key touch®

customer magazine
1/2011

Widen your scope

All -round cyber security

TETRA radios beat the big chill

Where to next in command and control?

WHO'S IN THIS ISSUE?

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

TERO PESONEN

Tero's focus is on improving the safety and efficiency of field operations – from public safety to utilities. So it's no surprise that the opportunities presented by mission-critical data have caught his attention.

JAAKKO SIRÉN

Born in Finland north of 61°N, Jaakko wrote his master's thesis about social media in the security industry. Today he lives in Helsinki, but still heads out now and then for hunting, hiking and skiing.

ISMO MANNINEN

Specialist in digital media, Ismo takes care of Key Touch website updates and helps with magazine graphics. In his spare time he runs a sports club, plays guitar in a band and studies photography.

SATU LAMBERG

Satu lives a double life, providing marketing, sales support and Key Touch articles about cutting-edge technology while enjoying a lake-shore rural idyll. Three horses, four cats and a dog keep her and her family busy.

PETRA VAKIALA

Petra has been a Key Touch editor since 2008. She lives in Helsinki and loves Japanese food, travel and interior design.

JEAN-MICHEL DUMAZERT

Jean-Michel 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.

AILA KOTILAINEN

Aila has been with Key/TETRA Touch more than ten years. She's passionate about writing, and in addition to her written contribution, many photos in the magazine are the result of photoshooting projects she's arranged during the years.

TIINA SAARISTO

Tiina is Editor-in-Chief for Key Touch and has led the team of editors and contributors since early 2003. Tiina lives with her husband, daughter and cat in Helsinki, where she creates quilts and quilted objects.

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CASSIDIAN
AN EADS COMPANY

Sharing data makes the job easier

VOICE has been the main medium for exchanging information until now. The most advanced radio communication users have already implemented interoperability to make it possible for different organisations and agencies to talk to each other across organisational boundaries and enjoy the benefits of closer co-operation. Now it's time to consider how to achieve the same levels of interoperability for information in the form of data.

More and more information is in digital form, with images, video, fingerprints and biometric data all playing an increasingly vital role, especially in public safety. The right interoperability solutions will enable this information to be shared between organisations and even across national borders.

The chosen transmission networks must be able to move the digital traffic rapidly and efficiently

Reaching the field

Distributing information to decision-makers in the field is critical. The information (a video clip, for example) is no use if the people who need it can't access it. But exchanging digital information between organisations in the field can only work if systems are interconnected and interoperable. What's more, the chosen transmission networks must be able to move the digital traffic rapidly and efficiently.

Using commercial broadband to transmit mission-critical data presents many of the same issues of security and reliability as relying on commercial mobile technologies for voice communications. Professionals are therefore looking increasingly to incorporate digital transport and interoperability into their dedicated radio networks.

In TETRA networks, for instance, TEDS can deliver high-speed data with the highest security and availability. Not only does this maintain mission-critical standards, it is also more cost-effective than adopting separate networks to deliver voice and data.

Dirk Borchardt
General Director
EADS Security and Communication Solutions

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Photo: Henrik Andersson, Swedish Coastguard Air Patrol

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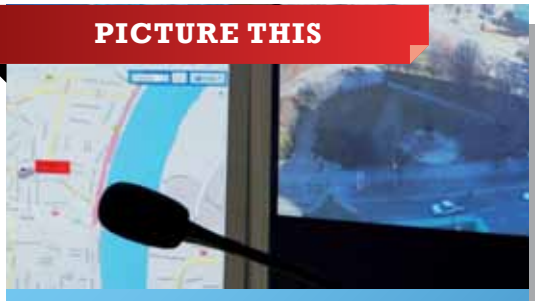
PICTURE THIS



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A new generation of command and control solutions is emerging to make the most of increasing network speeds, standardisation and new applications.

SENSATIONAL RADIOS

Photo: Finnish Defence Forces

46 TETRA radios beat the big chill

The Jaeger Brigade use their radios 130 km north of the Arctic Circle. Key Touch® finds out how the technology copes.

Rakel – effective beyond national borders

Completion of the Rakel roll-out on schedule marks the culmination of a process that began some five years ago. The first phases of the Swedish network have been in operation since April 2006 and now network coverage extends nationwide.

Rakel has been delivered by a consortium consisting of Saab, Cassidian and Eltel Networks in a contract with MSB, the Swedish civil contingencies agency. The final two phases of the project, which included Jämtland, Västerbotten and Norrbotten, began operating on 1 December 2010.

The roll-out has delivered a network of around 1,700 base stations and switches covering the length of the country, helping user organisations to cooperate on a national scale.

”MSB can now offer its customers Rakel services all over Sweden,” says Stefan Kvarnerås of MSB. ”MSB looks forward to continuing to work on the operation and development of Rakel with the consortium.”

Rakel in action

Beyond national boundaries, Rakel has also played a role in the world’s

first trial of sea-based cross-border communications, which took place between the German and Swedish authorities in November.

The trial took place on the southern Baltic Sea and tested the ability of the German BOS radio network and the Swedish Rakel network to interconnect. German and Swedish operators used handheld radios and dispatchers to talk to each other during the exercise. It also enabled German users to maintain radio communications with their colleagues using their BOS radios while they were in the Swedish Rakel network area and to keep contact with their German command and control.

The successful trial means that TETRA networks no longer need to be interconnected through a collection of analogue and PABX interfaces.

Photo: Henrik Andersson, Swedish Coastguard Air Patrol

A matter of maritime survival

Of course, Rakel is also delivering real results in real emergencies. It was the key to mounting an organised rescue effort when the Pearl of Scandinavia ferry caught fire on 17 November 2010.

The vessel was 2.5 nautical miles off the coast when the alarm was raised and a rescue plan was put into action to enable the evacuation of the entire ferry. The response included three helicopters, search and rescue forces, coastguard ships, ships from the maritime rescue organisation and a pilot boat. In addition, the police established an onshore base to care for any injured crew and passengers.

Tobias Nicander from the Swedish Maritime Administration says: "With the help of Rakel we quickly sent out a real-time situational picture to the police chief, to the healthcare chiefs, and the on-scene coordinator. Without Rakel, we would have simply had to call around on our mobiles."

Thankfully the ship's crew managed to put out the fire so the evacuation was unnecessary in the end.

Germany and Sweden unite in AUTHORITY CO

Photo: Swedish Coastguard

The first trial of cross-border interconnected TETRA networks at sea took place on 23 November 2010. In the trial, German and Swedish officers communicated using Sweden's Rakel network and successfully handled the communications around an imaginary incident near Ystad, Sweden.

Communication is key

According to project leader Patrik Risberg, communication is a key tool in an operation at sea: "I have been involved in chasing smugglers from Falsterbo to Skagen where the Danish police apprehended them. When we crossed over the border to the Danish maritime area, communication stopped! If we had had cross-border communications in operation, we would have been able to continue communications with the Danish coast guards."

TETRA switches Rakel and BOS were connected using an interconnection that supports duplex and direct calls, status messaging and SDS communications. In addition, a cross-border group connection was established. These connections made it possible for the German users to participate in inter-network talk groups and in their regular talk groups while covered by Rakel network.

The trial also involved a temporary extension to the BOS radio network because the nationwide roll-out had not yet reached the southern Baltic coast. Four command centres and more than 30 TETRA terminals took part in the exercise.

MMUNICATION

Photo: Swedish Coastguard

Patrik Risberg, Project leader, Swedish Coastguard.

Clear voices

Radio coverage at sea was good and users experienced the same voice quality in multi-national group calls as they did within their home country networks. Users were impressed by the absence of background noise, even for calls made next to a running engine.

Planning for the exercise started in 2009 with an agreement between the German operator BDBOS and Swedish operator MBS. The move followed the recommendation of EU ministers in June 2009 that measures should be taken to improve cross-border security. The successful trial of neighbouring TETRA networks is a big step forward in international co-operation.

Gaining total control

”We have good international co-operation today in many areas but in the area of radio, we need to practice more, says Officer Risberg. ”It is often the communications that is to blame if something goes wrong. To achieve 100 percent success, good communications is required, and there the TETRA network is perfect because we can choose which people will participate in which talk groups.”

He also highlights the importance of the added security of digital radio when tackling criminal gangs: ”The radios that we actually have today in VHF are completely public – the whole world listens in.”

Dutch radios drafted into Belgian network to protect European Summit

September 2010's European Defence Summit passed off trouble-free in Ghent, thanks to forward planning that saw a Dutch task force team up with the Belgian authorities to maintain order.

While Defence Ministers from EU Member States discussed co-operation between their armies, the Belgian and Dutch police services were already co-operating outside the meeting.

Mobile C2000 network inside ASTRID

The Dutch task force of around 60 officers worked alongside their Belgian counterparts to protect the area around the Sint-Pieters Abbey in Ghent.

"We used the Summit to test communications with the Dutch and the integration of their force with the Belgian network," says Luc Lacaeyse of the federal police. Like ASTRID, the Dutch C2000 radio network is based on TETRA technology so the Dutch radios can operate in the Belgian network with only minor adjustments. The same is true for ASTRID radios in the C2000 network.

Flexible mobility

Two international ISSI numbers and two international talk groups were programmed into two mobile radios and two Dutch handheld units. One of the talk groups was connected to a Belgian talk group that enabled the Dutch commander to communicate directly with his Belgian counterpart. For communications within the task force, the Dutch team brought in a mobile repeater, which comprised a truck equipped with a TETRA base station.

"There were no problems in the level of safety of the European Summit, nor in co-operating or communicating with the Dutch," confirms Mr. Lacaeyse. "The local police in Ghent, the federal police, the control centers and our Dutch colleagues all proved that cross-network co-operation is possible."

