key touch ®

Share important information

Taking note of the digital future

Power up the TH1n and enjoy!

WHO'S IN THIS ISSUE?

Want to know a little more about some of the experts who contribute to Key Touch? Look no further.

TAPIO MÄKINEN has the mission to create marketing and photographic contents for the security of all. He has undertaken photoshoots for Key Touch Magazine and Cassidian to capture events, products, sports, professionals at work, city views and critical infrastructure. *@tapiomobile*

SATU LAMBERG As a Key Touch editor, Satu has learned a great deal over the years about professional mobile radio communication and its evolution. This year, she is busy learning a new role, as a grandmother to a baby granddaughter.

PETRA VAKIALA has been a Key Touch editor since 2008. She enjoys researching and writing stories for Key Touch - there are always interesting new topics to dig into and while digging one learns so much! She is looking forward to the coming winter; with a lot of snow, frost, downhill and cross-country skiing, she hopes.

TIINA SAARISTO is Editor-in-Chief for Key Touch and has led the team of editors and contributors since 2003. In addition to Key Touch stories, Tiina is into quilting, Nordic walking and reading mystery stories. *@tiinasaaristo*

SHANTANU GUPTA divides his time between promoting Cassidian in the exciting Indian market, raising a young family and running marathons. He believes that in any security arena, information must be effectively communicated to avoid the 'water, water everywhere and not a drop to drink' syndrome.
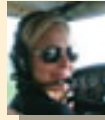
JEAN-MICHEL DUMAZERT juggles his time between Cassidian, his family, scuba diving and being a local councillor. Since September 2010 he's now added to his packed schedule by contributing to Key Touch as TETRAPOL correspondent.

ANKE STURTZEL As a Cassidian press officer, Anke looks after the Secure Communications Solutions within the EADS Group. With more than 15 years at Cassidian, she continues to be inspired by the civil aviation sector and the latest technology involved. Originally from East Germany, Anke has lived in Paris for 13 years and still admires the Eiffel Tower.

TERO PESONEN is amazed again and again of the benefits advanced digital PMR can bring to the field operations and the bottom line throughout the world.

Key Touch 3/2012 - November 2012

CASSIDIAN

Triple-play!

PEOPLE are used to the idea of sharing their experiences with friends and colleagues by sending pictures and videos directly from their smartphone to the people or to social media. It's part of the social media and mobile communications revolution.

So imagine this scenario: A bystander witnesses an accident, calls 112/9-1-1 and uses their smartphone to send pictures or live video of the scene in front of them to the emergency centre. Within seconds the first responders alerted to the incident can access the visuals, enabling them to prepare ahead of their arrival at the scene.

This sounds like a natural way to communicate. It's easy to describe, but much harder to make happen in reality. Why is it so difficult to achieve a multimedia-ready emergency response capability?

The answer lies in the fact that communications related to emergencies and major incidents takes place in three directions:

1. Communication from the general public towards first responders
2. Communication from the emergency management function towards the general public – public warnings and emergency notifications.
3. Communication between the emergency management function and first responders.

Conventionally, each communication direction is handled by a separate, highly complex system. Making the process work smoothly in all three directions requires fundamental changes both in operational models and in communication solutions. A 'triple-play' approach will be needed in which a trio of fundamental capabilities - emergency call processing systems, mass notification services and authority communication networks - need to be integrated seamlessly.

At Cassidian we are spearheading the triple-play approach and you can see a great example of how in our article on page 23 about the APCO "call-to-car" demonstration.

We believe it is vital to make full use of all the rapidly advancing technologies from the communications industry, like the mobile sharing of visuals, to help professional users in their day-to-day jobs, while also meeting the strict demands of the PMR sector. And to allow people to share important information with the authorities the same way they share information with their family and friends. This is our mission at Cassidian.

Jean-Marc Nasr
General Director
Cassidian, Security and Communication Solutions

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A feature that allows radios to send regular updates to the network efficiently, conveniently, and reliably.

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Users are the true experts: the Power key on the TH1n handheld has been modified in response to feedback.

TH1n
radio builds broad fan base

News about the launch of the slimline TH1n TETRA radio from Cassidian is obviously spreading, with orders arriving from Finland, Sweden, Norway, Denmark, Estonia, Germany, Poland and even as far afield as the United Arab Emirates, China and Brazil.

Deliveries of the new radio, which was launched at the TETRA World Congress in Dubai, will begin toward the end of the year.

VIRVE Products and Services from Finland, the Swedish Civil Contingencies Agency (MSB) and Atlas Telecom from the United Arab Emirates were the first customers to confirm orders for the TH1n

The TH1n TETRA radio from Cassidian offers all the best elements of a Professional Mobile Radio (PMR) handset in a slim design that makes it easy to carry in a shirt pocket. The new model has the familiar, easiest user interface, still packs in a full set of features, and remains as robust as many of its weightier counterparts. It also delivers good enough voice quality to satisfy the most demanding users.

"Since I don't want to carry a heavy radio, this is the first product that has really appealed to me," said one observer at the TETRA World Congress. "I need a pocket-sized radio, so this would suit my needs much better."

Est**onia**

– world's first with Release 6.0 upgrade

Estonia has become the first country to upgrade its public safety TETRA network with the latest software release. In spite of the small hiccups that go with being world's first network to undergo the upgrade, the ESTER network successfully made the transition from Release 5.5 to Release 6.0 with only a two-minute break in network services.

CUSTOMER WIRE

About 10,000 users rely on ESTER for their communications, including police, rescue services, medics, border staff and prison officers. The network was originally built by Cassidian in 2007.

ESTER is owned by SMIT (the Centre for Information Technology and Development Centre, which is part of the Estonian Ministry of the Interior). The network operator, RIKS, is responsible for technical management, quality of services and network monitoring, with around 15 staff.

The arrival of the nationwide network has had a huge impact on public safety users in Estonia,

The arrival of the nationwide network has had a huge impact on public safety users in Estonia, says Avo-Rein Tereping, Service Director with network operator RIKS.

Teamwork: both Cassidian and RIKS personnel agree that close co-operation was the key to the ultimate success of this ground-breaking project.

according to Avo-Rein Tereping, Service Director with network operator RIKS. "[Users] are very satisfied with ESTER. Previously, they had an old EDACS network (coverage was only in some towns of Estonia) and very basic UHF networks."

Pioneering plan

Cassidian is contracted to provide care for the network. The company has worked successfully with RIKS and SMIT in the past and knows that the Estonians are keen to make use of the latest innovations in their communica-

tions, so Cassidian approached them with a proposal to pioneer the latest upgrade process.

"This upgrade would be done in any case at some time in the future," says Mr. Tereping. "So we decided to do it as soon as possible. Of course, we were interested in the new features (base station load monitoring and routing features, for example)."

Planning began in May 2011. During the planning, the first two upgrade trials revealed first a technical hitch with the Configuration and Data Distribution server and then network's

central memory parametering. The upgrade process enabled the network to revert immediately to the previous software version. Network services continued the whole time without any ill effects, so users did not even notice the upgrade trials.

Some hiccups are only to be expected in a first-time project of this kind, according to Mr. Tereping: "Of course, the problems made participants a little sad, but they were sure Cassidian specialists could solve them. Anyway, there weren't any doubts about a successful finish."

Margus Rohtla, Technical Expert with RIKS, agrees: "I didn't feel too bad because I've worked a long time with GSM networks and I know anything can happen. Murphy is always lurking around the corner [so 'what can go wrong, will go wrong']. The best thing was that we could turn back to the old version at any time. I was sure nothing serious could happen."

"Of course, I was in a supporting role. Maybe that was easier than being fully responsible like the Cassidian specialists were. It's very good to have a care agreement!"

Success!

In any case, the third attempt took place in November and was successful.

Preparation for the final upgrade took place overnight, with the actual changeover happening in the main DXT switch room in around 15 to 30 minutes in the early hours of the morning. The service disruption on different base stations varied between 2 and 15 minutes during this process, according to Mr. Tereping: "There was only two minutes' break in service after Release 6.0 started but it wasn't a surprise.

Critical points were clarified during preparation activities, so there weren't any problems bringing about a service break."

As well as the DXT switch, ESTER includes around 100 base stations, which also needed to be upgraded. That took around a week in total, although Mr. Tereping estimates that any similar upgrade project could be carried out even faster in future.

Both Cassidian and RIKS personnel agree that close co-operation was the key to the ultimate success of this ground-breaking project. "Co-operation was almost like a case study," says one RIKS representative. "RIKS is ready to be the first customer for the delivery of future solutions."

And according to Cassidian customer support staff, RIKS personnel have a high level of technical expertise: "The technical personnel at RIKS are very competent. We have learned from experience that when RIKS sends us questions, they are always hard ones!"

The actual changeover took place in the main DXT switch room in the early hours of one November morning.

CUSTOMER WIRE

Two provincial switches have been upgraded in Belgium's national digital network, ASTRID. A hardware upgrade for a radio network switch is an extremely complicated procedure. It's a bit like doing a heart transplant operation on a runner, while he is running.

Switches in the provinces of Wallonian Brabant and Flemish Brabant were successfully upgraded within a few weeks of one another. These delicate operations – carried out for the first time ever - went almost without a hitch. That made **Michel Bonivert**, **Valery Granson** and **Brecht Duplacie** very happy, since they were the three ASTRID engineers responsible for the projects.

