

key touch[®]

CCW focus



Smart
communications

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Prepare for the future



CASSIDIAN IS COMMITTED to provide value for our customers, today and in the future. The future is not easy to see, but our experts are committed to future developments. These are two of their newest innovations born from that commitment.

1- Claricor® 3, the smart radio communications system that grows with you. Claricor 3 equipment looks compact but it delivers the features of a full-sized professional TETRA communications system. Its cost-effective setup is ideal to build coverage across airports, factories or power stations – indoors or out. Get the details on page 14.

2- TETRA Identity Module. A radio user's TETRA identity no longer follows his or her radio if the device is sent for service, for example. Instead, the user can simply remove the TETRA Identity Module and insert it into a replacement radio. Read more on page 13.

These innovations were first unveiled at the Critical Communications World 2013 in Paris, France.

The CCW event visitors also had the opportunity to experience how we are building the professional mobile radio future with the integrated LTE PMR solution, developed by Alcatel-Lucent and Cassidian engineers. A trial on this solution was conducted in Tours between February and April 2013 for the French Ministry of Interior.

The trial involved French security forces and it was the first real test for a new generation radio network based on the 4G LTE standard at 400 MHz. Find the details on page 16.

The secure radio communication networks are one ingredient in the recipe for security today and in the future. The ever-increasing cyber threat calls for other solutions. Cassidian can provide cyber expertise and professional services, such as attack analysis and response, risk management and audits of security infrastructure architecture. Read more on page 11.

Meet these new solutions also at www.cassidian.com/ccw and see the ways you can prepare for the future today.

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

For the security of all

From the latest radios and the most secure networks to the whizziest apps and adaptable command and control systems, Cassidian has shown all the best at the Critical Communications World 2013.

1 The right radio for the job

TH1n, THR9i, THR9 Ex, THR9+, THR8, THR880i, TMR880i, TDM880i, TGR990, TPH700, TPH700 Ex, TPH900, TPM700 Control Head, TPM700 MCP, radio accessories

Packed with value-added features and innovative technologies, today's radios are the right tools to support professionals in a changing world.

2 Smart radio management

Taqt® 2

The new version of the smart terminal management solution is now available. It allows an intuitive management and configuration of TETRA radios and TETRA Identity Modules. More details on page 12.

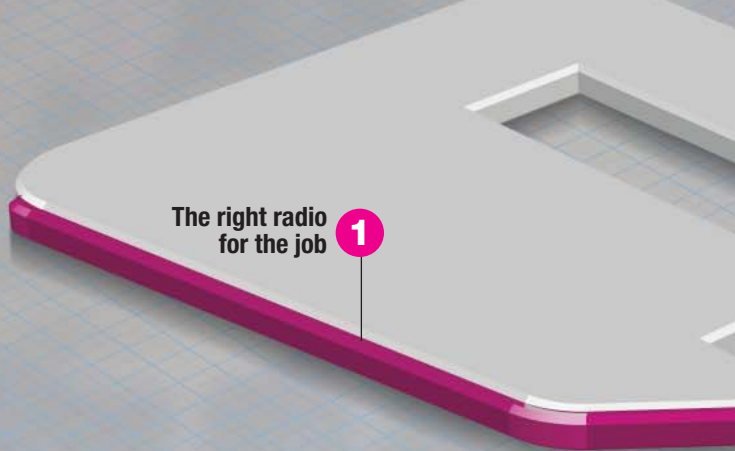
3 The power of innovation

TH1n, RCS9500, Claricor® 3

The TH1n pocket-sized TETRA radio packs professional features into a slim, lightweight package that users want to use.

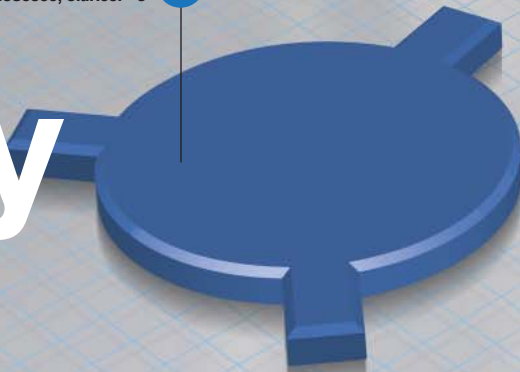
The RCS9500 workstation makes it easy to build the dispatchers' user interface to suit the way they work.


Built to fit and fit for purpose, the Claricor 3 system provides fully-featured, secure communications for up to 5,000 subscribers. More details on pages 14–15.



