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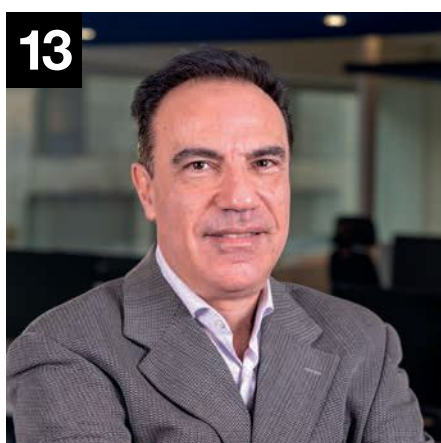*Cover credit: Adobe Stock/Radomir Jovanovic*

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JUNE 2025

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John Carlin PenrithMRT_broad view

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The big issues

CCT editor **Philip Mason** introduces the latest issue, published in advance of CCW 2025 in Belgium
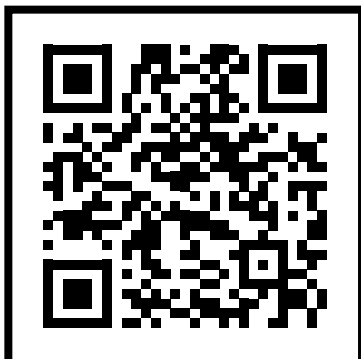
Welcome to the latest edition of *CCT*, published just prior to the latest iteration of Critical Communications World, which is taking place in Brussels.

Expectations are sky-high for this year's event, with TCCA anticipating many visitors, and some of the highest numbers of exhibitors ever to grace the show floor. More to the point, however, are the historical conditions under which the show is taking place.

Europe is currently a veritable hotbed of activity when it comes to the move towards nationwide mission-critical broadband, after all, with the most significant recent development arguably the UK Home Office's decision to award the ESN user services contract to IBM.

Another European national entity whose move towards broadband is picking up pace is ASTRID in Belgium, which also just happens to be this year's CCW host operator. Turn to page 12 for our exclusive 'big interview' with its director general Salvator Vella, during which he goes into detail about the network's future direction.

The organisation is also featured in this issue's focus on physical network infrastructure security, particularly as it relates to public safety. Head to page 20 for insight from TCCA on the subject, while ASTRID's technical director Christophe Grégoire talks about resilience and redundancy when it comes to that network.

Another important topic for the sector is the ongoing evolution of emergency calling towards what is often referred to as 'Next Generation' 911/112/999, depending on where you are in the world. Turn to page 16 for an in-depth report on global uptake of the technology, as well as the cultural and regulatory changes necessary for it to be embraced in full.

Finally, head to page 28 for an account of a virtual roundtable session taking place between some of the most talented young engineers in the sector. It's an interesting and wide-ranging discussion, as well as one that should also challenge the industry across any number of areas, not least its willingness to incorporate new points of view.

With all that said, all that is left is to look forward to Critical Communications World itself, a preview of which can be found right at the back of the issue. As ever, the *CCT* team will be present across the course of all three days, reporting, networking and enjoying all the hospitality that Brussels has to offer. If you're around, please do come and say hello.

Enjoy the issue.

Philip Mason, editor

Who, what, where

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John Carlin PenrithMRT_broad view

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Thuringian police update control centre tech

Mountain Rescue England and Wales buys SARCALL

Ericsson providing major sailing event with private 5G

Frequentis Germany has won the contract to "plan and supply" the operations and control centre system for the Free State of Thuringia police.

According to a statement, the company will be responsible for the installation and commissioning of all system components. This includes Frequentis's own 3020 LifeX communication system, as well as an operations control system from T-Systems Information Services, and the IT and network infrastructure provided by Siemens AG.

Discussing the contract, a spokesperson said: "The Thuringian police will be provided with a state-wide standardised and future-oriented solution for emergency call-handling and managing police operations in daily service and special situations."

Mountain Rescue England and Wales has purchased SARCALL Limited from its creator, John Hulse. The SARCALL system is used by mountain rescue across the UK, as well as by numerous partner agencies.

The technology – according to the SARCALL website – is designed to: "Enable users to easily interact with a range of client devices such as smartphones, tablets, PCs and terminals, to suit particular operational requirements. [It does this] through a secure web interface."

Hulse, who is a specialist member of Ogwen Valley Mountain Rescue, said: "It is currently used to log incident availability and activity, with integrated mapping and other functions, and to ensure consistent awareness for all partners in a search or rescue situation."

SailGP has chosen Ericsson as the global technology supplier for its 2025 season. According to a statement from the company, it will provide teams and personnel with "seamless, high-quality 5G connectivity, improving fan experiences and race operations.

"The roll-out will also support umpires via live camera streaming from competing vessels, as well as insights into team locations, tactics and strategy."

Discussing the deployment, a spokesperson for Ericsson said: "Split-second human responses made by SailGP athletes make the difference between victory and defeat.

"To support those decisions, each team will have access to the fastest connectivity possible under some of the most challenging physical conditions."

AUSTRALASIA

New Zealand coastguard updates comms

The New Zealand city of Nelson's coastguard organisation – known as Coastguard Nelson – has engaged Tait to provide a replacement for the legacy communications system used by its personnel.

Discussing the move, a Tait spokesperson said: "Struggling with an unreliable analogue system, the organisation decided to upgrade and take advantage of the benefits of a digital Tait DMR T3 network."

The spokesperson continued: "As a final piece to the communications puzzle, the 35-strong organisation has now committed to upgrading their dispatch to an Omnicore express radio dispatch console.

"The upgrade transitioned their communication system from an analogue to a digital system, using radio over IP."

SOUTH AMERICA

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Gendarmería de Chile rolls out TETRA

HMF Smart Solutions has been awarded the tender to implement and manage a TETRA system for Gendarmería de Chile. The deal took place through the company's office in Chile.

According to the company, the contract is worth more than US$13m. It ensures the provision and management of an Accessnet-T IP TETRA trunked system for 72 months in the Metropolitan, Valparaiso and Biobio regions.

Discussing the roll-out, a spokesperson for HMF Smart Solutions said: "This contract reaffirms [our] leadership in the mission-critical communications sector in the Chilean market. [The deal consolidates our] position as a benchmark in advanced technological solutions."

NORTH AMERICA

FirstNet appoints new CEO and executive director

Mike Cannon has been named as the executive director and CEO of the First Responder Network Authority, otherwise known as the FirstNet Authority. He previously served as the organisation's chief counsel.

FirstNet Authority acting board chair Renee Gordon said: "A seamless transition in leadership is very important right now, and I am committed to supporting Mike Cannon's transition into this role to ensure the mission for first-responders has zero interruptions.

"The Board looks forward to collaborating with Mike as the FirstNet Authority network continues to serve the needs of public safety.

"We will partner with Mike on future network investments, strategic goals and making further improvements to support first-responders nationwide."

News round-up

European Commission: cross-border comms vital for security

EUCCS Project has been recognised by the European Commission in the new EU Security Strategy. EUCCS is the acronym used for the European Critical Communication System, which aims to facilitate the equivalent of cross-border broadband roaming for European emergency services.

According to PSCE Europe, areas where the project "directly aligns" with European Commission security objectives include strengthening crisis communication capability, integrating "hybrid threats" into planning scenarios and developing a European crisis management architecture.

Discussing the project, a spokesperson said: "The European Commission, under the leadership of President Ursula von der Leyen, has published its new security strategy for the European Union, 2025-2027, and we are honoured to be explicitly mentioned.

"This official recognition underscores the strategic importance of our initiative within the European security landscape. EUCCS stands at the intersection of priorities defined in the security strategy [ProtectEU] and the newly adopted EU Preparedness Strategy.

"This is aimed at strengthening the European Union's collective resilience against hybrid, natural or intentional threats."

The spokesperson continued: "The EUCCS project embodies the European Union's desire to make Europe a security community, based on innovation, co-operation and technological sovereignty. It contributes to making Europe a stronger and more resilient global actor in the face of hybrid threats, geopolitical crises and increasing cyber risks."

Co-ordinator of the EUCCS Preparation programme at PSCE Europe, David Lund, said: "Being identified as a key item to strengthen EU security capabilities in the European Union's Internal Security strategy is a strong signal. EUCCS embodies a concrete response to European ambitions in terms of resilience, digital sovereignty and the protection of European citizens."

The news follows a previous statement from the project announcing the winning contractors for a tender launched in August last year. The four companies are Airbus, Frequentis, Leonardo and Teltronic.

Discussing this, a spokesperson said: "The first contract period concludes on 30 June 2025. Eight instances of 3GPP standardised mission-critical services [MCX] will be managed by eight of our 15 partnering national authorities.

"These systems will be evaluated by a series of tests and activities to assess the functionality and initial interconnection between contractor solutions."

Moving onto the second contract phase – lasting from July to September this year – the spokesperson continued: "[This] will work towards increasing the number of nationally managed MCX services, to include four more countries, and working towards interconnection between the different standardised deployments, managed by the different national authorities."

According to the organisation, the first phase saw each awarded team providing MCX services for two countries, as well as interconnection between them. This is to "realise international communication groups between the differently managed systems".

Leonardo was to provide services to Suomen Erillisverkot in Finland and the Department of Public Expenditure and Reform (Ireland), while Airbus worked with Kentro Meleton Asfaleias (Greece) and Agence des Communications Mobiles Opérationnelles de Sécurité et de Secours in France.

Frequentis, meanwhile, provided services to Myndigheten för Samhällsskydd Och Beredskap, Karolinen in Sweden, as well as the Netherlands National Police, with Teltronic provisioning Ministerio dell'Interno (Italy) and Belgium's ASTRID.

The spokesperson continued: "These testbeds will then be incrementally interconnected to assess the interoperability between different systems. They will be tested according to the national capabilities of the countries involved.

"This will build the confidence in the technical maturity of the 3GPP MCX services and will support, in the near future, the establishment of the EUCCS."

The solutions will also be evaluated by "a large group of practitioners" from across European emergency services.

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ETSI convenes new 6G group

ETSI has established a new industry specification group, focused on Multiple Access Techniques (MAT) for 6G mobile systems.

According to a press release, the group – known as ISG MAT – will explore: "Candidate techniques such as orthogonal multiple access, spatial division multiple access, non-orthogonal multiple access and rate-splitting multiple access. [These] enhance transmission efficiency across parameters such as spectrum efficiency, power consumption, latency and user fairness."

The release said that "relevant deployment environments" considered by the group will include "indoor hotspot, urban macro [for instance, high demand density areas] and rural settings". It will concentrate on "downlink multiple access techniques for the physical layer of the 3GPP radio interface".

The group was officially launched with a kick-off meeting held in the middle of January in London. This included 24 participants from industry and academia, as well as government. The BBC's Dr David Vargas was elected as chair, alongside vice

chairs professor Bruno Clerckx from Imperial College London and Viavi's Dr Stephen Wang. According to ETSI, the group will produce reports to be considered by 3GPP, alongside "other relevant industry bodies"

involved in 6G standardisation. It will thus "contribute to the development of 6G as a pervasive general-purpose communication system connecting humans and machines across a wide range of use-cases".

TCCA News

TCCA's Legal and Regulatory Working Group has published a new white paper focusing on security in relation to physical communications infrastructure.

The goal of the document, according to a statement, is to "catalyse the creation of a global standard for the physical security of infrastructure supporting critical communications".

Exploring the rationale in greater detail, a spokesperson stated that this is now a key topic due to the increased leveraging of commercial mobile networks by mission-critical organisations.

The spokesperson said: "Most of the current critical communication networks – using technologies such as TETRA, Tetrapol and P25 – are owned and operated by the state. Their physical security is [therefore] assured by the state to the extent deemed necessary."

They continued: "However, the emerging use of commercial mobile operator networks to support broadband critical communications – particularly as Radio Access Networks – is changing the operating model.

"The physical security of these network elements is of paramount importance, but it is debatable whether the measures that MNOs are currently adopting in this regard are sufficiently robust and fit for purpose."

According to the association, the white paper looks at "the measures in place in several countries around the world, in the context of their approach to broadband critical communications".

It subsequently identifies two potential approaches with the aim of creating "greater cohesion". These are the imposition of security obligations through legislation and provisions within the service contract itself.

LRWG chair and TCCA Board member Nina Myren said: "There is no universally agreed definition of what 'good' looks like with respect to physical security of infrastructure for critical communications. Different countries may have different ambitions and needs, depending on the evolving threat picture and resources, including finances, available.

"We hope this white paper will stimulate discussions that will ultimately lead to an

agreed regulatory baseline that all nations must agree to meet."

The white paper is titled 'Legal and regulatory aspects relating to the physical security of telecommunications infrastructure used for critical communication services'.

The organisation has also published another white paper, this time exploring the needs of public safety in relation to 'massive' mission-critical video.

According to a spokesperson for the organisation, the document "explores what public safety agencies and operators need to consider to successfully deploy video services supporting mission-critical operations, especially where the scale of its usage is considered 'massive'".

The latter term, says TCCA, describes situations where "the amount of video could potentially saturate network resources, if not appropriately managed".

The white paper – which is titled 'Guidance for the successful usage of Massive Mission Critical Video' – provides recommendations and initial guidance in relation to these kinds of scenarios.

IBM chosen as ESN user services supplier

The UK Home Office has announced that IBM has been awarded the contract to supply software for the Emergency Services Network.

The software will provide user devices with what the government calls "data-sharing functions and real-time video features". Crucially, it will also include a "push-to-talk protocol for instant communications".

IBM will lead the design, build and system integration of the ESN platform, integral to which is the provision of IT infrastructure. In the parlance of the programme, this is known as the 'user services' piece.

The work will take place in collaboration with what IBM calls an "ecosystem of partners", including Samsung Electronics, Ericsson, Frequentis, Exponential-E and Palo Alto Networks.

Discussing the move, a spokesperson for the UK government said: "After several delays to the roll-out of ESN over recent years, the government is [committed] to delivering the project as quickly as possible.

"Providing the emergency services with improved technology is a key part of the government's drive to make the nation's streets safer, which is a crucial part of the Prime Minister's Plan for Change." The spokesperson continued that going forward, policing minister Dame Diana Johnson will chair "regular meetings to ensure the project is running to time and cost".

Managing partner at IBM UK and Ireland, Rahul Kalia, said: "We are proud to support ESN in delivering a secure and resilient communications platform to empower frontline emergency services.

"Working with our ecosystem partners, we will deliver mission-critical services for first-responders to enhance safety in our communities across Great Britain. We look forward to working with the government to deliver this in a timely and cost-effective manner."

Policing minister Johnson said: "Every day our brave emergency services help members of the public facing life-or-death situations. We must do everything we can to maximise the chances of successful outcomes, and communications between frontline staff is critical to ensuring this.

"This government is working tirelessly to support this project, making sure it is delivered in a timely and cost-effective manner, and IBM will be an important part of bringing the Emergency Services Network online."

GCF mission-critical services certification gains momentum

The Global Certification Forum (GCF) and TCCA have noted "increasing industry support" for the GCF Certification Programme for Broadband Mission Critical Services.

Belgian operator ASTRID has recently joined the GCF, alongside Erillisverkot from Finland. This follows Sweden's Myndigheten för Samhällsskydd och Beredskap (MSB) becoming the first public safety organisation to join as mission-critical communications operator. According to a joint statement, other European organisations are also in the process of joining the initiative.

The statement continued: "On the test equipment side [meanwhile], Keysight Technologies announced being first in the market to validate at GCF 3GPP EUTRA mission-critical test cases, using ETSI MCX EUTRA TTCN. These achievements facilitate conformance testing being adopted to guarantee standards compliance and ensure high reliability, performance and interworking, mandated by mission-critical communications.

"All these organisations participate in the Mission Critical Services work stream. [This was] set up by GCF and TCCA to align and speed up the market availability of certified 3GPP standards-based mission-

critical – also referred to as broadband mission-critical – services and devices.

"The GCF certification programme assures device-network and client-server compliance to 3GPP standards for mission-critical devices and services, as well as contributing to reducing testing cost and accelerating time to market."

TCCA CEO Kevin Graham said: "The GCF-TCCA collaboration, establishing 3GPP Mission Critical Services certification, is a crucial programme that will bring significant benefits to industry manufacturers, network operators and increased confidence to frontline end-users.

"We are pleased to see longstanding TCCA government operator members such as MSB, and now ASTRID and Erillisverkot, becoming the first GCF mission-critical communications

operators supporting the programme."