The Leuven upgrade took place over three nights between 11 and 14 June 2012. "The operation ran successfully. It took less time than we expected and the users in the Flemish Brabant area were not affected much," says Duplacie.

The smooth operation in Leuven was only possible thanks to lessons learnt from the earlier upgrade in Wavre. "Replacing a switch is extremely complex. It is like changing a runner's heart while he's running," explains Bonivert.

Wavre – first in the world

The Wavre integration project was a first of its kind in the world. Every detail of the process was planned, but tests never reflect the real world 100%. It was towards the end process that Wavre experienced a hitch, when certain inter-switch communications were cut off. This was soon corrected. What's more, the expe-

A new heart for the ASTRID network
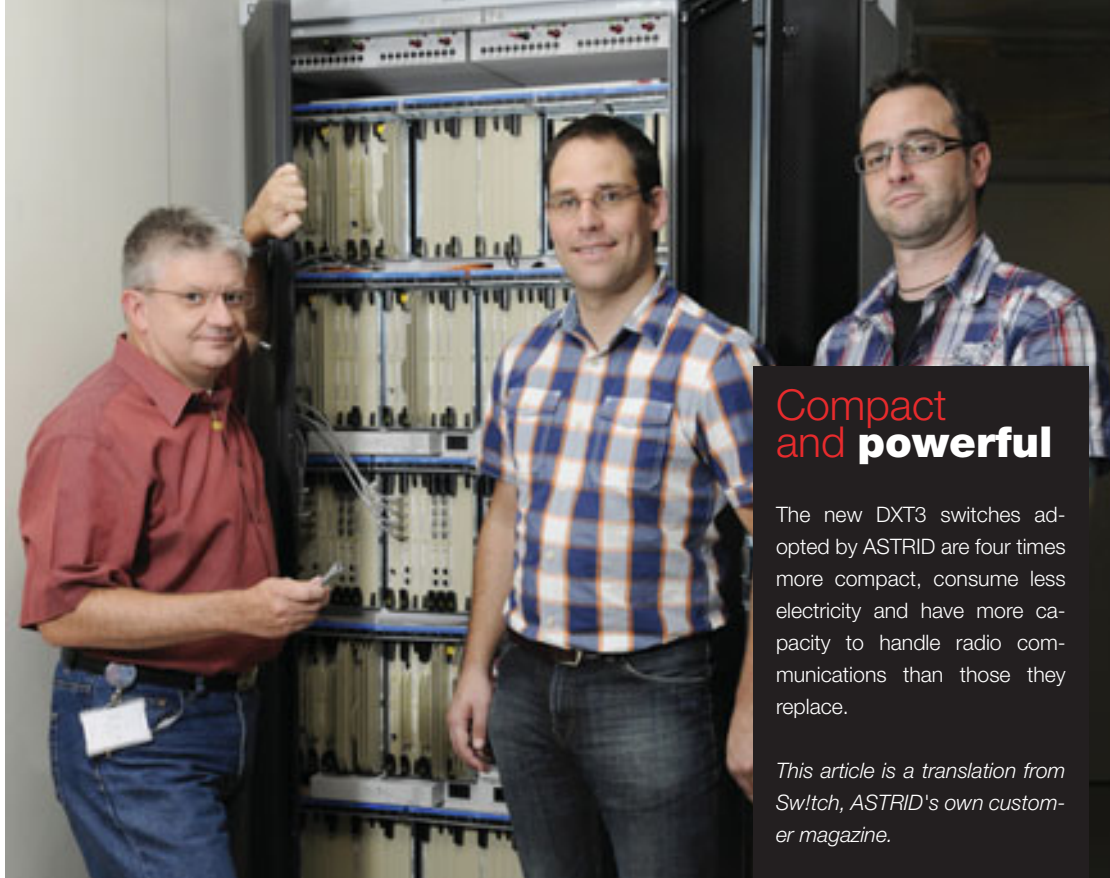
CUSTOMER WIRE

rience allowed the engineers to avoid the problem completely in the Leuven upgrade.

In both operations, on-site teams included technicians from the Cassidian-Belgacom consortium and from ASTRID. The consortium managed the migration and the configuration, while ASTRID took charge of coordinating and monitoring.

"We had one control station – a remote ASTRID service centre (ASC) so that we had a hotline for any urgent calls. We established a reporting system for the operations and carried out radio tests bit by bit," says Bonivert.

The new DXT3 switches were first integrated into the network and connected before the existing switches were removed.

Three nights of work
Each upgrade took three nights in total. On the first, the dispatcher workstations and the base station antenna relays were migrated. On the second, it was the turn of the databases, while the third night involved re-connecting and re-configuring switches in other provinces.

"It was all professionals involved in the switch upgrade," says Granson, "The people of the control rooms; the users; the technicians; and the consortium."

The projects were part of a wider process of renewing key components across the ASTRID network. Switches in other provinces will also be upgraded in the coming months, with the final upgrade scheduled for 2014.

Switches handle every call and every message in the system. Each switch is also connected to external systems such as fixed and mobile networks. It is important to keep switches up to date, both in terms of software and hardware.

Ghent Fire Brigade, one of the largest in Belgium, has opted for the Cassidian FMIS 500 data management application to equip its vehicles and central command and control room.

Data system
empowers Ghent fire fighters

FMIS 500 puts frontline fire crews in direct contact with the command and control room via a vehicle-based computer, as well as giving them easy access to resources such as tactical plans, risk information and standard operating procedures. Users both in the vehicles and in the command and control room will benefit by having information on the incident available immediately, as well as status updates and location information.

Operators will be able to update files, maps and drawings from the command and control room to vehicles at the incident location by pushing information over a data connection. The system also allows the vehicles to send various status messages, requests and location information to the command and control room. When the vehicle is back at the brigade HQ, the data are automatically uploaded to the vehicle through WiFi.

The turnkey deal covers the FMIS 500 solution to equip 69 vehicles and the command and control room, development of interfaces with an existing data information system, supply and integration of the I/Tracker Intergraph software, end-to-end service integration and maintenance services over four years.

Cassidian is the prime contractor and end-to-end integrator of the system. The integration of the back-office software applications with the existing command-and-control room is performed via customised interfaces developed by Astrium Services and the local subcontractor Ferranti, who will also supply the I/Tracker Intergraph software for vehicle positioning. The 4 year contract includes all related deployments as well as the maintenance of the system.

King of Spain
uses digital radio
– no training needed

Spain's digital radio service, SIRDEE, briefly had a new user this summer when the King of Spain, Don Juan Carlos, visited the operations centre of the traffic police (Dirección General de Tráfico – DGT) in Madrid. He spoke to all the members of the traffic police force using SIRDEE (Sistema de Radiocomunicaciones Digitales de Emergencia del Estado). So easy is the system to use that the royal needed no instruction on its use.

The King wanted find out more about the job of the traffic police and timed his visit to coincide with the end of the August break, when millions of Spaniards head home after their holidays.

He thanked officers for maintaining the security of travellers, and encouraged them to keep up the good work. Traffic officers listened to the message over their communications equipment. The King then activated the countrywide highway signs asking for safe driving during this critically-busy end-of-summer period.

Don Juan Carlos was accompanied by the Spanish minister of the interior, Jorge Fernández Díaz, the representative of the government in Madrid, Cristina Cifuentes, and the director general of traffic, María Seguí.

The SIRDEE network is Spain's national mobile voice and data communications network and is based on TETRAPOL digital security radio communications technology infrastructure supplied by Cassidian. The Guardia Civil and the National Police were among the first users when the network started in 2000, and other organisations have since followed suit. Cassidian continues to provide maintenance support for SIRDEE users and, together with network operator Telefónica, offers 24-hour emergency support.
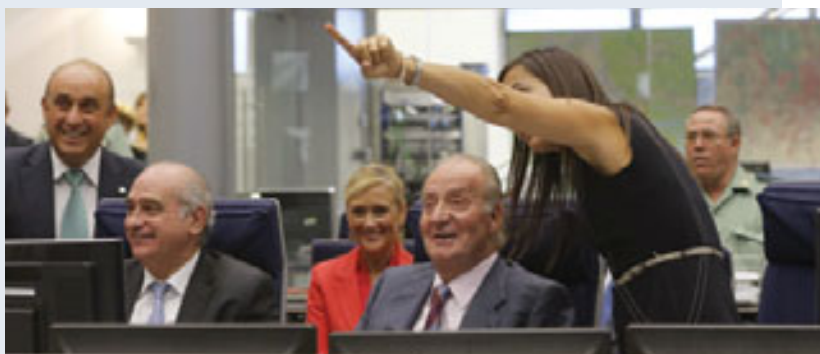
DGT chief María Seguí shows the King the traffic monitoring screens.

POLYALERT
provides early warning in Switzerland

Polycom, Switzerland's nationwide public safety radio network, has become part of the country's early warning system. Cassidian has developed special siren activation modules for the TETRAPOL-based network, as well as delivering the first 1,000 modules.

The first sirens are now equipped with the TETRAPOL Data Modules (TPDMs). When it is necessary to give a general warning to some section of the Swiss population, the national, regional or local control systems can activate the sirens through the Polycom network and the TPDMs.