The right radio for the job

The power of innovation
TH1n, RCS9500, Claricor® 3





4 Broadband – the future of PMR

*Integrated LTE PMR
solution*

Professionals need secure communications, but they also want the same slick, online mobile experience that they enjoy off-duty. The integrated LTE PMR solution from Alcatel-Lucent and Cassidian combines both. Read more about broadband solutions on page 16.



5 Instant TETRAPOL coverage

Tactical cells

TETRAPOL users need not be 'off-grid', thanks to the tactical cell from Cassidian. Connect tactical cells together into macro cells using Astrium's satellite communication services, or connect the cells to an operating room. Cost-effective and fast to deploy for voice and data, tactical cells are ideal for emergencies or special events.



6 Smart grid, oil and gas

TETRA solutions

The power grid can be smarter than ever with the support of communications networks. TETRA networks from Cassidian are secure and robust, so companies can count on them. More details on pages 17–19.

NEW SOLUTIONS

**Smart grid,
oil and gas**

6

**Broadband
– The future of PMR**


4

**Tactical cell
– Instant TETRAPOL coverage**

5

**Solutions for operators
and cyber security**

7



7 Solutions for operators and cyber security

*Secure MVNO, cyber
defence services*

Virtual Network Operators use commercial networks to deliver broadband and complement the secure PMR. More details on pages 22–23

Be prepared to face today's cyber threats and protect your business services, IT resources, applications, databases, and security components using advanced cyber defence services. More details on page 11.

Visit Cassidian's stand
A301 to see the future
of professional critical
communications.

If you missed the
Critical Communications
World 2013, go to
www.cassidian.com/ccw

Take a moment to think about your own job and daily tasks. How do you use your radio and what are your daily routines? What are your needs and preferences? Whatever you need, Cassidian has the right radio for you.

GET THE RIGHT RADIO

Public safety

Many fire brigades have chosen the robust THR9i or THR9 Ex as their radio. THR9 Ex is an intrinsically safe TETRA radio for hazardous areas, offering both ATEX and IEC-Ex certification for gas and dust. It looks like a THR9i but has red covers and an ATEX symbol. Both radios are designed to be rugged to stand up to field operations.

Firefighters use fireproof outfits and special helmets, meaning that helmet audio accessories with a separate large PTT button connected to the radio are widely used. Some firefighters also like to have a throat speaker microphone or a talk device for hearing protectors. For heavy use, high capacity batteries are also available.

Police normally wear a special belt that accommodates the various equipment items they need. Often there is no space for a leather case for a radio, so carrying it on a lapel can be a better solution. A large number of innovative carrying solutions and devices have been designed to make it easy to use the radio.



Hospital and ambulance

Doctors, nurses and other hospital staff are rather new user groups for TETRA radios. Yet, they are an essential part of the chain of professionals that come into play to save lives when an accident occurs. It is also vital to keep them informed about an incident and thus give time to prepare to take in casualties. Sometimes, extra resources are needed, so an early warning from the emergency cen-

tre means they have the chance to alert more doctors on duty. As well as saving lives and time, advanced communications helps patients to get faster treatment.

Health care professionals usually wear thin clothing and a fixed attachment point for a radio is not allowed. They normally need both hands to treat the patient and having a radio in a pocket is not a good solution. An ideal carrying device is fastened with



SENSATIONAL RADIOS

magnets, with the fabric in between. It has a counterweight on the rear to balance the weight on the shoulder and make it more comfortable to use. The radio is ready to be used on the lapel, voice feedback can be heard and it is close by when speaking. It is also extremely easy to put in place and to remove or change to another outfit and the radio can also be readily switched to the other shoulder. The Cassidian TH1n is the radio most favored by health care professionals because of its slim and light design. This ideal carrying device is now available for the TH1n, as well as other Cassidian radios.



THE RIGHT RADIO

SENSATIONAL RADIOS

Together with data devices, Cassidian's handheld and mobile radios mean users can select the best device to fit their daily work. There is also a full range of accessories to meet the specific requirements of different users, as well as versatile uniform and clothing items. Whatever you need, Cassidian has the right radio for you.

FOR YOUR JOB

Transport

People working in transportation make extensive use of TETRA radios as their daily communication tools. There are many different players in this sector, including airports, metro and train lines, delivery services and in some countries even boats and ships. The TH1n is a very handy small radio for many airport workers in areas like check-in, at the departure gate or in offices. Ground handling crews prefer the THR9i and THR9+, which have a simplified keypad and can be used easily while wearing gloves. The THR9 Ex is definitely the choice for those who fuel the aircraft, because they work in an explosive-prone area and there are many ATEX approved accessories available for the radio.

