key *touch* ®

**What if your
user experience
was truly
mission-critical?**

Critical
matters

WHO'S IN THIS ISSUE?

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

TIINA SAARISTO, the long-time Editor-in-Chief believes in sharing helpful information. "I always get a thrill from seeing the ideas of the Editorial Board come to life in a new issue of the magazine," she says. *@tiinasaaristo*

PÄIVI LAAKSO-KUIVALAINEN is Senior Editor for Key Touch, and is keen to see things from the end-user's viewpoint. In her free time she enjoys skiing, orienteering and other outdoor activities. *@lkpaivi*

SATU LAMBERG welcomes social and health care professionals as new TETRA radio users. TETRA use in hospitals has gained an early foothold in Scandinavia and is now spreading rapidly across the world. Secure communication and time-saving features like group calls enable staff to focus on their nursing and life-saving work.

JOUNI KEMPPAINEN has life-long interests in computers and technology and he now focuses on IT, global trends and new media. During his free time, Jouni likes hunting, fishing and photography. *@articrider*

TAPIO MÄKINEN is an award-winning and published photographer with a strong marketing background and wide experience in the mission critical world. He is an active (Klout 56) contributor to various professional social media forums. *@tapiomobile*

JEAN-MICHEL DUMAZERT juggles his time between work, family, scuba diving and being a local councillor. His packed schedule includes also contributing to Key Touch as our TETRAPOL correspondent.

KAI SCHLICHTERMANN joined Airbus Defence and Space in January 2016. Working as External Communications Manager in France, he delivers news to the trade press and writes insightful stories on PMR topics. When he is not working, Kai enjoys travelling, skiing, reading and discovering Paris.

OTHER VALUED CONTRIBUTORS INCLUDE: Tuomas Korpilahti, Lionel Marciano, Anke Sturtzel

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AIRBUS
DEFENCE & SPACE

Critical matters

WITH critical communications on the brink of a transformation, many organisations across the globe face some serious questions. What's the future of TETRA? How soon will public safety LTE become available? Does it make sense to wait for the promised public safety LTE solutions when there are no standards-based mission-critical broadband solutions yet available on the market?

We at Secure Land Communications, a subsidiary of Airbus Defence and Space, have proven our commitment to delivering safe and secure critical communications when it matters most. For more than two decades, we have developed digital solutions to serve our customers. Our experience means you can benefit from our expertise and with us, plan the way forward for your critical communications. As such, we want to continue to be a trusted partner long into the future.

PMR evolution, not revolution

The global security situation is more demanding than ever, making it crucial that the core of critical communications can be trusted.

PMR evolution for public safety and other professionals must meet three requirements. First, voice communications continues to be top priority. The second requirement is that current ways of working can continue unhindered. Thirdly, users and their organisations must get the new capabilities they need - sharing of rich media content in groups and giving more information to field commanders and command centers about the situations they face.

Success in this evolution will be based on long-term partnerships. Secure Land Communications can provide these partnerships, using a combination of our experience and competence in the mission-critical field.

At this year's Critical Communication World Conference and Exhibition, we demonstrate how our current products, together with future solutions under development, can deliver modern critical communication when it matters most.

Stepping towards the future

The Tactilon Dabat device, to be launched at the event, is a perfect example of a product that gives new capabilities to mission-critical users. The Tactilon Dabat does this because it combines the strength of TETRA and the intelligence of smartphones.

Find out more about the exciting new Tactilon Dabat device at www.dabat.com and you will see how the power of two really is better than one.

Olivier Koczan
Vice-president
Head of Secure Land
Communications

Contents

Your guide to **unforgettable Amsterdam**

The 18th annual Critical Communications World takes place in Amsterdam, Netherlands, from 31 May to 2 June 2016. In addition to networking in the global critical communications community, you may also get the chance to enjoy the beautiful city of Amsterdam, a city known as "the Venice of the North". Here are three things to do while in Amsterdam!

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iStockphoto.com/vwling

VAN GOGH MUSEUM

The Van Gogh Museum has the world's most extensive collection of art by Vincent van Gogh. Highlights include "Bedroom in Arles" and of course, the world famous "Sunflowers". The permanent collection also includes nine of the artist's self-portraits and some of his earliest paintings dating back to 1882.

Van Gogh's work is displayed in a timeline and you can view them while learning more about his life.

As it is a popular museum, be prepared to queue or buy a priority pass, although queues are shorter after 3 pm.

RIJKSMUSEUM

The museum is home to more than 2000 fabulous paintings from the Dutch Golden Age of painters such as Johannes Vermeer, Rembrandt and his pupils.

In addition to seeing artworks such as "The Night Watch" by Rembrandt and "The Milkmaid" by Johannes Vermeer, the museum transports you through the ages to experience a sense of time.

Throughout the museum's 80 galleries, 8,000 objects tell the story of 800 years of Dutch art and history, from the Middle Ages to Mondrian.

iStockphoto.com/GCShutter

PRINSENGRACHT

Amsterdam's three main canals, Prinsengracht, Herengracht and Keizersgracht, were dug in the 17th century. They form concentric belts around the city and the entire structure is known as the Grachtengordel. The canal area is on the UNESCO World Heritage List, earning Amsterdam its nickname "the Venice of the North".

Prinsengracht is the longest of the three main canals. Take a stroll or a bike ride along the canal for a perfect contrast to the hustle and bustle of the CCW Congress and Exhibition!

iStockphoto.com/ridjoe

When communication is critical

Across the Netherlands, professionals rely on their radios when communication is critical.

Guillem Vellut

Floris Oosterveld

FaceMePLS

AMSTERDAM RAI EXHIBITION AND CONVENTION CENTRE

Critical Communications World 2016 takes place at the Amsterdam RAI, a complex of conference and exhibition halls in Amsterdam's Zuidas business district. It gives its name to the nearby Amsterdam RAI railway station.

FIRE BRIGADE ZAANSTREEK-WATERLAND

The Zaanstreek-Waterland fire brigade has four operational units with 27 fire stations and posts across the region. The fire brigade comprises around 110 professionals and 660 volunteers.