City of Richardson opts for CORP25 communications

PlantCML has won a contract to supply and service a turnkey P25 Land Mobile Radio (LMR) public safety communications system for the City of Richardson, Texas. The solution is based on PlantCML's CORP25 radio access offering.

"PlantCML's CORP25 system was the right choice for Richardson," said Steve Graves, Chief Information Officer for the city. "The native IP core allows web-enabled applications and interfaces for network management and leverages commercially-available, off-the-shelf hardware -- allowing us to reduce our costs and have ultimate control and choice across the system."

Built to meet APCO's public safety P25 open standards, the CORP25 solution interconnects P25 radio systems via the Inter RF Subsystem Interface (ISSI). CORP25 also makes it easy to add extra sites and channels and enables P25 and non-P25 radios to operate together on one core architecture.

PlantCML will provide a city-wide solution for secure public safety communications

The City of Richardson already uses PlantCML solutions for their 9-1-1 emergency call processing and emergency notification services.

Cumberland County
enjoys complete dispatching solution

Zetron and PlantCML have celebrated the completion of a radio network for Cumberland County, Tennessee, based on PlantCML's CORP25 solution and Zetron's Advanced Communication (Acom) radio dispatch system. Together, the combined solutions provide improved 9-1-1 dispatch functionality, enhanced radio coverage and true interoperability across Cumberland County's public safety agencies. According to E9-1-1 director, Bill Hunter, "it will be the cornerstone of our dispatch operations for years to come."

The CORP25 radio network solution is fully compliant with P25 open standards and interoperable with existing conventional VHF radio networks. It allows P25 and non-P25 radios to operate together on one core architecture.

"I'm very pleased with the commitment both Zetron and PlantCML demonstrated toward improving public safety communications in our district. This was the best equipment rollout I've seen," adds Mr. Hunter.

PRACTICE MAKES PERFECT

Collaborative trainings help Finnish authorities in sharing knowledge, resources and experience

Co-operation between different public safety agencies is not limited to large-scale emergencies such as natural disasters or major accidents. Every week in Finland, organisations such as the police, rescue and defence forces help each other out with extra manpower, expertise and equipment in situations where the resources of the key responsible authority do not match the needs of the job. Good examples include searching for missing persons, dealing with explosives or sealing an area in a hostage situation.

Collaborative training plays an important role in making such joint operations run smoothly, and KeyTouch visited a training exercise organised by the Finnish Air Force in October 2010. Around 40 partici-

The effects of different explosives were demonstrated during the exercise. Trainees also learned how to deal with suspect bombs.

A VIRVE radio is an essential part of each trainee's kit. A shared radio network enables seamless communication during joint operations.

pants gathered at the Lohtaja training camp on the west coast of Finland for the three-day event. The session focused on clearing explosives and using pneumatic appliances, among other things.

Networking opportunities

The aim is to train personnel from all the agencies to use the latest equipment available, and to understand the possible ways in which they can help each other. In addition, getting to know people will make it easier to work together in real situations, according to rescue chief Keijo Kangastie and police sergeant Kai Rintaluoma, who both took part in the training.

TETRA system helps secure Asian Games in Guangzhou

November 2010 saw the 16th and largest Asian Games in history pass off trouble-free, thanks largely to the co-operative communications provided by Guangzhou's new TETRA network, which handled 2.2 million calls during the event's first day.

The shared TETRA network was supplied by Cassidian and has been up and running across Guangzhou since April 2010. The system catered for the security needs of over 100 venues, starting on the inaugural day on 12 November. The system also provided coverage along the main travel routes around the city.

The Asian Games is second only to the Olympics in the hierarchy of the world's sporting events. Guangzhou is the second city in China to host the games after Beijing in 1990. Forty two events were programmed for 2010, which is a record in the history of the Asian Games. The event involved 14,700 athletes and team officials, 6,300 technical officials and umpires, 10,000 media staff, 60,000 volunteers and 10,000 VIP guest from 45 countries. It therefore took a huge co-ordinated effort across the city to keep everything running smoothly.

Continuing a strong track record in China

"We are proud that the Asian Games Committee chose Cassidian for the 16th Asian Games, a very important event," says Galvin Wong, Head of Secure Networks in Asia Pacific. The decision follows the successful use of Cassidian's network during the Beijing Games and the 60th anniversary celebration of the People's Republic of China. "This new contract highlights the fact that the company's proven TETRA system is China's preferred solution," says Mr. Wong.

The network normally caters for the needs of over 45,000 users across Guangzhou, including the municipal government, emergency response units, public security services and safety organisations and utility companies. With mission-critical communications at stake, Cassidian provided 24/7, on-site support using an international team.

Collaboration between Cassidian, its strategic partner CETC-7 Ltd. (China Electronics Technology Group Corporation N°7 Research Institute) and the municipality of Guanghzou started with a major contract signed in December 2009. From there the two partners delivered an 800MHz TETRA network that was operational by April, 2010. The Guangzhou network is the second largest system of this kind in China. It is designed to provide over 60,000 users with secure radio communications across an area exceeding 7,000 square kilometres. It comprises two DXTip switches and nearly 200 TB3 base stations.

TETRA at skiing world cha

The 2011 Nordic World Ski Championships will take place over 12 days in Norway. Organisers are relying on TETRA technology to help them co-ordinate events and ensure everything runs smoothly.

A total of 21 sporting events in cross-country skiing, combination skiing and ski jumping will take place from 23 February to 6 March at the new national winter sports venue in Holmenkollen near Oslo. This celebration of skiing will be accompanied by a series of cultural events in and around Holmenkollen and Oslo city centre, all of which will be co-ordinated with the help of a TETRA communications network.

Building on experience

TC Connect, distrbutor of Cassidian TETRA terminals, is one of the event sponsors and has won the contract to provide radio communication for several teams throughout the championships. Organisers selected TC Connect because the company has solid experience of operating a commercial TETRA network around Oslo. TC Connect will install a base station in Holmenkollen to increase the capacity of the existing TETRA network during the 2011 event and will provide training for key personnel, on-site technical support and 24/7 maintenance. The contract also includes the supply of 550 TETRA handheld radios from Cassidian.

The modernised Holmenkollen ski jump is ready to host one of Norway's biggest sports events. In photo: Sindre Torp (Key Account Manager, TC Connect), Roy Evensen (Event Manager, Oslo 2011) and Harald Bergby (Sales Manager, TC Connect).

mpionships

The system will be used by the overall event management team, by the teams responsible for each event and by support staff in the medical services, logistics, media, security, hospitality and ticket office, as well as by international broadcast teams.

Cassidian radios are extremely easy for people to use, making it ideal for this sort of event where they must learn fast. The robust Cassidian radios will also be able to cope with the demanding weather conditions of the Norwegian winter.

OSL2011 Holmenkollen
FIS NORDIC WORLD SKI CHAMPIONSHIPS

Presented by Statoil

Oslo 2011 at a glance

The Oslo 2011 championships will be the biggest sports event in Norway for many years, attracting t around 650 competitors from more than 60 countries, around 1,000 journalists and at least 300,000 spectators.

The event depends on support from more than 2,000 volunteers, helping with everything from the arenas to public transport and marketing.

PICTURE THIS

Reconstructions build a clearer picture

When a stranger lures a child away in the park, the authorities need to find out who the perpetrator is and which way they went. The only information that police may have is a parent's panicked voice call, but at a time when most passers-by are equipped with mobile phones and security cameras are commonplace, emerging control room systems aim to bring together all available information to reconstruct exactly what happened.

In our kidnapping example, CCTV footage, witness statements and mobile phone snaps can all provide vital clues about where a criminal was going, as well as helping to identify them. And it's not just crimes where incident recreation software can help. Passers-by with mobile phones are often the first on the scene of an accident and can help piece together exactly what happened.

Enlist every citizen

Early adopters are starting to implement incident reconstruction solutions as part of a wider shift to-

wards "Next Generation Emergency Centres" that help make more of both voice and data communications. Able to handle different types of media, incident reconstruction software effectively enrols every citizen in the data gathering process. The technology brings together radio traffic between the dispatcher and police, any available ATM or security video footage, landline/cell phone/VoIP calls, suspects' mug shots, text messages and more. Once gathered, the system automatically assigns time stamps and assembles the data into an integrated incident timeline.

Use resources efficiently

The digital aggregation, integration and replay of all of this information eliminates many of the man hours previously devoted to this type of evidentiary collection. By adopting an open approach, the new generation of smarter emergency response centres will also promote the sharing of critical information between agencies such as the police, paramedics and fire fighters. This helps minimize costs and streamline operations for a faster response. This degree of openness is not available with every proprietary solution, so it's important to consider the possibilities of inter-agency co-operation when deciding which system to opt for.

The CyberTech IRIS application from CyberTech is one of the first incident reconstruction solutions to hit the market and supports co-operation between different control rooms.

www.cybertech-int.com

Fortecor® TEDS passes tests set by VIRVE operator

The TETRA high speed data service from Cassidian has passed its first trial step in a customer-run test network. Tests show that Fortecor® TEDS can be implemented successfully using a software upgrade and runs smoothly in parallel with existing voice and messaging services.

The test network is run by State Security Networks in Finland, which operates the country's VIRVE public safety network. It includes a DXT3 switch and TB3 TETRA base station, working with a Xerigo™ 3 TEDS-capable radio terminal. No hardware changes were required to enable a smooth swap between the operating modes of TETRA 1 and TEDS.

Trials began in May 2010 and the results so far verify that the TB3 base stations and Xerigo® 3 TEDS data radios from Cassidian can support both 25 kHz and 50 kHz TEDS communication, as well as all standard QAM modulation types (64/16/4), simply with a software upgrade. This makes the system future-proof for years to come, ensuring it is a safe investment for Cassidian's customers.