The setup is called Polyalert. It makes best use of the available government and canton infrastructures and of the existing, nationwide Polycom network, thus ensuring that the population is alerted securely and speedily in all situations.

Polyalert takes advantage of the high availability of the Polycom network, which continues to offer services when commercial cellular networks tend to be heavily congested, such as in emergencies, major incidents or even during large public events.

Thanks to the TPDMs, sirens can be monitored over the remote connection with their operational status visible in the control centres. This means controllers can always be confident that the warning message is getting through.

The other benefit is that the global system can be controlled from a national control centre or using a regional control system if needed. This makes it possible to monitor the relevant sirens during national events or during regional or local events as needed. In other words, the system can manage all the 5,000+ sirens across the country or a sub-group of them if appropriate. This capability was a priority for the Swiss authorities.

Corsica gets set for **IP migration**

Corsica's IP-based INPT (Infrastructure Nationale Partageable des Transmissions) network is set to go operational early next year. The move from TDM services is part of a wider migration covering not only the island, but also mainland France.

The French Ministry of the Interior (MoI) has contracted Cassidian to migrate Corsica's INPT network from TETRAPOL TDM to TETRAPOL IP as part of its nationwide migration initiative.

Corsica was one of the first regions to adopt the INPT in 2002, and the island uses 21 base stations in total. The police currently use the network, while the local fire brigade is set to join the network soon.

The migration team, including both Cassidian and MoI experts, aims to execute the migration without any disruption to the ongoing radio service. The new service is scheduled to begin in early 2013.

It's a relatively small-scale project, but it is important because the lessons learnt will be key in preparing for the possibility of further TDM-to-IP migrations in mainland France.

The main difference between the TETRAPOL TDM and IP versions is that the latter has a full IP backbone. This brings more flexibility in terms of system architecture as well as lower transmission costs. In addition, it is a platform for future developments toward high-speed data services.

The INPT network is a common radio communication infrastructure for all forces jointly involved in public safety and security in France.

Mexico glimpses the future with advanced TETRAPOL

August 2012 saw audiences in Mexico get a demonstration of some of TETRAPOL networks' advanced capabilities. Under the banner of TETRAPOL 4G, professional organisations including public safety and other authorities, the army and navy, security organisations, utilities and oil companies, and spectrum regulators saw just what this capable technology can offer.

The concept of TETRAPOL 4G was introduced, showing how TETRAPOL systems can be complemented with LTE capabilities. This was demonstrated with a live video transmission over LTE, sending video from a nearby vehicle direct to the auditorium. The LTE system was operating in the 400MHz range, which is one of the target frequency bands for public safety applications around the world.
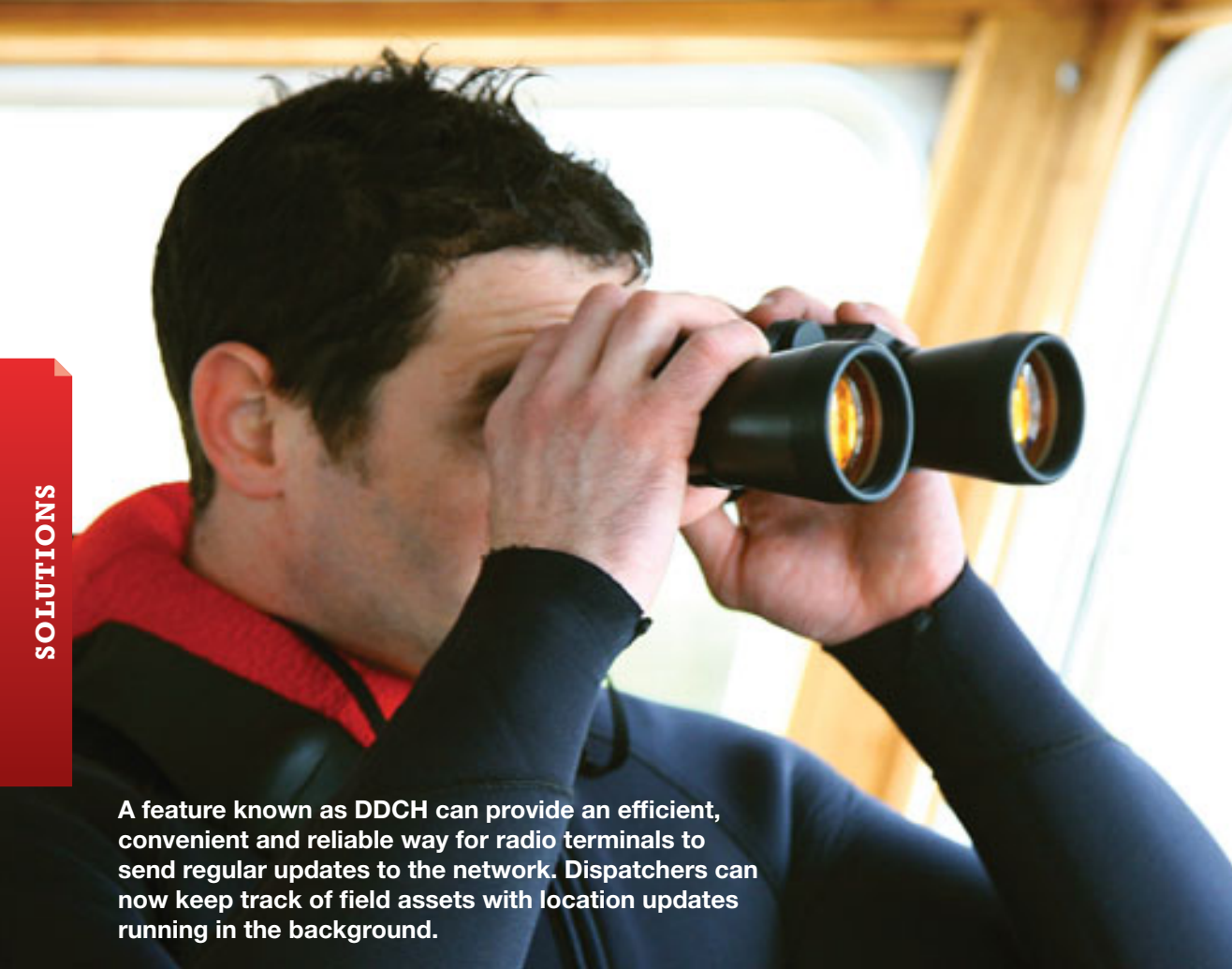
Participants were reassured that TETRAPOL systems are evolving and many asked about piloting these solutions. One particularly appreciated the possibilities that the demonstrated solution would give in implementing their 400 MHz strategy.

Among the demonstrations on show was also the tactical cell, which provides tactical, standalone radio coverage for the forces in the field. The system uses a special communication device called IDR that is easy and quick to deploy and that allows personnel to communicate even without relayed radio coverage. The demo also showed that, thanks to the system's Radio Access Gate, the control centre dispatchers can be included in the IDR communication, or at least be given access to the information on the incident.

If served by IDR 3G radio coverage, the Radio Access Gate can also forward data from the tactical cell to the control centre, for example, sending data to the control centre's Automatic Vehicle Location (AVL) display.

A feature known as DDCH can provide an efficient, convenient and reliable way for radio terminals to send regular updates to the network. Dispatchers can now keep track of field assets with location updates running in the background.

Amongst its many features and benefits, TETRAPOL makes it easy to exchange small data messages, without disturbing or interrupting the radio's current operations.

It does this via a specific radio channel known as the Dedicated Data CHannel (DDCH), sending short messages of nine bytes in length, irrespective of whether the terminal is in communication or on the control channel.

One of the most useful applications of the feature is Automatic Terminal Location, where the radio terminal sends its geographical position regularly to the network's Automatic Vehicle Location (AVL) server.

Tracking officers on foot and in vehicles

A person in the network control centre may want to see on a map the people they need to manage in the field. Someone on foot moves more slowly, so the location needs updating less often than that of vehicles. The control centre staff can decide how often these updates run and can, for instance, configure them to occur even more frequently for vehicles in pursuit of a suspect.

Staff simply need to decide their priorities and requirements and together with the AVL solution, the TETRAPOL DDCH will manage the data exchange within the network to meet their needs.

When a TETRAPOL radio terminal is connected to a GPS receiver, with either a standard Bluetooth GPS receiver or Cassidian's micro loudspeaker with embedded GPS receiver, the terminal will automatically ask the AVL server for a data transmission configuration. This commits the radio terminal to periodically communicate with the AVL server to transmit its po-

Easy location updates with
TETRAPOL

sition according to chosen time intervals - for example, updating the location of pedestrians every four minutes, the location of vehicles every 30 seconds and, when needed, the position of a pursuing vehicle every seven seconds.

The terminal requests the network to assign it a dedicated time slot in the DDCH so that it can alone decide to send its position without network intervention, avoiding the classic data exchange and handshaking that occurs each time a radio terminal wants to send data to a server. The network will dedicate a time slot to this terminal among those available, depending on the required periodicity.

Efficient messaging

This efficient data sending system avoids the usual polling mode from the network, as well as the message collision or loss of messages that can occur when radio terminals try to send their location on the fly.

When the radio terminal is roaming to another radio cell, the TETRAPOL network automatically dedicates a new time slot to the radio terminal within the new radio cell, avoiding loss of information and with no need for action from users in the field or staff in the control centre.