AMSTERDAM AMBULANCE

Amsterdam Ambulance operates in the areas of Amsterdam-Amstelland, Zaanstreek-Waterland and Kennemerland.

iStockphoto.com/DutchScenery

FLORAHOLLAND

FloraHolland is a flower auction company with several auction houses. Well over 20 million flowers and plants are sold at FloraHolland every day.

REGIONAL POLICE

The Regional Police in Amsterdam is one of ten regional units of the Dutch National Police. It consists of four districts and has a total of 17 "robust base teams."

Regional Police of Den Haag consists of seven districts and has 29 "robust base teams."

GVB PUBLIC TRANSPORT, AMSTERDAM

The Gemeentelijk Vervoerbedrijf or GVB is the municipal public transport operator for Amsterdam, the capital of the Netherlands, operating metro, tram, bus and ferry services in the Amsterdam Metropolitan Area since 2012.

More than a phone, more than a radio

Smart.
Strong.
Secure.

TACTILON DABAT is the world's first smartphone with a full TETRA radio inside. This represents a huge leap in TETRA evolution.

Tactilon Dabat may look like a regular fully rugged smartphone, but it is ground-breaking: it also offers the special multi-purpose push-to-talk buttons familiar from Airbus TETRA radios. It is therefore comfortable in even prolonged use.

The large 4.7-inch touch-screen is ideal for sending messages and it is designed also for gloved touch. In addition, Tactilon Dabat offers the functionality once found only on TETRA radios. It can operate on any standard TETRA network on the 380-430 MHz frequency band.

Powered by a long-lasting, 4800 mAh removable, rechargeable battery, this rugged device is rated IP65 and IP67.

Audio processing functions let users hear others loud and clear, while mapping apps and GPS ensure that the control centre will know the user's position.

Tactilon Dabat has a still and video camera for capturing the action and TETRA groups for sharing images in a controlled, safe way.

The Hex mount system allows the device to be worn on the lapel for capturing video for the control centre or colleagues.

All information is kept private, encrypted and protected against threats at every level, making Tactilon Dabat the smart device for professional communication users.

Critical matters

From mission-critical push-to-talk over broadband to group video and messaging apps, Airbus Defence and Space used Critical Communications World 2016 to show the trusted way to PMR evolution and smartest integration.

www.securelandcommunications.com/ccw

➡ SMARTEST INTEGRATION

PMR + broadband – many networks

Smart-phones and PMR radios – many devices

Messaging, image sharing, video streaming, voice and data recording,... – many applications

And Tactilon® Suite tying it all together.
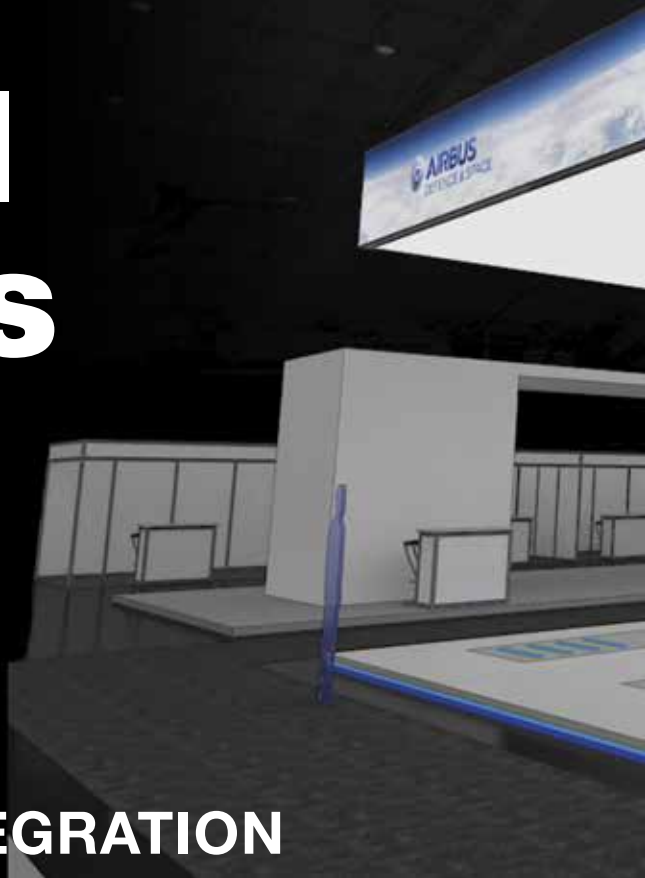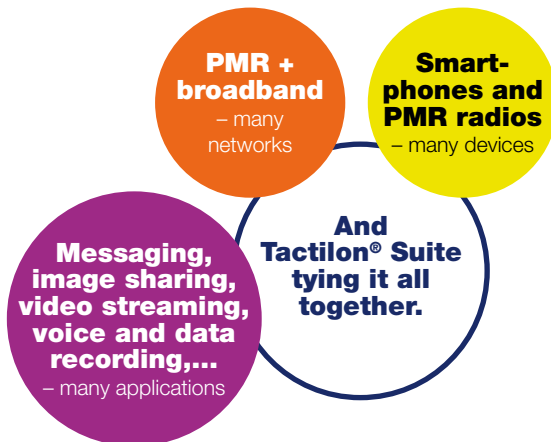
Today's professional communications world is a hybrid one, calling for the smartest integration.

A hybrid network is the way to get more data capacity for applications without losing the reliable voice, security and interoperability that PMR networks deliver.

Most professionals already communicate using many networks. They often have to use more than one device, and of course there are many applications to use, too.

Managing subscribers, security and services in a hybrid environment could get complicated. Tactilon Suite makes it simple because it is designed for just such an environment. In addition, it lets you confirm the identity and authorization of users, no matter which physical network they use in the hybrid system.

Visit the Airbus Defence and Space stand D.42

➜ PMR EVOLUTION

Public safety organisations in particular have to work in an increasingly challenging environment. A smooth PMR evolution can help guarantee a safe future for professional communications. It's also important for public safety organisations to continue to work in the ways they are used to while new capabilities are brought on line.