TEDS trials are now continuing into 2011 to test the integration of customer applications and network parameters such as modulation characteristics, coverage and payload.

Do you need broadband?

Professionals don't need reality TV streamed to their radios. What they really need depends on the situation.

Visual information can be important, but not every situation demands streamed video. It takes network resources and – just as importantly – human resources to send and analyse images, so they must serve a clear purpose. There's also a misconception that transmitting visual information automatically calls for wideband or broadband, but that's not always the case.

Case missing person:

When there is a need to see to inform

WHEN?	HOW OFTEN?	WHERE?	REQUIRED CAPACITY
➔ Now	• Continuously	➔ Anywhere	• Very high
• Soon	• Frequently	• Local area	• High
• At some point	➔ Once	• Own office	➔ Medium
		➔ In hand	• None
		• In vehicle	

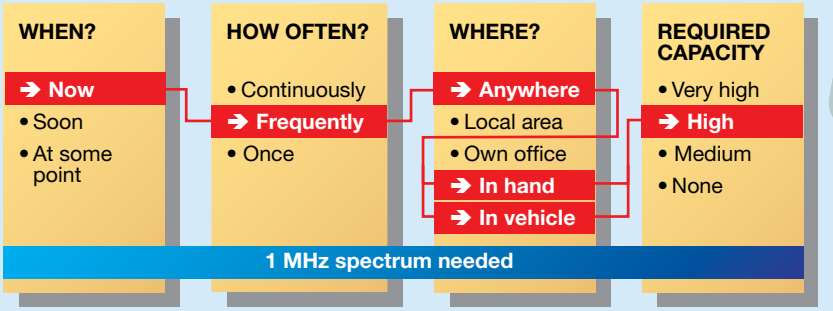
Runs smoothly with narrowband

Take the case of a missing person. It's clearly urgent that people see the picture right away, but it only needs to be sent once. Field officers can save the image if they need to look at it again.

It must be possible to send the image to everyone, whether they're in a vehicle or using a handheld terminal. The image must be clear enough to allow identification, but the file need not be huge. A point-to-multipoint, or broadcast, approach can be used and only medium data capacity is required. This application can run smoothly over a narrowband digital radio network.

Case identity check:

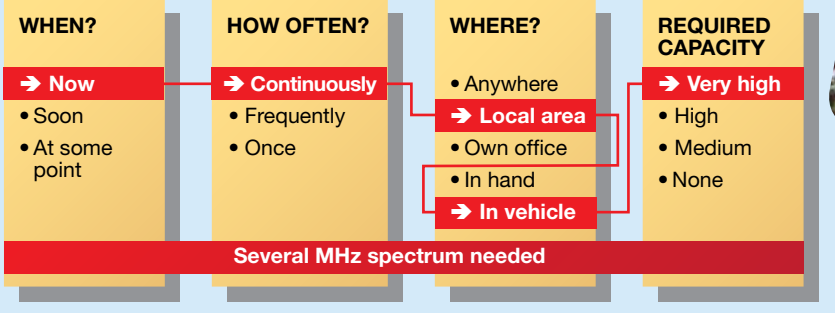
When there is a need to see to identify



Now consider ID checks, where a card or fingerprints must be checked against a central database. ID checks crop up frequently and they need to be quick. The amount of information again requires medium data capacity, but because ID checks are so common a wideband digital radio network may be the best way to meet the cumulative capacity requirement.

Case video surveillance:

When there is a need to see what is happening



In a third example there might be a high-risk event happening, such as a protest rally or a state visit. In this case the authorities need real-time video surveillance.

Coverage is only needed in specific areas, so vehicle-based viewing is fine for field units. Perhaps only a mobile control room or lead vehicle needs a live feed so they can respond instantly to trouble. More distant units may only need to see occasional clips to maintain their situational awareness.

Continuous, high-resolution, high-frame rate video information requires very high data capacity. If the there are multiple sources and destinations the cumulative capacity grows rapidly. If the feed is needed in real time then broadband is the best fit, but if it only needs to deliver periodic updates then a wideband digital radio network could work. Users can store the feed locally in high resolution and deliver it at lower resolution and frame rate. Recipients can then order particular frames or clips in higher resolution to provide detail on demand.

Valuable time and network capacity are at stake, so any implementation of visual data needs to consider what needs to be seen, when and by whom. Answering these questions will help users make the most of their resources.

Shared net

preserves independence in Switzerland

Switzerland's Polycom national communications network links 40,000 users, more than 100 individual organisations and 26 independent cantons using TETRAPOL radio technology. The aim is to combine the flexibility of independent communications for each organisation with the option of joint working when needed.

When the decision was made to establish a nationwide digital radio network in 1999, the main aim of the Swiss federal government was to develop a single network that enables each user organisation to use it independently for day-to-day operations while promoting co-operative working when needed. This goal reflected the need to deliver the lowest total cost of ownership across the user organisations, as well as maximising the potential for co-operation between different agencies. Switzerland's political system also had to be considered, because the network serves a federal state and 26 largely autonomous cantons, each of which has its own civil and security organisations.

work

The outline solution for Polycom comprises 26 cantonal subnetworks with 40 main switches. It delivers independent communications for each user organisation over a common infrastructure using The Modular Multinetwork/ Organisation Dispatch Solution.

One for all

This modular dispatching solution delivers data and speech services to more than 100 Swiss organisations across all the subnetworks. A Common Application/Integration Layer deployed throughout the regional networks allows user organisations to access TETRAPOL speech and data services independently via standard interfaces. Each organisation configures its own communications and authorisations hierarchy autonomously, but dispatchers and control centres from different organisations can communicate in an integrated way when needed.

Users can roam between all the regions and still enjoy access to important data applications, such as automatic vehicle location and water level monitoring. The status and location of each radio is conveyed to the relevant control centres at all times on the basis of cell registrations.

With the Swiss model of common independence realised, the next goal is to tackle the challenge of using digital radio for co-operation across national borders. This has to be achieved without compromising security or privacy. One possible solution is a PMR gateway for direct and group communication between the TETRAPOL network and neighboring TETRA radio networks.

The Modular Multinetwork/ Organisation Dispatch Solution and the PMR Gateway are solutions from the systems integrator Siemens IT Solutions and Services AG.

Scoring a winner

Several years on, the Swiss model of a common digital radio network is stable, both in inter-cantonal and international operations. Possibly the biggest test so far was in 2008, when Switzerland hosted the Euro 2008 football tournament. For the first time, police at venues in Berne, Basel and Geneva could communicate seamlessly with each other using digital TETRAPOL technology. Some 2.7 million people visited the four host cities to enjoy the 15 Swiss-based matches. "For the first time, all of the different organisations are able to use the same radio system," said the Swiss office for military affairs and civil defence. "The solution has enormously simplified cooperation."

http://www.siemens.ch/cns

Shared radio resources promote

greater efficiency

The police, fire and emergency services around Geneva have opted for a common dispatching system that enables them to share local radio resources to improve co-ordination and save money.

Public safety agencies in the Canton of Geneva wanted to share radio resources in order to save money and promote greater coordination in their emergency response operations. The solution was to deploy a common dispatching system that enables controllers from different agencies to communicate over the national Polycom TETRAPOL network.

The four dispatch systems are all located in different premises, with two in police control rooms, one for the fire brigades and one for emergency medics. They are connected to each other, enabling the different agencies to coordinate operations during crisis events. The workstations are also connected to the IP networks of each organisation.

This technology makes it easier to access radio resources from any premises using intranet or VPN remote connections. For example in Lausanne City, soccer events are managed on site through a temporary IP connection.

The flexible solution not only enables users to manage their communications over Polycom, but also provides access to other digital and analogue radio networks. In Geneva it is used to receive the analogue K** Channel and Distress Lake Channel, for instance. It also allows users to communicate with related organisations, such as airports, ports, industrial sites, maritime and civil safety organisations and the Red Cross.

The solution was deployed by command and control specialist Prescom using its M5S platform. M5S has already been installed on more than 200 command and control centres around the world.

www.prescom.net

PORTALIFY

An effective response - from start to finish

Integrated applications help organisations to manage fast-changing situations by giving dispatchers and field operatives access to the information they need. Here's a blow-by-blow account of how an incident could be handled with advanced dispatching solutions.

It starts in the control room with a fire alarm from a site equipped with remote video surveillance. The dispatcher accesses the video using the image database and assigns two units to the incident.

The operator sends a task assignment and an image of the incident to the chosen units using task management and instant image broadcast (image push messaging). The information is displayed by in-vehicle computers and handheld terminals running the Portalify Secure Client.

Both units acknowledge the assignment using status updates from the Java™ client's status update button. The dispatcher follows the location of the units as they race to the incident location.

The lead unit calls up a map of the location on a handheld TETRA terminal using the Portalify Secure Client map function. The officers decide which entrance to use based on the pushed image, task information and map.

The fire unit calls up site information including construction plans and emergency evacuation maps on the fire truck MDT PC running the Portalify Secure Client. The units arrive and update their status to "on site" from the client software.

Firefighters find a chemical truck parked in the yard. They enter the chemical code from the truck into the HazMat chemicals database in the Portalify Secure Client and discover that the chemical is flammable and must be moved away immediately.

HazMat search results also appear in the control room, where dispatchers decide to assign a chemical fire unit to the incident. Back on site, officers move the chemical truck out of danger while others put out the fire and secure the area.

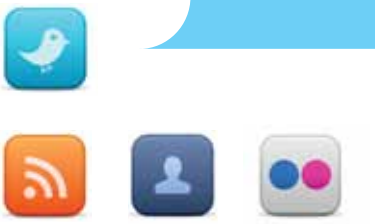
Portalify's end-to-end solutions include the Portalify Secure Client and Portalify Image Messaging and Task Management with Map information.