If there is no DDCH time slot in the new radio cell, the radio terminal will ask the network to use the back-up data sending mode. Based on standard polling mode, this does bring some constraints but ensures that the geolocation of the radio terminal can continue to be sent from the field.

The DDCH can be used for every type of data. Although our example explains its use with an AVL system, it could be used for other sensors, for example, to follow the water level of rivers, critical temperature in a plant or with any other critical sensor system that needs to be monitored via a radio network.

The network can accept up to 300 vehicles and more than 800 pedestrians per DDCH per radio cell in the configuration of the example above. This allows time to include a few pursuing vehicles and other emergency signalling tasks.

Other options for the maximum per cell per DDCH can be 1000 radio terminals sending their location every minute or 500 terminals sending their location every 30 seconds. Up to three DDCH per cell can be supported.

SECURITY for **CITIES**

Increasing urbanisation is an exciting global trend, but it brings with it significant security challenges. Digital communications can play a leading role in promoting security for those living and working in today's mega-cities.

Societies around the world are becoming increasingly urban, as people leave their rural communities and settle in cities in the search for a better life. By 2020, 60% of us will live in cities, leading to bigger, more diverse communities.

Today's so-called mega-cities are exciting and vibrant places to live, but having so many people crowded together also presents risks. There's always the possibility of social friction and any potential problems could impact on ever more people as the population density increases.

In many countries there's growing demand for a healthier, safer environment, a rising interest in bigger and better public events and increasing reliance on digital technologies. These shifts redefine the nature of security requirements, with cyber protection and simulation software, improved infrastructure for commuters and effective crowd control all climbing up the agenda.

In emerging economies it's the rise of the global middle class that's redefining the social structure and perceptions of safety. Fear of social unrest is a significant undercurrent in changing societies.

Defining the challenge

So what do we want in a safer city? It's ultimately about protecting people, but that also requires effective protection for the infrastructure, utility services and communications that support decent conditions for those who live and work in these urban communities.

Cassidian's urban security solutions can support authorities to manage and prevent problems such as social unrest, crime and terrorism. Effective communications are vital, both for those organisations responsible for tackling any threats, and to keep the public properly informed. Radio and data communications, command and control solutions, emergency response systems and public warning systems all have roles to play.

For example, critical sites - such as utility infrastructure– can benefit from a security solution that can give better situational awareness than guard-based security. Cyber solutions protect industrial control systems from cyber-attacks and assure continuity of production. Smart decision-making tools understand and predict different security alerts and their potential impact. A bomb disposal training tool improves safety for those on the front line.

Valuable experience

Public safety professionals know more than anyone else what's involved in urban security, and it's vital that any solutions are designed to fit their needs, and not the other way around. A security solution needs to support the proven processes favoured by professionals and not over-complicate or obstruct smooth operations.

At the end of the day, specific technical solutions are nowhere near the top priority for end users in public safety. People don't care about the "how", provided they can easily access the information they need, when they need it.

That's why an integrated system is essential and separate systems that do not "talk" to one another without human intervention have fallen out of favour. This is as true among those responsible for urban security as it is for the rest of us in this digital age. Integrated solutions from Cassidian can support them in their vital work.

Lexington-Fayette Urban County Government (LFUCG) in the USA has chosen Cassidian to provide a digital, trunked P25 Land Mobile Radio (LMR) system for public safety communications.

The new 800 MHz simulcast CORP25 radio network will provide mission-critical communications for the local police and airport, as well as full interoperability with the fire department and the University of Kentucky. Once complete it will provide coverage across the urban county's 285-square-mile metropolitan area.

The full CORP25 solution includes hardware, software, system engineering, installation, optimisation and onsite maintenance. It's scheduled for full deployment by the end of 2012.

The new network will provide broader coverage and full interoperability with the Lexington fire department and the University of Kentucky, which each currently operate on different radio technologies, but are expected to join the new system within the next two years.

"We were looking for a radio communications solution that would meet several differ-

Cassidian to deliver **P25 radio system for Lexington**

ent needs, improved coverage throughout the area, seamless communications within and across different networks, and compliance with a rapidly approaching narrowbanding deadline," says Robert Stack, assistant police chief with the Lexington Division of Police.

"The CORP25 solution fits the bill perfectly by ensuring the performance and coverage we require, interoperable communications for all of our emergency responders, and a system that can grow and adapt as the industry evolves."

Safety imperative

Lexington's Blue Grass Airport will be the other main user when the network goes live. Scott Lanter, chief and director of public safety at the airport says: "It is imperative that those of us in the business of keeping our communities safe have the tools to quickly and reliably communicate with each other in a crisis."

"With the new CORP25 LMR network from Cassidian Communications, we have the means to immediately share informa-

tion with our colleagues, respond with a common understanding of the situation and lay the foundation for the next level of unified public safety communications."

"Lexington has been using our public safety 9-1-1 call processing and emergency notification solutions for over 10 years, and we are excited to now have our open CORP25 LMR solution selected to round out the public safety communications mix," says Rich Cagle, vice president of sales for Cassidian Communications LMR.

"We take great pride in the fact that we have the technology and expertise to deliver a radio network that will meet Lexington's performance and interoperability requirements, and at the same time offer a flexible procurement approach that can save money both initially and for the life of the system."

What is **CORP25?**

The CORP25 digital trunked Land Mobile Radio (LMR) solution from Cassidian is the industry's only true non-proprietary P25 network offering. Fully standards-compliant, the IP-based CORP25 radio system enables interoperability within and between systems, and allows agencies to select radios, consoles, recorders and other network components from a variety of different vendors. This offers users both economical and operational advantages over proprietary systems.

This innovative, open approach enables competitive procurements and allows customers to build the best networks, with the best equipment, for the best price.

Mercer County
to get CORP25
radio system

Another US-based digital P25 based radio system will soon be bringing first class communications to public bodies, this time in Mercer County, New Jersey.

The Cassidian network will replace the county's existing mission critical radio system, with the total solution including hardware, software, system engineering, installation, optimization and onsite maintenance.

The standards-based CORP25 radio solution will provide full interoperability between law enforcement, fire and emergency medical responders operating across 12 of the townships and boroughs in the 226-square-mile county. The new system will also greatly improve the coverage, performance and reliability of radio communications for first responders throughout the county.

"We are excited to bring a fresh new business model and state-of-the-art P25 communications solution to Mercer County," says Rich Cagle, vice president of sales, Cassidian Communications Land Mobile Radio. "The combination of our experience in P25 LMR technology, with the flexibility of our open, standards based CORP25 system, will provide Mercer County with the interoperability, performance and freedom of choice needed to ensure the safety of its first responders and taxpayers."

Photo: J. Stephen Conn / Flickr

Mobile video is everywhere as people use their smartphones to capture the world around them. How long will it be before this moving medium is used to enhance emergency 9-1-1 calls?

It may not be as long as you think. At the scene of an incident, a witness makes a 9-1-1 call using a smartphone, sending pictures or live video of the scene to the control centre. At the control centre, operatives treat the incident as an event, linking the pictures or video to it.

Soon after, operatives are able to forward the visuals to emergency responders in the field. The system is smart, so it sends the data-heavy information using an LTE broadband network and the short data formats using the public safety radio network.

The whole smooth process is an example of seamless integration of systems, applications, and devices.

Sounds like science fiction? At the moment it is. Many people have made a call to an emergency number but no-one has yet been able to send a video clip of an incident to provide authorities with visual information fresh from the aftermath of the event.

Adapting to video

For people under the age of 30 that increasingly use services such as YouTube to share pictures and videos via their smartphones every day, there is an expectation that emer-

Emergency calls to go
visual

gency services should be able to receive and make use of these materials as well. Even more important will be the need to send and receive video images between the Control Rooms and first responders such as police, fire crews and paramedics. Broadband and LTE are the key to providing the means for efficient, cost-effective video transport.

A vision for the future

Cassidian Communications has already demonstrated this ability, showing solutions that deliver voice, data and video communications throughout all stages of an emergency situation, from the initial 9-1-1 call to the response in the field. Cassidian Communications' "call-to-car" multimedia demonstration at the 2012 APCO Conference showed how its NG 9-1-1 call processing solution can interwork with its LTE broadband vehicle router, clients and applications to provide first responders with the high bandwidth information they need.

The LTE Broadband Vehicle Router 700 brings the ability to transport real-time video and high bandwidth data between the call center and a first responder in the field. Optimal call center applications let the incident managers share the voice, video and images received from citizens with the emergency teams who are already on their way to the scene. Offering the solutions today that emergency teams will need tomorrow, Cassidian is helping them prepare for the visual future.

More than 200 people and a helicopter had been searching for the missing person for hours. After scanning the ground through night vision goggles, the crew of the Frontier Guards helicopter spotted him and he was pulled into the aircraft using a winch, at dusk at around 11 pm.

Missing person alert
sets rescue wheels in motion

A report of a missing person, particularly of a vulnerable one often triggers a huge response, with many different agencies swinging into action. In Finland, police has always the lead in these situations, and depending on the search area, they can involve also border guards and the army, as well a reserve of trained volunteers known as VAPEPA. Such a search draws on both the local knowledge of search volunteers and the professional skills and equipment of the full time agencies.