In practice, this means:
- Integrated control rooms are essential
- Group communication services with critical features must continue to be available
- Current ways of provisioning organisations, groups and users must be continued
- Provisioning of security must be ensured
- Field command capabilities must be maintained

A smooth evolution of professional communications, the trusted way to the PMR future, starts with Tactilon Dabat, the world's first smartphone with a full TETRA radio inside. Tactilon Dabat plays for both

Tactilon Dabat device

Tactilon Agnet for TETRA push-to-talk and mission-critical push-to-talk (MCPTT) over LTE

sides – TETRA as well as LTE.

Tactilon Agnet is the improved version of the Tactilon Suite TSA app. Tactilon Agnet marks the next phase in the evolution, which will deliver a mission-critical user experience. For example, the PTT on the screen is large enough to allow the user to touch it easily without looking. The app can also get bandwidth and priority in the LTE network, so critical information does not have to compete with cat videos.

Mission-critical push-to-talk (MCPTT) over LTE will bring next-generation communications for public safety and other professional users.

FIVE-A-SIDE FOR FOOTBALL MATCH COMMS

Large public events such as sports matches obviously need the support of police and emergency sevices. In our scenario, we imagine a football match with five types of professional participants needing to communicate.

The people in each role carry particular pieces of equipment and can use certain applications. They have all the possibilities of modern, hybrid communication at their fingertips thanks to the interworking of networks, technologies and devices.

These are just 10 examples of new ways of achieving smooth cooperation.

What's up with the queues outside?

Security people posted at the entrances use an instant messaging app to tell others the current queue length. "Entrance A: More than 30 people still queuing and the kick-off should be in 2 minutes". "Entrance C: Same here." "Entrance B: 15 in the queue here"

Postponed kick-off

Event Control makes a broadcast announcement, also heard on the speakers: "Kick-off will be 10 minutes late".

Man behaving badly

Security notices that a person is behaving in an unacceptable way. This requires either further questioning or that he is apprehended. Security needs the police to act on this.

Come save a life

Security calls paramedics to help with a person suffering from a seizure. They send the destination "Level 3, Stand 4, middle aisle" and a seating plan so paramedics can easily find the place.

Child found

An adult finds a crying child who cannot find her father. He gets in touch with the nearby paramedic. They shoot a short video clip of the child and send it to Event Control.

Attention units, there's a child missing her parents

Event Control sends the picture or the video to all people in the event perimeter. Where is the father?

Talk to the group

Teams can talk together in a group call, regardless of which device each of them is carrying.

Radio dispatching, Video application for the control room, Group multimedia messaging, Voice and data recording

EVENT CONTROL
Modern suite for dispatchers

What if...

What if different technologies could actually work together?
What if different communication networks really complemented each other?
What if people could use different communication devices and everything worked smoothly?
What if your user experience was truly mission-critical?
…That time may be closer than you think.

What's with this backpack?

A rookie paramedic spots a backpack without an apparent owner. He takes its picture and shares with security, asking for instructions on what to do.

You will see the rain

Exceptional weather is expected, as the Event Control notices. They broadcast the storm cloud formation animation clip to all security staff, to help them prepare. The game officials also get a message and are ready to stop the game if things get really bad.

Game over

The game is over and people are leaving the stadium. One of the exits is badly flooded because of the rain storm. Event Control makes a broadcast announcement to all security that exit C is not in use.

TACTILON SUITE APPS TETRA voice and messaging, Group messaging, group multimedia messaging, group video sharing

POLICE OFFICER
Wearable video camera
TETRA TH9 radio
Tablet

PARAMEDIC
Smartphone

FIRE / RESCUE
TETRA TH9 radio
Smartphone

SECURITY
Smartphone

EYE SOLUTIONS

A picture is worth more than a thousand words

They say a picture is worth a thousand words and when it comes in the form of real time video, it can be even more valuable.

Video and high quality pictures are seeing a dramatic increase in use. With authorities expected to respond to all kinds of incidents faster and more cost-effectively, video can offer many advantages.

Fire and rescue authorities are a case in point. They can use video to better manage missions remotely as well as offer greater personal safety. This in turn leads to more successful missions and makes the command and control of situations more efficient.

Assess the event as it unfolds…

Having a real-time view of the situation as soon as the first unit has arrived on the scene allows a better assessment. It also helps the commander assign only the relevant and necessary resources

…and when it's all over

The video will be automatically transmitted from the field unit in real time to the command centre and back to the field to the commanding officer for simultaneous viewing and is also automatically stored. As well as being used during the event itself, real-time mobile video can be used after the incident to help reveal its cause. The video can be used in evidence or for analysis at any time.

A real-time mobile video system provided by Eye Solutions Ltd is currently in operational use, among others, at Tampere Region Rescue Department, Finland, where vehicle-mounted mobile video terminals with an experimental drone are providing real-time visibility for the Fire and Rescue's Situational Control Centre.

As most new command cars and fire engines now have cameras installed, why not use them in the most effective way possible – in real time!

www.eyesolutions.fi
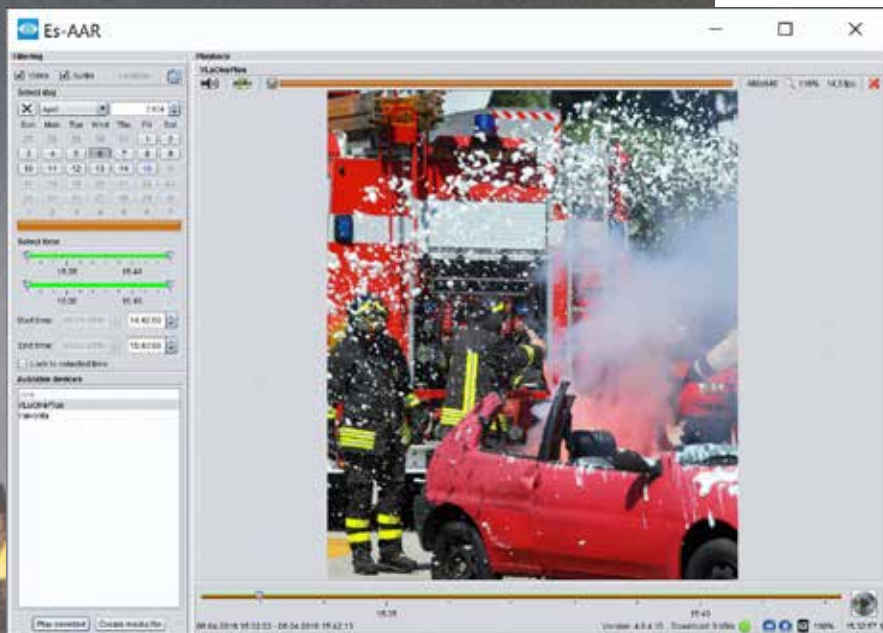
to safeguard lives and bring the incident to a timely conclusion.