Graham continued: "We look forward to other network operators following their lead, and more MCX manufacturers committing to the programme to ensure we build a robust 3GPP-MCX compliant and interoperable ecosystem.

"The commitment is to establish MCX server-to-server certification and develop MCX interoperability testing frameworks. [This] will ultimately result in conformance and interoperability testing covered in GCF MCX product certification."

GCF CEO Lars Nielsen said: "We are pleased to welcome new mission-critical communications operators joining the Global Certification Forum. [We] are also pleased to welcome the active collaboration of Keysight to validate a new test solution for conformance testing, facilitating the path towards interoperable, 3GPP standards-based mission-critical services and devices."

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Giving users what they want and need

Ahead of CCW 2025 in Belgium, director general of ASTRID, **Salvator Vella**, talks to Philip Mason about the move from narrowband to broadband

Could you provide an update on ASTRID's plans to roll out mission-critical broadband? What has been the key driver for the project?
ASTRID is currently in full preparation for the roll-out of its next-generation mobile communications programme. This initiative is mandated by a new management contract with the Belgian government, covering the 2023-2027 period. It marks a gradual transition from our current TETRA-based infrastructure to a dedicated, private mission-critical broadband network for emergency and public safety services.

The key driver behind this transformation is twofold. On one hand, we are responding to the growing demand from our user organisations for advanced mobile data services, such as real-time video, geolocation and multimedia sharing, without compromising on the reliability, security and resilience that are non-negotiable in mission-critical environments.

On the other hand, we are proactively anticipating the technological obsolescence of narrowband platforms. As TETRA and its ecosystem gradually reach end-of-life and end-of-support stages, maintaining service continuity without regression becomes imperative.

This transition is not merely about adding new functionalities; it is about future-proofing our national critical communications infrastructure. While we remain firmly committed to the proven reliability and quality of our current services, the next-generation mobile communications programme will unlock new mission-critical capabilities enabled by broadband technology.

It will be built on a hybrid network model, combining ASTRID's dedicated core and radio access systems with selected components from public mobile networks. It will enable prioritised 3GPP-compliant MCX services such as MCPTT, MCVideo and MCData.

This standards-based approach ensures seamless integration, enhanced resilience and secured communication for emergency and security services across Belgium.

Belgium has put its plans in place a few years after projects such as ESN in the UK, FirstNet and so on. What advantage has there been in waiting until now?
Indeed, while countries like the UK and the US have taken earlier steps with projects like ESN and FirstNet, Belgium's timeline offers us a unique strategic advantage. By observing these pioneering projects, we have been able to analyse lessons learned – both technical and operational – and integrate them into our approach.

This has enabled us to design a programme that avoids common pitfalls and aligns more closely with evolving European standards and proven best practices.

Additionally, it allowed ASTRID to ensure continued reliability and availability of the existing TETRA network while thoroughly preparing a seamless and safe transition to broadband. And at the same time, anticipating future European critical communications initiatives such as EUCCS.

At the heart of this transition lies a clear priority. The new solution must continue to support secure, reliable and robust push-to-talk group communications.

There is a sense that first-responders are quite reluctant to give up TETRA. What is the level of engagement/buy-in from user organisations?

This year's Critical Communications World is taking place in Brussels

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> **The transition to mission-critical broadband is a complex endeavour, which touches every layer of technology, policy and field operations**

Director general of ASTRID,
Salvator Vella

That's a valid observation: TETRA remains a cornerstone of reliable group communication for first-responders. Its robustness, simplicity and reliability are deeply valued by our users, and they want the new MCX capabilities to be 'on par' with the legacy services.

We fully acknowledge this and have therefore prioritised close collaboration with user organisations throughout the design and roll-out of the next gen programme to ensure a smooth introduction of the new broadband technology and services.

Their input is central. Via consultative structures like the Users Advisory Committee and through pilot testing and phased migrations, we are building strong stakeholder engagement. Moreover, the transition strategy is phased and hybrid, allowing TETRA and broadband solutions to coexist and interwork for a significant period. This ensures confidence and operational continuity during the shift. In moments of crisis, first-responders must be able to count on a communications network that simply does not fail. The ability to co-ordinate instantly and securely – even under pressure – is not a luxury, it is a lifeline. That is the standard ASTRID is committed to uphold.

Are you planning to retire TETRA, and if so, what's the timescale?

ASTRID will maintain its TETRA network for as long as necessary to guarantee a secure and stable communication environment for all our users. There is no hard end-date at this stage, but the current planning foresees a gradual transition starting around 2028, with TETRA services being progressively replaced by broadband alternatives.

TETRA will remain fully operational during the transition, and we have committed to support TETRA terminals until at least 2030. The replacement will be based on operational readiness, not just technical milestones.

What have been the key difficulties for the project up until now? What do you anticipate them being in the future?

The transition to mission-critical broadband is a complex endeavour that touches every layer of technology, policy and field operations. Some key challenges so far have included:

Ensuring strict compliance with mission-critical standards – for instance, MCPTT and MCVideo – over a hybrid network infrastructure.

Balancing innovation with backward compatibility and user comfort, for instance, devices and accessories.

Managing expectations and ensuring transparency during procurement and implementation phases.

And dealing with some critical functions, like device-to-device or DMO communications, which are still challenges for standardisation and availability.

Looking ahead, we anticipate that integration, user training and ensuring real-world performance under high-load conditions will require sustained attention. Cybersecurity and operational resilience will also remain top priorities. That said, we are confident that our user-centred, phased and partnership-driven approach is the right way forward.

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BEST HYBRID DEVICE

LM75, Cybertel

MXP660 TETRA/LTE device, Motorola Solutions

XL Extreme™ 400P NFPA Compliant, Full-Spectrum, Multiband Radio, L3Harris Technologies

BEST MCX PRODUCT OR SOLUTION OF THE YEAR

MCX SYRIUS and Direct Mode Operation, ACMOSS - Agency for Mobile Communications for Safety and Rescue Services

ATRIA and Mobility Management, ACMOSS - Agency for Mobile Communications for Safety and Rescue Services

A Broadband Interoperability Platform for Mission Critical Push to Talk Communications, Catalyst Communications Technologies Inc.

MCX ONE - Next-Generation Mission-Critical Communication Solution, Consort Digital Private Limited

MCX ONE Dispatcher - Advanced Dispatching Solution for Modern Control Rooms, Consort Digital Private Limited

FirstNet IWF, FirstNet, built by AT&T

MissionX Android SDK, first MCS client platform, certified by GCF, Frequentis AG

Rugged 5G MCX Device PNC660, Hytera Communications Corporation Limited

Next Generation End to End Emergency Response and Rescue Broadband MCX Communication System, JRC, Softil

XL Converge™ 200P Full-Spectrum, Multiband Radio, L3Harris Technologies, Softil

Zero downtime on public networks, Lyfo B.V,

PX350 MCX Digital Companion, Lynknex Communications

Critical Connect, Motorola Solutions

Smartphone CROSSCALL STELLAR-M6, Smartphone CROSSCALL STELLAR-M6

BEST TETRA PRODUCT OR SOLUTION OF THE YEAR

Taira - Secured Virtual Core for TETRA and hybrid TETRA, Airbus Defence and Space

Hybrid TB4, Multitechnology base station, Airbus Defence and Space

StarBridge, Funk Electronic Piciorgros GmbH

DIMETRA Connect, Motorola Solutions

MXM600, Motorola Solutions

Sepura SC28 Module, Sepura Limited

Tuesday 17 June 2025 at the Marriott Hotel Grand Place, Brussels

BEST USE OF ADVANCED TECHNOLOGY (ARTIFICIAL INTELLIGENCE, UNMANNED AERIAL VEHICLE, SITUATIONAL AWARENESS ETC)

Advancing Situational Awareness in Multi-Domain Counter-Drone Operations, ATDI

Sharpi - AI-powered speech enhancement for 112 emergency calls, Augmented Hearing

Funding Project KoPa_45 – Towards the Next Generation Digitalfunk, BDBOS - Federal Agency for Public Safety Digital Radio

AI-enhanced Face Recognition in Body-worn Camera, Hytera Communications Corporation Limited

UAV-Borne Convergent MC Communication Solution for PPDR, Hytera Communications Corporation Limited

Industrial Generative AI-Powered IoT Solutions at the Edge, Qualcomm Technologies and Aramco Digital

6G Future Network Services for Drone Aerial Corridor, Netherlands, TNO – National research institute, Odido, Drone Delivery Services, Ericsson and ecosystem partners

BEST USE OF CRITICAL COMMUNICATIONS IN INDUSTRIAL, MANUFACTURING, MINING RESOURCES, OIL & GAS EXPLORATION

Connected Vest, Capgemini

Driving operational efficiencies & enchanting safety Offshore, Druid Software

IS Radios Boost Operation Safety and Efficiency at Saudi Aramco, Hytera Communications Corporation Limited

CENAGAS, Teltronic

CIMPOR 5G Standalone Mobile Private Network, Vodafone Business

Swedish Minesite Interconnects a PMR Network with a Private LTE Network, Tait Communications Zinkgruvan Mining AB

BEST USE OF CRITICAL COMMUNICATIONS IN PUBLIC SAFETY

Defesa Civil Alerta (Civil Defense Alert), (Brazilian) National Telecommunications Agency (Anatel)

RRF - Radio Reseau du Futur, ACMOSS - Agency for Mobile Communications for Safety and Rescue Services

Sharpi - AI powered speech enhancement for Icelandic Emergency Services, Augmented Hearing

Voice Translation, Capgemini

World's first: Belgian Citymesh helps save lives with drone shield, Citymesh

C3 Upgrade Caribbean Tetra Network to TEA-3 for Enhanced Public Safety, Critical Communications Caribbean C3

Secure, Private communications at Rosslare Europort, Druid Software

Automated cyber defense for a public safety network, Ericsson & Erillisverkot

DC Fire and EMS Prehospital Whole Blood Transfusion Program, FirstNet Built with AT&T / District of Columbia Fire and EMS

Emergency Response in Iraq Elevated by Advanced 911 System, Hytera Communications Corporation Limited

Convergence-Native Communications for South African Police Service, Hytera Communications Corporation Limited

New Flood Warning System (FWS) in England, Intersec

Next Generation End to End Emergency Response and Rescue Broadband MCX Communication System, JRC, Softil

Real-time hurricane data collection utilizing reliable satellite transmission, KenCast Inc

Smart Police Support (Rome), Leonardo

Halton-Peel PSBN, Public Safety Innovation Alliance (PIA)

Starlink Backpack and Vehicle-Based Small Cell Solutions, SK Telecom

Enabling Cell Broadcast for National Public Warning Service (UAE-Alert), Telecommunications and Digital Government Regulatory Authority

Advanced Mobile Location (AML) Project in the UNITED ARAB EMIRATES, Telecommunications and Digital Government Regulatory Authority

BEST USE OF CRITICAL COMMUNICATIONS IN TRANSPORT

Busan Metro in Korea, Cybertel

HK MTR Light Rail 2.0 with 5G MCX Radio System, Hytera Communications Corporation Limited

RAN (Nation-wide Augmentation Network), Leonardo

Mission X Schneeberg Salamander, NÖVOG (Niederösterreichische Verkehrsbetriebe)

NYCT TETRA 700/800MHz Bus Radio System, PowerTrunk

Maya Train, Teltronic

BEST USE OF CRITICAL COMMUNICATIONS IN UTILITIES

PMR, Ad-hoc broadband, and SatCom for Yalong River Hydropower Hytera Communications Corporation Limited

Technology Applied to Water Management - Aguas Andinas, Chile Motorola Solutions

Disaster and Emergency Communication System for Toroslar Electricity Distribution Company Novatel Haberleşme Çözümleri A.Ş.

Icon Water TMR Replacement, Vertel

TCCA YOUNG ENGINEER OF THE YEAR

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Hu Chen, Hytera Communications Corporation Limited

Adam Howe, Sepura Limited

Lucy Liu, NSW TelcoAuthority

THE PHIL KIDNER AWARD FOR OUTSTANDING CONTRIBUTION TO CRITICAL COMMUNICATIONS

Jim Bugel, FirstNet Built with AT&T

Ian Gardiner, Tait Communications

Laxman Singh Rana, Centralized Accident and Trauma Services

Mark Wealleans, Motorola Solutions

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TCCA 30

Book your tickets at www.critical-communications-world.com

Meeting public expectations

The technology and the standardised architectural framework exist to implement 'next generation' emergency calling – but regulatory, cultural and funding issues mean implementation is slow and complex. **James Atkinson** reports on progress so far

Next generation (NG) 112/911/999 emergency calling promises to bring a wealth of benefits to citizens, public safety answering points (PSAPs) and emergency services control centres. The biggest change for citizens is that they will be able to communicate with the emergency services via voice, photos, videos, SMS texts and real-time text (RTT).

Calls, based on all-SIP communications, can be transmitted via faster and more resilient emergency services IP networks (ESInets), which provide the backbone for emergency call routing.

Call routing may be improved via the use of available information other than just caller location, such as the language of the mobile phone being used. Today, emergency communications are only routed depending on the location of the caller, so this should speed up response times and save more lives.

Control centres will need to move their emergency calling systems from legacy TDM circuit-switched telephony systems to full-IP networks and implement next-generation core services (NGCS).

NGCS will support multimedia, including images, video and sensor data, which will greatly enhance situational awareness for call-handlers and dispatchers. It will also be much easier to share data between control centres and the emergency services. The automatic transfer of calls to other centres during crisis events will help manage call overload.

In the US, the NG911 emergency calling system architecture is based on the "i3" standard developed by the National Emergency Number Association (NENA). NENA i3 has been adopted nationwide by Canada, while the European Emergency Number Association (EENA) has adopted NENA's i3 Standard - Stage 3 as the basis for NG112 in the European Union.

What progress?

What progress is being made to implement NG emergency calling? Manuel Hintermayr, director, solutions and sales, public safety, at control room solutions provider Frequentis, observes: "From our point of view, transition to NG emergency calling is happening at different paces around the world. It depends very much on the government structure of each country."

As he notes, in Europe at least, the mobile network providers are only legally obliged to fulfil emergency voice calls, but not necessarily any of the other NG features.

He says: "There is not a lot of money to be earned from emergency calls in Europe. It is a little bit different in the US, where the operators are paid by the call, so that is why they have more ESInets in place than Europe. At

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the moment, I am only aware of two ESInet projects that have been decided in Europe, others are in discussion."

Hintermayr's concern is that so far in Europe, ESInet projects are not necessarily following the pure NG standard, even though he feels it makes sense to do so. "There is proprietary technology included, because it is easier for them to do it that way. In the short term, the issue is money, so this is perhaps encouraging projects to take some shortcuts to keep the costs down."

As far as the US is concerned, Monica Million, a former president of
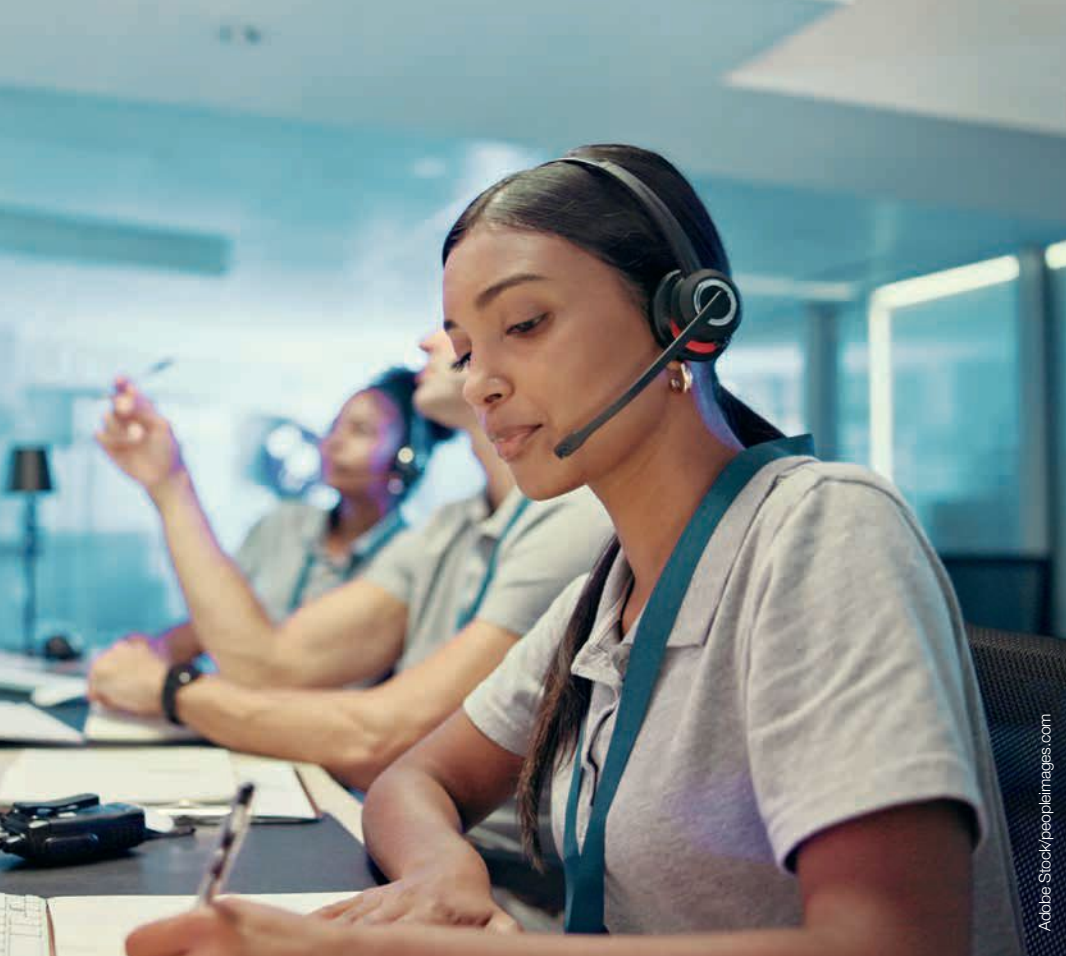
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NENA and now a global evangelist for all technology relating to emergency number systems, says: "NG911 is moving, but not as fast as we'd hoped. I'd say about 65 per cent of the country has migrated to very basic IP connectivity." Asked what the main challenges are, she states: "Funding is the number-one challenge."