Although the Finnish Police may order anyone between the ages of 18-54 to assist in the search, they generally make use of VAPEPA, whose operations are coordinated

by the Finnish Red Cross. VAPEPA is usually alerted to the search task via an Emergency Response Centre.

Air alert

If the terrain or timescale demands it, the police may call in helicopter support. An air search is generally the responsibility of the Frontier Guards, additional help for an aerial search can be requested from the army.

An efficient search, one that stands maximum chance of finding the missing person, requires careful co-ordination backed up by effective communications.

Communications with the Frontier Guards' helicopters is achieved directly via the VIRVE network.

Alerting the helicopter crew that they are needed is most often done via the frontier maritime search and rescue centre, or by the ground border command centres, also often via the maritime centre. Alerts can also come from the air search and rescue centre, again often via the maritime centre or directly from the emergency response centres, sent to the crews' VIRVE radios.

During on-call times, these direct alerts come directly as SDS messages into the VIRVE radios, while outside call times, they receive text messages to their GSM phones. For on call hours, readiness is 15 minutes while outside call hours it is 60 minutes. Crews acknowledge they have received the task by sending a VIRVE status message.

Both handheld radios and mobile radios are in use in the Frontier Guards' helicopters. Handhelds are valued for their convenience. They are carried into the helicopter and inserted into a special mount, allowing communication through the helmet microphone/earphone.

Ground support

While VAPEPA also uses VIRVE for communications with the authorities, their internal communications are usually with less expensive walkie-talkies, as their budget will not stretch to equipping everyone with a VIRVE radio.

Communications with other authorities is achieved using pre-defined inter-agency talk groups.

In terms of search area, a three kilometre radius is already a big task for a ground search and in these situations, sending waypoints via VIRVE helps eliminate errors. For example, the helicopter can send a point of interest to be checked as a waypoint via VIRVE to the commanding police on the ground, who can then ask the searchers to check this area.

For both ground and air assets, VIRVE makes it easy to send data and clear voice between many different agencies, giving the best chance that a well-coordinated search will find the missing person before they come to harm.

Energy gets smarter with TETRA

As power consumption rises and more energy is produced from de-centralized, renewable sources, current production and distribution networks are increasingly less able to cope.

Societies are also more vulnerable to disruptions in energy production and distribution. Every year, storms and heavy rain around the world leave thousands of households without electricity and shatter electricity pylons and mobile phone network antennas.

With their ability to adapt to changing conditions, smart grids offer a solution to these challenges. For example, they can keep energy production in balance, producing just the right amount to meet current consumption. Smart grids use information and communications technology to gather and act on information about the behaviour of suppliers and consumers, helping improve the efficiency, reliability, economics and, ultimately, the sustainability of electricity production and distribution.

Comms behind the power

A communication network is therefore a key part of smart grids. This network must be reliable and secure. A radio network based on TETRA technology is both, while also being cost-efficient.

South Korea's sole power distributor, Korea Electric Power Corp (KEPCO) is already using a TETRA network provided by Cassidian to automate and manage its power grid intelligently - even in remote locations, where the cost of deploying landlines would be prohibitive.

Cassidian is collaborating with its energy customers in order to make energy production more intelligent. If you would like to know more, send an email to keytouch@ cassidian.com detailing your needs and we will put you in touch with one of our expert advisors.

ANY WAY YOU WANT

Start with a blank screen, end up with an interface built any way you want! Welcome to a new type of dispatching console – one that can be created to suit the way an organisation works in real life, offering almost limitless ways to tailor the interface for the ultimate in convenience and efficiency.
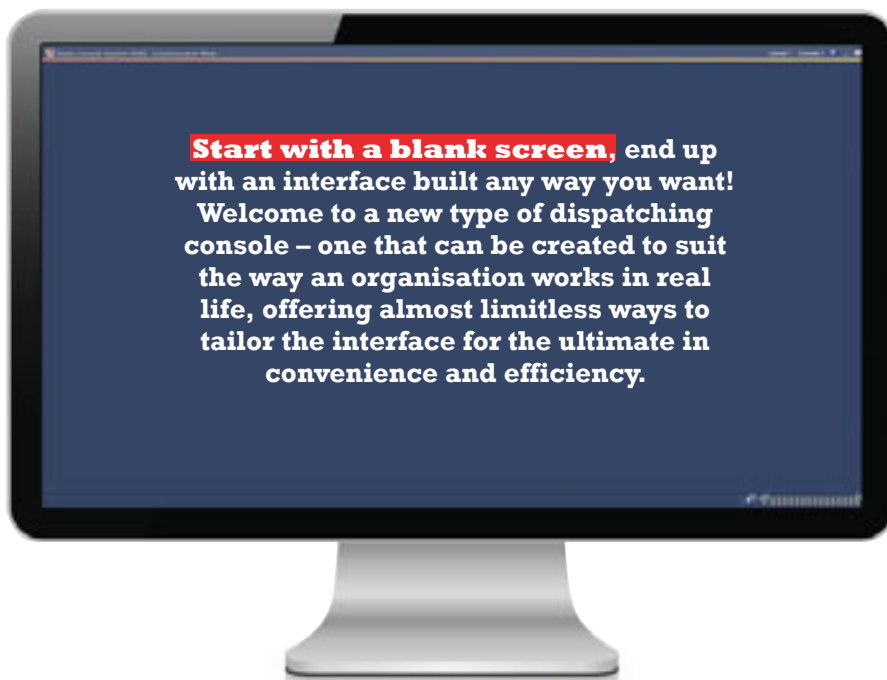
When specifying a new radio dispatch console, one of the most important considerations is how well it will fit the way that your dispatchers work. In other words, the interface should be adapted to its users, not the other way around.

And that's exactly the thinking behind the new Cassidian Radio Console System 9500 (RCS9500). The RCS9500 is a pure Voice over IP radio dispatch console that offers the ultimate in customisation.

Offered as an alternative to Cassidian's Dispatcher Workstations (DWSs), the RCS9500 complements the existing solutions.

Cassidian's RCS9500 experts can work with an organisation's operational staff to create the user interface to meet their exact needs. With staff thoroughly familiar with the dispatchers' typical work patterns, this tailoring can be achieved in one day – or even faster. "Knowing what you want is the key, and we can be there to tailor the user interface so that you get what you want," says Jari Juvonen, Control Room Expert at Cassidian.

During the dispatching roll-out project, sample user interfaces can be created and tested in action, allowing the UI to then be tailored to its final form. The user interface can be set up to look very much like an existing screen, allowing users to adapt

Starting with a blank screen, the user can mould the RCS9500 interface to fit the way their organisation works

to it with the minimum of effort. It can also be developed later to keep up with the natural workflow and changes to procedures.

A system can have hundreds of tailored layouts available, with each user seeing layouts defined for their own needs. This makes it possible, for example, to create fit-to-purpose, extremely user friendly layouts for a special event.

"I'd like to say there's no limit," says Juvonen. "Your dispatchers may want to use the touch screen with very large buttons. Or they may prefer the mouse and keyboard. They may want to see two windows, or ten. These are just a matter of choice – and very easy to make happen."

Superior capability

The new RCS9500 has been demonstrated to several PMR-using organisations, leading to users commenting on the solution's incredible flexibility.

During a demo, Antti Jeronen, Chief Inspector, Finnish Police Administration asked Juvonen to modify the layout. The RCS9500 met every modification request, causing CI Jeronen to state that "very rarely do you see a product that leaves you speechless."

In addition to its superior customisability, Mr Jeronen was impressed with the "user action log" and "console action log", used for troubleshooting, root cause analysis and investigation of user activities during an incident.

Harri Virtanen from State Security Networks Ltd also saw all his modification requests met with ease. "Based on what I have learned, the RCS9500 can meet dispatcher's needs extremely well," he says. "Although I had been told that the product was very flexible, I was amazed at its capabilities shown in the demo."

All at the touch of a button

With its flexibility of display and easy to read, intuitive design, the RCS9500 offers everything any dispatcher needs to do their specific tasks.

Shortcut buttons. Choose a button at the top rather than selecting something from a menu. For example, click on the Volume shortcut to adjust the volume. The Connectivity button will turn red if there is a problem with the connection between the dispatching station and the rest of the system.

Talk group tabs. These can be set up according to operational needs. For example, a user could call up different sets of talk groups on the screen according to their role or geographical location.

Data messages window. Very convenient for the dispatcher, who can, for example, click on a received message to make a voice call to the sender. Or, clicking on an emergency status message, the dispatcher can switch on ambience listening on the radio.

Talk group windows. Size, shape, colour: whatever you prefer. You can also choose which buttons the window will show. All windows may have the same buttons, or some windows could show only the PTT button. The colour of the window frame can be set according to the type of talk group: grey for regular, yellow for broadcast, invisible frame for dynamic talk groups, etc.

List window for a list of users. Information per user, the columns shown, the width of columns, everything can be configured. The buttons below the list can also be chosen according to need. Different lists would have different sets of buttons, of course. Information related to users is naturally nationwide, even in large scale networks.

Future critical communication networks must be able to deliver voice and multimedia they way that professionals need to do their jobs well. Key Touch lays out some reminders of what to do to make it happen.