Secure Client provides a highly user friendly environment for multi-device operation to cater for wide-ranging mobile worker needs. Communications between the field and control room are efficiently managed using the Portalify Data Management Server (DMS). DMS integrates with the databases and IT systems, and provides an effective means to access, manage and transfer information (including real-time updating of back-end systems where appropriate).

More information on these solutions is available from Portalify and Cassidian.

www.portalify.com

Why social media matters: An expert view



Social media matters to an awful lot of people and it's something that governments, commercial organisations and the security industry increasingly recognize that they shouldn't ignore. So what opportunities does social networking present to serious professionals? Social media specialist Jaakko Sirén explains.

Well-known names such as Facebook, Google, MySpace and Wikipedia are everywhere. Startups pop up constantly, magazines write about businesses making good money with the help of social media, and even your grandmother drops you a friend request. Many of the technologies behind social media or Web 2.0 services have been around for years, but services such as Facebook and Google have raised the level of activity to a whole new level, where people form online communities and create and consume their own content. So why should the authorities and other organisations care?

People make it popular

The first reason it matters is the number of people engaged with social media, whether they're posting videos on YouTube, blogging or simply checking out information on the world's most used encyclopedia, Wikipedia. So it matters because the people who matter are using it, whether they're citizens, employees, suppliers or customers.

Secondly, social media is an arena where normal controls are no longer effective. For example, once something is published online it is practically impossible to erase it and be sure that it's gone for good. The relative anonymity of online interactions also demands extra precautions to ensure that people are who they claim to be, so the rise of social media has brought with it a new set of threats.

Thirdly, social media matters and it's not going away, so it's far better to embrace it rather than trying to avoid it, which will be a losing battle in any case. In fact, the advantages are generally far bigger than the disadvantages, since no other medium enables such instant peer-to-peer communication.

Reaching out to many

If the goal is simply to share information with lots of people, social media can deliver it beyond government and corporate websites to where the people are. Of course, respecting the boundaries between work and leisure space is important, so companies need to think twice before touting their latest offers on a forum where customers are sharing their holiday snaps.

On the other hand, imagine the advantage of professional systems being able to access social networking information. For example, a police officer might look up a suspect's Facebook photos to aid identification.

Social networking can often seem trivial, but it ultimately promises to bring some serious benefits to serious professionals, provided their professional communication systems deliver the necessary access.

Make your TETRA radio work for you

The best radio is easy to use, yet offers smart features. And with Java™ you can get your radio to work better for you in many ways. Key Touch® 3-2009 gave three examples and here are two more.

Personalise on the fly

Use Java to personalise or update your TETRA radio terminal over the air. The radio can be optimised to suit the current operation without taking it to a service point. New Java applications, upgrades, or a new language version for the application can be delivered to the radio over the air using OTA PUSH.

Less load

A Java application can be smart: it can choose to use the TETRA optimal data type for a task. For example, during one session, an application could:

– send and receive information on a unit's availability as a status message
– send a database query from the field as a short data message (SDS)
– receive an image in response to a database query via IP packet data.

Users and organisations can use Java to get more value from their radios. Java support is available for the THR880i, THR880i Ex, TMR880i, THR9, THR9i, THR9 Ex and THR8 TETRA radios from Cassidian.

If you're among those who've been using a TETRAPOL network for years, you could get even more from your system with the latest release. Here are seven good reasons to opt for TETRAPOL V35_08.

7 enhanceme

MORE USERS

- Welcome new user organisations.
- Support up to 20 organisations. That's a 100% increase.
- Operate up to 20,000 terminals in a regional network (up by 60%) and up to 120 regional networks.
- Support up to 3,000 groups (up 200%).
- Pre-emption guarantees each user organisation the radio resource it expects.

EASIER MANAGEMENT OF USERS

- Improve network partitioning among organisations.
- Allocate each radio user in up to 70 groups (up 250%).
- Better partitioning supports easier management of user organisations.

DUAL WATCH

- Dual Watch scans talkgroups and direct mode communications in one communication list.
- It supports local communication while keeping in touch with dispatchers.
- It saves radio network resources.
- It offers a new voice service to licence.

nts for TETRAPOL

BETTER NETWORK MANAGEMENT

- NM-IS is the SNMP interface server, and it enables operators to supervise TETRAPOL equipment using a customised solution.
- A dedicated interface runs on the Mediation Device to make TETRAPOL network technical data available to external systems.
- An IP interface based on SNMP protocol sets up a central Network Supervision Centre.
- The MIB of TETRAPOL components is provided to a standard SNMP manager.
- A scalable solution provides the required level of detail (global, detailed or error codes).

NEW CONNECTIONS

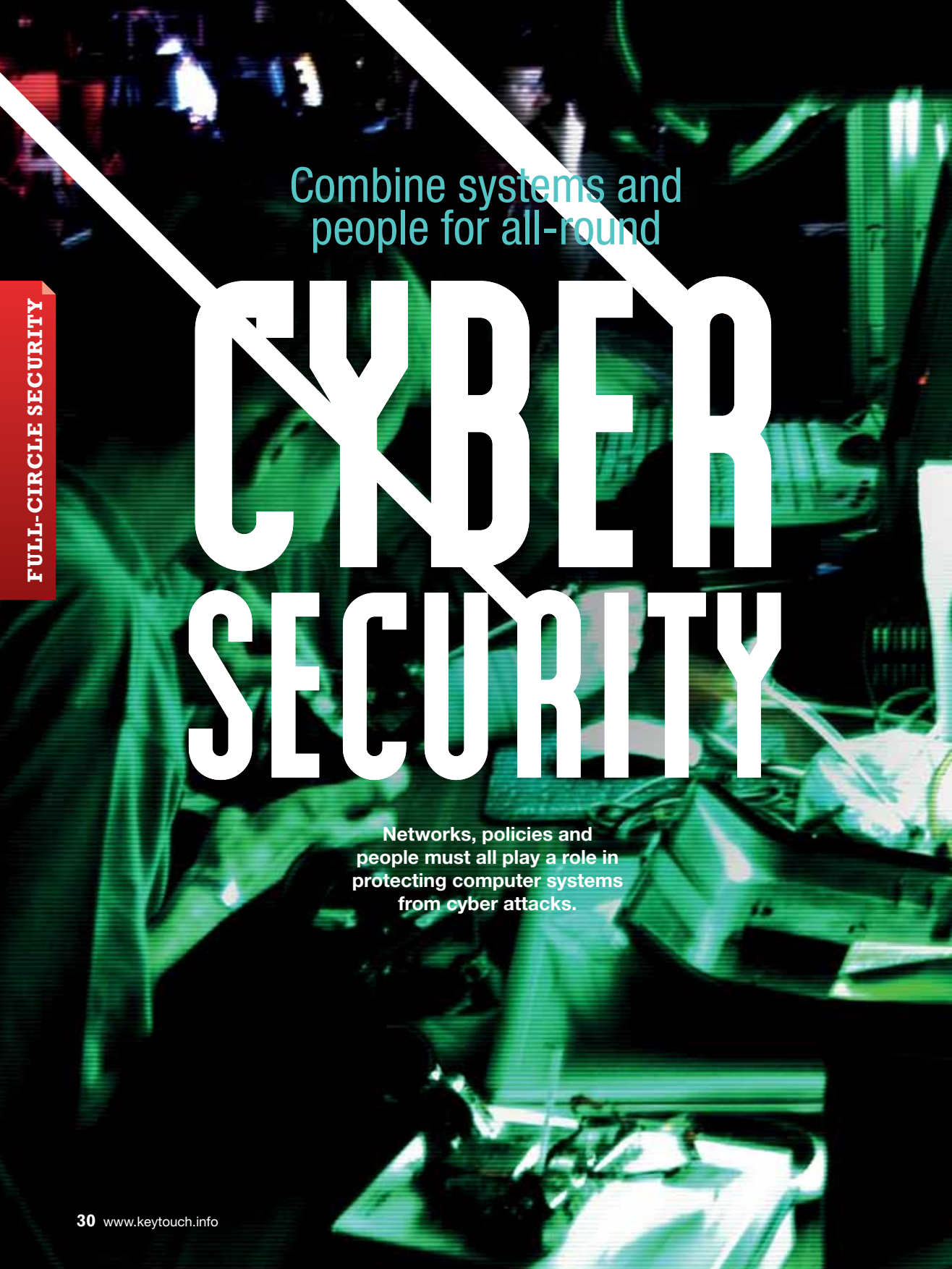
- An optional XIP Gateway (X.25 to IP) offers new connection possibilities.
- Replace the X.25 WAN that otherwise connects management and dispatch positions in-terconnects main switches with any kind of IP WAN.
- Remove the PBX (6501 or Nexspan) that is otherwise installed to multiplex X.25 con-nections.

IMPROVED RESILIENCE

- The high level of resilience continues to improve in all releases in the 90 operational TETRAPOL networks in 35 countries. These networks continue to serve 850,000 users across 1.7 million km².

MAINTAINING MISSION-CRITICAL CAPABILITIES

- The new release retains all the stability and safety of previous releases and is ideal for mission-critical applications.



Combine systems and people for all-round

CYBER SECURITY

Networks, policies and people must all play a role in protecting computer systems from cyber attacks.

Today's governments, businesses and public safety organisations all rely on computer networks. In fact, most of today's critical information is stored on computer systems and cyber security involves protecting that information by preventing, detecting and responding to attacks.

Cyber dangers include viruses and other malicious software (malware). There is also the threat of hackers breaking in to delete or alter files, using systems to attack others or to steal information.

