, helping to deliver appropriate and timely justice."

Positive benefits

Closer working and information sharing between police services and YOTs enables informed decisions on young people to be made earlier, more accurately and appropriately. It also provides greater opportunity for early interventions that may well reduce youth reoffending.

More complete information enables all parties to be better prepared for court appearances and information is transmitted more quickly and securely than previously was the case. Compliance with information security standards ensures that the young person's information is not compromised or lost when it is sent. Furthermore, access to up-to-date and accurate information on all incidents allows for more effective support to be offered to victims of youth crime and opportunities for restorative justice. This is a recognised way to improve victims' confidence in the Criminal Justice System, and at the same time ensure that the young people face up to the effect of their behaviour on others.

For more information visit http://www.wiringupyouthjustice.info

Securing sensitive data

The very nature of the information that is sent using the PENY process means that security is paramount. All of this information is sensitive and, therefore, must be safeguarded at all times. Using fax to send documents is no longer permitted as offender and victim information falls within the category of Restricted information. However, the new systems allow for police notifications to be sent between police and YOTs as Secure eMail attachments. This means that the sensitive data is transferred quickly and securely.

Promoting partnership

Through earlier police notification and YOT action, the most appropriate resources can be directed to the young person and victim by the YOT. Early intervention provides the greatest chance of steering young people away from crime and when the YOTs and the police work together they are more able to tackle the problem of youth crime at source, highlighting the underlying causes and giving young people the best possible chance of mending their ways. PENY can contribute in key ways.

The secure nature of the system means that it reduces the risk to officers of information being compromised or lost when it is sent. Also, considering there are more than 56,000 reprimands and 33,000 final warnings given to young offenders each year the administrative burden is significant for police officers. PENY reduces this burden through automating the data input and communications processes so that it requires less time from officers and, therefore, enables them to dedicate more of their time to front line policing. In turn, this promotes public reassurance.

Moreover, PENY complies with the Flanagan review on the future of policing, which calls for a reduction in bureaucracy by using technology to share information across the Criminal Justice System.

For YOTs, the benefits are equally significant. They are provided with timely information which gives them a more complete picture of detected youth crime. This means that they able to make quick and effective assessments and enjoy greater preparation time for court. Overall, PENY promotes a consistent and improved approach to victims of youth crime.

And, so far so good. The system appears to be working. During 2006-07, 86% of victims were offered the chance to take part in restorative justice, of which 97% were satisfied with the outcome. Also, there were over 9,500 parents who received parenting support from youth offending teams in 2006/07, 74% of whom were satisfied with the support they received.

Counting the cost

You'd be forgiven for assuming that this new system carries a mighty cost, but you'd be wrong. Implementing the PENY process was focussed on changing the way people worked and how they handled information about a young person. The main challenge was to make secure eMail an instinctive process and to change working practices more than technology. Some police forces enabled the successful implementation of PENY through their own IT changes, with the set up and the sending of PENY data to suit their local needs and operating practices.

I am sure the PENY process will bring a vast improvement in working with those young people who offend and their victims. Prior to PENY, often details of offenders were not sent to YOTs or were delayed which meant, at times, opportunities for interventions were missed and work with victims delayed. As it is increasingly important that relevant information is shared to ensure we tackle those children and young people at greatest risk, PENY may be the forerunner of greater co-operation in the future.

A flare for response

Following a streamlining process and a successful trial PageOne helped The British Red Cross reduce emergency response times through the use of its "flare" system.

The British Red Cross recently undertook a review to streamline and reduce emergency response times to major incidents that occurred in Cornwall, Devon, Dorset, Somerset and the Channel Islands. Traditionally, the charity had a "phone-round" paper based process to locate which volunteers were available during an emergency, followed by another "phone-round" to deploy them, inevitably leading to crucial time-delays. Following a successful trial period testing both the functionality and resilience of PageOne's paging and SMS system, the decision was made to implement it for emergency response paging and messaging. After a successful pilot phase PageOne's "flare" system, specifically tailored to local needs, has been adopted.