Good examples of these are chemical accidents, forest fires and other large scale incidents where the situation is rapidly evolving. In such cases, the rescue centre can monitor development of the situation using a real time video from the scene and provide field units with information on chemical substances, the precautions to take and help to conduct the mission safely.

Got your suspect on video?

> Suspect says he was in demonstration Tue 15th at 2–4pm Market Square. Any video material?
> 17.39

> We have 4 clips. Want to check them?
> 17.40

> Are time and date visible?
> 17.40

> You can see time and date second by second. Compiling. Will send.
> 17.41

> Thanks 👍
> 17.41

Claricor Cell is a complete radio communication network that can be set up where you need it - on an industrial site, in a storage area or a warehouse, or at a harbour.

Within minutes, your people can be communicating over their new radio network, with privacy and security guaranteed.

SET UP PRACTICALLY ANYWHERE You don't need a special room in which to set up Claricor Cell equipment. The hardware is installed in outdoor boxes and with the covers closed, it has IP65 protection against dust and water.
- IP65 - IP rating during transportation and storage
- IP54 - IP rating while in use

GET CONNECTED – IT'S EASY Claricor Cell offers several transmission options for the base station and the TETRA switch - fixed line, IP radio link, commercial LTE and satellite.

ADDITIONAL CAPACITY The Claricor Cell can also be readily used as a mobile base station.

Claricor® Cell
– deploy a network in minutes

When people need to communicate with each other, especially in teams, a professional mobile radio network is a great choice. And when choosing your PMR network, you won't go wrong with Claricor Cell.

CONVOY PROTECTION For convoys, Claricor Cell can provide a continuous, reliable connection, safe from eavesdropping.

MOVING TEAMS Do you have work crews who move from place to place? Set the Claricor Cell up in a car or van and the communication network moves with the crew.

RUNS ON ALMOST ANYTHING Claricor Cell has both AC and DC power options. And because it is a mobile solution, it runs on a wide variety of power sources. Get power from diesel generator solar panels, a battery on a vehicle, a power grid, or backup batteries, for example.

7 reasons to switch to the TPH900 radio

They say, "If it ain't broke, don't fix it." Yet, even though your trusty Tetrapol radio gives you reliable service day in and day out, maybe you could be getting more. After all, mobile phones have innovative and useful features in each new model, so why should Tetrapol radios be any different?

If your fleet is based on P2G or TPH700 radios, check out these seven reasons to opt for the modern TPH900 instead.

1 IT'S FAMILIAR.

The TPH900 handheld keeps the most popular features from both the P2G and the TPH700 - shortcuts and programmable keys. With these features close at hand, the radio will feel familiar as soon as you start using it.

2 IT'S EASIER ON THE EYE.

The display is much wider than on either the P2G or TPH700. At a glance, you can access to all the main information - radio connectivity, battery status, features presented by icons and several others.

3 IT'S LONGER-LASTING.

You can get 13 hours operating time from the TPH900 without changing or recharging the battery. Even with Bluetooth and GPS active, the battery will work for 11 hours.

4 IT'S FIVE TIMES FASTER!

Put a fresh battery in the TPH900 and the radio will be ready for use in only 18 seconds. Even when you switch on a TPH900 radio that is still charging, you only have to wait 23 short seconds and the radio is ready.

5 IT'S SAFER.

The new Man Down function could save your life. Your radio recognises if it stops moving or remains horizontal for too long and triggers an alert. If you don't respond to this alert the radio automatically sends an emergency call over the Tetrapol network to your control center. In a few minutes, your colleagues could be on their way to rescue you.

6 IT'S BETTER TRACKED.

In the P2G and TPH700, it was the remote speaker microphone that provided the GPS location. Now, the GPS device is integrated into the TPH900. The radios can be tracked with an Automatic Vehicle Location application and can also show you your current GPS coordinates.

7 IT OFFERS BETTER AUDIO WITH BLUETOOTH.

The Bluetooth 2.1 chipset is the most secure solution for handling audio profiles. TPH900 can handle simultaneously two connections, one audio connection based on the HFP profile and one data connection based on SPP profile. This provides great flexibility however you want to use the radio, whether on a motor bike or during a surveillance operation.

Keeping in touch
from the ends of the Earth

From its base on an Antarctic island, the Spanish army can call home using its new Tetrapol network.

Barren but beautiful, Deception Island lies at the southern end of the South Sandwich Islands, just north of the Antarctic peninsula. The ring shaped island forms the caldera of an active volcano and the waters of its sheltered harbour can reach a surprisingly balmy 70 degrees centigrade.

Researching a harsh landscape

Yet, with an average air temperature of -3 degrees, this is a harsh place to live and work.

For 25 years it has been the site of the Gabriel de Castilla research station, run by the Spanish government. Supporting the scientists at the base, the Spanish army provides logistic and communications services.

A priority for the 2015/2016 expedition season was to improve the communications, replacing the existing analogue system with a new digital network. As well as keeping people in touch as they move about the island, it also needed to provide easy communication with Spain.