Many metros and trains have a TETRA TMR880i mobile radio installed, as of course do police cars and fire engines. There are also many vehicles that need a high level of security, such as those transporting prisoners or transferring money

between banks. A fixed mobile radio installation is essential to maintain a connection to such vehicles. Sometimes voice communication is not needed, so a TDM880i data module can be the solution to track the vehicle or boat through a TETRA network.

When a gateway device is needed to ensure communication between those talk groups that are in network mode and those who operate in direct mode, the TGR990 gateway-repeater is the solution. It also extends the range of coverage for direct mode.



TMR880i



TH1n



THR9+



THR9 Ex



THR9i



TDM880i



TGR 990

The right radio for security

Safety and security is a key issue in all countries and in all branches. Efficient and seamless communication is a vital part of security. Guards and other security people are joining TETRA networks as radio users all over the world. They not only secure buildings, offices, airports and stations but also people in mass events, such as concerts, football games and sport events at stadiums.

Often they have highly visible uniforms to reassure the audience. Sometimes they might be escorting a VIP or be in a covert operation where they don't want to be recog-

nised as a guard or a bodyguard. The best solution here is to have the world's thinnest TETRA radio, the TH1n, with a covert accessory set, including Bluetooth. Even an iPod type earpiece or other commercial headset can be used with the TH1n, making the user appear identical to any other tourist or citizen.

TH1n accessories are easy to use and easy to connect to the radio. You can select your favorite according to your personal needs and requirements.

Visit www.th1m.com to discover more about the smallest TETRA radio.



Slimline
TH1n radio

Wireless audio accessories with Bluetooth

For security, covert or industry use cases, a Bluetooth function can be added to the TH1n. Screwing a dongle on the side connector, the user can pair either a commercial earpiece or the new Bluetooth Hub BTH-1. As for wired audio, it allows the connection of any kind of smartphone kit (like a HDS-70) or induction loop (like a HDS-69) through the 3.5mm jack plug. The BTH-1 incorporates a Push To Talk button and the Alarm Button.



Moving from security alert to cyber-defence

Although we hear increasingly of cyber threats to communications networks, users of TETRA and TETRAPOL currently have little to fear as these networks are closed and consequently highly secure. However, their IT networks, like those of any other organisation, may be susceptible to attack. Clearly, user organisations need to be prepared.

Many organizations will have a Network Management Centre, but this may lack the cyber security expertise needed to fully safeguard the network. This expertise can be provided by Cassidian CyberSecurity, which offers high-level professional services, such as attack detection and analysis, advanced incident response, risk management and audits of security infrastructure architecture.

Centralising security

As well as these professional services, Cassidian CyberSecurity offers dedicated Cyber Defence Centres, or CDCs. A CDC is a centralized organization devoted entirely to cyber-security, and is operational 24 hours a day, seven

days a week. Based in France, Germany and the UK, Cassidian's CDCs do not only monitor an IT network for cyber-attacks, but also have the capabilities to prevent or respond to such outbreaks thanks to advanced threat intelligence.

A CDC is an integrated organization of security operators, security architects and integrators as well as a CSIRT team (Computer Security Incident Response Team). It aggregates multiple data feeds various sources, such as IDSs (Intrusion Detection Systems). When an attack is detected, the CDC's experts use advanced Cassidian tools for security supervision and to check for APT (Advanced Persistent Threat) to help stop the breach, analyse the causes and advise on an appropriate response

A CDC will help to maintain and increase a security stance defined according to agreed requirements, such as internal security policy, international standards or best practices. This involves protecting and defending the security of assets such as business services, IT resources, applications, databases, network critical infrastructures and security components.

Well-planned response processes

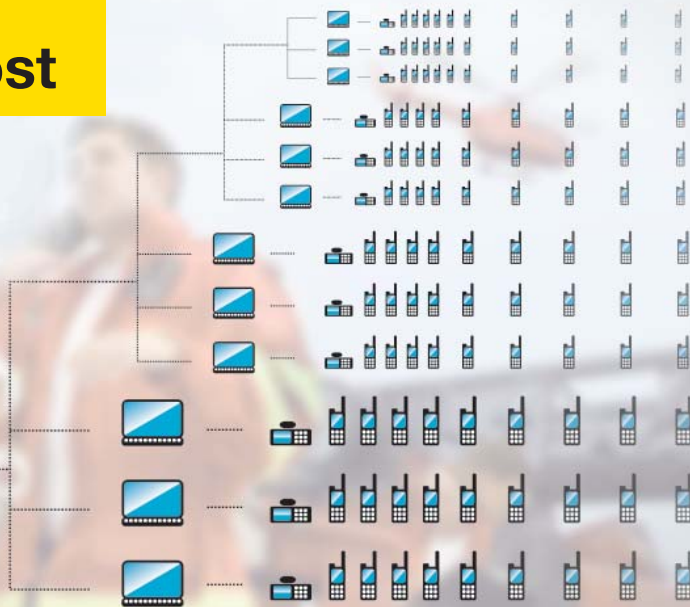
The CDC can alert the Network Management Centre when it detects a threat or unusual and suspicious behaviour on the network. Cassidian CyberSecurity's CDCs operate well-structured processes, contacting appropriate people depending on the type of alert. The CDCs also recommend actions according to the type of threat detected, which areas of the network are affected and the overall impact on the business.