Information systems and computer networks face constant and evolving security threats and the number of attacks is growing. In one example a computer virus spread through a Defence network, infecting thousands of PCs and resulting in entire systems being shut down. Removing the virus took weeks and cost millions of Euros. Whilst there was no impact on military operations this virus attack it was a real wakeup call for the government in question.

For many organisations, the risk of cyber attack extends beyond the immediate loss of data or system outage to include the severe damage that such an attack can cause to the organisation's reputation.

In the past, the most confidential information was stored in isolated networks, but that is no longer a practical approach. The end result might be great security, but access to the information would be too difficult and cumbersome. It might even lead to entirely different risks if people if people started sharing information on paper instead, for example.

So isolation is not a realistic option, but connectivity brings with it risk.

Technical solutions

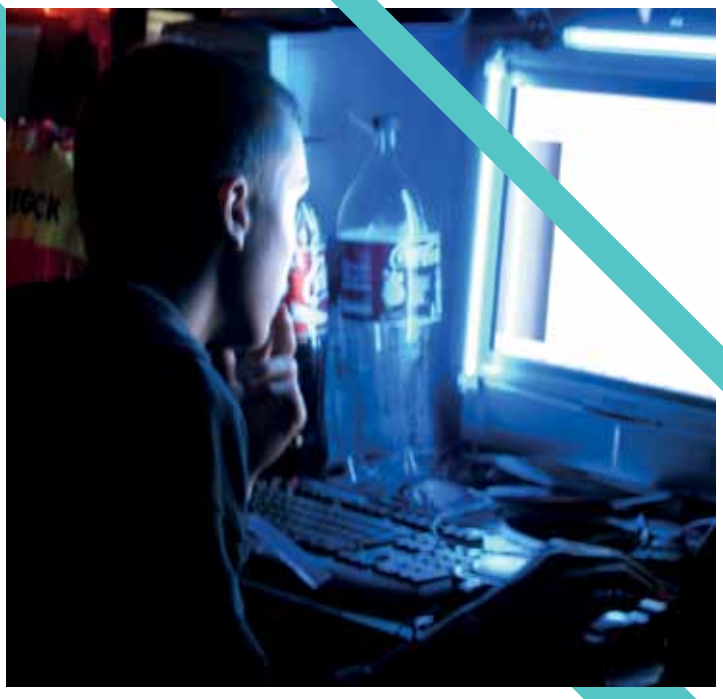
New, integrated infrastructures can provide part of the answer. Rather than trying to layer security on top of existing, legacy systems, new network infrastructure can be designed from the start with security in mind. Operators and security analysts should clearly understand the new networks and put common policies in place, such as allowing only approved and certified applications and other software onto the system.

Round the clock monitoring is essential to spot and prevent intrusion. It can be tricky to identify unauthorised activity in a legacy network, but this should be easier in new systems.

The role of people

Strengthening network defences frequently concentrates on "making the walls higher" but such narrow, targeted solutions may fail if an attack takes an unexpected form. What's more, these "higher walls" may include extensive Intrusion Detection Systems and increased numbers of firewalls all generating huge numbers of log files, alerts and associated files. Security analysts may therefore fail to spot real threats among all the "white noise".

It takes more than IT systems and applications to provide cyber security. People, processes and ▶



It takes skilled, highly trained people to understand threats

technologies all play an important role. Everything must work in synch or the whole system is vulnerable.

It takes skilled, highly trained people to understand threats and defend against attacks. Without them, firewalls and other security solutions will ultimately fail. Network operators therefore need to keep up with the latest methods being used by attackers.

Building competence

The right training is vital and should include a hands-on component. Realistic simulations are the answer, allowing trainees to practice without endangering real operational systems. People must be able to adapt their responses as situations develop. For example, attacks may come several at a time, and people must be able to change tactics as the attackers adapt.

Cyber security thus combines IT systems and networks designed for security with active monitoring and response by skilled people. Governments and the private sector must co-operate to develop and promote best-practice and innovation. Cyber criminals are constantly evolving their attacks and it's up to the rest of us to stay one step ahead.

Cassidian has developed cyber-simulation-based training using the HOTSIM platform and is currently offering one and three-day courses in Cyber Network Defence to European governments and military organisations.

Thanks to Ilmar Tamm, Director of the Cooperative Cyber Defence Centre of Excellence (CCDCOE) in Estonia, and Andrew CP Laird from Cyber-Simulations & Training at Cassidian UK for their help with this article.

A new force emerges in the drive for urban security

Global Security

In our continuing series of articles, Key Touch® describes the major homeland security concepts, based on Cassidian's unique experience in the Global Security business. Cassidian can manage the conception, realisation and delivery of turnkey solutions for border security, large event management, emergency response, critical site and infrastructure security.

The Pôle Pilote de Sécurité Locale (PPSL) or Pilot Centre for Urban Security is more than a test bed for public safety technologies. It also helps operational personnel to investigate new ways of working enabled by the technologies.

Urban security calls for co-operation between multiple security and safety organisations and France's PPSL provides a common resource where everyone can try new technologies and identify how they can support them in their work.

The PPSL is a non-profit organisation set up by the French Ministry of the Interior together with local authorities. It brings together end users with the designers of future technologies from industry and academic laboratories to refine and optimise technologies in near-real environments. The aim is to help manufacturers match future systems more closely to the needs of users and to encourage users to think about the possibilities raised by new technologies. Ultimately, the resulting solutions should be more in step with what professional users are looking for.

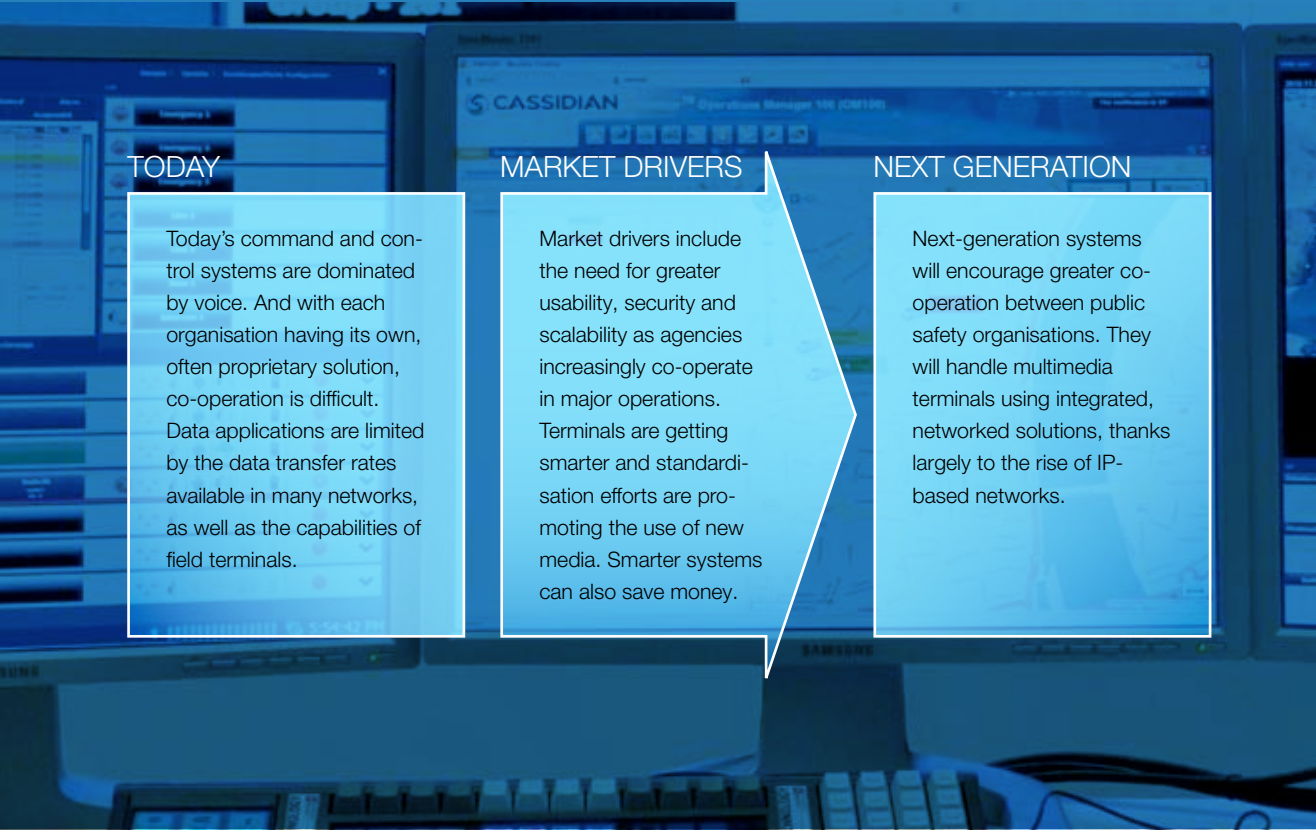
The French government has also set up the PPSL with an eye on potential exports of successful technologies. The Centre will participate in applied research projects via European and French programmes such as clusters and ANR. Project partners can use the PPSL as a venue for demonstrations and testing and enjoy preferential access to the markets.

Public security forces will be able to try out prototypes and mock-ups, with facilities to simulate certain subsystems if they are not yet ready. It also provides an arena in which to test technologies that are currently restricted by legislation. The potential use of drones to patrol urban areas is a good example. This approach of developing systems using a rapid cycle of successive developments, tests and validations will speed up the deployment of new technologies to complement existing urban security capabilities.

Where to next for **command and control?**

A new generation of command and control solutions is emerging to make the most of increasing network speeds, standardisation and new applications. KeyTouch takes a look at the key trends driving new developments.