Applying flare made it possible to broadcast key messages to specialist groups from either a control centre or remotely from any WAP-enabled mobile phone. Flare's online console allows message status viewing, incident analysis and appropriate action response. Whether notifying rescue teams, deploying specialist staff or performing a mass evacuation, flare provides a simple, yet powerful means to ensure rapid response in critical situations. Flare also offers group messaging, 2-way SMS replies, pre-defined message templates, a searchable history log and audit trail, delivery reports, contact manager and secure encrypted web access.

Outcome

Significant time savings were achieved. The flare system allows The British Red Cross to set up SmartGroups in advance of an incident, enabling the targeting of pre-selected volunteers quickly and effectively. All responses are managed through a secure web service, enabling the incident manager to view availability for deployment. Responses can also be sent to mobile devices via SMS or email to ensure that volunteers are contactable when on the move. Messages can be initiated via the secure PageOne website, any internet enabled PC running Microsoft Excel or PageOne's 24/7 call centre. This reduces the time to initiate a call from minutes to seconds – potentially crucial time savings during a crisis.

The flare system allows The British Red Cross to set up SmartGroups in advance of an incident, enabling the targeting of pre-selected volunteers quickly and effectively.

There were also cost savings as The British Red Cross was able to take advantage of the fact that PageOne is an approved supplier under the Mobile Solutions II Framework as procured and managed by Buying Solutions (formally OGC Buying Solutions), which offers charities and public service bodies access to best-in-field mobile services at significantly reduced rates. The most recent benchmarking by Buying Solutions revealed that the overall cost of purchasing mobile services from them, when factoring in monetary cost, time-savings and ease of access was at 21% below alternative commercial offerings. Like any charitable or public organisation, the British Red Cross must be fully transparent demonstrating true value for money in any expenditure it makes. Not only is flare cost efficient, the charity can be sure that the time-sensitive information that can change so quickly in an emergency situation is simultaneously delivered to all volunteers – the previous "call round" system meant that information was often out of date before the last person was called.

"In the event of a major incident, making voice calls is time-consuming and a potentially confusing method of contact. Within a very short time-frame we can now contact significant numbers of volunteers, monitor their response concerning availability and then contact them again in a very targeted way to deploy them with information that is critical," comments John Blake, Emergency Response Assistant at The British Red Cross. "This ensures a professional and timely response which our Category 1 and 2 partners have come to both expect and rely on because The British Red Cross has demonstrated repeatedly that it can provide effective support in a time of crisis".

The British Red Cross and PageOne continue to work together as quality of service and an ability to maintain an innovative approach to solutions underpin the values of both organisations. The current contract serves 12 Red Cross operational areas and PageOne is being implemented in all remaining Areas in the UK, offering both economies of scale and recognising the advantages that flare from PageOne can provide.

However, PageOne isn't just a technology provider – it also offers The British Red Cross effective customer service as well as hosting workshops to train its Emergency Response staff and demonstrate the full potential of PageOne's services. Additionally, PageOne is assisting in the development of a co-ordinated plan for the UK incorporating best practice from both the British Red Cross and PageOne to provide an all-encompassing state of the art call out system.

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Recording an improvement

Jamie Wilson, Marketing Manager of Public Safety, EMEA, at NICE Systems, believes that efficiency and productivity gains can be realised by looking at existing investments in processes, infrastructure and associated technology – if leveraged to their full potential.

"One police force that made the switch to digital explained during a seminar that they had been previously been purchasing 13,000 tapes per year with 1.1 million tapes in storage and a further 200 tapes on transit every day, at an annual maintenance and warehousing cost of £170,000."

This report, published on 2 December 2009 by the Home Secretary, sets out a new programme of measures to help the police work smarter to fight crime, tackle anti-social behaviour and boost public confidence.