Cassidian CyberSecurity can also provide an incident response service, where consulting and CDC assets combine to respond rapidly to halt incidents, clean up problems, identify their causes and propose solutions.

Taqto[®]

– Managing your data, time and cost

Time is money in any organisation and having a smarter way to manage the radio fleet can save both. The answer: Taqto 2, the new, smart terminal management solution from Cassidian. You will want it for six reasons



Keyword: “usability”. The new Taqto 2 helps keep things simple, even when carrying out the most complex configuration tasks on the most complex radios. Not only does it save time, but it also minimises the opportunity for human error to creep into the process.

Centralised. With Taqto 2, you can perform all device management tasks from a central Taqto server workstation. Having the backup of a central device management database minimises the logistical challenges of making changes, while improved reliability in device programming minimises radio downtime.

Validation. Real time configuration validation also adds value. If there's an error in the configuration of the

device (from faulty data entry, for instance), Taqto 2 spots it immediately and will not allow the device to be programmed wrongly. So there's no danger of a problem cropping up once the device is deployed later in the field, when any error might prove critical.

Import and export. The new Taqto 2 helps manage TETRA talk groups – you can import and export group information to and from standard office tools such as Microsoft Excel. You don't have to enter them manually into each device.

No duplicate ITSIs. Taqto 2 can integrate TETRA subscriber-related information, like the ITSi numbers and TETRA Identity Module cards. Integrating these features into a single tool simplifies management process-

es even further. ITSi information can even be synchronised “on the fly” with the TETRA infrastructure to avoid giving the same ITSi to two devices.

Confirmed confidential. The security mechanisms in Taqto 2 keep all the confidential communication taking place in the decentralised device management networks secure. This means that the device management information is protected, not only in the Taqto database but also in any communication between the Taqto server and clients.

Taqto 2, the smart terminal management solution from Cassidian enables the fast, intuitive management and configuration of TETRA radios.

This time it's personal with the **TETRA Identity Module**

In the past, each user's TETRA identity has been tied to his or her radio.

The TETRA Identity Module from Cassidian changes all that.

Whereas a person's stored TETRA identity previously followed their radio if the unit was sent for repair or servicing, the user will be able to remove the TETRA Identity Module and slip it into a replacement radio to retain all their settings for talk groups, ac-

cess rights, priorities and contact information. Clever.

This contrasts with the previous situation, in which all such information was stored on the radio itself, even if that radio was shared between several users – perhaps where they do the same job during different shifts, for example. With a TETRA Identity Module, a properly configured TETRA terminal no longer needs to store individual subscriber-related information. Instead, the radio fleet effectively becomes a pool of terminals that are only loaded with the necessary common subscriber data to suit the user organisation. This means the radios can be used interchangeably by any personnel, simply by inserting their TETRA Identity Module.

This portability between radios is similar to a SIM card that is familiar from commercial mobile phones.

In fact, the TETRA Identity Module is much more secure. It's actually a secure smart card, with all the confidential information stored in a secure database, which cannot be accessed without proper authorisation.

Cassidian is developing a complete portfolio of TETRA Identity Modules, ranging from an ITSI-only version to a complete solution in which both the subscriber information and individual settings for each end user are stored in the module. TETRA Identity Modules can be managed using the Taqto smart terminal management solution, and are compliant also with Tactilon® subscriber management tool.



CLARICOR® 3

SMART COMMUNICATIONS THAT GROW WITH YOU

Claricor 3 is the smart choice for organisations looking for secure communications on a scale that can match their evolving needs more closely.



TB3p mini
TETRA base station



DXT3p
TETRA switch

Built to fit and fit for purpose, Claricor 3 equipment looks compact, yet it delivers in a big way. It packs the punch of a fully-featured and full-sized professional communications system. With Claricor 3, you can start with a single base station and expand from there. It is the smart choice for organisations on the look-out for a secure solution based on the proven open TETRA standard.