Pinpointing people on the island

Working with Airbus Defence and Space and supported by companies such as ISDEFE, Telefonica and Raytheon, a Tetrapol system was installed which uses two independent digital repeaters to provide two highly secure tactical cells. This provides coverage over 98% of the island's area and allows the position of radio users to be tracked and displayed in the operations center.

The Tetrapol network is also integrated with other systems and with a PABX, allowing communication with Spain through a satellite link.

Tetrapol goes deep

The world's longest railway tunnel, the Gotthard Base Tunnel of Switzerland, has been under construction for 10 years. When it becomes operational this year, the 57 km long tunnel will be covered by a Tetrapol network, helping keep rail passengers and staff safe in the event of accidents.

At 57 km long and up to 2,300 meters below the surface, the Gotthard Base Tunnel system is the world's longest and deepest railway tunnel. Due to the huge length of the tunnel, a secure and stable radio communication system is vital to coordinate the work of emergency services in the event of a technical failure of a train, a fire in the tunnel or on board a train.

Gotthard Base Tunnel incorporates two single track tunnels running parallel. Since 2015, both tunnel pipes have been equipped with the POLYCOM system. Based on Tetrapol and supplied by Airbus Defence and Space, POLYCOM is a secure nationwide radio communication system for public safety and military organisations and is used by both Switzerland and Liechtenstein.

Police, fire fighters, first responders and border guards use the system in the Gotthard tunnel, while it is also used by the firefighter and rescue trains of the Swiss Federal Railways.

There are also emergency stop stations in the tunnels for trains that cannot be moved.

Zurich

Geneva

Erstfeld 7.8 km

Amsteg 11.3 km

Sedrun 9.2 km

Faido 12.9 km

Gotthard Base Tunnel 57 km

Bodio 15.9 km
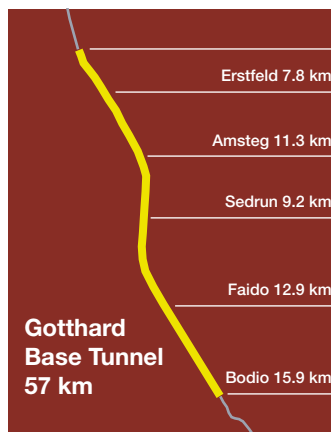
A demanding project…

The construction of the tunnel is managed by AlpTransit Gotthard Ltd, while the installation and commissioning of the tunnel radio project was the responsibility of Atos Switzerland, the main contractor for POLYCOM.

The system contains 18 Tetrapol TSS400 Transceivers operating in simulcast mode synchronized with GPS over fibre optic cable, the first implementation of its kind in Switzerland.

For security reasons, both parallel running tunnels have an independent radio communication system that consists of six radio cells, each of which includes two independent radio base stations. Coverage in the tunnel is ensured with a leaky feeder cable that receives the radio signal from two directions. This means that, even if some parts of the system are damaged by fire, communication would still be possible on both sides.

One major challenge was the synchronisation of the many transceivers with the compensation of the different signal propagation delays, caused by the different cable lengths.

… done in three phases

The project is being carried out in three phases, with phase 1 being a proof of concept based on a trial run in 2013 using an existing 10 km long tube.

Phase 2 saw the roll out of radio infrastructure and integration into the existing Tetrapol system and user groups. Since the project was one for demanding governmental users, an extremely thorough testing programme was carried out. This included test trials by Swiss railways and the ministry of transport. System validation work will be completed in mid-2016.

Phase 3 will see handover to the customer, an event scheduled for June 2016, with the tunnel set for full commercial use by December.

As well as the tunnel itself breaking records, the immense depth at which it operates makes the Tetrapol system in the Gotthard Base Tunnel probably the deepest of its kind in the world.

Tetrapol
ready for the future

For 26 years, Eric Lorfeuvre has been deeply involved in Tetrapol-based PMR technology. The 55-year-old Head of Tetrapol Solutions at Secure Land Communications in Elancourt, France, tells us why users are satisfied with Tetrapol – and how they can easily upgrade their PMR systems.

Mr. Lorfeuvre, you were involved in the development of Tetrapol technology in the 1990s and its successes at that time. Why is Tetrapol also a solution for the future?
Tetrapol is evolving in the same way as other PMR standards. Tetrapol IP offers an increase in capacity, reduces operational expenses and is compatible with all legacy services and interfaces. Users can also still benefit from the existing outstanding security features. Secondly, the IP version of Tetrapol opens up the possibility to add certain LTE features.

Which LTE features are these?
We will soon offer video and picture transmissions on Tetrapol, as safely and reliably as Tetrapol's mission critical communication today. We invest in Tetrapol's development and also help develop standards for LTE-based Tetrapol communication. In parallel, we examine our technical capability in a pre-standard product project.

What are Tetrapol's benefits for users?
The radio coverage of Tetrapol is very good. The coverage within the cells is larger and is well suited to countries with a low density of users. And when you switch to direct mode communication between radios, Tetrapol systems offer great availability, achieving

> **"It's all about providing resiliency, stability and security, regardless of the conditions."**

a radius of about 4 kilometres. But finally, it's all about providing resiliency, stability and security, regardless of the conditions. This is crucial for the police or other government bodies. Overall, our customers are very satisfied with our Tetrapol networks.

What other capabilities are possible?
We have also come up with new applications to meet user needs, such as users' localization. An other example from Switzerland is a system to warn the population of an emergency, with our solution replacing the old sirens.

What about extreme situations, such as natural disasters or terrorist threats?
Looking back on the terrorist attacks in Paris, the Tetrapol systems worked perfectly and supported the rescue missions. Tetrapol is very stable and reliable. Why should an operator change the PMR system? It is much more efficient to upgrade a Tetrapol network, because operators don't have to build a new infrastructure, buy different radios and retrain their personnel. Finally, a modernized Tetrapol system can run for 15 years or more and can even incorporate LTE-features in the future.

Mexican story of secure communication

25 years ago - an entire generation - Secure Land Communications started its activities in Mexico. Over the years, the company has gained wide experience in installing large networks in that country. Looking ahead, Tetrapol has a bright future as it offers users the chance to migrate to LTE technology.