The volume of data streaming into emergency call centres is growing by the day and enabling call takers to mount a more informed response, provided the systems are in place to enable them to access and assimilate the various types of information quickly and easily. Clear voice capabilities are no longer enough to make the most of the new opportunities. Instead, command and control systems must handle information in multiple formats, including telematics, location coordinates, pictures, text messaging, video, weather alerts and more.



Developing on several fronts

Command and control systems are therefore developing in several key directions.

The first is mobility. People have become increasingly used to the idea that they should be able to access data anywhere at any time, and that applies to professional users as well as consumers. Professionals want applications that work effectively over PMR networks and they want scalable solutions that will give them the capacity they need to manage major events such as demonstrations, sporting occasions and natural disasters.

Next up is usability, which means providing high-capacity network systems for fast data transfer. Ideally, the transmission capacity should be adjustable to meet the immediate need. Geographic redundancy further supports usability.

Applications must be there when needed in mission-critical situations, so stability is imperative. Applications should be interoperable and able to work in parallel without clashing. Standardisation promotes interoperability and easier maintenance, which can be further optimised by remote maintenance capabilities.

Cost is a key driver and merging control rooms to serve multiple locations and organisations can be extremely cost-efficient. Software developments can also save money.

The ultimate goal

All these trends are essentially enablers for the ultimate goal of increased functionality. The possibilities are virtually endless, from sending and receiving pictures and videos to greater support for encryption and SMS/SDS messaging. Dynamically updated location information, telemetry, biometrics and greater accessibility are all functions that stand to benefit.

Achieving this vision will require uniform, open interfaces and IP-based networks. In addition, no matter how complex applications may become, command and control systems are tools that must remain intuitive to use under extreme pressure.

Pinpointing the right resources with loca

Public safety officials often operate in situations that change in the blink of an eye. Knowing exactly where everyone is about more than saving time and money – it's about saving lives.

Automatic Vehicle Location (AVL) and Automatic Person Location (APL) are great tools to improve the efficiency and security of any organisation with field operatives, whether in vehicles or on foot. AVL enables controllers to locate and track the position of a vehicle, typically using GPS satellite signals. The more recent introduction of GPS-enabled handheld radios means that individual radio users can now be located and tracked in the same way, making APL applications possible too.

With AVL/APL, a controller can easily identify the right field response at a glance. Dispatchers can send in the right units and follow their progress throughout an operation.

AVL/APL also promotes smarter decisions. For example, one job may be almost done and the unit handling it may actually be able to reach the next incident faster than a more distant unit that's already free. AVL/APL helps dispatchers spot that kind of opportunity.

Managing the network load

GPS or other location information is transmitted over a radio network from a radio terminal to AVL/APL applications at regular time intervals or when a field unit has moved a certain distance. All this signalling naturally generates traffic on the radio network. However, when the radio terminals and applications adhere to the ETSI LIP standard, the location information is packed into short, standard text messages, which significantly decreases the traffic load from AVL/APL applications.

Another way to decrease the traffic load is to use a centralised AVL/APL server to manage the location information for all units and distribute it as needed to all the relevant applications. This means that two applications do

tions apps

not need to send and receive their own messages via the air interface. Instead the server deals with both, using a single send sequence.

High-speed data and AVL

The introduction of TEDS high speed data will increase the data capacity of the radio interface in TETRA networks. This means that more field users can update their location information more frequently, making AVL/APL more accurate than ever.

The greater accuracy enabled by TEDS-capable TETRA networks will be especially beneficial in mission-critical applications.

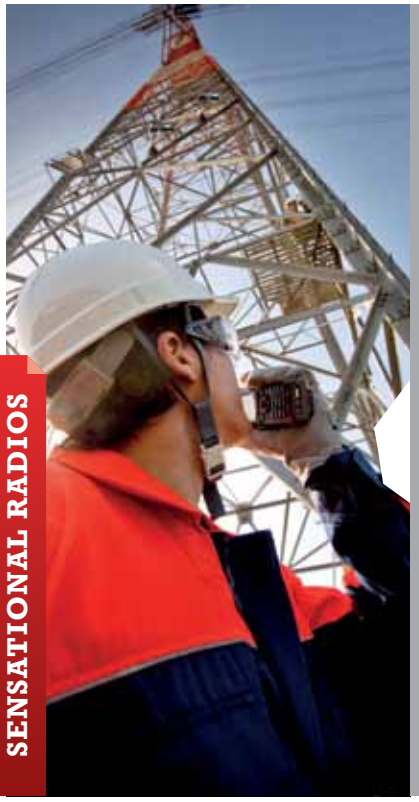
The ABC of **AVL/APL**

A basic AVL/APL application delivers the following:

- ➔ It knows the identity, location, availability and special characteristics of each field unit.
- ➔ It can show all the units on a map or other smart display.
- ➔ It knows the roads/routes on the map and can give advice on which route to take and how quickly each unit will reach the scene.
- ➔ Controllers can administer tracked units remotely, such as adding, deleting, combining or grouping them.

A more advanced AVL/APL application delivers even more:

- ➔ It follows the progress of tasks.
- ➔ It communicates with the units that are being tracked.
- ➔ It monitors that units remain in their designated area and alerts a controller as needed
- ➔ It plans routes.
- ➔ It stores and displays the location history of each tracked unit.
- ➔ It stores and displays the history of tasks.



PTT queuing
for more reliable group calls

It's often the little things that make life easier, and PTT queueing is one of those underappreciated features that is a vital ingredient in effective communications.

Group calls in a TETRA system are one-way, so only one person can speak at a time. All the speaker has to do is press and hold the PTT key. But what happens if several people want to speak at once?

Queuing is easy in TETRA systems by Cassidian. Just press and hold the PTT key and wait for your turn. You will hear a queuing tone while you wait. Only users with a higher priority can jump the queue.

Life would be very different without queueing. Users would have to keep trying the PTT key and lose their place every time. In contrast, TETRA users stay in the queue as long as they keep the PTT key pressed down. The system then passes the right to speak to the next in line or to the user with the highest priority.

DID YOU KNOW ...
about flash messages?

When a normal text message turns up on your radio you hear a tone and an envelope icon and "Message received" appear on the display. You then have to unlock the keypad and choose to read the message. Flash messages are different because they appear directly on the display.

You can read the beginning of the message without pressing a key. This makes flash messages a very fast way to share information instantly.

Any user can send a flash message. Just type in the text and select Flash message from the sending options. You can even send a flash message to a talk group to reach lots of users fast.

Flash messages may be configured to be automatically deleted or stored to the Inbox after reading.

Only TETRA radios from Cassidian offer the flash message function.

It's so simple!

Emergency! The red key is easy to find – even in the dark.

Be heard clearly with the quality microphone and loudspeaker. Volume controls are on the side.

Want a second PTT or to talk to the dispatcher? With the Duty key the choice is yours.

The big PTT button is in the middle

Access talk groups with the rotary switch and Back key. Voice feedback helps you operate without looking.

Access routine functions in an instant with the Fast Menu key. Switch to DMO, change your profile or send a status message.

If you're looking for a radio without a keypad then the THR880i is for you. The THR880i provides all you need for traditional PMR use on one side of the handset. It's ideal for hands-free and eyes-free use.

If you sometimes need more, just flip the THR880i over to find a keypad and display with the most advanced features around. It's the ultimate in flexibility.

TETRA radios beat the big chill

The Jaeger Brigade (Jääkäriprikaati) is Finland's northernmost defence force, carrying out training and research 130 km north of the Arctic Circle, where the temperature can be as low as -35°C. This makes it one of the most demanding environments in the world where TETRA radios are used routinely. Key Touch® finds out how the technology copes.