Claricor 3 is a professional radio system for up to 5,000 users, and with cost-effective set-up to build in-

door coverage across sites such as airports, factories or power stations. With that in mind, Claricor 3 is high-speed data (TEDS) capable and provides more than enough bandwidth for data in Smart Grid or SCADA applications.


The smart choice

Claricor 3 is really the smart choice. The open, standards-based approach means that Claricor 3 is interoperable with TETRA radios from different vendors. Need coverage? Choose Claricor 3 and the TB3 series coverage engines from Cassidian. Working in hazardous environments? Choose Claricor 3 with Cassidian's Ex radios and low-power base stations. Struggling for audio resources? Claricor 3 offers an unbeaten array of calling priorities for different classes of user.

The comprehensive set of functions available with Claricor 3 are all field-proven and deliver business-critical reliability.

DXT3p at the heart

The heart of the Claricor 3 system is the DXT3p switch, which offers a powerful feature set in an IP-con-



Enhance your network with applications

- Know where your resources are with an AVL app
- VoIP dispatching is an easy way to communicate between field personnel and control room

nected infrastructure. The DXT3p is an all-in-one package with high capacity, best functionality and great resilience. The lower power consumption (around 150W) makes it an eco-friendly option, too.

The rest of the network builds out from the switch. Using state-of-the-art energy-saving network equipment, smart users can start with a small system that will grow with them, making Claricor 3 a low-risk choice. In other words, Claricor 3 brings smart, safe and secure communications within the reach of more organisations than ever.

More than 300 people at the Secure Communications Network Users' and Operators' Conference (SNUC) shared a first-hand experience of a special broadband trial which was being conducted in Tours between February and April 2013.



Tested: 3 apps

The greediest: Transmission of video in real time from vehicles to the control room.

Second app: Transferring a video file from the vehicle to the control room, and again from the control room to other vehicles.

Video streaming from one vehicle to the control room, for re-transmission to other units would allow the other units to prepare to deal with the incident before they arrived on the scene.

Third app: Live geo-location of the vehicles involved in the mission. All the vehicles had a map application and thanks to the broadband connection, they could all see where every other unit was on the map. What's more, any vehicle's video file could be retrieved by clicking on the vehicle on the digital map.

Food for future trials

The success also raised the usefulness of internet access from a tablet in the vehicle. One of the very first tools used to find missing people is their Facebook profile, because much information is often posted by the missing persons themselves.

The broadband experience

The trial was conducted in Tours by Cassidian for the French Ministry of Interior. It was carried out with French security forces over several weeks in the city of Tours, being the first real test for a new generation radio network based on the 4G LTE standard at 400MHz. The SNUC participants got a glimpse of the trial via video feed from the Tours control room.

The new mobile broadband will enable the use of bandwidth

hungry apps (video and file transfer, streaming video) in the secure radio network. In addition, the integrated LTE 400 PMR solution developed in collaboration with Alcatel Lucent preserves the current frequency band and re-uses the TETRAPOL network sites.

The trial in Tours was a first demonstration of the feasibility of the solution. It proved that the use of 4G LTE for data and TETRAPOL for radio communication is possible under the same radio coverage.

Helping keep **Smart Grids** always on



Reliable energy supplies are crucial to the functioning of modern societies. They are also critical for the companies that supply that energy, as any break in supply damages both profits and reputations.

Although energy consumption is rising, we need to reduce the environmental harm that results from its production. Renewable energy is one answer, yet current infrastructure does not support it. A further challenge is the increasing number of cyber threats against electricity grids.

Making an electricity grid smart

One of the key ways to meet these challenges is to increase the intelligence of electricity grids. Smart Grid makes electricity networks more reliable and efficient, allowing them to manage distribution

of energy from renewable but intermittent sources. They also allow households to distribute power generated at their own premises.

When the power grid is made smarter, the number of remotely operated devices such as sensors and switches will grow significantly. Wireless control is essential, as fixed wire connections are expensive.

By contrast, wireless communication technologies such as TETRA – particularly high speed capable TETRA/TEDS – can provide cost-efficient connections for grid devices and do not depend on vulnerable cables.

Smart Grid – the essentials

Smart Grid increases the quality of service to customers and enables modern low-carbon electricity production. It can increase power company revenue by reducing power outages and enabling efficient mobile workforce management.

A smart grid drastically reduces power outages through power distribution automation, where faults are automatically detected, isolated, and electricity re-routed. Effective mobile workforce management ensures a reliable energy supply for customers

Smart grid enables renewable energy production by balancing the generation and consumption of solar and wind power.

