



# Enjeu!

THE ETSI MAG

## 35 years old and still growing strong.

**THE INTERVIEW** with Mike Short ■ **NEW MEMBER INTERVIEW** with Philippe Dallemagne, Senior Expert, CSEM ■ **TECH HIGHLIGHTS**, Quantum Key Distribution: certifying the unconventional ■ **IN THE SPOTLIGHT**, ETSI standards: shaping our world

JULY 2023

**ETSI**   
The Standards People

# The Spotlight highlights some of the ETSI standards that shaped our digital world.



Welcome to this new edition of Enjoy! celebrating the ETSI 35 years' anniversary.

35 years and still growing strong, despite all the challenges ETSI, the industry and the world have been through, and we hope to serve citizens in Europe and around the world for many years to come. As we have in the past, we keep being flexible and have adapted our governance in time for the *new EU regulation* (p.18) while *the Secretariat* (p.23) reshuffles to maintain the support and

value ETSI gives to its members.

In our exclusive interview, we asked a seasoned ICT expert, a *former ETSI board member, Mike Short*, to give us his insight, looking backward and forward. As a novelty, the interview with our *former CTO, Adrian Scrase* (p.24.25) is available in an audio format, adding a few tips to the printed one. If you want to listen to it, just scan the QR code. *Dr. Philippe Dallemagne*, from our *new member Swiss CSEM* outlines how standards may play a key role in managing the trust and reliance we can put in AI.

We continue to cater for inclusiveness with articles from our *user group working on smartID* (p.11), and about our education programme being used by Italian SMEs. We are anchored into the future as the *quantum key distribution Protection Profile* shows (p.10). It is the first of its kind. And of course, the *Spotlight highlights* some of the *ETSI standards that shaped our digital world*.

But there is more, and this summer edition offers you a *special treat with a crossword* on page 26.

Enjoy reading!



Luis Jorge Romero,  
Director-General ETSI

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## ETSI's education programme for Italian SMEs

Emerging digital technologies such as Artificial Intelligence, High-Performance Computing, and Cybersecurity can be daunting for Small and Medium Enterprises (SMEs) and Public Administrations (PAs) wanting to exploit them in the creation of innovative products and services. To help them overcome the challenges that they may find on their way, the I-NEST programme, part of the European Digital

Innovation Hubs (EDIH) network, offers a wide plethora of services, going from skill development to specialized consultancy and technological mentoring and training.

It leverages a rich set of facilities for testing and prototyping and a widespread network of points-of-presence distributed in the whole Italian territory to stimulate and



incentivize collaborations and synergies between different regions and innovation ecosystems. At the centre of the programme is a rich catalogue of advanced education and training initiatives designed to provide the tools and the know-how needed for guiding SMEs and PAs through the digital transformation process. Acknowledging both the relevance and complexity of the current standardization landscape, I-NEST includes, among the actions dedicated to SMEs, activities dedicated to the education and awareness of ICT standardization, based on the ETSI's textbook Understanding ICT Standardization: Principles and Practice. For more information: <https://inest-digital.it>

## ETSI Security Conference

ETSI is pleased to announce that the ETSI Security Conference will take place face-to-face from 16 to 19 October 2023 on its premises. This highly anticipated annual event, aligned with the European Cybersecurity Month, is an exclusive gathering point for the security community to connect with experts, network with peers, and exchange knowledge and viewpoints on cybersecurity standardization.

The 2023 edition will focus on Research and Innovation, featuring engaging presentations, panel discussions, demos, and posters. Key topics to be covered will include Global Regulation (EU, CEPT and other regions), "5G in the wild", certification, IoT Refresh, 6G Futures, Zero Trust, AI, Open Source, Open RAN, Non-Terrestrial Networks (NTN), Supply Chain Security, Post Quantum "State of the Nation" and Augmented Reality.

The detailed programme is available at: [www.etsi.org/etsisecurityconference](http://www.etsi.org/etsisecurityconference)

**SAVE THE DATE**

**ETSI**  
The Standards People

**Security Conference**  
Sophia Antipolis, 16-19 October 2023

[www.etsi.org/etsisecurityconference](http://www.etsi.org/etsisecurityconference)

**Nominate future ETSI Fellows!**

The ETSI Fellowship programme rewards individuals who have made an outstanding personal contribution to ETSI, either by advancing its work or enhancing its reputation in specific standardization sectors.

Candidates for an ETSI Fellowship must be proposed by representatives from at least two ETSI members and the final selection is made by an Award committee comprising the ETSI General Assembly Chair and Vice-Chairs, the ETSI Board Chair, and the ETSI Director-General.