NENA and other organisations have been trying to secure federal funding to help states migrate to NG911 by lobbying Congress to approve a sell-off of spectrum by the Federal Communications Commission to raise an estimated $15bn. However, this failed to happen in the previous two administrations and Million is not optimistic about it happening under the current one.

"The second issue is the technical challenges that come with migrating antiquated systems into an IP network and having to uplift multiple networks into that type of service. That has been extraordinarily hard," says Million. She points out that it is difficult to find enough experts who can advise states and control centres on how to build out their IP networks, particularly in rural areas.

The flexibility inherent in how the i3 standard can be implemented has sometimes led to interoperability issues due to the different interfaces between vendor equipment. Million says: "That has not been an issue in every state, but some, yes. For example,

Next-gen calling will enable citizens to contact the emergency services however they wish

California is experiencing that right now, as they are trying to build a multi-vendor network."

Another issue is getting GIS data frameworks and common addressing platforms in shape, so they adhere to NG911 models. "That is a component that has added delays to the NG911 roll-out," notes Million, "especially some states in the Midwest which have not had a common addressing platform. The geo data was not complete, and without that you cannot build out a geospatial routed system."

In Million's home state of Colorado, the challenge is how to tie its ESInet to those of the four surrounding states, as different vendors have supplied the NG911 technology. "Some of them are easier to work with than others," she observes, "but that has definitely been a challenge. There are also integration costs involved with that, which were not initially forecasted."

Fully IP-based
In Europe, EENA's latest progress report, *112 Day Recommendations* (February 2025), notes mixed progress. Last year, 23 EU member states had submitted a roadmap on their planned upgrades to packet switched 112 technologies in PSAPs, with 11 claiming to have migrated by the end of 2024. Quite what this means is open to interpretation.

Cristina Lumbreras, technical director at EENA, says: "What is not

clear to me is what they are calling IP-based communications. On the one hand they are saying the PSAP is prepared, but perhaps the MNO network is not ready to handle IP-based emergency communications.

"Or, the network is ready, but not the PSAPs. So, I don't have a full view on whether these countries are fully IP-based in reality."

All but three member states have implemented AML technology. However, Lumbreras says that not all countries have roaming solutions in place to send AML data to PSAPs, either internationally or, in some cases, even within countries when callers cannot access coverage from their home network.

The accuracy of the AML data can vary widely too. EENA reports that accurate location information is only transmitted in about 50 to 80 per cent of emergency communications. EENA is trying to persuade the European Commission to provide states with clearer guidance on location accuracy criteria, recommending a location within 50 metres of the caller in at least 80 per cent of emergency communications.

EENA's report also highlighted the potential hazards of 2G/3G switch-off. There is a risk that users of 2G/3G mobile phones – particularly the elderly – may be left unable to contact 112 if the message does not get through to them that they need to upgrade to 4G/5G devices. More particularly, the switch-off will leave at risk vehicles fitted with 2G/3G-based eCall modems. NGeCall using 4G/5G modems is not mandatory for new vehicles until 2026.

The current main driver for implementing NG112 in the EU is that member states are committed by the European Accessibility Act (EAA) to deploy RTT either by 28 June 2025 or by derogation, 28 June 2027.

RTT displays live text as it is typed and can be used on many devices, not just smartphones. "RTT is not just for emergency communications. It is also for real-time person-to-person communications," says Lumbreras.

In addition to the EAA, the European Electronic Communications Code (EECC) now refers to emergency "communications", rather than just "calls", so this includes video and RTT. The catch is that member states cannot deploy RTT unless they introduce NG112, so they have to upgrade to ▶

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full-IP communications and implement NGCS technology.

Peter Lonergan, policy officer at EENA, says Ireland became the first country to introduce RTT at the end of 2024. But as he points out, the ideal is to have 'Total Conversation' technology, also known as multi-channel comms, which will automatically open up simultaneous channels for voice, video and RTT with the NG112 call-handler. This permits all kinds of communications, including sign-language relay services for the deaf.

Achieving Total Conversation is some way off for now, although Hintermayr points out that Frequentis and other vendors have integrated multimedia connectivity and processing into their control room platforms to help customers evolve towards NG. But the lack of current connectivity options other than voice and text for emergency calling is holding things back for citizens in general and people with disabilities in particular.

Providing equal access for all to emergency services is hugely important, because as EENA's 112 report notes: "Disability affects 15 to 20 per cent of every country's population. There are at least 650 million persons with disabilities worldwide, while persons with disabilities represent 100 million persons in the EU."

Non-verbal communication
For now, SMS is often the only non-verbal option. Lonergan says: "SMS is used in 23 member states, although in some countries it is only for people with

hearing disabilities. But that doesn't help the blind community or people with mental disabilities, for example, so for other groups there is more work to be done."

Solutions for the deaf are among the most advanced. Northern Ireland SME Inclutech has developed TapSOS, a government-certified, free-to-use SMS-based app that allows users to contact the emergency services with a few simple taps.

Dr Jonathan Sinclair, CTO at Inclutech, says the app is not only useful for the deaf, hard of hearing or non-verbal, but may also prove vital for people suffering from a stroke or diabetic attack that affects speech; or for people who do not want to be heard calling for help, or for someone whose airway is blocked by choking, asthma or allergic reaction. "These kinds of cases represent 20 per cent of the UK at some point or other," he says.

"The biggest weakness we are trying to address is how do you change what has been and is solely focused on verbal communication into non-verbal communication? It is notoriously difficult, but it is an important challenge because of the many people who cannot communicate with the emergency services with the current means available to them."

But Sinclair notes that the UK public safety space is a particularly difficult one to innovate in due to red tape and bureaucratic engagement issues, while the private sector tends to focus on the bottom line and market share.

"How do we solve the problem from

a citizen's perspective? That should be the focus when it comes to driving engagement with NG112/911/999. There is a lack of thought to the service provision to the citizen and how they want to communicate, [eg, social media], and more thought towards the hardware and connectivity pieces."

For private sector developers, the other big frustration is the lack of an agreed data standard for public safety data. "The challenge is not a lack of capability," says Sinclair. "It is a lack of collective commitment to work together across public sector emergency services organisations and private sector sending and receiving organisations to come to a collective agreement as to how to send data from A to B and in what format are we going to send it."

He believes the lack of a data standard will hinder the development of public-safety-specific AI solutions. "The data in a lot of these systems is unstructured or partial, and when data is unstructured or partial, and you have no data standards, you are limited in what you can do with AI. If you put rubbish into the learning models, you get rubbish out."

EENA's 2024 AI Special Project came to a not dissimilar conclusion. The project tested possible uses of AI in PSAPs for: language detection, translation and transcription; triage to prioritise emergency calls effectively; and noise cancellation to improve call clarity. A key recommendation was that AI solutions be designed for the specific needs of PSAPs.

Lonergan says: "The AI products showed that there was a lot of potential in these services. But the companies, and the PSAPs, found that the solutions they had developed had been trained on non-emergency services communications data, which could sometime result in reduced functionality. The AIs may need to be trained on emergency services communications data to function correctly."

Therein lies the problem. If the data is not structured enough to be of use, and security issues mean PSAPs are reluctant to let their data be used to train the AIs, then progress will be slow. "This is a hurdle that needs to be resolved," observes Lonergan.

Transitions to new communications technology always take time. For now, NG112/911/999 is slowly progressing, but it is going to be a while before it is fully in place. ◉

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Safe and sound

Following the recent publication of TCCA's white paper focusing on the physical security of mission-critical network infrastructure, *CCT* spoke to members of its Legal and Regulatory Working Group (LRWG) about this increasingly important topic

What are the key issues around physical infrastructure security?

Nina Myren: The key issue is ensuring sufficient security for physical infrastructure used for critical comms, with the transition of critical comms from mainly government-owned or controlled TETRA networks for radio access to the use of MNO RAN for PSBN.

One question is how do we ensure that the relevant MNOs take the necessary steps to secure the physical infrastructure, particularly in view of the additional costs and efforts that may entail?

Lasantha De Alwis: We have to bear in mind that the effect of an incident impacting the functioning of the network is likely to be higher in the case of PSBN than that of a legacy network.

If a legacy network fails, mostly voice comms will be lost. But in the case of PSBN, there will be two further effects.

One is that PSBN may be used by other sectors such as utilities, thus the effects will be felt more broadly across the country and society. Secondly, PSBN provides many more functionalities in addition to voice, such as mission-critical video. Thus, the effect of an incident will be felt much deeper.

Could you define physical security?

NM: By physical security, we mean the security of the physical infrastructure. While there are regulations governing the security of data, comparable legislative/regulatory obligations are lacking on the security of the physical components of the RAN.

In our view, the scale and scope of the security of physical infrastructure should be fit enough for the critical comms service, of which it is an important element. By its very nature, critical comms should have a very high degree of availability and integrity so that the emergency services can rely on it with confidence to carry out their work in protecting lives and property.

What lessons can be learned from the original roll-out of TETRA?

LDA: Obviously the practices of the TETRA networks do provide valuable lessons and guidance. However, these need to be customised to the new operational environment, and the MNOs providing radio access need to agree with the obligations. This requires a more consultative approach.

How do measures being taken across the globe differ?

LDA: Differences occur mainly due to the regulatory approach of countries. For example, the UK adopts a light-touch approach with minimal interventions. However, consensus appears to be developing on the importance of physical security in view of the recent incidents of sabotage and damage to infrastructure.

NM: The LRWG, through TCCA, will promote the white paper with a wide range of stakeholders. The LRWG aims to use the paper to generate a wider discourse on the subject.

Regarding ESN, what conversations have already taken place regarding physical security?

LDA: For ESN, the standard security conditions of EE applicable to their commercial network elements apply, as ESN uses EE's infrastructure.

For example, all lattice towers will have to be in a demarcated compound, other than at street-work sites where it is normally not possible. All cabinets that house either power or active equipment will be locked.

For site access, there will be a process for engineers to log their visits and sign out keys, and so on. EE should, in line with BAU practice, attend the site for maintenance visits to ensure there have been no break-ins and everything is in good working order, with locks oiled and the compound secure.

What can be done at the level of legislation?

NM: We are of the view that regulation and legislation can set a minimum standard applicable across the board and contractual provisions could build upon them. A regulatory/legislative framework will also enable harmonising the standard across jurisdictions.

Building upon them, contractual provisions will be able to create a bespoke security framework that suits the particular situation of the country. A common baseline that also includes pricing mechanisms – for instance, a cost-plus model – will provide better predictability for all parties.

Nina Myren is a TCCA Board member and chair of its Legal and Regulatory Working Group. She is the board representative for DSB Norway.

Lasantha De Alwis is an LRWG member, and telecom policy and regulatory lead for the Home Office ESMCP Public Safety Group, in the UK.

The white paper – 'Legal and regulatory aspects relating to the physical security of the telecommunications infrastructure used for critical communication services' – is available from TCCA's website.

Protect and thrive

In the second part of this issue's focus on infrastructure security, **Philip Mason** talks to ASTRID technical director Christophe Grégoire about resilience, redundancy, and the 'hardening' of the organisation's burgeoning mission-critical broadband network

As you will have read elsewhere in this issue, TCCA recently published a white paper focusing on physical security and mission-critical network infrastructure.

More context in relation to this can be found in our news section, as well as the exclusive TCCA interview on the previous page. On these pages, however, we are focusing on the experiences of a specific mission-critical network operator in the shape of Belgium's ASTRID.

The experience of the organisation is incredibly relevant to the topic at hand, given its ongoing move from a TETRA-based solution to mission-critical broadband, provided in part by commercial operators. A key aspect of TCCA's report, after all, focuses on potential differences between self-owned narrowband legacy networks and those run by for-profit MNOs.

At the same time, ASTRID is also the host operator for this year's Critical Communications World, co-located for the first time with the organisation's 'User Days'.

Legacy network

ASTRID operates Belgium's nationwide, TETRA-based communications network, designed for use by the country's emergency and security services. According to the organisation's website, it is currently used by over 70,000 personnel.

The network was established by Belgian federal authorities in 1998, prior to operational use beginning in 2001. According to ASTRID's technical director, Christophe Grégoire, a process of continual improvement was built in from the beginning, not least around physical security.

Discussing this in relation to the current TETRA offering, he says: "The sites were secured from the very beginning, because of who the network is being used by [the emergency services]. We knew that it had the potential to be attacked.

"Beginning with the protection of the radio access network, this takes place through the use of fences. At the same time, all the sites with telecommunication equipment are in shelters including intrusion detection systems, as well as smoke and fire detection systems.

"All this is monitored 24/7 by ASTRID at our network operation centre. If you damage or steal a piece of equipment, it simply won't work any more. Any disturbance will be detected by the monitoring systems, and ASTRID will take appropriate remediation actions."

Moving on to the topic of resilience and redundancy, meanwhile, Grégoire says the core network architecture is distributed across Belgium's 10 provinces and Brussels Region, with each site possessing the ability to operate independently of every other site.

Needless to say, these components are likewise installed in what he calls "secure environments", with the buildings in question typically being owned by the police. ("Trust me, the core network is secure as far as physical protection is concerned.")

He continues: "In terms of the overall resilience piece beyond security, there are protections which guarantee the availability of the service. I already mentioned radio access in the core network, and – for instance – we can sustain that for many hours with the use of emergency batteries if there's a power outage.

"That can be for a minimum of eight hours, or up to 20 on one battery. Also, we deploy generators if needed, and we also have UPS [uninterruptible power supply].

"As well as the physical protection, all communications are also redundant, with all radio sites being accessed in two ways and using different technologies. We have access via fibre-optic links, but we mainly use microwave to interconnect the masts together.

"These are always connected in a loop topology, so there's always redundant access to all these sites."

Security guarantees

As mentioned, ASTRID has been operational for over two decades, during which time the network has functioned overwhelmingly as it should. (Which is not to say there haven't been issues, such as local base stations reaching maximum capacity during the Brussels terror attacks of March 2016; a situation that has been fixed by investing in additional capacity).

While this is clearly positive, it is, at least to a degree, only to be expected, given that the network architecture belongs to the Belgian government itself. Or, to re-quote a TCCA spokesperson from earlier in this issue: "Most of the current critical communications networks – using

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technologies such as TETRA, Tetrapol and P25 – are owned and operated by the state. Their physical security is [therefore] assured by the state to the extent deemed necessary.”

That being the case, what happens when the network infrastructure is not actually owned in its entirety by the state? In a landscape where mission-critical broadband is increasingly likely to be provided through leveraging pre-existing commercial networks, what assurances can MNOs give regarding the physical security discussed above?

These questions are relevant to ASTRID, which has stated its intention of using a hybrid model when providing its users with mission-critical broadband.

This will involve provision of network infrastructure by commercial telecom operators, combined with a dedicated RAN and a dedicated core network, both owned by ASTRID.