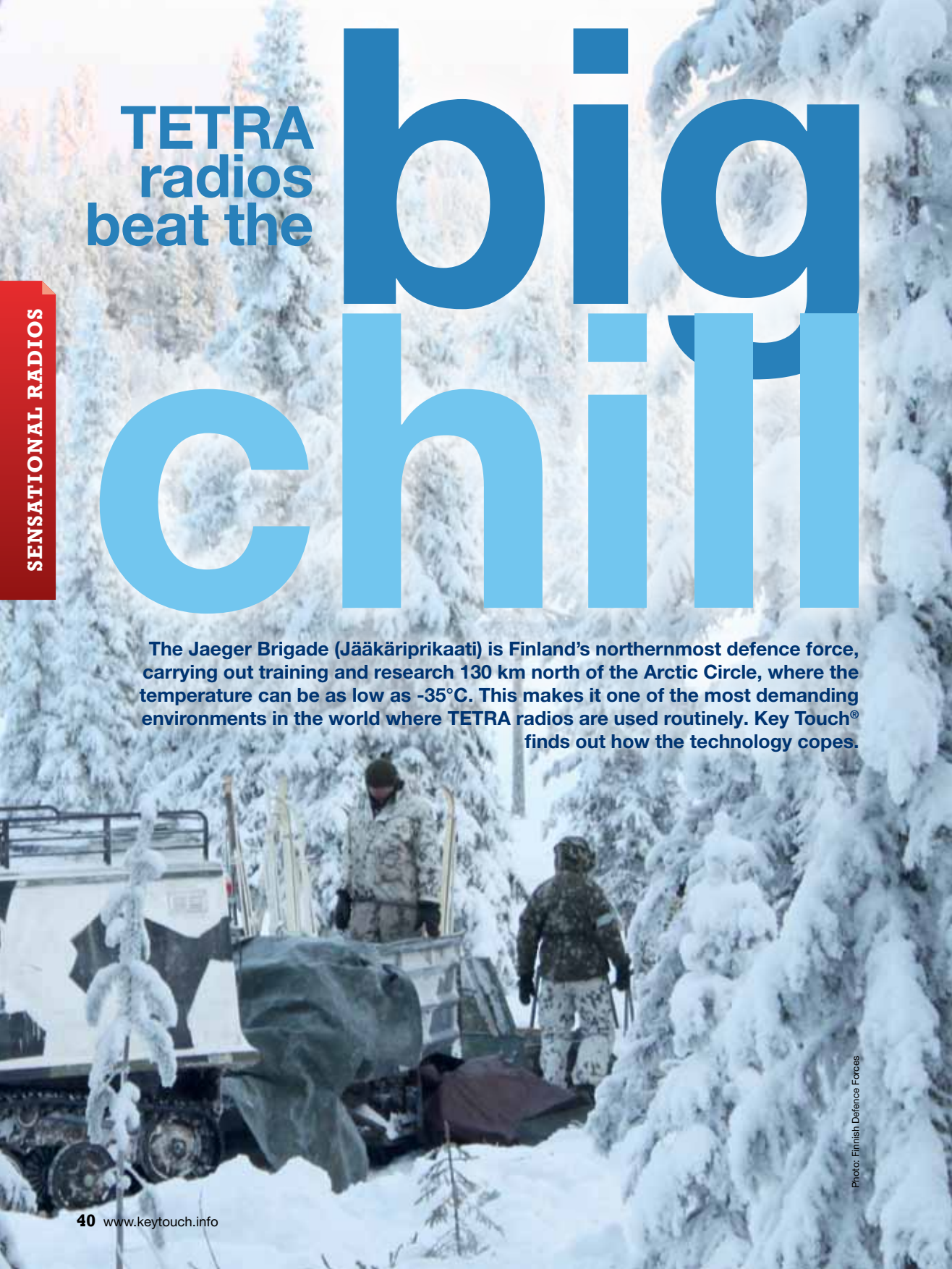


Photo: Finnish Defence Forces

Finnish Military Police are used to arctic temperatures. In Finnish Defence Forces, theirs is one of the biggest everyday user organisations of the VIRVE network.

The Jaeger Brigade typically manages around 1,000 conscripts, training them to carry out military exercises and rescue operations in the extremely tough conditions experienced in Finnish Lapland. Military officers from platoon commanders upward use TETRA radios to manage the troops during manouevres. Most of the 150 radios are handportable THR880i units, with backup from a couple of vehicle-mounted TMR880i radios.

Making batteries last longer

The TETRA radios provide the Brigade with trouble-free communication in spite of the harsh conditions. The only limitation is the battery life, which is around one or two days in the summer but drops away in the plunging temperatures of the Arctic winter. It's therefore vital that the batteries are easy to recharge from a variety of power sources. In addition, soldiers often carry spare batteries. Officers are also trained to increase the life of the battery by charging it only when it is totally empty and allowing it to warm up to room temperature before recharging.

If users are caught out by a dead battery in the field, they are taught to take it out of the radio and warm it up by placing it next to their skin. This can sometimes revive it. Both the user and the radio fleet administrator can also disable some radio functions in order to prolong the battery life.

Avoiding ice build up

Officers often shield the handheld radios from the worst of the winter weather by wearing them under their jackets and connecting them to a helmet or earmuffs. Snow or rain is not a problem, but experience has shown that ice can form in the microphones if the user's breath is allowed to condense inside. The microphone on the back of the THR880i is easier to use when speaking from a few centimetres further away, which helps prevent condensation forming. Some users also favour their own ad hoc protection, such as placing a small plastic bag in front the microphone.

The conditions are easier inside the vehicles, where handheld radios can easily be recharged in the carkit or with mobile chargers. The external antenna also improves reception when the conditions deterioriate.

Voice and data

The majority of the radio communication takes place in group calls, with the use of private calls limited during operations. The Brigade uses some status messaging, but the main non-verbal application is GPS and tracking, which helps to manage the soldiers into a coherent force. Rescue exercises also call for cooperation with other agencies, such as the police and paramedics and this is also enabled by the TETRA system, which operates over Finland's national, multi-user VIRVE network. There are also no geographical restrictions on using the radios within Finland thanks to the nationwide coverage of VIRVE.

NEW SOLUTIONS

Cassidian launches

TETRAPOL RADIO FOR EXPLOSION-PRONE AREAS

Aimed at hazardous environments, the **TPH700 Ex** TETRAPOL radio from Cassidian is ATEX certified for gas, making it suitable for facilities such as oil and gas platforms, petrochemical and steel plants, refineries, rigs and harbours. The robust TPH700 Ex meets the needs of fire brigades working in hazardous situations under even the harshest conditions.

With a user interface similar to that of the latest Cassidian handheld and mobile TETRAPOL radio models, the TPH700 Ex includes a clear and sharp colour display and easy-to-use navigation and customisable shortcut keys. The new model will be released in 2011.

It features 1.26W output power and works with a range of ATEX-certified accessories, including a robust remote speaker microphone and several other audio devices. It is also capable to interface Bluetooth© accessories thanks to its integrated wireless module. Non-ATEX accessories for the standard TPH700, such as the car kit and chargers, can be used in non-Ex areas. For 380-430 MHz frequency band, a booster is available for the car kit to provide up to 10W output power.

The new radio advantageously supersedes the P2G-ISafe TETRAPOL handheld radio from Cassidian.

New handset for TETRAPOL mobile radio

The HST-1 handset is an ideal solution where discrete mobile communications are needed. Compatible with the TPM700 TETRAPOL mobile radio, HST-1 combines ease of use and ergonomic design. The compact handset fits easily into different vehicles.

Access new radio features
with one press of a button

THR9i TETRA Radio
- 380-430 MHz
- 450 – 470 MHz

THR9 Ex Intrinsically Safe TETRA Radio
- 380-430 MHz
- 450 – 470 MHz

THR8 TETRA Radio
- 806-825 / 851-870 MHz

The trio of new TETRA radios from Cassidian – the THR8, THR9i and THR9 Ex - offers several new features to improve safety and efficiency.

LIFE GUARD works as a personal safety alarm. Activate it with one key press and the radio sends a warning that there may be trouble. If the expected trouble materializes and the user becomes incapacitated, the radio detects no movement and generates an emergency call and transmits its position to make sure help reaches you as soon as possible.

DISPLAY BLACKOUT is for those moments when you don't want to highlight your presence or would like to protect information from being seen by someone else. You can switch the display off with one key press and switch it on again with another.

DISPLAY FLIP lets you check who's calling or read messages easily while carrying the radio on a belt or lapel. One key press flips the display upside down so you don't have to detach the radio from its holster to check the display.

MARK WAYPOINTS during a call using the "Where are you?" feature, which lets you see and transmit your position. Now you can also save the caller's or your own position for later use with a single key press, so you can also see where you **were**.

Radios are ready with ACCE

New Cassidian radios come with a complete portfolio of accessories from day one, thanks to a partnership of Cassidian and peiker. Here are some tips about choosing the right accessories for each radio.

How to choose the right accessory

Some accessories are essential while others simply make life a little easier. With a large choice of equipment available, users must choose their accessories carefully.

The main consideration is the performance of the accessory in the user's working environment. However, it should also offer the best combination of quality and price.

Accessory specialist peiker teamed up with Cassidian to meet this challenge in the latest Cassadian catalog, with all the products in the range designed to fulfill five key criteria:

EFFICIENCY: all the accessories are selected from leading manufacturers offering the best prices.

RELIABILITY: the accessories proposed in the catalog are the only ones approved and certified by Cassidian.

SERVICE: the products can be delivered with the best lead times and efficient aftersales service.

INNOVATION: peiker and Cassidian are investing to develop state-of-the-art innovations in the accessory range.

SIMPLICITY: the partnership provides one point of contact for both terminals and accessories, ensuring that customers get the best advice for the whole package.

peiker
people. innovation. ingenuity.

peiker: the expert choice in PMR

Founded in 1946, peiker acustic GmbH & Co. KG is a leading supplier of products and solutions in communications technology and enhanced in-car wireless communications systems. Its product portfolio encompasses PMR audio accessories, line-fitting solutions for in-car info/entertainment, aftermarket and machine-to-machine business.

THR9i

THR9 Ex

THR8

SSORIES from day one

SPM-4: Remote speaker microphone HR8160AA

DKC-1: Desktop charger (1 + 1 batt) HR8165AA

HDS-1: 3-wires acoustic sound tube with PTT & Mic HR8151AA

RSM-9X: Speaker microphone HR8531AA

LCC-9X: Leather case HR8532AA

TC: Throat microphone speaker unit HR8337BA

SPM-5: Remote speaker micro-phone HR8377AA

HDS-17: Earbud with PTT & Mic HR8386AA

HDS-18: Earhook with PTT & Mic HR8388AA

The accessories presented above are just some examples of our broader portfolio.
For the complete catalogue, please get in contact with your nearest Cassidian distributor.

PICTURE THIS

In-vehicle communication

is on the road to multimedia

KeyTouch explores the challenges and trends of PMR communication in the vehicle environment

Vehicle-based communication is changing fast, as basic voice communication is joined by data applications. The changes will transform vehicles into mobile offices, helping PMR users do their jobs faster, more safely and more efficiently in the field. The amount of information, media, task-specific applications and vehicle-control-related equipment is constantly increasing. The arrival of technology to support multimedia communication is the key, paving the way for applications that combine complex on-board systems consisting of various sensors and peripherals with all multimedia formats: voice, data, pictures and video.

In Cassidian's vision, the design of new vehicle based solutions should be guided by the following key drivers:

1. Integrate separate user interfaces and controls into one clear format

To free users from managing many separate interfaces in a moving vehicle, it's essential to integrate multiple interfaces together. Combining radio, internal and external video, blue light controls and other relevant applications into one ergonomic and safe to use interface will also save space in the dashboard. The integrated user interface solution can consist of a centralised touch screen device, steering wheel buttons and Head-Up-Display (HUD), for example.