Managing a smart grid requires a dependable communication system. TETRA is the perfect choice due to its excellent reliability, security, and availability.

Wireless TETRA based smart grids are more cost-effective and resistant to extreme weather conditions than cable-based solutions.

Stability at the source – Control of renewable energy sources

Many power companies are building renewable energy sources, which are usually very distributed. Energy production can vary with environmental conditions, while distributed plants are also harder to control.

A practical solution is to control the distributed energy production remotely. TETRA can transmit control signals and data between control rooms and the renewable plants, balancing energy demanded with energy produced. TETRA's availability, reliability and security make it ideal for this.

Quality of service for customers – Power distribution automation

Electricity is delivered to consumers via the medium-voltage distribution network, which must provide a reliable and high quality energy supply. Distribution automation offers a way to achieve a better quality of service for customers.

Fault Detection, Isolation & Restoration (FDIR) allows the energy grid to be remotely re-configured to mitigate or prevent outages.



TETRA – Reliable and secure communication for power companies

- Designed for reliability and high availability
- Very high security, e.g. British CESG certification
- Radio technology – wide coverage and flexibility
- Global standard with a strong ecosystem
- Voice for mobile workforce management
- Data with low latency
- Scalable solution

There are three important steps in automated fault correction:

1. Fault Detection by monitoring the network. Faults and disturbances are reported automatically to the control centre and SCADA system.
2. Isolation. If possible, the fault is isolated by disconnecting switches or other network elements.
3. Restoration. The fault is corrected and service is restored.

A TETRA network is used for the remote control and monitoring of various devices, providing fast, secure and reliable messaging between control room systems and devices in the field.

Efficient and safe maintenance - Mobile workforce management

Voice is still the most efficient way to communicate with maintenance personnel, but for opera-

tional effectiveness, data communication is becoming increasingly common.

TETRA voice communication includes group and one-to-one communication with a robust and flexible organization, together with group management. A dispatching centre is an efficient way to centralize the management of field workers and their assignments.

Voice communication can be enriched with mobile workforce management applications. For example, fault reports can be sent directly to vehicles in the field, with status responses sent back to the control centre. Control rooms can also see the location of maintenance vehicles at all times through AVL or Automatic Vehicle Location.

Meet the experts

Visit us at Critical Communication World and discover Smart Grid communications in more detail on the Cassidian stand A301

Unable to attend? Simply go to www.cassidian.com/ccw to download Smart Grid whitepapers on the topic and request a private meeting with our experts.



Be on safe ground for

Next Generation 112 and broadband are trendy topics today but what do they really bring to emergency services?

Better caller and incident information

With its IP-based transmission, Next Generation control room technology offers easy connection to Emergency Services IP Network (ESInet). IP connectivity allows emergency callers to use rich media, such as videos, pictures and 112 apps that help first responders by sending a user's medical details to the emergency response centre.

Broadband shares this enriched information with response units, helping them to be better prepared.

High quality cost-effective emergency response service

Using IP technology, emergency calls and information about incidents can be routed to any Public Safety Answering Point (PSAP) in a network. Control rooms can be consolidated into larger units, allowing economies of scale that can provide a stable, high quality, cost-effective service at night, during vacation periods and on peak days. Work can be concentrated at the largest PSAPs during quiet hours, or allocated to other sites at busier times.

Improved interoperability between organisations

Because next generation systems make it easy to share information between control rooms and in the field, different forces can co-operate in a smarter way. Police and rescue services can easily share information on hazardous chemicals. All services can see a map with suitable landing locations for a medical evacuation helicopter - the crew click on the best site and police know which area to clear.

Making it happen

Using these new facilities means changing operational processes, de-

veloping new training programmes for staff and acquiring new technology that supports these processes. Previously, these developments required costly change orders that could dramatically escalate project timelines and budgets.

Cassidian's integrated next generation solution for emergency call taking and dispatching, known as Integrated Dispatch System 9700, includes a user interface which operators can customise themselves, completely eliminating change order costs.

The same technology is used in Cassidian's next generation radio dispatcher, the RCS9500, which is available now. Using such technology allows you to focus your investment on what matters most - people and processes.

Meet with experts

Visit us at Critical Communications World and discover Next Generation emergency centre solutions in more detail on the Cassidian stand A301


Unable to attend the show? Simply go to www.cassidian.com/ccw to download a white paper on the topic and request a private meeting with our experts



Next Generation 112

SOLUTIONS



An aerial photograph of a city street, likely in Paris, showing buildings, a park, and a beach. A yellow callout box is overlaid on the image, containing the text 'CAV01 Ambulance Available' and a small icon of an ambulance. The main title 'Are virtual network operators the way to go?' is written in large white letters on a black background, partially overlapping the callout box.