Going into greater detail about this, Grégoire says: “Our model is quite unique. We want to benefit from all the advantages of working with a commercial operator, of which there are three in Belgium, with a fourth one currently rolling out their network. There is very good broadband in the country, which is small with a high density of population.

“Commercial operators deploy thousands of eNodes through the whole of Belgium, with over 4,500 base stations. If we work with them, they can provide us with very good radio coverage, and lots of capacity because they have spectrum.”

Moving the discussion onto the security aspect, meanwhile, Grégoire

“We will work with the commercial operator to reinforce the network”

does indeed admit that special attention will need to be paid to resilience, and what he calls “robustness”.

He continues: “[Commercial networks], by design, are typically not suitable for critical communications, because they lack robustness. For instance, in the case of a power outage, they lack the needed battery autonomy.

“That being the case, with our solution we will work with the commercial operator to reinforce the network. We will harden the solution with our own dedicated network.

“This is actually mandatory by law in Belgium. The commercial operators have to provide ASTRID with access to their radio access network, and they have to provide [us with] quality of service. That also includes priority and pre-emption for emergency services users.”

According to Grégoire, a key part of this process will be leveraging the existing TETRA infrastructure and upgrading it to 4G/5G technology. It will be used as a “dedicated network” in order to augment the commercial offer. Also, ASTRID will deploy its own core network, connected to both commercial and dedicated RAN.

According to Grégoire, this will not only provide baked-in redundancy but also guarantee the “sovereignty” of the system, meaning that sensitive information will always be in control of the Belgian public authorities.

Going into greater detail, he continues: “As far as physical protection is concerned, we already know that the TETRA sites are robust in terms of physical infrastructure and security. And again, that also includes battery back-up and so on.

“In the future, meanwhile, we will combine the commercial RAN and our dedicated RAN infrastructure to make one network, meaning that if one fails, the other one is available. If there is a problem with the commercial operator for any reason, we will rely on the dedicated network.”

“In that eventuality, we probably won’t be able to provide the same level of service as far as broadband is concerned,” he concedes. “But we will guarantee critical voice communication,

We will combine commercial RAN and our dedicated RAN

which is the mandatory, primary service for emergency services users.”

Moving the conversation back to network security, meanwhile, use of the pre-existing TETRA architecture also guarantees the same level of protection that the current legacy network already receives. But what of the commercial network infrastructure, which by Grégoire’s own admission is key for users to access the full range of broadband functionality?

According to him, alongside the priority and pre-emption mentioned above, “reinforcement” of the commercial network is actually guaranteed by law.

Discussing this, he says: “In Belgium, it is not just a matter of voluntary co-operation. Under the royal decree governing the 700MHz band, there are legal provisions that empower the government to *compel* commercial operators to make their infrastructure available, or to reinforce their network for public safety purposes.”

He goes on to say that this obligation is not “automatic”, but rather subject to an assessment by national regulator BIPT, and must be justified in terms of “feasibility and public interest”. At the same time – needless to say – operators are entitled to receive “fair and reasonable compensation” for the use and reinforcement of their infrastructure.

He continues: “So it’s a legal obligation, but one that respects the commercial realities. In practical terms, it means that when ASTRID needs to ensure service availability and resilience, we can require commercial partners to meet stricter requirements.

“At the same time, we also site-share with them, which means they benefit from the same security measures which we already have in place. The commercial operators can deliver over 4,500 sites, while we have about 600.

“To answer your question – can it fail? – if there was an issue with the commercial network, the impact would be limited. But as I mentioned, we would still have our dedicated network available.

“That’s the concept we have today. We still have to build it, of course, but that’s what we will propose to our users in Belgium. Ultimately the model used is going to change from country to country, but we all have the same goal, which is to provide robust critical communications for PPDR [public protection and disaster relief].”

Forward into the future

Critical Communications Today sends a dispatch from this year's BAPCO Annual Event in Coventry, UK, where the conference focused on two huge issues for the sector

Taking place in Coventry in the UK, there were two major themes at this year's British APCO Annual Event, as reflected in the conference keynote presentations across both days.

The first of these is the potential impact of artificial intelligence (AI) on emergency services operations, something which has been a major talking point across the UK sector for at least the past 12 months. The second, meanwhile, was, as ever, the ongoing progress of the Emergency Services Network (ESN).

AI was positioned front and centre right at the beginning of the first day, with two presentations and a panel discussion, the first of which was led by AI thought leader LJ Rich. She delivered a compelling and unusual session, using human beings' relationship with music as a metaphor for the way in which AI processes data.

Rich began her presentation by providing a landmark moment for the BAPCO Annual Event, by bringing an electric piano onstage and playing it.

Having kicked off proceedings by performing the opening of *Bohemian Rhapsody* by Queen, Rich stopped mid-rendition when the audience started singing along.

Using this to illustrate the theme of her presentation, she said: "*Bohemian Rhapsody* is universally known. It's the most-played track for karaoke and it contains elements of many musical genres. And even with singing in public being one of the greatest fears humans have, many of you still took action despite that fear."

Linking this into a broader point about human nature, she continued: "What [humans] do when we're really performing is use our intuition, connected with our training. And all of these unconscious cues that we take in give us all these extra shortcuts on understanding how to handle something unpredictable.

"How to capture that internal decision-making process… that is a real problem for machines. Because we don't know how we do it."

Tacitly moving the discussion into the emergency services context, Rich then asked: "How can we ask AI to help us contain risk, or compute periphery eventuality? And, do we really want to do this without a human? Of course, the answer is no. It comes down to making the data we collect useful for the outcome required."

Temporarily moving back to the topic of music, she said that human beings are influenced by a variety of different factors when it comes to their own taste. These include familiarity, environment, friends, social media and so on.

"Gen AI music models reflect this," she said. "And they work on the most probable 'next in a sequence'. Not the most surprising, not the most beneficial. Just the next most logical things. And it helps us to know that when we're working with AI in our systems.

"If we don't question our origins – of taste, for example – we run the real risk of creating the musical equivalent of fast food. AI will serve us algorithmic, formulaic things that are just entertaining and challenging enough, but not enough to try something different."

This year's Emergency Services Network update was hugely anticipated

By contrast, she said – once again bringing the conversation back to *Bohemian Rhapsody* – when we study that song, "none of it fits [the traditional criteria for a hit]".

"So maybe the data we're collecting isn't complete, which means there's something else going on. How do we get a new perspective? Are we even collecting the right data in the first place?

"If we can explore the data and find the 'secret sauce' that our people need, that's going to make the product or service stand out. Knowing the patterns creates a whole new classification, and that's true in music, business and in public safety."

The important thing, Rich concluded, is context, which in a public safety environment means "the right data at the right time". Or to put it another way, giving frontline staff exactly what they need is going to be more helpful than just "throwing a bunch of data that lots of other people have done, at the same time".

The second keynote of the first day was delivered by 911 futurist Brad Flanagan, who also discussed artificial intelligence, but this time in the specific public safety context. He focused in particular on exploring the possibilities of AI, but this time applying them "in everyday life".

Flanagan opened by listing his credentials as a former dispatcher, training co-ordinator and director of a 911 centre. "And one of the things I found was really important," he said, "was to solve problems in any way we could. We were running into challenges and realising that we had significant staffing issues coming up."

He continued: "I was willing to try anything – just like Wile E. Coyote – to

get my one goal. And I did that with everything I had.

"So today, we're going to be talking about embracing the future. And how AI, and knowledge itself, can become more a part of everyday life."

With this in mind, he continued by describing the contemporary call-taking/dispatching environment, within which the demand is inexorably increasing as ever more calls are being taken. These challenges, indicated Flanagan, can now be mitigated through the creative use of AI applications, many of which are already available to the general public.

The first solution he spoke about was a software tool called Motion, which he described as "giving me the ability to input my [work] tasks in different ways" in conjunction with his calendar. One simple use for this, he said, was the ability of the AI to sift through his schedule in order to find windows of availability for meetings.

The next solution was a transcription application called Otter AI, which records meetings, provides a summary and transcription and so on.

Continuing the discussion of its functionality, Flanagan said: "My favourite part is that it actually has a chatbot that, after the meeting, I can ask [questions]. So, I can save the time of having to write the task list, figure out who said what and who promised they were going to do something."

He brought his presentation towards its end by moving the discussion explicitly back to public safety, asking how the technology can be used to help telecommunicators and control room operatives be "present" in their work.

'Presence' in this context, he said, means the degree to which the call-taker has the capacity to be empathetic to members of the public calling in. On the dispatch side, meanwhile, it is the level of focus on the first-responders themselves.

Fundamental questions

This year's hotly anticipated Emergency Services Network update took place on the second day.

The reason for this excitement was the Home Office finally being able to go into detail about the direction of the project after many months of attempting to procure a new provider for the user services piece. The contract in question was won by an IBM-led consortium, with EE's role as network supplier also being extended.

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Emergency Services Mobile Communications Programme (ESMCP) programme director John Black acknowledged this sense of anticipation during the opening section of his presentation. He said: "How fabulous to be here with something to say.

"You just can't talk about [commercial discussions], particularly when you get into procurements. There's huge control over commercial confidentiality, so we were giving as much of an update as we could. Which wasn't very much."

Elaborating on the developments earlier this year, Black continued by stating that "there's more to it than new contracts". Rather, the situation also prompted considerable thought about the programme itself in the years prior to those contracts being signed.

According to Black, that discussion took in the lot structure in particular, which has ultimately remained the same. Discussing the rationale for this, he said: "Overall, we have a mosaic or around 40 different contracts. We had to replace one big piece in the middle – user services – but if we changed the lot structure significantly, it would have a ripple effect across the whole programme."

"If I had a blank sheet of paper, I might not procure to that lot structure," he continued. "But given where we are, we took the decision that we needed to keep everything else moving, keep the lot structure and procure a new user services partner – which is what we've done."

The second point of discussion, according to Black, was to completely revisit the overall business case. He said: "Was this the right thing to do? Does it still make sense? Should we push ahead at speed or take a pause? We went through all of those considerations and [concluded] that the business case is strong. In fact, stronger than it's been before."

Going into greater detail about the financial case for the move away from Airwave, meanwhile, he identified the benefits derived from the use of an existing commercial network. These included "lower cost and also better facilities in terms of voice and data".

Moving onto the ESN solution itself, Black focused in particular on technology existing "around the side" of the user/mobile services contracts. This included connection of control rooms to the ESN system, the interworking solution, as well as integration of the new MCX solution with control rooms themselves.

Another ongoing piece of work taking place during the procurements had been field testing. Black said two critical pieces of knowledge have been derived from this, the first of which is confidence that the technology will work at scale and in crowded situations.

Discussing this, he said: "We've proven that in stress situations several times. We don't need multicast – it seems to work with unicast very well. And broadly speaking, the technology does what we need it to do at the scale we need."

The second piece of knowledge – "and this is a stunning insight" – is that the network is incredibly complex. "There's lots of different backhaul mechanisms, and there's different base station software," he said. "What really came out is the vital need to carry on testing, so we understand how all those different configurations in the RAN work at scale and under stress."

Black drew his presentation to a close by focusing on timescale, which he called "the question everybody wants the answer to".

He said that the programme is currently in the middle of an "intensive piece of work", driving towards an "integrated programme plan". At the same time, there are also two other milestones in the short term.

The first of these is the "mobilisation complete" milestone, which was scheduled for the end of March. This will be followed by the "high-level design and contract alignment" milestone at the end of May. By then, Black said, "we will have that integrated plan and be able to share what that timeline looks like and what the key deliveries are".

Black also shared an anticipated 'overall' timescale, showing the programme working towards other, longer-term goals. In relation to this, he spoke of "a key interim milestone, [marking] the point at which we think the network, the infrastructure, the application and the service model is ready to go for the start of mass transition.

"At the moment, it looks like we will be at that point around the end of 2027, possibly into the early months of 2028. The focus in that half of the plan is building stuff and testing it rigorously."

After that, he said, "we're into transition, and the numbers game of users, control rooms, vehicle fit-out, all of that stuff". The target for the completion of this phase, with the Airwave contract being "closed off", is the end of 2029.

Alongside Black, the first ESN presentation of the day also included respective IBM and EE ESN leads Andrew Doggett and Faisal Mahomed. Other ESN-related content was delivered by ESMCP senior responsible owner Simon Parr, and Home Office head of law enforcement economics Kenneth Low. ◉

> **What came out is the need to carry on testing so we understand how all the different configurations in the RAN work at scale**

New voices, new ideas

Ahead of Critical Communications World 2025, *CCT* talks to four 'rising stars' about the central role young engineers will likely play in driving the sector forward

What different perspectives have you been able to bring to your roles, as people who are relatively new to the industry?

Aaron Page (Actica Consulting): Being part of this new generation, we've grown up with, and been very integrated with, technology. So, whether it's Microsoft products, programming languages, AI and so on, we've seen it evolve. I was in primary school when the internet first started to become critical.

We've grown with all these new technologies. And because of that, we often bring a lot more focus on its use, whether that's APIs, data mining and so on. For instance, doing stuff around ESN assurance, I carried out a lot of work with APIs, integrating with data and high-speed processing.

As the next generation, I believe that we're much happier to disrupt the status quo.

Merve Bayram (Frequentis): I've brought the importance of creative problem-solving to my role as a product manager, especially when it comes to optimising processes. For instance, when I first started, I noticed that the testing phase of our software was very time-consuming, and also challenging, due to limited hardware availability.

Rather than sticking to traditional methods, I proposed moving our product testing to the cloud. As part of this initiative, I participated in the Innovate event taking place in Vienna in September of last year. I presented my solution and won an award.

The idea has gained attention from other business units, and I'm currently in discussions with them on how we can integrate cloud testing into their products as well.

Veronica Pecchioli (Leonardo): As a test and validation engineer, I aim to bring a fresh perspective and forward thinking. I've been working on integrating automation testing, which allows us to perform frequent reliable tests. This could be an incredible tool, used to reduce human error during testing.

In the future, automation could be used as the first step of testing activities. And all the results produced by the automation test could then be analysed in a more detailed way.

AP: I think that being quite young in the industry, we bring a lot of energy. We're often chasing into things. We find problems. We fall over and get back up.

We often drive things forward. It's not necessarily perfect every time, but we have that consistent energy.

There is a sense that user organisations in particular – quite understandably – can be quite risk averse. Is that something which is reflected throughout the industry? How quick is it to adopt new ideas?

AP: I think there's always the danger that there's a rigid 'this is how we have always done it' approach to getting things done. That could be in relation to just getting the ideas pushed forward

> ❝ **Being quite young in the industry, we bring a lot of energy** ❞

[in the first place], before the necessary steps, gateways and processes. These typical frameworks should be the guardrails to creative, pragmatic, yet still rigorous, approaches to achieve the aim of successful implementation.

That said, I've found that organisations have become much more interested in data. People are talking much more about digital twins, data labs and that kind of thing. There's a lot of funding and change in this area.

I believe that the more data we have, the more likely organisations will be able to see, and act on, the areas they can do better. Without [that kind of insight], stagnation will set in; keeping what 'works'. Consequently, I expect to see continued growing interest in data-driven decision-making to deliver value.

Markus Säynevirta (Airbus): I think it depends. For instance, looking at something like Erillisverkot in Finland, their CTO is very present in many of the industry circles. He's always presenting on what they are seeing in terms of the wider technology.

Young engineers are vital to the future of the crit comms sector

At the same time, this industry is very much tied to government budgets. And in the end, also political decisions and bureaucratic processes, which often take a long time. If we consider the transition in Finland, for instance, it required a law change for it to happen.

These are definitely considerations which need to be taken into account in the mission-critical context. You are not seeing this kind of Uber 'break things and see how it goes' approach within this industry. But they are certainly looking at what's going on [when it comes to new technology].

AP: Depending on their size, a lot of organisations don't have the provision to test technology in full simulated staging areas. They'd have to push it into an operational situation to see if it works, and that can be very dangerous. Consequently, technology must go through a lot of checks and tests, as well as asking how it's going to affect things like control rooms and data centres, as well as end-users, in an attempt to remediate potential risks.

Depending on what your technology provision is, you may have to stand up perhaps four or five different teams/departments/third parties, providing support to all the different parts of the mission-critical system.

Why is it important that younger members of the industry are increasingly in the spotlight, for instance, during events such as Critical Communications World?

MB: It's important for us to be at events such as CCW because they provide a platform to meet customers and listen to their stories. Plus, the constantly changing world of new technology needs fresh ideas and viewpoints, which younger people can offer.