Take note
of the digital future

TRIPLE-PLAY APPROACH

EMERGENCY RESPONSE DEALS WITH MULTIMEDIA AS EASILY AS VOICE

MORE AND MORE INFO COMES IN DIGITAL FORMAT

BROADBAND CAPABILITY

BASIC REQUIREMENTS

NOT ONLY DATA, BUT VOICE TOO

RADIO COVERAGE

GROUP COMMUNI- CATION

DMO

ETC.

DISTRESS CALLS GO DIGITAL

The near future will see more calls to emergency centres arriving in a digital format. With next-generation solutions, calls can come in as emergency text messages, while video clips, digital images, location information, and an abundance of personal information will also be common.

MEDIA–RICH
INFORMATION
IS USEFUL
FOR FIRST
RESPONDERS

FIRST RESPONDERS WANT MORE MEDIA

First responders will find media-rich information extremely useful. Broadband and Emergency Response Solutions ERS with multimedia capabilities are key for sharing this information, but technology is not the only thing that matters.

EASE OF USE ESSENTIAL

How will the users see and access the new multimedia-capable services? Both devices and applications must be easy to use, durable and suitable for the purpose, with a long battery life.

DON'T FORGET THE BASICS

Users' basic requirements also still need to be met. The communication system has to provide the necessary voice and data services, while radio coverage must be available throughout the operational area. And the radio communication system needs to fit the operational needs of the users.

INTEROPERABILITY IS A MUST

Different organisations within a discipline need to communicate together easily, but in a controlled manner. Ideally, communications with other agencies will work the same way – easily, securely, and in a controlled way.

THE BROADBAND FUTURE

LTE broadband brings a higher bandwidth and enables the transmission of video, for example. On the other hand, it requires a lot of spectrum and a completely different network infrastructure from the existing public safety infra. However, when the existing TETRA network and broadband are integrated, the familiar, reliable, secure and efficient voice services continue to be available. Cassidian's Evercor® system can use the TETRA connection when it is the best choice and broadband when more bandwidth is needed

ONE STEP AT A TIME

The best road to the broadband future is incremental. Use the existing network infrastructure as much and as long as possible and build the future solutions on top of this solid basis. Thanks to the integrated Evercor system approach, this becomes possible.

BETTER PROTECTION

When communications meet these requirements well, the results can be tangible. Public safety professionals will be able to respond faster, deal with more incidents more quickly and giving better protection to people and property.

Yesterday's tomorrow is today

"A glimpse of tomorrow's terminals" was the title of an article that appeared in Key Touch in 2008. At that time, we foresaw many changes in the way professionals use their radios, based on the most advanced software and hardware. How accurate was this prediction? Have traditional PMR users really adapted to new functions in their daily communication?

Key Touch 3/2008:

A glimpse of tomorrow's terminals

As professional lives change, so will the capabilities that people demand from their radio terminals.

Professionals need all their tools to support them in the best possible way, and their PMR terminals are no exception. As professional lives continue to change, the reasons that people invest in a particular PMR terminal are also changing.

Today's professional radios are used mainly for voice communication, so the terminals' most valuable capabilities are group calls and secure voice, followed by status messages.

Tomorrow's radio will have to support the rise of role-oriented communications. Intelligent task management and field reporting from "the mobile office" will demand new capabilities. Field-initiated database enquiries will also become more common, with some radio terminal support.

Other forms of connectivity are booming, thanks to RFID tags, biometric passports, mobile printers, external memory devices and so on. These will become the common tools with which tomorrow's radio terminals will have to communicate.

But the main difference between today's radios and those of the future are value-adding applications. Tomorrow's professional radios will offer easy-to-use applications that are tailored to work according to each organisation's needs. And one of the critical enablers is Java™ support in the terminal.

The answer is clearly yes. In many TETRA networks, the number of data messages is already higher than voice calls. Field-initiated database enquiries include individual social security numbers or car registration plate queries to check someone's identity or determine if a car has been stolen. Accessories and other external devices make it possible to read an RFID tag or to print out a speeding ticket at the scene of a traffic offence.

AVL (Automatic Vehicle Location) has become a key application using GPS receivers built into radios enabling users to be located over the TETRA network. Pre-programmed triggers for sending a user's position enable field units and individual officers to be tracked, while users can also save their position to the radio with a single key press for later use. All this combined with special advanced GPS features, like Lifeguard and "Where are you?" enhances user safety significantly.

Java platform applications are also a reality today and becoming more widespread, thanks to the unlimited ways in which they can be tailored for user groups.

What are the users of today expecting in the future? Usability and configurability are the key words, as radios receive more advanced software and versatile features. Users want an easy-to-use radio with their personal settings always available, while being tailored to their organisations' needs and ways of working.
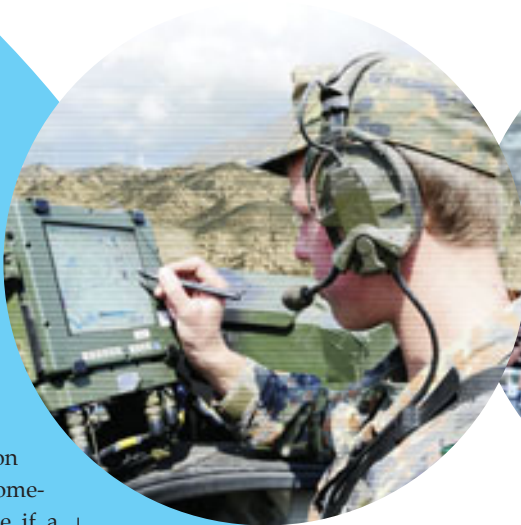
PLANNING AHEAD

GOOA

Russia's players celebrate their team's victory over Slovakia at the end of the final game of the International Ice Hockey World Championship. Russia defeated Slovakia 6-2.

SCORES A
GOAL!!

From a security point of view, the 2012 IIHF Ice Hockey World Championships in Finland were just one sports event among many. Finland did not win a medal this year, but the organisation was a big success, thanks to careful planning.

The main venue for the championships was Helsinki's Hartwall Arena, where **Ville Ketonen** from the Local Crew security company took charge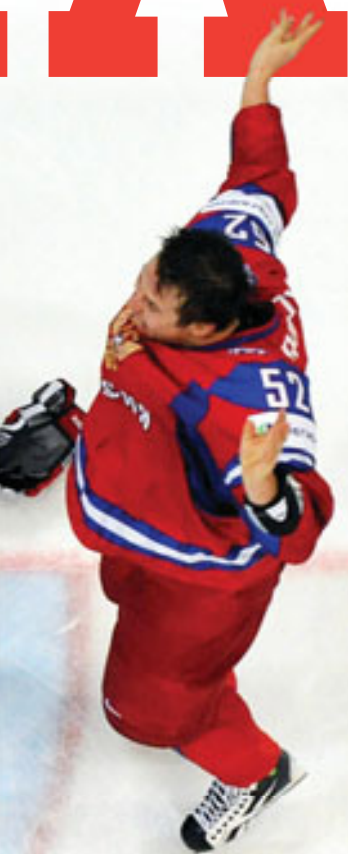. According to Ketonen, the duration of the championships set it apart from most public events, with matches played over several weeks. Apart from that, the security challenges were similar to those of other major events.

The championships will also take place in the same venues in Helsinki and Stockholm next year, so lessons learned from this year will apply going forward.

Fire planning

Most of the private security personnel were already familiar with the Hartwall Arena, and fire chief Juha-**Pekka Lassila** says that the public authorities also monitored the planning of the event from the start to ensure everything was checked in plenty of time.

"From the fire security point of view, the biggest challenges relate to the subcontractor operations [such as food outlets] built into the arena. These often have to be adjusted," says Lassila.

He also says that having a modern arena helps since the most important safety features - such as exits - were carefully thought through during the building phase. Well-trained security personnel are also crucial. For example, if a fire is spotted, they can be on the spot immediately with extinguishers to keep things under control until the fire service arrives.

All this adds up to a relatively small fire risk, even with such a big crowd. But there was no room for complacency, says Lassila: "Crowd behaviour is always unpredictable. Someone may get a 'bright idea' and do something foolish."

There were daily meetings throughout the championships, including rescue services, emergency medics and representatives of the police, as well as event security. But the most important work was done beforehand, with operational plans and driving routes already decided, for instance. During the playoffs there was no need for additional preparedness, but the command centre for the emergency services was maintained on high alert throughout the finals weekend.

Medical planning

When it comes to preventing and responding to possible medical emergencies, the primary responsibility lies with the event organisers. But organisers naturally focus on players and other personnel, while the sheer size of the audience may pose a much bigger risk. The emergency medical service therefore plays a vital supporting role if an urgent situation crops up with anyone at the event, whether they're a player or a spectator, says emergency medic **Teuvo Määttä**.

Security planning involving the authorities started in the autumn of 2011. Event personnel were trained to give first aid, for example, so they could act quickly if need be while waiting for support from the authorities. If anything serious had happened, the organisers' security organisation would have started the process and guided the rescue workers to the site. Responsibility would then have shifted to the authorities.

"The organiser had first aid prepared and the rescue authorities had checked that the venue was okay. We got ready by raising our preparedness level during the game for bronze and the final match," says Määttä.

In addition, the first response medics carried laminated cards complete with routes within the arena and the important contact information. Personnel were also trained to use talk groups on the Finnish public safety radio network, VIRVE.

This year's plans also included a new element – a response plan in case Finland won.