Inevitably, the state of the economy is prompting political debate and widespread concern around public sector budgets. Policing consumes approximately £17.5 billion of the public coffers each year and any cuts in frontline services will undoubtedly be met with political and public outcry. Also, with all forces recently committing to The Policing Pledge, the challenge will be to uphold these promises in the eyes of citizens who are expecting a more visible police presence on the streets.

There is often a common misconception in both public and private sector organisations that any major innovation or improvement needs to be matched with a similarly sized budget. This is not the case and to illustrate the point let's consider one example – incident information management.

Rather worryingly, a senior member of a UK police force confided during a conversation that it can take anything between 24 hours and seven days to get a voice recording made from a 999 emergency call, played back to an investigating officer. More disturbing was the suggestion that his police force was not the exception, but the rule.

He went on to explain that such lengthy timescales where considered acceptable five years ago, but he really thought it should be possible today to deliver this information within two or three minutes of the call taking place, especially as the first few hours of any investigation are always the most vital. To his surprise I explained that it is more than possible to consistently meet his target and in fact, it was likely he already had the fundamentals in place to make this and much more possible.

For the overwhelming majority of police forces that have invested in the upgrade of their command and control rooms in recent years, they will have much of the infrastructure already in place right now to dramatically speed up the time it takes to get relevant information to an investigating officer. However, the truth is that often they do not realise the additional benefits that their investment is capable of delivering.

At the heart of any incident management procedure is the information that feeds the investigation. Typically, the repository for this is the call recorder. Used by the command and control room and increasingly in custody suites, these recorders will capture and store all call taker/citizen interactions, as well as internal comms.

Historically these recorders were tape-based, making them expensive to run, with the need to continually purchase tapes and often a dedicated secure room to house the burgeoning tape library. Huge advances have been made and today these antiquated machines have – in the main – been replaced with digital recorders (otherwise known as loggers) that are more economical to run, offer greater resilience, high levels of security, reduce the risk of loss, provide higher quality recordings and negate the need for further physical storage space.

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The benefits of digital recording have been widely acknowledged and proven to deliver intrinsic value in reducing the financial and resource burden associated with tape. Furthermore, search and retrieval of a specific call/s on a digital recorder, which has been tagged and stored, is going to be much quicker than manually trawling through hours of tape. So how is it possible to use this infrastructure to derive even greater value and time savings? The answer is to use the investment in digital recording as the foundation on which to begin to build an Incident Information Management (IIM) system.

The information associated with a single incident is typically numerous, stored in different places, with different processes for managing them. However, what investigating officers actually want is a single repository of the most up-to-date case information that they can quickly access.

An IIM system can be gradually built in a modular fashion, as the need, available budget and resource of the force dictates. Such a systems is able to rapidly consolidate information from traditional sources such as the call recorder, video footage and still images from surveillance cameras as well as body worn cameras and mobile devices (along with sms and mms information submitted), GIS information, call-taker CAD screens, incident reports, mug-shots and emails.

With all of this information date and time stamped it is possible to search, retrieve and dispatch the right information to the right people at the right time, delivering a comprehensive account of an incident, along with any relevant case notes that have been appended by other third parties, not in days or hours but a matter of minutes. This information can also be used later for more in depth scenario reconstruction and disclosure of evidence if and when there is need for a prosecution.

Having a strategy for building an IIM system is also a positive step in light of the HMIC (Her Majesty's Inspectorate of Constabulary) review of joint working, to identify how forces can collaborate more successfully to provide the best deal for the public in terms of preventing serious crime and reducing financial costs. By having a plan in place to fully utilise the infrastructure that already exists, at a rate that is achievable, it is possible to improve operational efficiency, empower officers to speed up investigation times, embrace new communication and multimedia channels and ultimately improve the provision of frontline services (and the perception of the quality of these services) to the citizen.