The future

2012

2005

2002

1999

1996

1991

In the beginning
In 1991, Secure Land Communications' predecessor Matra Communications enters the Mexican market, offering a secure communication infrastructure to help deal with disasters.

An important visitor
In the summer of 2002, Pope John Paul II arrives in Mexico, a visit only made possible with a secure communications network.

A secure summit
June 2012 - world leaders meet at the G20 summit in Los Cabos. Again, the IRIS network helps the event go smoothly.

A testing time
The IRIS network aids reconstruction efforts after one of the most dangerous hurricanes ever recorded made landfall on the Yucatan Peninsula.

First contract
Mexico's national security agency, CISEN, signs a contract with Matra Communications.

Network up and running
The nationwide Tetrapol network IRIS (Interconexión de Redes Integrales de Seguridad Pública) becomes operational.

The future
Throughout this time, Secure Land Communications maintained its presence in Mexico and supported IRIS with services. The story of Tetrapol in Mexico will be continued, as the federal government will decide on IRIS' modernization soon. With a new version of an IP-based Tetrapol network, this would give Mexico the option to switch completely to secure LTE services in the future.

The new Head of Secure Land Communications Latin America, Fred Gallart, based in Mexico City, will be making sure that Tetrapol technology offers many possibilities to integrate LTE services in the coming years.

THE TRUSTED WAY

Wired for sound … and data

Recording and analysing emergency voice calls is not only useful to learn how to improve responses, but is often mandatory for public safety organisations. Here's how Estonia's ESTER public safety network is doing it.

Public safety organisations are usually required by law to record the voice conversations transmitted over their networks. They also find it useful to record the transmitted data. Whether to get the right information during a stressful event, to help in training or to have legal evidence, it's important to know exactly what was said or transmitted by whom and when.

As well as being useful, it's also very often a legal requirement. An example is Estonia's Ministry of the Interior (MoI), which controls all public safety organisations in the country. It requires these bodies to record what they transmit and receive. To help them do this, the MoI wanted to add a centralized recording solution to its ESTER network, originally supplied by Airbus Defence and Space and owned by SMIT, the Center for Information Technology and Development in Estonia.

SMIT had several criteria that the solution must meet. It had to:

- Be based on Microsoft Windows and able to monitor, record and play back encrypted audio and metadata for hundreds of concurrent users.
- Offer high availability of 99.9 percent and be usable in VMware virtual environments.
- Be scalable to accommodate changing needs or growth in usage.

EVOIPneo fits the bill

To meet these requirements, SMIT selected a solution from recording and analysis specialist ASC. Known as EVOIPneo, the solution had the major advantage at the time of being the only recording solution certified by Airbus for TETRA release 6.0. TETRA integration allows several control centers to use the system without degrading transmission security.

Known as EVOIPneo, the ASC solution also allows each organisation using ESTER to access only their own recordings. Each agency can create its own recording configuration, but the fundamental settings are established by SMIT.

Unlike in many networks where the conversations can only be retrieved

within a far larger chunk of information, TETRA networks from Airbus make it possible to retrieve particular conversations, ones that the organisation is authorised to retrieve.

Cutting response times saves lives

EVOIPneo helps SMIT conduct post-incident analysis and streamline its processes. This is a critical matter because shaving seconds off response times can make the difference between life and death in an emergency.

Supervisors can add comments to calls and easily email recordings back and forth. Recordings are tamper-proof, and timestamps are accurate to within a hundredth of a second. The ability to recognise voices and emotions can assist with investigations.

Juergen Lasn, a Senior Expert in the Estonian Government, says: "One of my favourite features of EVOIPneo is 'Last Call Repeat.' This function lets the responder replay the current call, even while the caller is still on the line."

Since callers often panic or become incoherent during stressful situations, Last Call Repeat can help the dispatcher understand the caller. This is critical to a successful response.

The ESTER network covers the entire country with about 100 base stations and one switching center. In addition, five base stations belonging to Finland´s VIRVE network are located on Estonia´s north coast to help cover the Gulf of Finland and to ensure intercommunications for the two countries´ border guards. About 10,000 users rely on ESTER for their communications, including police, rescue services, medics, border staff and prison officers.

"ASC's communications recording solution empowers our public

safety agencies and makes them the equal of any nation in the European Union," adds Juergen Lasn. "Our dispatchers receive the best training possible and our agents can focus on the situation at hand without worrying about the supporting infrastructure."

DID YOU KNOW...
you can swap the THR9 Ex battery in hazardous areas?

Special situations require special equipment. And when professionals are working in hazardous areas, they need capabilities only available with the Airbus THR9 Ex radio. That's because professionals in the oil and gas, petrochemicals and steel industries, workers on rigs and in airports and harbours, and, of course, firefighters need their radios always powered up, ready to meet any needs.

Did you know that you can change the THR9 Ex's battery and accessories in areas at risk from explosive gases?

Also, the red battery features a new locking mechanism. Easy to use while wearing gloves, the locking mechanism ensures the battery will not accidentally become detached from the radio. It also means you can use the radio without a leather case or any other added protection. What could be easier or more convenient?
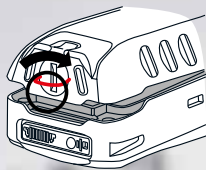
The THR9 Ex radio from Airbus is the only ATEX radio with this capability. It's a big advantage because without it you would have to waste time moving out of the explosive area whenever you wanted to connect an accessory or replace a flat battery.

Around 350 competitors shouldered their rifles and took to their skis at the recent biathlon world championships 2016 in Oslo, Holmenkollen in Norway.

Tying the event together was a TETRA network and 260 of TETRA radios. They were connecting a small army of support staff, including doctors, drivers, security staff and the jury to ensure a smoothly running event.

"The organising committee relies on a radio communication infrastructure that has stood the test of time at other large sports

TETRA KEEPS STAFF CONNECTED AT BIATHLON WORLD CUP

events", says Erik Trosby, chief of communications at Oslo2016, the local organising committee.