In 2011, around 10,000 people gathered downtown to greet the victorious home team and the celebration was not fully under control, although luckily there were no serious consequences. So for 2012 it was decided from the start that any celebration would not be staged on the Market Square but at the Event Park near the Olympic stadium. If Finland won, the authorities' preparedness would also have been raised.

Even though Finland couldn't pull off a victory this time, the championships still meant extra challenges for the emergency services around the city, according to Määttä: "Warm weather, spring in the air and available booze kept us busy."

VIRVE everywhere

The VIRVE TETRA network was an important means of communication not only between the public authorities but also with the security organisation at the arena. According to Ketonen, VIRVE radios have replaced walkie-talkies in all the important operational areas.

"Every year and at every event, our people become more familiar with VIRVE and the cooperation between us and authorities gets clearer," he says.

Lassila says that radio coverage was improved before the event. "We knew in advance that there were a couple of black spots around the practice hall, for example. We put up repeaters there to extend network coverage," he says.

Original article written by **Jarno Salovuori** for Alma 360 and published in VIRVE magazine of State Security Networks Ltd, Finland

CHAMPIONSHIP FACTS

- Russia took gold at the 2012 event, with Slovakia winning silver.
- Russian goalkeeper Smyon Varlamov saved 93.93% of all shots on goal.
- Slovakia's Jan Laco was the hardest working keeper. He took the largest number of shots on goal (250), and he also had the longest time in play (over 524 minutes).
- Russia's Yevgeni Malkin was the top scorer with 11 goals, but was Alexandre Burrows of Canada the most accurate player? Over 40% of his shots scored goals, even though that only meant three goals.
- French Sacha Treille endured 27 minutes' of penalty in total, that is almost 14 minutes per game.

At the **heart**
of triple-play

The three directions of communications related to emergencies and incidents

SOMEONE WITH
A SMARTPHONE

GENERAL PUBLIC

FIRST
RESPONDERS

WARNINGS,
EMERGENCY
NOTIFICATIONS

IMAGES,
VIDEOS

IMAGES, VIDEOS,
OPERATIONAL
COMMUNICATIONS

A triple-play approach means that emergency call processing systems, mass notification services and authority communication networks are integrated to work together seamlessly.

What will triple-play bring?
People can share important information with the authorities the same way they share information with their family and friends.

COMMAND AND CONTROL

Flying eyes
watch out for spectators

News organisations reported that 100,000 visitors poured into London daily to enjoy this summer's sports events, some 64 years after England's capital was last in the same position. Overhead, police helicopters kept a watchful eye on the celebrations, helped by Eurocopter's team on the ground.

Picture the scene: An EC145 helicopter is filled with the chatter of six radios as it hovers over the 80,000-capacity stadium. The front observer adjusts the thermal image in the fading daylight to focus on the crowd outside the stadium. Commanders on the ground are worried that people might be getting crushed. The tactical commander in the back of the helicopter scans the crowd on the four-screen display and sends the images to colleagues on the ground. Given the all-clear, the crew types in a new destination and the video camera swings around, showing the pilot on the moving map where to go next.

The London Air Support Unit (ASU) provided constant coverage throughout the "summer of sport", using three EC145s from EADS company Eurocopter. The unit's executive officer, inspector Phil Whitelaw, says: "It was our largest ever peacetime operation."

Between April and November the unit normally assists in up to three pre-planned events per week, typically demonstra-

Photo: Eurocopter

Sport radio

Radio communications play a vital role in providing security at major events. In the last 10 years, communication networks provided by fellow EADS company Cassidian have helped safeguard events ranging from alpine ski championships in Austria to the 2008 games in Beijing.

When a torrential downpour threatened to flood the stadium at the 2005 World Athletic Championships in Helsinki, real-time communications over the radio network helped organisers keep everything under control. More recently, at the 2011 World University Games in China, peak traffic between the 63 venues hit a remarkable 140,000 calls per hour.

Looking to the future, the Cassidian network used by the Brazilian Federal Police will support the security efforts for the football World Cup in 2014 and the city's 2016 events.

tions or sporting events. This year was different because 70% of events being held in London were spread over some 20 venues and ran from May right through to September.

Eurocopter has worked with the London ASU for more than 20 years, and ramped up support for the unit over the summer. The company also maintained coverage for its other customers throughout the UK, where it covers roughly 75% of the market. Neighbouring police forces also contributed to the operations in London, not only to boost security, but also providing air ambulances and photographers.

Eurocopter's inspection regime therefore had to change radically. "Normally we say 'in three months' time the EC145 will have flown 800 hours and will need an inspection'. Now we are saying, 'we want this period to be clear of inspections so we need to schedule work early'," says Steve Pickston, director of support and services at Oxford-based Eurocopter. At the same time, they had to keep sufficient police assets flying at all times so that normal services were not impaired.

Ultimately, the strong co-operation between Eurocopter UK and its customers ensured that, while everyone else was watching the sport, helicopters could watch the crowds and help keep them safe.

Sri Lanka improves airport security with Claricor®

BIA is based in Sri Lanka's largest city, Colombo, and is currently the country's only international airport. It is operated by Airport and Aviation Services (Sri Lanka) (AASL), which is a government-owned company that manages and develops civil airports. The capacity at BIA is expected to double within the next five years, according to AASL, and the necessary construction work is expected to start in the near future.

The airport previously relied on analogue radios, but AASL decided these were not sufficiently secure and opted last year to commission a digital system using Cassidian's Claricor. Based on a single switch and base station site, the new network provides 100% coverage, both indoors and out, throughout the main BIA site and all the peripheral AASL facilities within a 25 km radius of the airport. Fully operational since March 2012, the new network is already delivering the promised benefits, according to users.

"An analogue system is vulnerable to intrusion. The new TETRA system is much more se-

Sri Lanka's Bandaranaike International Airport (BIA) is enjoying improved security and more efficient co-operation between different departments thanks to its new digital communications system, which is based on the Claricor® solution for small to medium-sized networks.

Sri Lanka

Bandaranaike International Airport

cure, with its air interface encryption and authentication. It makes it impossible to eavesdrop," says Mr. Wipula Wimalshanthi, Head of Electronics & Aeronautical Engineering of AASL. "The quality of voice and coverage offered by TETRA is vastly superior to the analogue system, and additional functionalities are a huge plus."

Versatile functions
These additional functions include automatic vehicle location (AVL), short data messages (SDS), status messages and a network management system. The system also enables individual and group calls. Ground staff and security personnel are the main user groups and the ability to organise different communication groups for different tasks has enabled greater co-operation within the organisation.

According to Mr. Wimalshanthi, this versatility and ability to add new functionality in future will be crucial to the long-term success of the new system: "The new system is IP-based, which is a most important characteristic."

The system currently includes 135 handheld TETRA radios

and 71 mobile TMR880i radios from Cassidian. To get the airport staff up to speed with their new communication capabilities, Cassidian initially brought seven users over to its training centre in Europe. This was following by two onsite training programmes back in Sri Lanka, which were delivered during the commissioning process.

Future plans
The planned capacity expansion at BIA is not the only major aviation project currently in the pipeline for the Sri Lankan authorities. Construction is expected to start soon on a second international airport in the Hambantota District, known as the Southern

International Airport at Mattala. The BIA digital communications project has been so successful that AASL has already asked Cassidian to commission a TETRA communication network for the planned airport at Mattala.

Designed to meet the needs of airports and for use in the industry and transport sectors, Claricor offers many of the advanced functions of larger networks, including secure voice and data services, individual calls, group calls and dispatcher functionalities. In addition, Claricor can easily expand, from covering a small group of users served by a single site to becoming a fully-fledged network addressing the needs of a few thousand subscribers.

DID YOU KNOW …
your TETRA radio is multi-lingual?

Gebruikersinterface in het Nederlands

Magyar felhasználói felület

Deutsche Benutzeroberfläche

ان‌گ‌ل‌ی‌س‌ی واسط کاربه

Interfície d'usuari en català

Svenskt användar-gränssnitt

Interfaccia utente in italiano

Suomen-kielinen käyttö-liittymä

Interfaz de usuario en español

Περιβάλλον χρήσης στα Ελληνικά

Interface utilisateur en français

한글 사용자 인터페이스

Did you know that Cassidian's TETRA radios can talk to you? The Voice Feedback feature guides you while you focus on the task in hand, rather than on your radio. You can use your radio even without looking at it - all you need to do is listen.

The voice feedback language is the same as the selected User Interface language on the radio. Whether you speak English, Finnish, Arabic, Bulgarian, Korean, Chinese or any of the other 20 languages available, your radio speaks the same language as you.

When you change a talk group, you can hear the Voice Feedback confirm your selection. With the Fast menu key on the side of the radio, you can quickly and easily access the most commonly used functions preprogrammed into your radio. If you switch between network and direct mode, activate or de-activate scanning or transmission barring or change a profile, your radio clearly tells what you just selected. So you don't need to read it on the display.

Voice Feedback is available only with Cassidian's TETRA radios.

Power up the TH1nnest
and enjoy!

The new TH1n radio was first introduced at TETRA World Congress (TWC) in Dubai in May, and the smallest TETRA radio ever was warmly welcomed by professionals from all user groups.

Users are the true experts when it comes to handling radios day-to-day, and some modifications have been implemented on the TH1n in response to feedback received at TWC and afterwards.