At the same time, the connections made through face-to-face interactions are crucial for building strong relationships and driving future growth.

AP: To build on what Merve said, there's this whole concept around us picking up the mantle. The current industry gurus and thought leaders are eventually going to retire, and the next generation needs to pick up this knowledge and understand what their predecessors have learned over those many years of dedication to the sector.

That doesn't just mean the knowledge around how things work right now, but also what happened 20 or 30 years ago. Having engaged with people on this, it's given me a strong reflection of here and now.

Perhaps not the technology so much as the political aspects that drive the industry. They haven't changed – they've stayed very much the same.

MS: I think it comes down to continuity. Emergency situations are going to keep happening in the future, and first-responders will still need to communicate. We need to provide modern solutions like 5G and video to help them do that.

I think young people provide a fresh set of eyes on the technology, which is something that brings a very valuable viewpoint. It breaks the mould around how things should be done and has the potential to be very beneficial.

Having the chance to be part of these kinds of industry networks, as represented by CCW, is very valuable. Not only between young professionals themselves but also between us and those who have worked in the field for a long time.

AP: We're each part of this larger community. However, when we're in our bubbles, in our own companies, we don't tend to see how everything else works and interlinks. Conferences like CCW just highlight that we're cogs in a much greater machine, and that every single cog is critical. It must all line up if we want things to work.

What kind of impact has the increasing profile of young engineers led to? How is the industry changing because of it?

AP: From my perspective, I'm really hoping that it's inspiring more people to engage with activities, such as participating in roundtables; realising that if they want to get involved and do great stuff, they'll be recognised for it.

When you recognise people, they're much more likely to try new things going forward, as well as doing more to benefit the wider community. When you don't recognise people, there's an inverse effect. The increasing profile

Adobe Stock/onkey Business

you mentioned really does shine a light on that.

MB: If we want to continue leading the sector successfully, we need to involve and train young talent from the start. That includes visiting things like Critical Communications World.

After the Rising Stars panel [at CCW last year], my colleagues started to say, "Oh, our rising star is here." I really like that.

MS: The idea of having a training programme in a company is something which could conceivably arise from attending events such as CCW. The wider implication of that is long-term continuity in a concrete way.

I like to draw a parallel with the ship-building industry. If you're not building new ships for a decade, you're going to be saving money, but the industry will atrophy. Then, a few decades down the line, when you need to replace the old, rusting ships, building the industry up again might be impossible.

Keeping those capabilities in existence by spending a little bit more in-between those times is of value in and of itself. This is very much a similar situation [to what we've been discussing].

For instance, looking at TETRA networks, they can be maintained and serve their purpose very well for the next couple of decades. But if we are not taking the steps towards the next technologies, in 10 or 15 years when people want to use 6G, who will be there who can build it?

" We need to involve and train young talent from the start "

In the same way, if [engineers] aren't aware of mission-critical requirements and expectations, they will need to start building this knowledge out of thin air. So, younger people interacting with the industry gurus now is a very important starting point.

AP: Another thing is that if we aren't recognising upcoming individuals and supporting them in their growth, they might not want to take on the challenges that are going to be passed on to them.

They might not be ready, they might not be skilled. And even if they do take it on, they might make the same mistakes which have already been made historically.

VP: If we don't include the younger generation, that could create disillusionment. It could discourage their participation and contribution in creating future chances for our sector.

Is it a sector that young engineers tend to gravitate towards? If not, why not?

AP: I think we need to ask what are the things that would actually bring people into an industry. You're much more likely to 'intentionally' follow a direction or career if you've heard about it. It is almost impossible if you haven't.

I studied engineering for six years, and I never thought about mission critical or public safety. With that in mind, even as a young person in the sector, why would I know about TCCA or the various APCOs across the world, if the industry doesn't reach out to me?

MS: Personally, my path to the sector involved a course related to satellites. After which, I ended up studying electrical engineering and finding an opportunity at Airbus.

It's a long journey, but the important thing is providing the opportunity for talent. The panels at CCW and awards such as Young Engineer of the Year are important, but then there is always room to do more, particularly in this industry.

Would it be beneficial for the industry to reach out to universities when it comes to recruitment?

MS: Very much so. Bringing this kind of information to university students is very much of value. Letting them know that there are interesting careers to be made in this sector.

We need to keep doing all the things we've been talking about, but also looking at the visible next steps which can be taken. How do we involve young professionals even further, getting people excited about working for this life-saving and important industry sector?

AP: Young people need to come together and form communities to support each other, driving not only their careers but the success of the sector itself. We can't depend on the current leadership in the industry to do it for us.

We must be prepared to put in the effort to create the communities we need. Of course, bringing industry leadership on the journey with us is critical, but it is on us to ensure we are ready to 'take on the mantle'.

MB: I totally agree. I'm very happy to be part of this young engineers community. ◉

If you are a young engineer in the sector – or if you manage/ mentor a young engineer – please contact admin@tcca.info for more information about becoming actively involved in this burgeoning community.

TCCA Critical Communications WORLD 2025

200+
GLOBAL BRANDS

200+
LEADING SPEAKERS

31
GOVERNMENT AUTHORITIES

3
CONFERENCE THEATRES

SHOW PREVIEW

17-19 JUNE 2025

BRUSSELS EXPO, BELGIUM

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in **TCCA CRITICAL COMMUNICATIONS WORLD**

CONTENTS

VISITOR INFORMATION

VENUE:

Brussels Expo
Place de Belgique 1, 1020 Brussels

Opening Hours:
Tuesday 17th June: 10.00-17.30
Wednesday 18th June: 09.00-17.30
Thursday 19th June: 09.00-15.30

REGISTER FREE
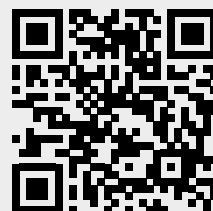
Brussels is a major hub for European institutions and international organisations. It offers a central location that facilitates participation from stakeholders across the region.

The country will showcase its achievements in critical communications technology, while fostering collaboration among industry experts from the European Union and beyond.

The city has an incredible wealth of culture, heritage and architecture just waiting to be discovered. During your visit, make sure you explore its must-see places and museums.

WHY VISIT CCW

Join the global networking hub!
Serving the sector for more than 20 years, CCW unites mission-critical and business-critical end-users with manufacturers and suppliers for three days of inspiration, knowledge and connections. At its heart CCW is a global networking hub, allowing visitors to view the latest technology and forge new business relationships with partners from across the globe.

CCW is the global event of the year. It boasts an exhibition of leading international brands, a conference programme led by industry experts, in-depth focus forums, and government authorities fostering collaboration across international borders.

For 2025 meanwhile, ASTRID User Days will be held in conjunction with CCW, presenting a unique opportunity for the event and more conference content than ever before.

CHAIR'S WELCOME

TCCA Chair Mladen Vratonjic welcomes readers to this preview of the most important event in the critical communications calendar, CCW 2025

MLADEN VRATONJÍC,
BOARD CHAIR, TCCA

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CCW SETS THE PACE AND AGENDA FOR OUR SECTOR

REGISTER FREE
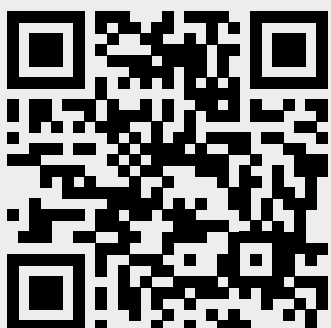
Presented by TCCA, Critical Communications World (CCW) sets the pace and the agenda for the ongoing development of our sector. We are delighted this year to be in the vibrant city of Brussels, the administrative centre of the European Union - and to have the support of tourism organisation visit.brussels, which promotes this city so rich in history, architecture and culture.

One of the key phrases we use in TCCA is 'success in cooperation'. Nowhere has this been demonstrated so successfully as in this year's CCW, where ASTRID - our longstanding member, innovator in critical communications, and operator of the national radio communications, paging and dispatching network for emergency and security services in Belgium - is our host. A huge thank you to ASTRID's Salvator, Daniel, Michaël and rest of the team for all their support, help and advice over the past year as this event has come to fruition.

ASTRID has been instrumental in building the momentum for CCW 2025, as this year's event is co-located with the biennial ASTRID User Days, with a comprehensive programme in Dutch and French taking place across the three days of CCW.

The ASTRID User Days stream covers key topics such as the transition from TETRA to 5G and the modernisation of emergency call centres. They also give strategic insights into Blue Light Mobile, ASTRID's innovative priority, high-availability mobile voice and data communication service for first responders.

So what to expect from CCW 2025? This is our largest event to date, with more than 250

exhibiting organisations and more than 200 speakers across the three theatres, Focus Forums and workshops. The CCW exhibition is the stage on which to showcase new products and innovations to a global audience; to unveil the future; to analyse the past and present; and to promote cooperation across our sector.

This year's conference once again brings expertise from around the world, providing a microcosm of the world of critical communications. There is such a wealth of experience, insights, learnings and wisdom to be shared during CCW, so please do take advantage and attend as many presentations as you can.

CCW is also the place where we are incredibly proud to be able to spotlight the invaluable work of TCCA's Working Groups and task forces. They will share the amazing depth of knowledge concentrated in these communities.

TCCA is committed to advancing global critical communications for a safer, more connected world, by helping to empower critical communications users with secure, trusted, and standardised technologies.

CCW is the event where this vision and this mission becomes tangible. Where real, demonstrable, solid progress can be seen as we all work together to enhance the quality and potential of critical communications.

Come and find out more about TCCA in our Members' Lounge – come and share a celebration cake as we mark our 30th anniversary. We look forward to meeting as many of you as possible. Enjoy the show!

WHAT'S ON

EXHIBITION – MEET 200+ LEADING MANUFACTURERS, SUPPLIERS AND ASSOCIATIONS

Critical Communications World unites our global sector and provides the best opportunity for you to discover cutting-edge technology, watch first-hand demonstrations, try out equipment, and discuss the needs of your business with leading experts.

At CCW you will meet 200 international suppliers, covering every aspect of mission critical communications technology. That includes AI, mission critical broadband, command and control, cyber security, DMR, facial recognition, IoT, network services, ruggedised devices, satellite, TETRA and much more.

Visitors will have the opportunity to connect with brands such as our Platinum Sponsor, Motorola Solutions, and Gold Sponsor Ericsson. With thousands of innovative products and solutions on show, CCW is the best place see the technology at the forefront of critical communications.

CONFERENCE – WORKING TOGETHER

The theme for 2025 is **Working together: Advancing global critical communications for a safer, more connected world.** Over 200 speakers in three theatres across three days will present a huge range of cutting edge sessions which are specifically curated to expand your knowledge.

Hosted by some of the most respected thought leaders in the sector, the packed programme consists of keynote addresses, presentations and panel discussions that cover three key themes: Working Together Internationally, Innovating Together, and Working Together with All Industry Players.

Plus, make it four days with a pre-conference workshop: Advances in Situational Awareness Tools, taking place on Monday 16th June. Take an afternoon before Critical Communications World to learn about the vital situational awareness innovations you will find on the Brussels Expo exhibition floor during your visit.

ASTRID USER DAYS

ASTRID User Days are being held in conjunction with Critical Communications World 2025, offering a unique opportunity to explore the future of critical communications for emergency and public safety services. Over the course of three inspiring days, participants will attend sessions focused on technological innovations, strategic projects, and developments in the Belgian communications landscape.

ASTRID will present an extensive dual-track content programme with all sessions in both French and Dutch.

TECH TOURS - A DETAILED LOOK AT SPECIFIC AREAS OF INTEREST

Escorted by a member of the event team, these free of charge tours take a detailed look at specific areas of technology. They offer the opportunity to meet carefully selected exhibitors and watch live product demonstrations, ask questions, and explore new and innovative technologies.

Topics include Delivering Next Generation Mission Critical Services, Command & Control Centre Communications, Emerging Technology Solutions, Transitioning to Broadband, Vertical Case Studies, and Narrowband and LTE Devices.

FOCUS FORUMS – KNOWLEDGE SHARING AND COMPREHENSIVE UPDATES

Running alongside the main conference programme, the CCW Focus Forums are in-depth, deep-dive sessions providing knowledge sharing and comprehensive updates in each topic area. The focused sessions will comprise multiple presentations, interactive workshops and roundtables, allowing specialists to come together to learn about developments and share their own challenges, experiences and skills.

Topics include Interworking (IWF) between Narrowband and Broadband, MCX Testing & Certification, Security of Critical Communications, Advancing Mission-Critical Broadband, Network Coverage and Resilience Solutions, and Expected Role of AI on Critical Comms.

THE GLOBAL VILLAGE

A dedicated space for representatives of national critical communications projects from around the world to come together to discuss ideas, challenges and best practice.

Fostering a spirit of collaboration across international borders, the Global Village facilitates knowledge sharing and benchmarking, while at the same time, enabling organisations to share the great work they are undertaking. We are once again looking forward to welcoming government agencies from around the world:

Australia: New South Wales Telecoms Authority (NSWTA) | **Belgium:** ASTRID | **Brazil:** Federal Police (PF), FNPS (Ministry of Justice), Ministry of Communications, Anatel, EAF and Telebras | **Canada:** PSBN Innovation Alliance | **Denmark:** Danish Centre of Emergency
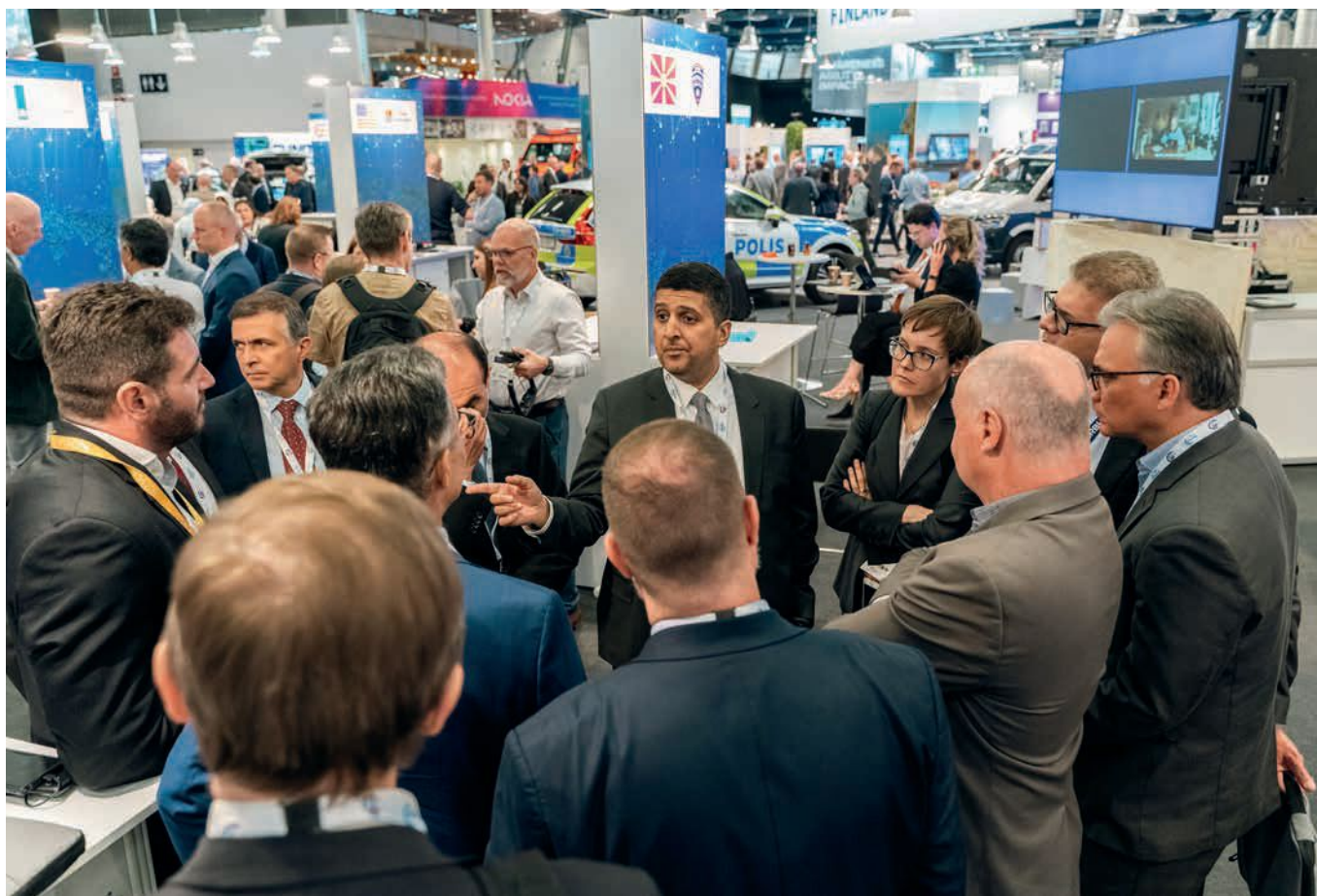
Communication (CFB) | **Estonia:** RIKS (Riigi Infokommunikatsiooni SA) | **Europe:** European Commission | **Finland:** Erillisverkot | **France:** RR French Ministry of Interior | **Germany:** Federal Agency for Public Safety Digital Radio (BDBOS) | **Hong Kong:** Hong Kong Police | **Hungary:** Pro M | **Iceland:** 112 Iceland | **Latvia:** Ministry of the Interior of the Republic of Latvia | **Macedonia:** Macedonia MoI | **Netherlands:** Ministry of Justice and Security, Netherlands | **Norway:** The Norwegian Directorate for Civil Protection (DSB) | **Poland: Polish Police** | **Republic of Korea:** Safenet | **Saudi Arabia:** CITC Communications and Information Technology Commission | **Serbia** - Ministry of Interior | **Spain:** Spanish Ministry of Interior | **Sweden:** Swedish Civil Contingencies Agency (MSB) | **UK:** ESMCP (ESN) | **USA:** NIST / PSCR and Firstnet.