Although the call for nominations is usually sent by Collective Letter at the end of the year and the awards are announced at the spring General Assembly of the following year, we remind you that nominations can actually be made at any time!

To do so, please complete the form at: [www.etsi.org/membership/fellows](http://www.etsi.org/membership/fellows)

**Standards,**  
particularly  
GSM,  
have been  
**essential**  
in driving  
the industry  
forward.

A portrait of Mike Short, a middle-aged man with short, graying hair, wearing glasses, a blue checkered shirt, and a dark jacket. He is smiling slightly and looking towards the camera.

# Mike Short

Dr Mike Short was Chief Scientific Adviser at the Department for International Trade from November 2017 to February 2023. He has over 40 years of experience in the electronics and telecommunications industry, latterly as Vice President of Telefonica for 17 years to December 2016. While at Cellnet UK, later acquired by Telefonica, he managed the launch of 2G (GSM) and 3G mobile technologies in the UK and went on to lead international research, innovation and standards for Telefonica Europe. His career includes the promotion of international technical standards in mobile and digital technology. He is a former Chair of the GSM Association and the UK Mobile Data Association, and was president of the Institution of Engineering and Technology from 2011 to 2012. He was honoured with a CBE in 2012 for his services to the mobile industry.

## How did you get into the mobile industry?

I have a diverse background, with 10 years in electronics, 30 years in the mobile industry and five years in government. My involvement in the payphone business during my electronics tenure exposed me to the early mobile trials in Chicago in 1981. This led me to think that it was time to transition from the payphone world to the mobile world. Later, while working at BT, I joined Cellnet UK in 1987, where I witnessed the evolution of mobile technologies from analogue to the current 5G roll-out and preparations for 6G.

## What were the main lessons learnt from the first generations of mobile communications?

The mobile industry has experienced substantial growth through competition and the adoption of standards, are just two key lessons learnt. Competition since 1985 has played a vital role and helped the growth to over eight and a half billion global customers today. Standards, particularly GSM, have been essential in driving the industry forward. The third lesson was the need for a wide ecosystem of infrastructure vendors, network providers, and device manufacturers that contributed to this success. Standards have facilitated efficient network management and device choice.

Standards that work internationally and in fact globally are vital to keep costs down. Collaboration mechanisms like Horizon Europe, supported by common language such as standards, have been beneficial, especially in areas like sensing and the Internet of Things. Indeed, universities and collaborative research communities have played a crucial role in the industry's growth.

**“ Having standards that work internationally is vital to keep the costs down.**

## Do you think there is enough training for young generations in standards?

In the rapidly evolving tech industry, including wireless, wireline, quantum, and space, talent challenges are always prevalent. Nurturing and developing new

**“ In the rapidly evolving tech industry talent challenges are always prevalent.**

talent are crucial aspects and should never be overlooked. However, talent is not limited to one location. As more people embrace global standards, the career prospects within those standards expand internationally. But there may be a shortage of talents who possess the operational understanding. I speak sometimes to researchers who have limited market understanding of 2G or 3G, but they're doing a lot of work on 5G and 6G.

## So we need to know the past to talk about the present and the future?

I think systems engineering knowledge is built upon lessons from the past, learning from mistakes, and combining old and new ideas. However, there may be a shortage of new ideas due to the competition for talent to other industries or sectors. You can't build networks based purely on cloud alone. Many of the sectors we're now serving with voice or data are much wider than telecoms. These include private networks into energy, factories, stadiums, and transportation. Therefore cross-sector knowledge is crucial to really innovate at the edge of networks into key sectors that need telecommunications. The talent isn't just about academic talent or engineering talent. It's also about installation talent, systems integration, and usage-based requirements. I did some work some while ago with connected and driverless cars, where you need to understand the automotive industry, not just the telecoms industry. The modern telecommunications landscape requires a multidisciplinary approach compared to the voice-centric networks of the past.

## How do you see the government's role in standards?

As members of the public, we expect governments to keep our societies safe, productive, educated and healthy. While in Government at the Department for International Trade, I included advice to business on standards, and I always used to stress how important standards were in critical network infrastructure. They help with interoperability, resilience, vendor choice, and help to keep costs down. But Digital standards also help make society more productive, richer culturally, more connected and valued, and safer, healthier and better educated. Governments shouldn't necessarily dictate standards, but they can help to maintain them and make sure we maintain consistency through regulation and policy. The government role is also important to ensure that we can work together across national borders with spectrum, and also numbering and addressing consistency.