The Power key has a new position and the HI/LO key is configurable as the Duty key or as one of the functional number keys. It's up to the user.

Power up the TH1n and enjoy a full set of features and functions in a slim, 19mm, pocket-sized radio.

SENSATIONAL RADIOS

Open-standards TEDS ecosystem
continues to evolve

Cassidian and Asia Pacific Satellite Communications Inc. (APSI) have begun pre-interoperability tests between TETRA networks from Cassidian and ATP7000 TEDS modems from Korean manufacturer APSI. It's a step in a programme to develop TEDS-enabled modems to support data across a range of industries.

The two companies have previously worked on TETRA terminals, but this latest move extends the existing partnership to include data-orientated products for stationary applications, such as smart grids, control systems and sensor networks.

"The expanded collaboration between Cassidian and APSI underlines Cassidian's commitment to creating an effective and diverse TEDS ecosystem," says **Jean-Marc Nasr**, head of secure communication solutions at Cassidian.

"Our cooperation will foster the growth and development of the TEDS market both in Korea and on a global scale," adds Ryoo Jang-soo, chief executive of APSI.

Meanwhile, Cassidian has also been working with Motorola to extend multi-vendor interoperability by conducting private interoperability testing of Motorola's TEDS-capable mobile terminal on Cassidian's TEDS-capable infrastructure. This paves the way for the first multi-vendor TEDS IOP certification targeted for the end of 2012.

It follows last year's announcement of a field trial of TEDS with VIRVE in Finland and Motorola's first interoperability certificate for its TEDS infrastructure and TEDS-capable mobile unit.

EADS goes
F1 racing

I n addition to providing security solutions to Formula 1 races, EADS has widened its association with the sport by becoming a partner of the Caterham F1 team.

The first signs of the new deal were the addition of the EADS / Airbus logos on the CT01 2012 cars at the Belgian Grand Prix. Yet, the link goes much further than mere sponsorship, adding EADS technology to Caterham's own skills.

Caterham F1 team principal **Tony Fernandes** says: "The partnership is the first of a number of exciting announcements about projects that various arms of the Caterham Group are working on with EADS."

Bintulu hears loud and clear with TETRA

The Bintulu Port authority and Asean Bintulu Fertilizer are the latest organisations to join a TETRA network established by Malaysian operator SLW. SLW has rolled out digital TETRA networks in several major cities across the country.

Bintulu is the import and export gateway for Sarawak and the surrounding region of the Brunei, Indonesia, Malaysia and the Philippines East Asian Growth Area (BIMP-EA-GA). The port handled more than 40 million tonnes of cargo in 2011.

Asean Bintulu Fertilizer operates an ammonia/urea plant in Bintulu.

Both organisations now have secure and reliable digital communications, thanks to the SLW TETRA project.

SLW (Supreme Landmobile & Wireless Corporation) is a Cassidian value-added reseller based in Malaysia. The company is an independent system integrator and service provider with over 25 years of experience in wireless communications. (www.slwholdings.com.my)

Protecting the external frontier of Europe

Border security in Romania

The completion of Romania's state-of-the-art command and control centre this year marks the culmination of Cassidian's border security solution for the country. Cassidian's border security solution protects a 3,100 km long border separating Romania from Moldavia, Ukraine, Hungary, Serbia and Bulgaria against illegal immigration and smuggling, while providing increased national security for Romanian citizens.

which may soon sit on the frontline in protecting the integrity of the Schengen area.

The new solution helps to safeguard the 3,100 km border separating Romania from Moldova, Ukraine, Hungary, Serbia and Bulgaria. Romania hopes to join the Schengen Agreement's zone of free movement, possibly by Spring 2013, and that ambition sees the country facing new obligations in terms of protecting the integrity of its borders.

The increasing flow of cross-border traffic promotes free trade, but also raises the spectre of illegal immigration, smuggling, trafficking and international terrorism. The Romanian system is the most extensive border security solution in Europe and the country's border police say it has already really boosted the efficiency of their operations against illegal immigration. (What do we mean by 350%? Is this cost savings, time savings, fewer resources, faster responses or something else maybe?)

Cassidian was first awarded the contract to provide an integrated border security system for Romania in 2004.

TETRA network to serve **Zhengzhou metro**

A Cassidian TETRA system will provide radio communications for 400 employees when the first metro line in the city of Zhengzhou is completed next year.

The TETRA radio system to be delivered comprises a DXT3 switch and 23 TB3 base stations. In addition, seven Dispatcher Workstations will be delivered for the control room to manage staff working the metro lines.

Seamless radio communications – both voice and data – will support metro employees in tasks ranging from train dispatching, operation and management to train security.

Six metro lines, with a total length of 189 km, will be built in Zhengzhou, with the complete system due for completion in 2015. All will eventually share a single control centre with the other five lines scheduled for construction by 2015.

China plans to build around 80 mass transit rail lines in 22 cities by 2015. Cassidian has already provided TETRA radio communication systems for ten other metro lines in China including Shenzhen, Hong Kong, Guangzhou, Wuhan, Shenyang and Nanjing.

Stay ahead with videos

You'll find all our latest videos at http://www.keytouch. info/features/videos_and_podcasts/, but here are a few of the latest examples to whet your appetite.

TH1n handheld TETRA radios

The lightweight TH1n TETRA handportable radio from Cassidian is a pleasure to carry. It squeezes a full complement of features into a pocket-sized package.

First introduced at the TETRA World Congress 2012 in Dubai, you can find out what the buzz is about in the latest video.

Digital revolution

Public authorities are using more and more digital information in their daily operations. So how should communication systems evolve to make the most of the increasingly rich stream of data?

Tapio Mäkinen, Marketing Director at Cassidian, shares his insights on the digital revolution.

Indoor location technology demo

New positioning and data communications make it possible to keep track of people in places beyond the reach of GPS signals. This presentation shows how commanders can track a fire-fighter venturing indoors in zero visibility, but the same approach could also be used to safeguard police officers in pursuit of a suspect.

The latest technologies for indoor positioning make it possible to track a person's location on a digital map of the building, as demonstrated in the Sinetra Euripides programme. Check out the video for more details.

These are just a few examples. All Key Touch videos are here: http://www.keytouch.info/features/videos_and_podcasts/

UP
Smart grid security
Nationwide LTE for
public safety in the US
"smaller is better"
Security in events

DOWN
Euro
Queuing
"bigger is better"
Eavesdropping

Key Touch
10 years ago

TETRA Touch 4/2002 boasted a record-breaking 40 pages. 15 applications were introduced, ranging from e-Mailing over TETRA to recording and from e-Policing to passenger transport management.

But the limelight was on VIRVE, the nationwide authority network in Finland, which became ready for full scale use across the country on 31 October 2002.

A nationwide group call is reality with VIRVE

The rollout of the VIRVE network was completed in October 2002. The implementation was performed stage-by-stage, starting with the first section being commissioned for testing purposes in 1999 and the last section being completed in late October 2002.

A nationwide group call was made at the official opening of the network at the Jaukkaravaara site on 31 October, 2002.

"The last VIRVE base station was switched on in Finnish Lapland on a sunny winter day with a temperature of -17°C."

Back to basics - the Network Economy corner reviewed the performance and overall costs of a TETRA network and warned against overlooking the importance of choosing an appropriate architecture.

Costs and performance – how do different network architectures compare?

"Although a network's architecture is invisible to users, it can have an enormous impact on the Total Cost of Ownership (Capital, Implementation and Operational Expenditures)."

"There is a choice of different network topologies, including hierarchical (traditional), flat mesh (in which every switch is connected to all others) or a mixture of these two architectures."

In conclusion, the article stated that "The flat mesh architecture with low capacity switch increases CAPEX and results in extremely high maintenance costs (OPEX) annually! These may be avoided only by using the scalable and high capacity switching platform." "Huge savings and excellent protection can also be achieved by choosing the best method of connecting the base stations to the switches."

2012 – TETRA on tour in North America

TETRA recently went on tour in the 'States' to bring the benefits of the technology to new audiences. Here, Key Touch follows the route taken with some snapshots of the tour

TORONTO:

It was exciting to kick off the North American TETRA Tour in Toronto, with New York, Washington, Sacramento and Houston to follow.

SACRAMENTO:

We shared our message of TETRA's major benefits - interoperability, the open market and real competition in hardware, which were real eye-openers for many in the audiences

NEW YORK:

The tour brought the benefits of TETRA to a whole new continent. People from utilities, transport companies and public safety all wanted to know more

WASHINGTON DC:

As we travelled across the country, we were continually asked about how to use TETRA effectively.

HOUSTON:

In every city, we advised people to go after spectrum and a waiver to roll-out TETRA to improve spectrum efficiency.

Design,
innovation
and style

Consider the mobile phones you've had over the years. Remember how they have changed, becoming slimmer, lighter and more stylish year by year? With smartphones offering classy and elegant designs with metallic finishes, why should your TETRA radio look any different?

Well, the Cassidian TH1n doesn't!

Design, innovation and practicality have joined forces to create a revolution - the TH1n. As well as being chic, the TH1n is so much more. Not just ground-breaking in its size and weight, it also has all the qualities you need in a demanding situation, while being extremely easy to use. Th1n - a radio you may have to carry, but also one you will want to

Welcome to the new era in radio design.
www.cassidian.com/TH1n