PARTNERS' VILLAGE

Once again CCW welcomes a host of leading professional associations which can provide valuable guidance as we move forward into an ever evolving landscape. Expect to meet representatives from **5GAA, 450**

Alliance, EENA, European Utilities Telecom Council (EUTC), EUCCS Preparation, EUWENA, Global Certification Forum, Public Safety Communications Europe (PSCE), and **Wray Castle.**

THE INTERNATIONAL CRITICAL COMMUNICATIONS AWARDS

Taking place on Tuesday 17th June 2025 at the Brussels Marriott Hotel Grand Place, the ICCAs are the most prestigious awards in critical communications. Celebrating excellence in the sector, the highly anticipated programme recognises the success of products,

organisations and individuals that have pushed boundaries and capabilities within the field.

An expert panel of independent judges are looking to reward the best and most innovative work in the sector, both in terms of the technology itself, and how it is being rolled out and used on the frontline.

The individuals behind these innovations are what fuels the sector, and the ICCAs also acknowledge its most influential personalities, with categories including TCCA Young Engineer of the Year and the Phil Kidner Outstanding Contribution to Critical Communications award.

5000+
CRIT COMMS PROFESSIONALS

200+
LEADING EXHIBITORS

200+
EXPERT SPEAKERS

SPEAKER HIGHLIGHTS

FREDRIK RYBERG, *SUPERINTENDENT AND HEAD OF OPERATIONS RG2, SWEDISH POLICE AUTHORITY*

Fredrik's key focus is on operating procedures, as well as end user perspectives. A police officer for 17 years, he has been appointed by the Swedish government to represent the country at the EU Mission Critical Communication Group (MCCG).

He is chairman of the MCCG Standard Operating Procedures Group. He is also a member of other international and national forums in the realm of critical communications.

THE SWEDISH END USER STORY - THE JOURNEY TOWARDS A NEXT GENERATION MISSION CRITICAL NETWORK
14:15–14:45, 17TH JUNE, THEATRE A

....

LENE GISSELØ MAALØE, *HEAD OF CENTRE, DANISH CENTRE OF EMERGENCY COMMUNICATION*

Lene has been in-post since September of 2016, and has been involved with numerous national technology projects involving IT, security documents and radio communications.

The key responsibility for the Centre of Emergency Communication is to operate and develop SINE, the Danish national emergency radio network. The centre operates under the auspices of the Ministry of Resilience and Preparedness.

CRITICAL COMMUNICATIONS IN DENMARK
16:30–16:45, 17TH JUNE, THEATRE A

....

BRIAN FONTES, *CEO, NENA*

Brian has been NENA CEO since June 2008. Prior to this, he was Vice President, Federal Relations for Cingular Wireless, also serving in that capacity after its acquisition by AT&T.

He is also currently on the Board of Directors of the NG911 Institute, as well as an emeritus member of the Quello Center for Telecommunication Management, Policy and Law.

KEY ISSUES FACING THE CHANGING EMERGENCY COMMUNICATIONS WORLD
10:00–10:30, 18TH JUNE, THEATRE A

....

CRISTINA LUMBRERAS, *TECHNICAL DIRECTOR, CHAIR, EENA, ETSI EMTEL*

Cristina Lumbreras is EENA Technical Director, where she leads the coordination of technical and operational activities, promoting innovation in emergency communications.

Her work focuses on the deployment of Next Generation 112, advanced caller location, accessibility, and critical communications across different networks. She represents EENA at ETSI and chairs the ETSI Technical Committee EMTEL.

TRANSFORMING PSAPS: NEXT GENERATION CALLS, MULTIMEDIA, AND AI INTEGRATION
16:00–16:25, 18TH JUNE, THEATRE B

....

PATRÍCIA LEAL COUTINHO, *EXPERT IN REGULATION*
BRAZILIAN NATIONAL TELECOMMUNICATIONS AGENCY, ANATEL BRAZIL

Patricia has been heavily involved in regulation initiatives, looking at the use of communications tech for disaster preparedness and response. She was responsible for implementing the 'Defesa Civil Alerta', a cell broadcast-based alerting system.

Patricia holds a bachelor's and a master's degree in electrical engineering, as well as a specialisation in telecommunications from the University of Brasília.

CIVIL DEFENCE ALERT PROJECT
11:15–11:30, 19TH JUNE, THEATRE A

....

JUKKA VIALEN, *VICE-CHAIR, WG SA6, 3GPP AND AIRBUS*

Jukka has 32 years of experience in the mobile communications industry. For the first 16 years of his career, he worked for the Nokia Research Center and Nokia Networks, before joining Airbus in 2009.

He joined 3GPP SA6 in early 2017, being elected as Vice Chair in 2019. Since then he has been leading the mission critical work in SA6.

3GPP MISSION CRITICAL STANDARDS - PAST, PRESENT AND THE FUTURE
12:30–13:00, 19TH JUNE, THEATRE C

SPEAKER INTERVIEW

Ahead of her presentation at CCW 2025, former US fire administrator **Dr Lori Moore-Merrell** discusses the crucial role played by mission-critical communications in combatting the increasing threat of wildfires

"

COMMUNICATIONS TECHNOLOGY HAS BEEN PIVOTAL IN THE EVOLUTION OF WILDFIRE MANAGEMENT STRATEGIES

REGISTER FREE

What will you be talking about at CCW 2025? Why is it an important topic?

At CCW 2025, I will be discussing the critical intersection of climate change and wildfire management. I will be focusing on innovative strategies and technologies, including the NERIS data platform, that address this escalating challenge.

As wildfires become more frequent and severe, understanding their dynamics within the broader context of climate change is essential. This topic is vital, not just for environmentalists and policymakers but for communities worldwide that are increasingly affected by wildfire events.

By exploring proactive measures, we can develop more effective strategies for prevention, response, and recovery, ensuring public safety and ecological resilience.

For those who don't know, what are the links between climate change and wildfires? What does the science say?

The links between climate change and wildfires are well-documented. Rising global temperatures, due to increased greenhouse gas emissions, have led to prolonged droughts, reduced snowpack, and earlier snowmelt, all of which create conditions conducive to wildfires.

According to the Intergovernmental Panel on Climate Change [IPCC], the frequency and intensity of wildfires are expected to increase as climate change progresses. Scientific studies indicate that heatwaves and dry conditions enhance vegetation dryness, making it easier for fires to ignite and spread.

The connection is clear. As our climate continues to warm, the risks and impacts of wildfires are likely to intensify, necessitating urgent action and adaptation strategies.

How has wildfire strategy evolved in the US and around the world, as the risks have become more acute?

Wildfire strategy has evolved significantly in recent years in response to the increasing risks. Historically, the predominant approach was fire suppression, focusing on extinguishing fires as quickly as possible.

However, this has shifted towards a more integrated approach that includes prevention, mitigation, and controlled burns. In the US, agencies like the US Forest Service have begun to emphasise forest management practices, such as thinning overgrown areas and conducting prescribed burns to reduce fuel loads.

Globally, countries are adopting similar strategies, incorporating community involvement and indigenous knowledge into fire management practices. This holistic approach recognises that fire can be a natural part of many ecosystems and seeks to balance ecological health with human safety.

The NERIS data platform plays a critical role in this evolution by providing comprehensive data analytics and insights that inform decision-making and enhance the effectiveness of wildfire management strategies.

What part has communications technology played in that evolution?

Communications technology has been pivotal in the evolution of wildfire management strategies.

Advanced satellite imagery and remote sensing technology allow for real-time monitoring of fire conditions, enabling quicker response times and more accurate forecasting of fire behaviour. The NERIS data platform meanwhile enhances this capability by aggregating and analysing vast amounts of data related to wildfire risks and environmental conditions.

Social media platforms and apps provide vital communication channels for disseminating information to the public during wildfire events, helping to keep communities informed and safe. Additionally, data analytics and machine learning utilised by platforms like NERIS are being employed to predict fire risks and assess the effectiveness of various management strategies.

These technologies not only enhance operational efficiency but also foster greater community engagement and preparedness.

Is there an increasing sense of urgency about this in the US, for instance following the fires in Los Angeles earlier this year?

Absolutely. There is a growing sense of urgency regarding wildfire management in the US, particularly in light of the devastating fires that occurred in Los Angeles and other regions earlier this year.

The intensity and destruction wrought by these fires have underscored the reality of climate change and its direct impact on public safety. Communities are becoming more aware of the risks, prompting increased advocacy for better policies and investment in fire resilience.

The NERIS data platform has emerged as a crucial tool in this context, offering insights that inform policy discussions and community preparedness efforts. Furthermore, the urgency is reflected in the heightened discussions among policymakers, researchers, and community leaders.

These discussions are about the need for comprehensive strategies that address both the immediate threats and the long-term implications of climate change on fire dynamics. The recent events serve as a clear call for action, emphasising the necessity for collaboration across sectors to develop sustainable solutions.

CRITICAL COMMUNICATIONS WORLD 2025
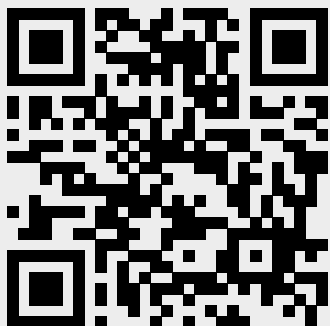
FOCUS FORUM AND WORKSHOP TIMETABLES:

17 – 19 JUNE
BRUSSELS EXPO, BELGIUM

Monday 16th June
Location: Room 1121 A&B

13.30-17.00
PRE-CONFERENCE WORKSHOP: ADVANCES IN SITUATIONAL AWARENESS TOOLS
Leveraging critical communications networks to deliver enhanced geospatial situational awareness to field personnel
This workshop provides operational field responders, agency leaders, and the private sector with vital information about the new software advances delivering real-time geospatial situational information to the handheld devices used by field personnel.
Session Leader: Ken Rehbehn, Principal Analyst, CritComm InsightS

Tuesday 17th June
Location: Hall 11: P70

14.00-15.30
TCCA FOCUS FORUM: INTERWORKING (IWF) BETWEEN NARROWBAND AND BROADBAND
TETRA IWF SO is published, a new IWF WG has been established in TCCA and the working group will share their first results in this focus forum

Session leader: Harald Ludwig, Chairman Technical Forum, TCCA.
Speaker: Michel Duits, Chief Engineer Technical Management and Development, DSB
After the Focus Forum there will be a possibility to join a tour through the exhibition hall to companies which have IWF solutions. The tour will be approx. 1 hour.

16.00-17.30
TCCA WORKSHOP: THE FUTURE STARTS HERE
An interactive workshop – help us shape TCCA initiatives to better support the next generation. As part of the Rising Stars activities, this workshop led by Dr Aaron Page, Actica; Markus Saynevirta, Airbus and Merve Bayram, Frequentis previous rising star panellists, explores how the TCCA can support young talent to flourish in the critical communication sector. Attend to share your views on what the sector wants, needs and most importantly how we can work together to make beneficial initiatives become a reality.
Be part of the conversation. Be part of defining the future.

Wednesday 18th June
Location: Hall 11: P70

14.15-15.45
TCCA FOCUS FORUM: MCX TESTING & CERTIFICATION
Discussing the MCPTT certification launch; ongoing work to establish an Interoperability test program; progression of server-side certification
Session leader: Harald Ludwig, Chairman Technical Forum, TCCA.
Speakers: Asif Hamidullah, Head of Certification - IoT & Verticals, Global Certification Forum
Nina Myren, Director & Board Member, TCCA
*Peter Gundersen*, Consultant, Mission Critical Communication, Combitech Sverige
Fidel Liberal, Professor, University of the Basque Country; *Thibault Holley*, Director Solutions & Partnerships, Crosscall; *Magnus Tränk*, Technical Product Manager, Ericsson; *Anders Granath*, Solutions Architect, MSB; *Charlotte Rösener*, New Business Development, Frequentis

16.00-17.30
TCCA FOCUS FORUM: SECURITY OF CRITICAL COMMUNICATIONS
- Update of Recommendation 03 – TETRA risk assessment
- IoT security and impact to TETRA
- Mission Critical recording and replay
- Resilience in critical communication systems
Session Leader: Trevor Evans, Chair, SFPG Group, TCCA
Speakers: Steen Petersen, Danish Centre of Emergency Communication; *Mark Wealleans*, Motorola Solutions Ltd, UK; *Mika Laitinen*, Airbus Finland; *Brian Murgatroyd*, TCCA
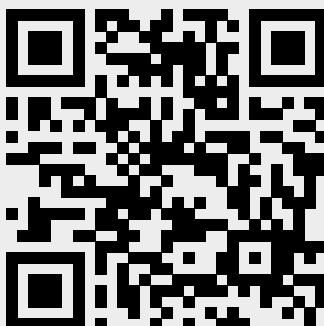
Thursday 19th June
Location: Hall 11: P70

11.00 – 12.30
TCCA FOCUS FORUM: INFORMATION SHARING: ADVANCING MISSION-CRITICAL BROADBAND: INSIGHTS, INNOVATIONS & GLOBAL INITIATIVES
This dynamic Focus Forum session will provide an update on the latest task forces and activities from the TCCA Critical Communications Broadband Group (CCBG) and Broadband Industry Group (BIG).
- Critical communications cybersecurity developments
- Advances in 5G Device-to-Device (D2D) sidelink communication
- 4G/5G MC roaming updates and GSMA collaboration
- National strategies and examples in the migration from narrowband to broadband
Session leader: Tero Pesonen, Vice-Chair, TCCA and Chair, TCCA's Critical Communications Broadband Group
Speakers: Filippo Gaggioli - Head Product Introduction Security, Nokia
Guilherme Pizzato - Head of Public Safety - Nokia Mobile Networks & Chairman of Broadband Industry Group, TCCA
Jason Johur - Strategy Director & Board Member, TCCA
Renaud Mellies - Head of International Collaboration, Standardization & Innovation, ACMOS

13.00 – 14.00
TCCA FOCUS FORUM: INTERACTIVE WORKSHOP: NETWORK COVERAGE & RESILIENCE SOLUTIONS
Leading experts will explore cutting-edge solutions that enhance the performance and reliability of broadband critical communication networks in the field with practical insights into strategies such as leveraging non-terrestrial networks, deploying rapid-response units like CoLTs and portable backpack solutions, and strengthening infrastructure through site hardening and backhaul redundancy. Spotlighting emerging technologies including 5G sidelink relay and advanced AI-powered radio network solutions designed to ensure continuous, secure and reliable broadband connectivity even in the most remote or demanding scenarios.
Session leader: Guilherme Pizzato - Head of Public Safety - Nokia Mobile Networks & Chairman of Broadband Industry Group, TCCA
Speakers: Renaud Mellies - Head of International Collaboration, Standardization & Innovation, ACMOSS
Claire Raynal - Cheffe de Bureau, ACMOSS
Brad Morell - Director for Network Technology Operations and International Engagement, FirstNet Authority
Sanne Stijve - Global Business Development Director, Ericsson AG

14.00-15.00
TCCA FOCUS FORUM: INTERACTIVE WORKSHOP: EXPECTED ROLE OF AI ON CRITICAL COMMS
Session leader: Ken Rehbehn - Principal Analyst, CritComm Insights
Speakers: Jason Johur - Strategy Director & Board Member, TCCA
Sami Honkaniemi - Managing Director Critical Communications, Modirum Platforms

REGISTER FREE

SESSIONS ARE FREE TO ATTEND BUT SPACES ARE LIMITED. YOU MUST BE REGISTERED AS A VISITOR TO ATTEND. YOU CAN BOOK YOUR PLACE TO ATTEND BY REGISTERING FOR THE EVENT: WWW.CRITICAL-COMMUNICATIONS-WORLD. COM/FOCUS-FORUMS.