Are virtual network operators the way to go?

Using a Secure MVNO (Mobile Virtual Network Operator) solution to supplement traditional public safety radio networks looks attractive, but does it hold all the answers to the need for more data?

A growing strategy for many Professional Mobile Radio (PMR) organisations is to make use of data by taking out cellular subscriptions, in much the same way as the consumer world works. While this could improve efficiency, it also raises some challenges.

Keeping the customer satisfied

With each professional organisation making a deal with a mobile data operator, the result can be very different levels of service,

while also not being very cost-effective. Yet, public safety users need more data capacity so must use a commercial provider until they can adopt a dedicated PMR broadband network.

While this is a relatively straightforward arrangement for gaining access to the necessary broadband connection, a more difficult issue is the apps that work based on that data pipe. For example, it remains an open question of just who is hosting the apps, user organisations or the PMR operator?

The increasing need for data

A PMR operator needs to provide apps that use the dedicated network – the digital radio network – and also apps that use the consumer mobile network. Both need to offer secure subscriber management, with maximum coverage and maximum availability.

Organisations need their users to have secure access to apps, which need to be thoroughly tested and field proven. The network on which these apps run must also offer maximum coverage and throughput.

Ready to go?

User organisations also need a quick and efficient way to provision new users. Commercial mobile operators can certainly add new subscribers into the network, but will be unable to ensure that this provisioning includes group hierarchy. In contrast, Cassidian's Tactilon® tool does provisioning as well as user and organisation management.

Tactilon is a tactical management solution for public safety networks. It enables operators to manage users en masse, saving time and money. It also gives user organisations more flexibility in managing their own organisational units, talk groups and subscribers. What's more, Tactilon will also check that a new subscriber has been provisioned correctly.

Tactilon can manage subscribers and devices regardless of the network they will be using, and will also understand when a commercial mobile subscriber and a radio user are one and the same person. Separate provisioning will not establish this link, except in separately maintained lists or databases.

Implementing a MVNO solution without considering subscriber management will lead to costly, often duplicate or triplicate subscriber management systems, which are difficult or impossible to keep synchronised. Subscriber management will also

directly affect the level of service, with implications for both technical and financial buyers.

One network is not enough

Most European countries have good outdoor 3G mobile coverage pretty much everywhere which also extends to indoor areas in cities. Although these 3G mobile networks can run a wide variety of useful data apps, they cannot offer guaranteed availability. With 3G, it is also not possible to have users with automatic priority.

4G technology will make it possible to manage the availability issue much better, but in Europe, it will take from five to eight years before it can offer the equivalent of today's 3G coverage.

The Secure MVNO solution can ensure maximum coverage because it uses several choices of network and not just one. And because this approach does not rely on a single network, it also optimises the availability.

To sum up, the ongoing development of consumer mobile communications, which are rapidly turning into a mobile broadband environment, is also bringing new possibilities to the professional mobile radio world. But ensuring that the needs of professional users are met effectively and efficiently demands a more sophisticated approach than simple cellular subscriptions alone can provide.



Bulgarian TETRA goes from strength to strength

Bulgaria is rapidly joining the ranks of those countries that enjoy a nationwide TETRA network, building up to a level of 65% coverage over the last ten years. Beginning with the first phase in 2002, the project has spread beyond its original users, the border police, to serve the needs of the fire services and now also covers the country's major international traffic routes.

An extension project, awarded to Cassidian in 2009 and executed in partnership with Ericsson

Telecommunications Bulgaria, included a further 50 fixed and three mobile TETRA base stations, roughly doubling the number to 111.

The extension project also involved setting up the backbone transmission network of 120 microwave systems, including a state-of-the-art platform for wireless transmission.

Over the next two years, EU funding will help extend coverage still further to 80% while also improving the quality of existing coverage.

Director Ivan Dimitrov from the Ministry of Interior outlined how the scope of the network is growing: "In the last four years, the Ministry of Interior has been building relationships with organisations outside its scope, including the Ministry of Justice and Ministry of Health, which is responsible for emergency response.

"Part of the improvement project, started in January this year, includes setting up a public warning system, which would be integrated with safety critical systems such as the monitoring of nuclear



plants for example. The TETRA network will be used to control warning sirens, taking another major step towards improving public safety.”