More than 25,000 visitors a day saw the event, which was supported by Airbus Defence and Space as TETRA network provider. The company also successfully supported the Nordic Ski World Cup in Falun, Sweden in 2015 with similar communication services.

Manage your radios

Programming and managing TETRA radios takes time and skilled people – so instead of doing it yourself, why not outsource it?

This is the idea behind Taqto® as a service, provided by TC Connect Sweden over the country's Rakel public safety network. TC Connect takes on responsibility for parameterizing and programming customers' radios, ensuring that each has the right programming.

Since its launch last year, the service has continued to attract customers with its speed, convenience and ability to cut costs.

One of these happy users is Stockholm County Council,

remotely

which uses the service to manage its fleet of TH1n radios used in their emergency treatment department. Mikael Abbemo, project leader for the implementation of the service in the organisation says: "Taqto as a service plays a key role by managing our Airbus Defence and Space radios. Since in our business we work with emergencies, time is a critical factor. With Taqto as a service and TC Connect's excellent support, we can quickly reconfigure the radios in

the field, without interrupting our day-to-day operations."

How does it work?

When a customer needs to change anything in their radio programming, they simply inform TC Connect, which adds it as a programming task for the radios in question. Due to a built-in feature in Taqto, an SDS message is automatically sent to the radios to indicate that they should be reprogrammed. Next time the radio is connected to the system, the latest configuration is fetched for the radio in question and it will automatically be updated with the new parameters. All information is saved in Taqto central database, making it very easy to see the cur-

rent status of a radio. A report in the form of an Excel file can also be created with a summary of the status of all the radios.

The only thing the customer needs is a PC with Taqto client software and programming interface for the radios. TC Connect also provides a Taqto programming case consisting of a PC with a 3G/4G-modem built into a shockproof casing that can be used in the field. The client PC communicates with TC Connect's central Taqto server through a VPN-tunnel via an IP-connection, for example, an Internet line or even a mobile 3G/4G broadband solution.

With this method, remote programming of the radios is made absolutely secure, a necessity for accessing mission-critical devices such as TETRA radios.

When devices must stay in the field

Sven-Erik Wahl, solution manager, described what Taqto features and benefits can really mean for a customer: "A customer wanted to change some parameters in radios already delivered. The radios were already out in the field and

to send them back to our workshop for reprogramming was not an option. We therefore suggested our Taqto programming service to the customer. To use it, they only need to start their PC and it automatically establishes the connection and logs in to our server. Once the radios were connected, we did the reprogramming remotely.

"Using Taqto, I did the work on my laptop in a car on the way to a meeting. Without it, I would need to visit the customer to do the work, which would mean a whole day including travel.

"With Taqto as a service, the programming of the radios is really simplified. Because there is no need to send the radios to our workshop for repro-

gramming, customers don't have to be without their mission-critical devices, which is sometimes an almost impossible challenge. Taqto as a service is a real win-win solution for everyone!"

Why Taqto as a service?

Taqto is a client software and programing interface for TETRA radios. Already a capable tool, providing it as a service unlocks even more benefits, including:

Speed - programming can be done at the customer's premises, meaning there is no need to send the radios for programming

Easy handling - the end user simply puts the radio in the programing slot and it is automatically updated

Cost effective - no need for specially trained people to do the reprogramming

Complete overview - gives an instant status of all the radio fleet

ASTRID
USER DAYS

5–6 October 2016 – 6th edition
Stayen football stadium in Sint-Truiden, Belgium

During these two days, experts in the field of security and emergency communications share their knowledge with you in workshops and seminars. Providing information, inspiration and discussion opportunities, you can attend for either one or both days.

With over 1,500 attendees and 50 specialised exhibitors expected, the ASTRID User Days is truly an unmissable event.

This year's edition will host an Innovation corner and Drone corner.

Registrations are open via www.astriddays.be

astrid

Professional users
hungry for more mobile apps

Professional radio users have taken mobile apps on board and are ready for more.

That's the message of the latest Airbus Defence and Space mobile app survey, which looked at both the experience and the expectations of users from professional organisations across the world.

From police forces, fire brigades and ambulance services, to border security, utilities and industry, professional users are ready for mobile apps. Many are already using apps in their daily routines, while 75% are planning to introduce them in the future.

Messaging and multimedia content sharing are today's most common apps, being used by 43% and 34% of respondents, while positioning applications also show good potential for the future.

When it comes to the operating system (OS), there is room for developers in all the popular choices, as professional users have no overwhelming preference. Although Android is the most popular, Apple iOS and Windows OS also have big followings.

Get your copy of this report "The future for professional mobile apps - What app developers need to know about the professional user market".

A place for rugged smartphones

As might be expected, consumer smartphones are the most popular device to use for accessing apps, with 73% of respondents saying they use these in their daily work. Laptops are also common access devices, while there is also a significant demand for rugged devices that can withstand the harsh conditions of daily field use. There may be a burgeoning market for rugged smartphones and the apps that can run on them.

When it comes to the way they perform daily tasks, professionals are not too concerned about the need for apps to fit the way they operate – they are willing to change to fit the app.

And what about the next big thing in apps for professionals? Users showed a big interest in positioning apps, while there is still good market potential to develop messaging apps.

What app developers need to show

Of course, app developers need to know what these users look for in an app and for the most part, it is security and ownership of data, a criterion not often met by apps. Current apps are typically used ad hoc, with little or no integration with existing methods of working. These are good pointers for developers interested in addressing the professional user app market.

Other must-haves include an app developer with proven experience and a long lifecycle for the solution.

With the majority of organisations planning for mobile apps, the potential for growth in the mission-critical app market looks rosy.

Historic base station
hangs up after 18 years of loyal service

The world's first TETRA base station in a commercial network has delivered 18 years of continuous use. Its historic achievements include chalking up the first TETRA call over a commercial network.

Back in 1997, this hero of base stations became the first in its network for energy company HelenNet. Its years of loyal service have included operating without complaint in a damp underground chamber in Laajasalo, Helsinki, which was previously used to store ammunition in the Second World War.

Highlights of its career included being struck by a bolt of lightning, melting its transmission cable. After switching to a new cable, the base station started working again as if nothing had happened.