CONFERENCE TIMETABLE
Day One – Tuesday 17th June 2025

KEYNOTE - WORKING TOGETHER - ADVANCING GLOBAL CRITICAL COMMUNICATIONS FOR A SAFER, MORE CONNECTED WORLD
Session Chair: Sasha Qadro, Professional Presenter

11.00 TCCA WELCOME AND INTRODUCTION- UPDATE ON TCCA MATTERS
Mladen Vratonjic, Chairman of the Board, TCCA
Kevin Graham, CEO, TCCA
Tero Pesonen, Vice Chair, TCCA

11.15 WELCOME ADDRESS BY THE MINISTER
Bernard Quintin, Minister for Security and Home Affairs, Belgium

11.30 CRITICAL COMMUNICATIONS IN BELGIUM: A WARM WELCOME FROM THE HOST OPERATOR
Salvator Vella, Director General, ASTRID

11.45 ESTABLISHING THE EUROPEAN CRITICAL COMMUNICATION SYSTEM TO KEEP EUROPE SAFE AND SECURE
Video Address: Henna Virkkunen, Executive Vice-President, Tech-Sovereignty, Security and Democracy, European Commission

12.00 PANEL DISCUSSION: ENSURING THE SAFETY & SECURITY OF EUROPEAN CITIZENS IN THE GLOBAL ECOSYSTEMS
Panellists: Olivier Onidi, Deputy Director-General and Schengen Co-ordinator, Migration and Home Affairs (DG HOME), European Commission
Salvator Vella, Director General, ASTRID
Magnus Packendorff, Head of Mission Critical Networks, Ericsson
Jeroen de Graaf, Director, Ministry of Justice, The Netherlands

12.45-13.00 INDIA UPDATE
Sanjay Kumar Agrawal, Director, DCPW, Ministry of Home Affairs

13.00- 13.45 EXECUTIVE PANEL- FUTURE TECHNOLOGIES
Moderated By: Robin Davis & Iain Ivory, Co-Chairs, Future Technologies Group, TCCA
Peter Hudson, CTO, Sepura
Sami Honkaniemi, Managing Director, Critical Communications, Modirum Technologies
Antti Kauppinen, CTO, Erillisverkot
Eric Davalo, CTO, Airbus
Katja Millard, Corporate Vice President, Critical Communication Networks, Motorola Solutions
Christophe Gregoire, Director of Technology & Operations, ASTRID
Renaud Mellies, Head of International Cooperation, Standardisation and Innovation, RRF Programme, ACMOSS
Bidar Homsey, Chair ACCF
Patricia Campos Millos, International Business Development Director, Ericsson Mission Critical Networks

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Theatre A - Hall 11
Working Together Internationally for a safer, more connected world

13.50-14.40 SESSION: COLLABORATION AND COOPERATION
Session Chair: Sasha Qadro, Professional Presenter

13.50 END USER CASE STUDY GHENT POLICE DEPARTMENT - HOW BODY CAMERA TECHNOLOGY IS HELPING FRONTLINE OFFICERS STAY SAFE
Ruben Vansevenant, Chief of Police, Ghent Police Department

14.15 THE SWEDISH END USER STORY, THE JOURNEY TOWARDS NEXT GENERATION MISSION CRITICAL NETWORK
Fredrik Ryberg, Police Authority; *David Högberg*, Fire Chief & Senior Advisor, SOS alarm & *Christian Bohlin*, Reg. Nurse Ambulance Service & IT Strategist, Swedish Health Care

14.45- 16.10 SESSION COLLABORATION AND COOPERATION
Session Chair: Sasha Qadro, Professional Presenter

14.45 CONNECTING PPDR 5G NETWORKS WITH PRIVATE 5G NETWORKS
Christian Bohlin, IT-strategist, Region Västra Götaland; *Sofia Enlund*, Head of Development & Project Management, Swedish Civil Contingencies Agency

15.10 MANAGING MASSIVE AMOUNTS OF MISSION CRITICAL VIDEOS TO SUPPORT FIRST RESPONDER OPERATIONS
Sanne Stijve, Global Business Development Directors, Ericsson AG), *Geir Myhre*, Senior Principal Engineer, Norwegian Police & *Sami Honkaniemi*, Managing Director, Critical Communications, Modirum Platforms

15.35 CASE STUDIES: ACHIEVING INFORMATION SUPERIORITY FOR THE SAFETY OF 2025 JUBILEE IN ROME, ITALY & MISSION CRITICAL TO ENABLE THE COLLABORATION AND THE CONVERGENCE OF DIFFERENT OPERATIONAL DOMAINS
Enrico Colaiacovo, Director for the Digital Transformation Department – Comune di Roma

16.00-17.30 GLOBAL VILLAGE SESSION
Session Chair: Peter Clemons, Global Head Critical Communications, ENENYS Technologies

16.00 INTEGRATING WITH COMMERCIAL PARTNERS TO DELIVER THE EMERGENCY SERVICES NETWORK
John Black, Programme Director, ESMCP – Home Office
David Salam, Chief Technology Officer, Emergency Services Network BT/EE
Andrew Doggett, Programme Director - ESN, IBM

16.15 ENSURING CONNECTIVITY: ADVANCING CRITICAL COMMUNICATIONS IN GERMANY
Thomas Scholle, CTO, BDBOS

16.30 CRITICAL COMMUNICATIONS STATUS IN DENMARK
Lene Gisselø Maaløe, Head of Centre, Danish Centre of Emergency Communication

16.45 B14, A GRASS ROOTS APPROACH TO PSBN
James Felton, Director of Operations, PIA / Peel Regional Police

17.00 BROADBAND COMMUNICATIONS OFFERING FOR THE HUNGARIAN PPDR COMMUNITY
Dr. Ferenc Balla, CEO, Pro-M, Hungry

17.15 Q&A DISCUSSION

17.30 END OF DAY ONE

Theatre B - Hall 7
Innovating Together for a safer, more connected world & Astrid User Days

13.00-16.00 ASTRID USER DAYS
For further information:
www.astrid.be/en/userdays/programme

16.00-17.30 SESSION: WHAT WILL CRITICAL LMR (TETRA, P25...) LOOK LIKE ACROSS THE NEXT DECADE?
Session Chair: Ildefonso de la Cruz, Senior Principal Analyst, Omdia

16.00 TETRA - THE GLOBAL IMPACT
Panellists: Francesco Pasquali, Chairman, TETRA Industry Group, TCCA
Ricardo Gonzalez, Strategy Director, Motorola Solutions
Peter Hudson, CTO, Sepura
Stuart Will, VP Sales, DAMM Cellular Systems

16.30 SECURING TETRA'S FUTURE
Brian Murgatroyd, Chairman, ETSI TC TCCE (Technical Committee for TETRA and Critical Communications Evolution)

16.50 EXTENDING THE REACH OF CRITICAL LMR, WHILE SECURING ITS FUTURE
Marcos Tomita, Project Manager, Stocktotal Telecomunicações, North America Regional Manager & *Gilson Pozzati*, North/South America Director, DAMM Cellular Systems

17.10 EXPANDING TETRA OVER BROADBAND & SATELLITE NETWORKS
Ricardo Gonzalez, Strategy Director & *Dr Katrin Reitsma*, Director TETRA Systems Solutions, Motorola Solutions

17. 30 END OF DAY ONE

Theatre C - Hall 7
Working Together with all industry players – Network Providers, Industry, End-users & Vertical Sectors for a safer, more connected world

13.00-14.30 SESSION: STANDARDS, REGULATION AND SPECTRUM

13.00 ASSESSMENT OF FUTURE SPECTRUM AND TECHNOLOGY
Ryan Poltermann, Chair, LMR-LTE Integration & Interop, NPSTC

13.20-13.55 PANEL DISCUSSION ON GLOBAL BEST PRACTICE IN QUALITY OF SERVICE, PRIORITY & PRE-EMPTION (QPP)
Panel Moderator: Jason Johur, Chair, Broadband Industry Group, TCCA
Zeineb Makni, End to End Mission Critical Broadband Network Solution Architect, Ericsson
Grant Emberson, Senior Network Architect Manager, BT
Matt Walsh, AVP Product Management, Development, AT&T
Kari Junttila, Development Manager, Erillisverkot
Frank Savaglio, Senior Technology Specialist Networks, Devices, Spectrum and Standardisation, Commercial Engineering Global Networks & Technology, Telstra
Martin Goldberg, RAN Product Management for Critical Communication, Nokia

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13.55 – 14.30 PANEL DISCUSSION: HOW TO ENSURE THE LEGAL & REGULATORY LANDSCAPE IS IN-STEP WITH THE TECHNOLOGY
Panel Moderator: Nina Myren, Director & Board Member, TCCA
Max Brandt, Team Leader Critical Communication, DG Home, European Commission
Kari Junttila, Development Manager, Erillisverkot
John Foley, Managing Director, Safer Buildings Coalition
Mark Taylor, Client Partner, Home Office, Police and Justice Account Group CTO, IBM Consulting

14.35- 16.00 SESSION: MANAGING THE TRANSITION TO CRITICAL BROADBAND TOGETHER AS AN INDUSTRY
Session Chair: Marc Jadoul, Marketing Strategist, ASTRID

14.35 IS THE CRITICAL COMMUNICATIONS MARKET READY FOR "ONE SIZE FITS ALL" CONNECTIVITY
Marc Jadoul, Marketing Strategist, ASTRID

14.50 TAKING BELGIUM'S CRITICAL COMMUNICATIONS TO THE NEXT LEVEL: ASTRID'S NEXTGENCOM PROJECT
Jurgen Poels, NextGenCom Program Manager, ASTRID

15.05 WHEN THINGS GET BUSY – REAL WORLD MCX TESTING
Simon Lambert, Quality Assurance & Test (QAT), UK Home Office

15.30 PRACTICAL EXPERIENCE ON BROADBAND NETWORK PERFORMANCE FOR MISSION CRITICAL COMMUNICATION
Martin Goldberg, Head of Product Management – Critical Communications, Mobile Networks, Nokia

16.00-17.30 SESSION: MCX - THE EVOLUTION TO NEXT GENERATION MISSION CRITICAL SERVICES
Session Chair: Lars Nielson, CEO & General Manager, Global Certification Forum

16.00 INTRO - THE MCX CERTIFICATION PROGRAM - GCF CERTIFICATION OF 3GPP MCX SERVICES. A KEY STEP IN THE MIGRATION TO BROADBAND MCX
Harald Ludwig, Chairman Technical Forum, TCCA & *Asif Hamidullah*, Head of Certification - IoT & Verticals, Global Certification Forum (GCF) Ltd

16.20 EXAMPLE CASE STUDY DISCUSSION: HOW SWEDEN IS SPEARHEADING 3GPP MISSION CRITICAL CERTIFICATION
Anders Granath, Solutions Architect, MSB; Peter Gundersen, RISE/AstaZero; Magnus Tränk, Ericsson

16.35 MCX NETWORKS ADDING CALLOUT AND TWO-WAY PAGING
Hans Petter Naper, Chief Engineer, Norwegian Directorate for Civil Protection (DSB) & Task Force Chair, Mission Critical Broadband Callout, TCCA

16.50 ITALIAN DEFENSE PRIVATE MOBILE BROADBAND NETWORK: CHALLENGES AND OPPORTUNITIES
Representative of Stato Maggiore of Italian Defense

17.05 TRANSITIONING TO MODERN MISSION CRITICAL SOLUTIONS - MCX IN THE OFFSHORE ENVIRONMENT
Øyvind Skjervik, Chief Architect Mobile, Tampnet AS

17.20 Q&A

17.30 END OF DAY ONE

CONFERENCE TIMETABLE
Day Two – Wednesday 18th June 2025

09.35-10.45 KEYNOTE: INSIGHTS ON THE IMPLICATIONS OF EMERGING TECHNOLOGIES TO CRITICAL COMMUNICATIONS
Session Chair: Mladen Vratonjic, Chairman of the Board, TCCA

09.30 CIVIL MILITARY CO-OPERATION & STANDARDISATION
A Representative NATO

10.00 KEY ISSUES FACING THE CHANGING EMERGENCY COMMUNICATIONS WORLD
Brian Fontes, Ph.D., Telecommunication/Mass Media, NENA CEO

10.30 -10.45 Q&A

10.50-12.00 RISING STAR PANEL - YOUNG TALENT, NEW TECH AND WHAT'S NEXT...
Led By: Dr Aaron Page, Senior Consultant, Actica Consulting
Panellists: Georgie Green, Programme Management Office Analyst, Ambulance Radio Programme
Zoya Junaid, Project Manager, Motorola Solutions
Archie Charach, Pe-Sales Engineer, Sepura
Markus Saynevirta, Strategic Marketing Expert, Airbus
Veronica Pecchioli, Test & Validation Engineer, Leonardo

Theatre A - Hall 11
Working Together Internationally for a safer, more connected world

14.00-15.00 SESSION: ENSURING THE SECURITY OF CRITICAL COMMUNICATIONS
Session Chair & panel Moderator: Iain Ivory, Co-Chairs, Future Technologies Group, TCCA

14.00 QUANTUM SAFE NETWORKS FOR CRITICAL COMMUNICATIONS: TIME TO ACT IS NOW!
Giampaolo Panariello, CTO Network infrastructure, Nokia

14.20 PANEL DISCUSSION: PROTECTING CRITICAL COMMUNICATIONS: STRATEGIES FOR CYBERSECURITY AND DATA INTEGRITY
Nils Ahrlich, Head of Security Consulting, Nokia
Paolo Palumbo, Vice President, WithSecure Intelligence
Phil Burns, Director of Professional Service, Arqit
Robin Davis Executive Director & Board Member, Actica Consulting
Harri Pietilä, Strategic Product Manager, Chief Data Scientist, Ericsson
Ms. Noura A. Al Akeel, Chief Strategy Officer, Specialized by stc

15.00- 16.00 SESSION: HOW CAN AI AND DATA SPACES BE USED EFFECTIVELY IN CRITICAL COMMUNICATIONS?
Session Chair & Panel Moderator: Dr Aaron Page, Principal Consultant, Actica Consulting

15.00 PLANNING THROUGH A SCENARIO BASED ON A MAJOR ACCIDENT INVOLVING A LARGE NUMBER OF RESPONDERS FROM PUBLIC AND PRIVATE SECTOR
Eline Paxal, Director of Department, Directorate for Civil Protection (DSB) & Geir Ellingsen, Special Adviser in the Department of Emergency Communications, DSB

15.20 ARTIFICIAL INTELLIGENCE, BUT REAL-WORLD APPLICATIONS – LEVERAGING MACHINE LEARNING FOR ADVANCED PUBLIC SAFETY COMMUNICATION
Dereck Orr, Brianna Huettel, and Kerianne Gibney, Strategy and Operations Lead, United States National Institute of Standards and Technology (NIST) Public Safety Communications Research (PSCR)

15.40 PANEL DISCUSSION: HOW CAN AI AND DATA SPACES BE USED EFFECTIVELY IN CRITICAL COMMUNICATIONS?
Mohamad Khayat, Lead Architect, Airbus Public Safety and Security
Eline Paxal, Director of Department, Directorate for Civil Protection (DSB)

16.00-17.30 GLOBAL VILLAGE SESSION
Session Chair: Victor Marcais, Senior Partner, Telecom, Media & Technology, Roland Berger

16:00 BUILDING FRANCE'S FUTURE PUBLIC SECURITY NETWORK: INSIGHTS FROM THE RRF PROJECT & DEMONSTRATION
Guillaume Lambert, Director ACMOSS
Pierre Fortier, Vice President, Business Technology, Head of 5G & Mission Critical Communications, Capgemini
Eric Davalo, Vice President, Head of Europe and North America, Airbus Public Safety and Security

16:30 MIGRATING FROM CURRENT NARROWBAND TO BROADBAND PUBLIC SAFETY NETWORK IN ROMANIA
Mădălin-Virgil Mihai, Technical Deputy Director, STS Romania