The TETRA radios adopted by Bulgarian officers have a user interface and voice feedback in Bulgarian. Looking and behaving just like a mobile phone, their familiarity makes it easy for anyone to use them right away.

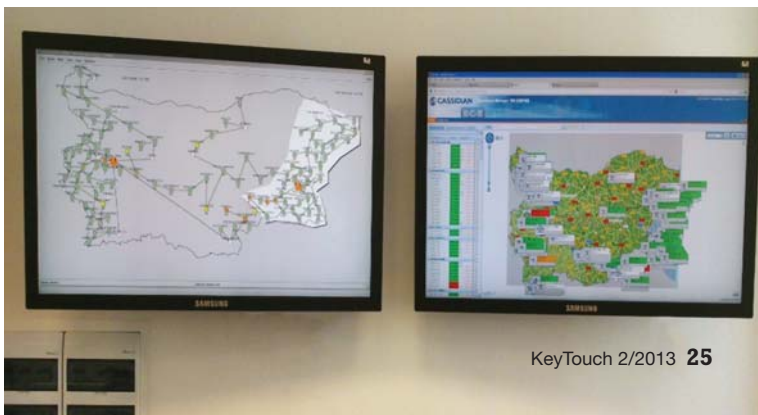
The TETRA radio network also supports several data applications, such as the instant broadcast of images, which Cassidian demonstrated to the Bulgarian Ministry of Interior over the course of 2010. Cassidian also demonstrated its PD400, a device to identify people and vehicles. It can also read Bulgarian and EU identity cards and biometric passports.



CUSTOMER WIRE

Another demo showed how to use SDS messages to control an electronic display so that, for example, border police could use a roadside display to tell drivers to go to the next checkpoint because too many cars were arriving at once.

The arrival of the TETRA enhanced data service (TEDS) in the network supports data speeds of up to 100 kbit/s and will open up even more possibilities, ensuring the Bulgarian public services can continue to serve citizens using the most capable and efficient applications.



Ensuring the security of 17,000 delegates from almost 200 countries at a major UN conference is no picnic. One of the major essentials in such a task is knowing where security vehicles are at any time.

A watchful eye on vehicle movements



This was the challenge facing the organizers of the UN Climate Change Conference 2012 in Qatar, who needed to know the status of patrols and convoys throughout the capital of Doha. Fortunately, Qatar's Ministry of the Interior operates Mentura TETRA Tracker, created to provide such information on remote vehicle units.

Using a standard Web browser, the dispatchers can follow the location and status of vehicles and people on a map, following events as they unfold, whether they are using an expensive workstation or a portable tablet computer. Because Mentura uses normal Web technology, dispatchers can access the system from anywhere through the built-in IP connection. The application is highly suited

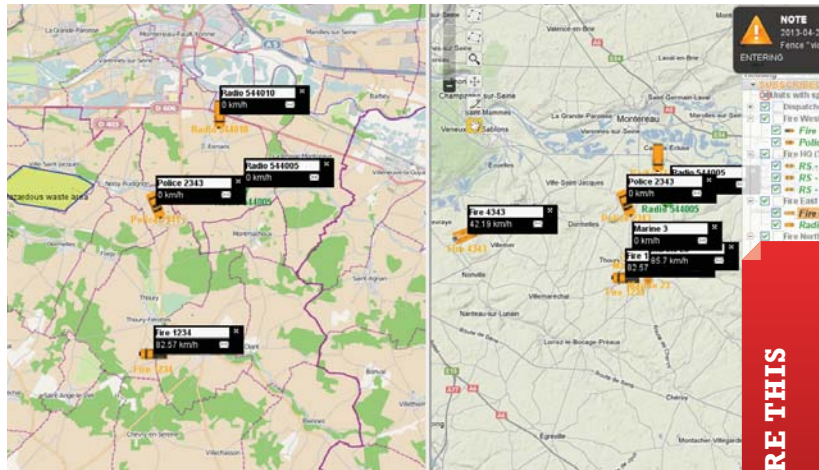
to being run over LTE, providing mobile maps and location information to units on the road.

The system allows the dispatcher to make the best decisions based on additional information provided for each unit. For example, a police car can be selected to handle an emergency call based on how close it is to the incident. The user can also call up other geographical information at will, such as the locations of fireplugs.

For large scale operations, where several safety and rescue organizations need to work together, all information on mobile units and incidents can be shared with other users. Information sharing is also made easier by

Outside specific operations, the system operator can also monitor the performance of his fleet, using charts of data such as vehicle utilisation and idle and busy times. This allows the public safety and security services to be provided more efficiently while keeping costs.

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