The base station started with TETRA software release Rel 1.6 and got as far as Rel 6 before its recent retirement.

Kalle Marttila and Heikki Lahtivirta were on site also when this base station handled its first call.

Sometimes it's better not to talk

Important information must be communicated clearly during a life or death incident. Voice isn't always the optimal choice. A new way to run triage is a good example.

Imagine the scene. There's been a major incident. Many people are injured. As first responders arrive they must secure the situation quickly and accurately to save lives. At the centre of the response are the paramedics and doctors who need to perform immediate triage to prioritise treatment for those most badly injured.

Counting casualties

Triage is a vital part of responding to accidents and injuries and the conventional process involves first responders assessing the injuries to victims and using coloured labels to indicate which people are most seriously injured.

Counting the numbers of casualties usually involves a paper and pen based tally system, with

numbers of each casualty type reported to the hospital over voice radio. The problem is that a large number of casualties could lead to inaccurate recording – some patients may be recorded twice while others may be missed. It's easy to make mistakes under pressure. Further errors can be introduced when communicating these numbers to the hospital from a noisy and often chaotic incident site.

It's little surprise that voice is used in this way because TETRA users are very comfortable with the system for voice communication. Voice is the most powerful way to control groups and individuals in crisis situations, particularly when groups can be created and modified according to the situation and the organisations involved. Yet, using the voice channel to deliver well-defined routine information can have drawbacks. Often, using data would be much more effective and would not disturb critical voice communication.

Triage over SDS

A new and more reliable method of completing the triage process is to make use of the data capabilities of TETRA radios. As soon as a casualty has been classified in the primary triage stage on site and is ready to be transported for treatment, a responder will scan the information from the triage label with a device. The information moves as data through the TETRA system and to the command system. This has the advantage of being much quicker and very accurate.

Moving this important information from the voice channel to the data channel creates a flow of information based on real-time facts. It is delivered from the field to the command and control center, as well as the ambulance and hospital. Presented in a fully electronic format, this data can be viewed on the web, meaning anyone who needs the information can be given access by the command center.

Tried and tested

The digitized triage application has been shown to increase efficiency and improve operations in mock crisis situations in Finland in 2015. Trials will continue during 2016, for example in Kuopio and Mikkeli.

Lauri Sandman, Medical Officer EMS, Etelä-Savo Health Care District Finland, says:

"We can already see that digitization of the triage process improves patient safety and provides data based on facts from the first phases of the process. This helps achieve successful treatment for patients and also records data to help us improve the process."

www.exomi.com
www.stopnoise.fi

Which radio is this **experienced user's favourite?**

When you have been using TETRA on a daily basis for 12 years, you know a thing or two about what works best. Actually you know a lot.

Accident and emergency department nurse Ari Nikki at Finland's Satakunta First Aid Centre is a true trailblazer, having used TETRA radios in critical work from as early as 2004. He knows how TETRA radios should perform in just about every situation that nurses face.

So which radio does Nikki choose?

He uses the Airbus TH9 handheld TETRA radio. "The TH9 delivers even better communications and support than my earlier TH1 device. The TH1 was slightly smaller, but I find the TH9 just as convenient to handle even though it is very robust for daily use. The hospital district handles about 8,000 alarms each year and I can get alarms in both voice and SMS, making its usability the best for the centre's needs," says Nikki.

"The TH9's biggest benefit is its reliability. I also like the radio's hands-free capabilities, which makes it very convenient and efficient when making regular group calls. In my experience, the TH9 is the radio I would recommend to my colleagues and to other hospitals," he concludes.

"The TH9's biggest benefit is its reliability."

Whop, whop, whop – the unmistakable sound of an approaching air ambulance helicopter means help is on the way. Good communications are essential in these situations, making TETRA radios the most important technical device in the operation, says Anesthesiologist Juhani Tavasti, chief of the emergency unit at Hämeenlinna Central Hospital and emergency doctor in FinnHEMS 20 helicopter base in Finland.

"TETRA radios are a critical part of the team's work on every mission outside the hospital and I think should be essential for use inside hospitals too. In my experience, TETRA brings many benefits that make communications more efficient in a wide variety of situations," says Tavasti.

"With effective TETRA communications available everywhere, healthcare professionals would be able to take better care of their patients at all times. In fact, one of the best aids in my work that I can imagine is to have my TETRA device with me at all times."

"TETRA brings many benefits that make communications more efficient."

In touch…
in the air…
in the ward

Tweet this ...
Not that

Get the best advice before investing in a radio network.

Long winded explanations often fail to give us the best advice on how to proceed when contemplating a major purchase such as a radio network. Or in other words, shorter can be better.

Today, advice is often summed up in 140-character chunks! So what good and not-so-good advice could one give in Twitter-sized messages?

Tweet this:

In addition to the system's current capabilities, take a good look at the longer-term roadmap #radionetwork

Why this is sound advice:

When looking at a technology investment, you will not want to be stuck with a system that won't be developed. That's why the supplier should present a credible plan for how the solution will evolve - how the network will be developed and what the financial consequences will be.

Tweet this:

Proven references and long-term commitments mean that the supplier can be trusted to deliver.

Why you would want this advice:

The final question is always, who can I trust to deliver? Sanctions in the contract can never completely cover the lost time and effort if the supplier fails to deliver. You would not want the network project to fail or even to suffer a delay.

Not this:

It's best to choose a system which meets req.s and whose purchase price is the lowest! #radionetwork

Sometimes short is not so sweet.

This tweet may look good, but is it really offering the best advice? Your investment-savvy consultant should use more than 140 characters and say this instead:

> It is natural to look at the price tag of the offered system. What you also should realize is that the purchase price is usually only 20% of the total cost of ownership of a radio communications network over just ten years.
>
> Therefore, you should look at how much money you need to spend on the system during its lifetime. How much it will cost to bring the network into use, to operate the network, to run it, and so on.

If you want to know more about the issues to consider before deciding on your new radio network, download the document "5 things you need to know when investing in a new radio communication network".

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radio

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