16:45 KOREA SAFE-NET STATUS UPDATE AND FUTURE ADVANCEMENT STRATEGY
Dong-Chan Kim, Technical & Executive Officer (VP)- Safe-Net Forum, KAPST (Korea Association Public Safety Telecommunication)

17.00 INDIA CRITICAL COMMUNICATIONS UPDATE
Debashish Bhattacharya, Senior Director General, Broadband India Forum

17:15 Q&A

17:30 END OF DAY TWO

Theatre B - Hall 7
Innovating Together for a safer, more connected world & Astrid User Days

10.45-12.00 SESSION: INTEGRATING SATELLITE INTO THE CRITICAL COMMUNICATIONS ECO-SYSTEMS
Session Chair: Barbara Held, Senior Advisor, friedrich30

10.45 PROGRESS MADE: OVERVIEW OF LAST ONE OR TWO YEARS IN SPACE TECHNOLOGIES – OUTLOOK/PLANS FOR THE NEAR FUTURE
Zóltan Wirth, VP 5G/6G Strategy Lead, Airbus / Antti Kaupinnen, CxO, Erillisverkot

10.55 THE EUROPEAN APPROACH: IRIS2 IN THE MAKING
Anas Hanan, DEFIS European Commission: IRIS2 supporting European Sovereignty

11.05 CONVERGENCE BETWEEN INTERNAL AND EXTERNAL SECURITY: BATTLEFIELDS IN SPACE
Ville Meskus, Head of Business Development – Defence, Reorbit

11.15 CONFIDENTIAL AND SECURE COMMUNICATION IN EXTREME CRISIS SCENARIOS
Joachim Kalcher, CEO, Scotty Group & Dr. Jens Specht, Viasat

11.25 STACOM FOR TETRA
Frank Christophori, Head of Unit Security in Satellite Communication, BSI, Germany

11.35 SATELLITE COMMUNICATIONS IN THE 6G ERA: NEW POSSIBILITIES FOR PUBLIC SAFETY AND MILITARY USERS
Marko Höyhtyä, Associate Professor, Technology adaptation and disruptive technologies, Finnish National Defence University

11.45 Q&A PANEL: COMMON DENOMINATORS

13.00 -16.00 ASTRID USER DAYS
For further information: www.astrid.be/en/userdays/programme

16.00-17.30 SESSION: INNOVATING COMMAND AND CONTROL CENTRES COMMUNICATION
Session Chair: Monica Million, ENP, Million Consulting Services

16.00 TRANSFORMING PSAPS: NEXT-GENERATION CALLS, MULTIMEDIA, AND AI INTEGRATION
Cristina Lumbreras, Technical Director, EENA & Chair, ETSI EMTEL

16.25 ENHANCING CONTROL CENTRE EFFICIENCY AND RESILIENCE BY MIGRATING TO THE CLOUD
Matt Walsh, Assistant Vice President, Product Management & Scott Agnew, President of FirstNet & Public Sector Mobility, FirstNet, Built with AT&T

16.50 MODERNISING EMERGENCY CENTRES: ASTRID'S NEXT GENERATION PSAP
Christian Mouraux, Head of PSAP Products and Services, ASTRID

17.15-17.30 Q&A

17.30 END OF DAY TWO

Theatre C - Hall 7
Working Together with all industry players – Network Providers, Industry, End-users & Vertical Sectors for a safer, more connected world

10.45-12.00 SESSION: SHARING AND HIGHLIGHTING COMMERCIAL BROADBAND OPERATIONS VIEWPOINTS
Session Chair: Ghada El Nikheli, Market Leadership Team Leader, R&D, Ericsson

10.45 CASE STUDY -BLUE LIGHT MOBILE: A UNIQUE MULTI-OPERATOR SERVICE FOR PRIORITY BROADBAND COMMUNICATION
Nicolas Keukeleire, Product Manager Blue Light Mobile, ASTRID

11.10– 11.35 EMPOWERING PUBLIC SAFETY COMMUNICATIONS: UNLEASHING THE POTENTIAL OF FIRSTNET® AND 5G
Matt Walsh & Jeff Bratcher, Assistant Vice President, Product Management & Development & Assistant Executive Director and Chief Network and Technology Officer; FirstNet, Built with AT&T

11.35 SPONSORED SESSION: CRITICAL COMMUNICATIONS FINLAND: HOW THE FINNISH ECOSYSTEM ENABLES 5G MISSION CRITICAL OPERATIONS?
Panellists: Claus Still, CEO, Creanord Ltd
Mika Skarp, Senior Product Manager, Cumucore
Jari Tuliluoto, CTO, Goodmill Systems
Simo Ruoko, Partner & Owner, Roger-GPS Ltd
James Kenyon, Senior Specialist, Savox Communications Ltd

14.00-15.00 SESSION: IOT FOR CRITICAL COMMUNICATIONS – USE CASES AND APPLICATIONS
Session Chair: Nick Smye, Principal Consultant, Mason Advisory Ltd

14.00 CASE STUDY - PUTTING IOT & UAS DATA INTO RESPONDERS HANDS WITH ATAK
Ken Rehbehn, Principal Analyst, CritComm Insights and End-user adopters, Charles Laird, Technology Specialist, TAK Subject Matter Expert & Mark Halliday, Director, Mini Workgroups Ltd

14.25 IOT CONNECTIVITY IN CRITICAL ENVIRONMENTS PANEL
Panel Moderator: Nick Smye, Principal Consultant, Mason Advisory Ltd
Panellists: Maxime Flament, CTO, 5GAA
Oliver Ledgard, Public Safety strategy Direction EMEA, Zebra Technologies
Paul Pearson, Director Systems Engineering, Ericsson
Matti Peisanen, CEO, Netquori
Adrian Grilli, Technical Manager, European Utility Telecoms Council (EUTC)

15.00- 16.00 SESSION: CROSS SECTOR LEARNING TOGETHER ACROSS THE MISSION CRITICAL VERTICALS
Session Chair: Dr. Juergen Tusch, Senior Advisor, Tusch Consulting

15.00 SIMILARITIES AND DIFFERENCES IN THE CRITICAL COMMUNICATIONS SECTOR
Adrian Grilli, Technical Manager, European Utility Telecoms Council (EUTC)

15.15 UC'S STORY: HOW PRIVATE 450MHZ BROADENS THE TELECOM PORTFOLIO AND OFFERING LESSONS LEARNED
Tristan van Oorschot, Manager Business Development, Utility Connect

15.30 BENEFITS OF TETRA COMMUNICATIONS RESILIENCE FOR THE OPERATION OF THE MEXICAN NATIONWIDE ELECTRICAL DISTRIBUTION NETWORK
Juan Carboni, Head of Communications and Supervisory Control, Federal Electricity Commission (CFE), Mexico

15.45-16.15 DISCUSSION PANEL: DELIVERING RESILIENT CRITICAL COMMUNICATIONS FOR CRITICAL UTILITIES INFRASTRUCTURE & INDUSTRIAL APPLICATIONS
Panel Moderator: Dr. Juergen Tusch, Dr. Tusch Consulting -an independent consulting firm for critical utility telecoms & cyber security
Panellists: Carsten Ullrich, Founder of 450connect and Board Member of the 450MHz Alliance
Prakash Sadagopan, Global Head of Enterprise, Cloud and Network Services, Nokia
A Representative, L3 Harris
Tristan van Oorschot, Manager Business Development, Utility Connect
Juan Carboni, Head of Communications and Supervisory Control, Federal Electricity Commission (CFE), Mexico
JP Baker, Manager, Strategic Solutions, Communication Systems, L3 Harris
Rhys Clare, Airbus Australia

16.15-17.30 SESSION: CROSS SECTOR LEARNING TOGETHER ACROSS THE MISSION CRITICAL VERTICALS: CASE STUDIES
Session Chair: Bidar Homsey, Chair, ACCF

16.15 MISSION CRITICAL BROADBAND NETWORKS: WHAT MAKES RAIL AND UTILITIES DIFFERENT FROM PUBLIC SAFETY?
Noel Rushe, Telecom Network Manager, ESB Networks & Sanne Stijve, Global Business Development Director, Ericsson AG

16.35 MISSION CRITICAL SERVICES AS THE BACKBONE OF FRMCS, A NEW ERA FOR RAILWAY COMMUNICATIONS
Raquel Frisa, Head of Product Management, Teltronic

16.55 TRANSPORT PANEL DSICUSSION- BROADBAND MIGRATION STRATEGIES
Jamie Bishop, Director Business Solutions, Tait Communications
Thomas Brewster, Senior Service Delivery Manager, Transport for London
Sanne Stijve, Global Business Development Director, Ericsson AG
Raquel Frisa, Head of Product Management, Teltronic

17.30 End of Day Two

CONFERENCE TIMETABLE

Day Three – Thursday 19th June 2025

09.15- 10.45 KEYNOTE: DISASTER- RISKS, RESPONSE AND RESILIENCE WITH CRITICAL COMMUNICATIONS
Session Chair: *Robin Davis* Co-Chair, Future Technologies Group, TCCA

09.15 INTRODUCTION TO THE DAY

09.25 WILDFIRE- CLIMATE CHANGE DRIVEN RISKS, RESPONSE AND RESILIENCE - NERIS
Dr Lori Moore-Merrell, Former, US Fire Administrator

09.55 AI IN EMERGENCY RESPONSE
Dr Alejandro (Alex) Jaimes, Chief AI Officer at Dataminr

10.25 Q&A

10.35 CCW 2025 HANDOVER TO 2026 HOST OPERATOR

Theatre A - Hall 11
Working Together Internationally for a safer, more connected world

11.00-12.30 GLOBAL VILLAGE SESSION
Session Chair: *Ken Rehbehn*, Principal Analyst, CritComm Insights

11.00 FIRESIDE CHAT: STATE OF THE NPSBN
Moderated by *Chris Stevens*, Managing Director CartGiS Pty Ltd
Scott Agnew, President of FirstNet & Public Sector Mobility, AT&T *Brad Morell*, Director for Network Technology Operations, FirstNet Authority USA

11.15 CIVIL DEFENSE ALERT PROJECT
Patrícia Leal Coutinho, Expert in Regulation Brazilian National Telecommunications Agency – Anatel, Brazil

11.30 BRAZILIAN GOVERNMENT CRITICAL COMMUNICATION NETWORK: INTEGRATING LMR AND MCX DEFENSE AND PUBLIC SAFETY NETWORKS
Geraldo Segatto, EAF Head of Government Private Network, Brazil

11.45 CRITICAL COMMUNICATIONS IN PUBLIC SAFETY IN HK & HK SOS RESULTS OF LIFE-SAVING SOLUTIONS
Mohammed Swalikh, Senior Superintendent (Digital Policing Services Bureau), Information Systems Wing, Hong Kong Police Force

12.00 CRITICAL COMMUNICATIONS UPDATE AUSTRALIAN PSMB
Kylie De Courteney, Managing Director, NSWTA

12.15 FROM FRAGMENTATION TO COORDINATION: ACHIEVING INTEROPERABILITY IN EMERGENCY MANAGEMENT
Victor Antonio Cisneros Diaz, Director General of Information for the Secretariat of State Security of Mexico

12.30-12.45 SESSION Q&A

13.00-15.00 SESSION: FUTURE INNOVATION & HOW IT EFFECTS CRITICAL COMMUNICATIONS
Session Chair: *Sara Olsson*, Senior Strategic Advisor for Sweden's National Next-Generation Mission-Critical Broadband Program, MSB

13.00 IMAGINE THIS: A WORLD WHERE YOUR NETWORKS AREN'T JUST CONNECTING—THEY'RE ALSO SENSING AND UNDERSTANDING THEIR SURROUNDINGS
Kari Junttila, Development Manager, Erillisverkot & *Joerg Huschke*, Senior Researcher, Ericsson

13.30 DISCUSSION - NEXTGEN DEVICE-TO-DEVICE COMMUNICATION: A COLLABORATIVE STEP FORWARD FOR MISSION CRITICAL PUBLIC SAFETY
Sara Olsson, Senior Strategic Advisor for Sweden's National Next-Generation Mission-Critical Broadband Program, MSB,
Brittany Haile, Global Public Sector Solutions Lead, Qualcomm,
Walt Magnussen, Director of the Internet2 Technology Evaluation Centre (ITEC), Texas A&M University

14.00 UNCREWED AIRCRAFT SYSTEM (UAS) IN ACTION: ADVANCING PUBLIC SAFETY THROUGH TECHNOLOGY
Terese Manley, Strategy and Operations Lead, United States National Institute of Standards and Technology (NIST) Public Safety Communications Research (PSCR)

14.30 PUBLIC WARNING & PUBLIC EMERGENCY CALLING DISCUSSION SESSION
Panel Moderator: *Benoit Vivier*, Public Affairs Director, EENA
Panellists: *Patrick van der Linden*, Service Manager Alert Services, LMS
John Foley, Managing Director, Safer Buildings Coalition
Caroline Morisot-Pagnon, Expert in EWSS, Telespazio
Toon Van Loovere, Technical Lead, BE-Alert

End of Conference

Theatre B - Hall 7
Innovating Together for a safer, more connected world & Astrid User Days

11.00-12.30 SESSION: DEPLOYING TETRA HYBRID SOLUTIONS
Session Chair: *Tony Gray*, TCCA (retired)

11.00 EXPANSION AND IMPROVEMENT OF TETRA HYBRID SOLUTIONS IN INDONESIAN DEFENSE
Iroth Sonny Edhie, Major General, Indonesian Army

11.30 PIONEERING THE FUTURE AND PROTECTING INVESTMENTS: HYBRID INTEGRATED SOLUTIONS FOR NEXT-GEN MISSION-CRITICAL NETWORKS
Col Hamad Khalifa Al Nuaimi, Head of Telecommunication, Abu Dhabi Police

12.00 IP MIGRATION IN GERMANY: A CURRENT STATUS - ACHIEVING IP-READINESS IN GERMANY AS BASELINE FOR FUTURE BROADBAND CAPABILITIES
Thomas Brandt, Head of IP Migration, BDBOS

13.00-15.00 ASTRID USER DAYS
For further information: www.astrid.be/en/userdays/programme

15.00 END OF CONFERENCE

Theatre C - Hall 7
Working Together with all industry players – Network Providers, Industry, End-users & Vertical Sectors for a safer, more connected world

11.00 YOUNG ENGINEER OF THE YEAR PRESENTATIONS
Adam Howe, Graduate Acoustics Engineer, Sepura
Hu Chen, Hytera

11.20 SHARED EXPERIENCES WITH PRIVATE MOBILE BROADBAND NETWORKS IN CRITICAL ENVIRONMENTS
Panel Moderator: *Antoine van der Sijs*, Board Member, EUWENA
Panellists: *Christian Regnier*, Board Member, EUWENA

11.45 DIGITAL AIRSPACE ENABLING MISSION CRITICAL COMMUNICATION
Panel Moderator: *Kapil Mittal*, Global Head Digital Airspace, Ericsson
Panellist: *Brad Morell*, Director for Network Technology Operations, FirstNet Authority USA
Raphael Aebersold, Field CTO Mission Critical Communication, Swisscom
Stefano Faccin, Director Technical Standards, Qualcomm
Niklas Andersson, Infrastructure Strategist at Sundsvall Municipality, Sweden

12.30-13.00 3GPP MISSION CRITICAL STANDARDS - PAST, PRESENT AND THE FUTURE

13.00-13.30 SPONSORED SESSION CRITICAL COMMUNICATIONS FINLAND: HOW USERS SEE MISSION CRITICAL BROADBAND OPERATIONS?
Panellists: *Elina Avela*, CEO, Beaconsim
Kalle Arola, Managing Director, Elektro-Arola
Asko Saura, Principal Engineer, Portalify
Valtteri Koivisto, Sales Manager, Vitec Codea Oy

13.30 SHARING THE SURVEY RESULTS - REVOLUTIONISING CRITICAL COMMUNICATIONS
Ildefonso de la Cruz, Principal Analyst & *Paul Bremner*, Industry Analyst, Omdia

14.10 MOBILE COMPUTING FOR THE FRONT LINE PANEL DISCUSSION
Panel Moderator: *Chris Stevens*, Managing Director CartGiS Pty Ltd
Panellist: *Carlos de la Cuesta*, Senior Manager, Government and Public Safety, Zebra Technologies
Yves Van Tente, Business Development Manager, Airbus
Brittany Haile, Global Public Sector Solutions Lead, Qualcomm

15.15 END OF CONFERENCE

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