2. Adaptable user interface/control units to suit various vehicles

Public safety or utility organisations typically use several types of vehicles, including cars, vans, trucks, motorbikes, boats and helicopters. So the user interface device must be adaptable to provide the same level of access and services in different vehicles.

3. Integrate communication tools into vehicle systems

Vehicle systems can support communications in several ways, such as power supply management including batteries and back-up systems. The vehicle's own databus can integrate communication controls within vehicle controls via steering wheel buttons, for instance. Blue lights and sirens, cameras and speed measurement tools can also be integrated as part of the vehicle LAN or wireless IT network, as well as a seamless part of the user interface. ▶

4. Applications should work seamlessly together
Applications must be easy to use in the vehicle environment, since the driver and co-pilot must be able to use them while the vehicle is moving. Features like touch screens and macro-based command chains for common tasks will make life simpler and safer. A single platform will hide the complexity of applications by helping to harmonise them, with the possibility of adapting the user interface to meet different needs.

5. Adopt an architecture that supports modularity and standard, open interfaces
The content of each vehicle's communication package may vary, but the building blocks of the solution should be designed to support modularity and open interfaces that make it straightforward to fit diverse solutions together and add new elements in the future to meet arising demands. This will also simplify maintenance.

6. Provide multi-bearer connectivity for voice and data
The transfer from voice to multimedia communication demands greater carrier capacity. The modern multimedia solution is based on a smart router for optimising the flow of information using the best carrier available. As an example, TETRA or TETRAPOL can be used for mission-critical voice, and wideband TEDS or broadband LTE for pictures and video. Satellite and commercial carriers such as 3G can provide back up. The router application will automatically choose the most appropriate carrier available in each case without the user having to decide.

7. Create a hotspot for network access around the vehicle
Vehicle solutions must also provide services for pedestrian users, since officers will often be working outside the vehicle. For example, a TMO-DMO Gateway application connects radios operating in direct mode with the network for voice communication. For data, users can access databases located in the vehicle or on remote network servers using a PDA device with hotspot conncectivity around the vehicle.

8. Integration to provide easy service and maintenance
An integrated solution requires a compact hardware package complete with the necessary carrier elements and interfaces to applications. Maintenance can be mainly carried out remotely using over-the-air updates, fault diagnostics and self-correction. Plug-and-play modularity also makes it easy to swap faulty hardware in the field. Space-saving integration also leaves room for back-up solutions to run limited communications and maintain essential features if there's a problem.

It's a big change to go from voice-oriented communication to multimedia in vehicle communications. The key is to provide new products and applications that create a seamless vehicle solution adaptable to each customer's needs. Cassidian invests significantly to develop the most appropriate products and to support customers in achieving the most cost-effective migration to new technologies and applications, based on a joint understanding of the key criteria.

Cassidian demonstrates Smart vehicle concept at PMR Expo

Cassidian chose PMR Expo in Cologne to showcase its latest demo for mission-critical vehicle-based communications. The model comprised a dashboard and a video presentation that together highlighted the elements of communications peculiar to the vehicle environment, such as blue lights, radio control, location-based services and cameras. The solution integrated various applications with a single, user-friendly touch screen controller.

Many organisations are in the early phase of implementing digital TETRA in their vehicles, while also planning to introduce new multimedia tools to complement the vehicles. The Cassidian demonstration at PMR Expo triggered new ideas and helped visitors to plan what needs to be taken into account when starting to implement vehicle solutions.

Following the success of the initial demonstration in Cologne in November, Cassidian will develop the concept further based on customer feedback and the arrival of new applications. The next chances to catch the demo will be at SNUC in Seville on 26-28 January 2011 and at TETRA World Congress in Budapest, 24 – 27 May 2011.

Looking back on forward thinkers

Digital radio networks were evolving rapidly in Europe 10 years ago. We revisit some of those early successes with articles that were first published in TETRA Touch (now called Key Touch) Vol. 1

Helsinki Energy wins with WAP

Helsinki Energy's Most Innovative Applications Development award recognises the company's introduction of a professional WAP service in its field operations last September. This means that personnel need only be armed with TETRA mobile phones in order to gain real time access to the company's customer and technical databases.

National Board of Customs is using VIRVE services in Eastern Finland and Helsinki

"With VIRVE we can finally have one communication system. Having all functions in one handset is a big relief for a customs officer on the move. The officers are not geographically close. In a large country like Finland it is important to be able to communicate between several cities.

We expect more good applications and application developers for more efficient data transmission. One of the most important applications for customs officers is checking licence plates. In the future we expect to see many applications in the field of video transmission."

Jan Österlund, Senior Detective, National Board of Customs

TETRA secures skiing world championship

With the security of well over 50,000 people at stake, the organisers of the FIS Alpine Ski WM 2001 skiing world championships used TETRA-based communications to coordinate the event. This year's championship took place at St Anton in Austria, from 28 January to 10 February.

What you liked best in Key Touch 3/2010

We asked you to pick your favourite article in Key Touch 3/2010 and the runaway winner was "**Rakel secures Royal Wedding in Sweden**," which described the activities related to the security of this special event on 19 June 2010.

The first runner-up was an article introducing the THR9 Ex intrinsically safe TETRA radio in "**Red, robust and powerful**". Continuing the red theme, the second runner-up was "**Did you know … about the Red key in TETRA terminals**".

FEEDBACK WINS PRIZES

Tell us what you think about our latest issue by voting for the best article in this edition. Go to **www.keytouch.info** and share your views by voting in our online poll. You can win a prize too!

TETRA World Congress is the biggest event of its kind, attracting PMR users and developers from around the world. 2011 will see the show roll up in Budapest, Hungary, with an overarching theme of "Critical communications for an evolving world".

So come and experience the world's largest TETRA gathering with Cassidian. Don't miss your chance to network with all the key players in the field.

Find more information at:
www.tetraworldcongress.com

A survivor's guide
to TETRA World Congress

A lot of people ask what they should bring when attending a trade show such as TETRA World Congress. Here is a good checklist of essentials:

- **Comfortable walking shoes.** Trade shows mean a lot of walking and standing, so this is a must!
- **Business cards** to share with other visitors and exhibitors. It'll help you stay in touch after the show.
- **A camera (and extra batteries)** to capture events and people at the fair – and elsewhere if you find time to do any sightseeing beyong the exhibition space
- **A travel guide** will help make the most of your visit, especially if you're in a city or country for the first time.

Hubert Azemard: The powerhouse behind the SNUC

With planning for the next Secure Networks Users' Conference (SNUC) underway, Key Touch interviewed TETRAPOL Forum chairman Hubert Azemard about the value of the conference, as well as his experiences as the 'father of TETRAPOL User Conferences.'

Each year SNUC, Cassidian's network users and operators conference, brings together representatives from the global radio communications and full-circle security community, including vendors, operators and user organisations, as well as applications and accessories developers. The meeting gives delegates two and a half days to discuss, debate and exchange views on the latest digital developments.

A prominent figure since the earliest days of the TETRAPOL Forum and of the first users' conference TUC, Mr Hubert Azemard is well placed to give a fascinating insight into how the conference began and why it's so important to the ongoing development of public radio technology.

"TETRAPOL Forum and the user conferences were based on the idea of opening up the technology to a wide audience in order to expand the market and ▶

"High speed data will be the most important trend in the coming years."

encourage the adoption of digital radio," says Mr Azemard, who took over SNUC chairmanship in 2006. "The conferences provide a structure in which users can discuss their experiences and requirements free from the influence of vendors. When they reach a consensus, they are able to collectively take their ideas to the manufacturers. The manufacturers gain by learning what technology developments users want, giving them good business

grounds for investing in developing those functions.

"The conferences have also been useful in bringing the industry together to lobby governments and regulators on common issues, spectrum allocations for example."

Global conferences, differing challenges

Early TETRAPOL user conferences were frequent, being held four times per year and with only four users attending the first ones. The conferences have since grown to encompass all PMR technologies and related solutions, and each year they attract hundreds of delegates.

"The conferences offer a convivial atmosphere in which users can build relationships with other delegates. Conference venues have been across the globe - North and South America, Asia, Europe, China and Russia. Each country has presented its own organisational challenges, and we have not always got it perfect," explains Mr Azemard.

"In China I remember that we rang a bell to call delegates back to the conference sessions after a break. What we didn't know is that this is considered very rude in China. One of the local delegates had a quiet word with us and we stopped using the bell immediately. It could have been embarrassing but fortunately the Chinese delegates laughed off our faux pas and took no offence."

Having spent a long and distinguished career in the public mobile radio sector working for leading organisations such as Philips, Alcatel Lucent and Matra, Mr Azemard is semi-retired, but just as busy as ever. "I enjoy very much my continuing involvement in SNUC as well as my activities in local politics and charity work. I also spend time skiing, shooting, sailing and playing golf. I have a full agenda, but it is much nicer now to be able to set my own priorities rather than having them imposed on me by a boss," he laughs.

High speed data – the next big step

Looking ahead to SNUC 2011, Mr Azemard expected to be able to welcome many new delegates and to help them make the most of the many opportunities that each conference creates. He also expected to see substantial technical evolution of PMR.

"In the early days of PMR, the only application was voice and it was unencrypted, completely open to eavesdropping. We have seen the technology evolve with data being introduced, moving from analog to digital and increasingly sophisticated encryption for security. The major trend today is high speed data and I am sure this will be the main topic of discussion at SNUC 2011.

"Public safety users need more information and to get that data as quickly as possible to help them do their work more efficiently and safely. They need to use the Internet and to use video. High speed data will be the most important trend in the coming years," concludes Mr Azemard.

Built tough

The IP65 protection class gives the **THR9i** excellent resistance to water (and dust).

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