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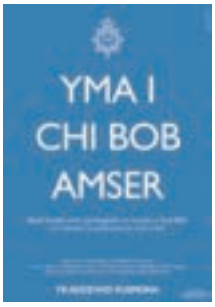
A success story in the making: enabled by technology

Two things were striking about the Policing Pledge public awareness campaign of Christmas 2009: first, although the Pledge seems to have been with us for some time, it was only launched as recently as summer 2008; second, it impresses as an initiative that really intends to succeed, writes Paul Kennedy, Senior Manager, Analysys Mason.



"Furthermore, the evidence suggests that regardless of any change in Government, the commitments of the Policing Pledge will be sustained."

Both the recent advertising campaign and announcements by the Prime Minister in March 2010 – including the resurrection of commitment to a national single non-emergency number – demonstrate that the Policing Pledge commands genuine enthusiasm on the part of central Government. Furthermore, the fact that all 43 Police Forces in England and Wales have embraced the initiative, without which support it would be doomed to fail in the long term, indicates that the Pledge, even at this early point really is a success story in the making.

Key to the Pledge's fundamental aim of putting the citizen at the heart of police services is the use of technology by forces in both innovative and, more usually, established but increasingly effective ways. The role of technology in enabling delivery of the Policing Pledge has been pronounced in at least two ways – in the effectiveness of public-facing communication, and in the mechanisms by which Pledge-related services are delivered.

Although the HM Inspectorate of Constabulary (HMIC) Strategic Overview graded the progress of three-quarters of police forces as "fair", it was keen to emphasise the good practice achieved in communications with the public.

An initiative that has caught the media's eye, for example, is Humberside Police's "talking poster" in Hull, with a "sonic box" within the poster to broadcast the Pledge commitments in several languages including Urdu, Kurdish, Polish and Mandarin. Similarly the release of the NPIA's national web-based crime maps with detailed information on criminal and police activity searchable by postcode has proved popular. All of Thames Valley Police's Neighbourhood Policing Teams have their own websites, together with contact details and photographs, and there are many more examples of mainstream communication avenues being exploited. The freedom for forces to decide how they will best fulfil their commitment to proactive public communication has led to effective mobilisation.

In terms of how policing services are actually being delivered to the public, what is striking is how a number of ambitious programmes of the last five or so years are being taken advantage of in the context of the Policing Pledge to take advantage of, particularly on a national level.

As recently as 1 March 2010 the Prime Minister strengthened the Policing Pledge commitment to include officers spending a full 80% of their time actively on the beat. Putting aside concerns about what this will actually demand of police resources when it is implemented, there is no question that this would not be possible without recent developments in access to mobile data. Credit must be given to the programmes put in place and funded not just by individual forces but also the National Policing Improvement Agency, which has made tens of millions of pounds available for exactly this purpose since 2007.

It could be said that every technology project aimed at reducing administrative burdens on the police supports achievement of the Pledge – from the progressive implementation of PDA-type devices that allow secure remote access to information potentially to confidential level, through to the Lantern mobile fingerprinting device, which 90% of officers surveyed in 2008 estimated to save at least 30 minutes per incident. The Pledge's emphasis on tackling anti-social behaviour in particular has received recent impetus from the PM's announcement that the national 101 single non-emergency number is to be re-established. What is important is that by brigading 101 with the Policing Pledge – and therefore sensibly confining its scope solely to the police – the probability of force buy-in and thus effective, actual improvements to the service provided to the public must surely be improved.

While it may be early to be pronouncing success or failure of the Pledge (acknowledged by HMIC in its Strategic Overview, which accepts that the Pledge demands are "relatively demanding to deliver every day, everywhere, consistently"), based on the evidence to date the Policing Pledge can be fairly said to be progressively accumulating success, enabled by increasing use of both innovative and established technologies. Furthermore, the evidence suggests that regardless of any change in Government, the commitments of the Policing Pledge will be sustained.

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