## What should be the focus of ETSI in the near future?

ETSI should prioritize digital transformation over traditional telecoms. As an example, broadcasting networks will undergo significant changes in the next few years, requiring standards discussions and broadcast switchover planning. The current delivery of content will change, prompting regulators to explore alternative spectrum usage. Many industry players will likely be involved in carrying this new streaming traffic. ETSI must ensure its members are prepared to handle this increase and participate in spectrum allocation discussions. Collaboration with the broadcasting community is crucial, considering the different access methods to the Internet, including fibre, cable TV, satellite, and wireless. In a Digital society, the capacity and quality of fibre networks for broader resilience as well as broadcast switchover requirements should garner special attention.



# Welcome to our New Members



## **BAINZ Consulting**

 New Zealand

BAINZ Consulting provides professional and customized services to the IT Communications sector with a prime focus on End-to-End product and service delivery capabilities for mobile, fixed and data network operators, equipment vendors and organizations deploying communication solutions for national and international clients. Their expertise spans the entire product lifespan model from product realization, scoping, requirements, design, capacity, security, integration, delivery and performance.

## **Centre for Cyber security**

 Belgium

The Centre for Cybersecurity Belgium (CCB) is the national authority for cybersecurity. It was established by Royal Decree and operates under the authority of the Prime Minister. The CCB supervises, coordinates and monitors the application of the Belgian cyber security strategy. Through optimal information exchange, companies, the government, providers of essential services and the population can protect themselves appropriately.

## **National Chung Cheng University**

 China

The National Chung Cheng University is a national university in Minxiang Township, Chiayi County, Taiwan. It was officially founded in 1989 following the government's plan to establish a strongly research-oriented university in order to promote research and to develop higher education in the Yunlin, Chiayi and Tainan areas. CCU

is organized into seven colleges and aims to provide students with advanced skills and profound knowledge in the fields of humanities, sciences, technology, law, and management.

## **Cosmian Tech SAS**

 France

Founded in 2018, Cosmian has built the first private data intelligence platform that makes it possible to encrypt the data and obtain the result of the calculations performed on this encrypted data without ever revealing the underlying data. Cosmian aims to build the most comprehensive and reliable technological stacks based on state-of-the-art cryptographic techniques and become the first company to industrialise functional and homomorphic encryption schemes, embedded within business applications, across a large scope of industries.

## **Centre Suisse d'Electronique et de Microtechnique S.A.**

 Switzerland

Founded in 1984, CSEM is an internationally recognized Swiss innovation leader. CSEM develops disruptive technologies with a high societal impact in the fields of precision manufacturing, digitalization, ultra-low-power electronics, optical elements, AI, and sustainable energy. CSEM then transfers these innovations to industry partners in a variety of sectors. As a public-private, non-profit organization, its mission is to support the innovation of Swiss companies and strengthen the economy through collaboration with universities, research institutes and industrial partners (Read the interview of CSEM head of the IoT & Vision activities on pages 8&9.).

## DigitalPlatforms SpA



DigitalPlatforms SpA is an Italian group born in 2018 with the mission to provide end-to-end solutions and IoT and Cyber technologies to Defence, Public Administration and to the main companies that manage critical infrastructures in energy/utilities, transportation, telecommunications sectors. It is currently made up of nine companies all based in Italy. DP collaborates with all the major Integrators and platform suppliers of the Italian Defence. SpA is an AIAD federated company (Italian Association of Defence Companies) and a certified vendor at the Council of Europe and NATO.

## Institut de recherche technologique Saint Exupery



IRT Saint Exupery is a research foundation dedicated to aeronautics, space and embedded systems and is one of eight Technology Institutes accredited by the French state. It combines public and private partners on the same principal location, Toulouse Aerospace and Bordeaux. The Institute develops research activities backed by global technology platforms and high-level skills. It aims to develop and promote breakthrough technologies whose maturity is in line with the needs of the aviation industry, space and embedded systems.

## Jio Estonia OÜ



Jio is an Indian technology company and a subsidiary of Reliance Industries Limited, headquartered in Mumbai, India. It provides an end-to-end 5G solution consisting of 5G Radio, a complete 5G Core Network, AI/ML ATOM

platform for 4G/5G, MANO for cloud CNF orchestration, ACI for cloud infrastructure deployment as well as the Cloud-native OSS Platforms. In addition to these core platforms, Jio has also created its own cloud-native probing solutions for radio and core networks, simplifying network debugging and not requiring any systems integration with probe providers. To enable a SaaS-based model, JPL has also developed a sophisticated array of BSS solutions.

## Ministry of the Interior of the Republic of Croatia



The Ministry of the Interior deals with administrative and other tasks related to criminal police activities that involve protection of life and personal security of people and property. It is also in charge of the prevention and detection of crime, maintaining of public order and the protection of particular people, citizens, facilities and premises, conducting of technical crime investigations and expert analysis. The Ministry is also responsible for keeping the records and statistics concerning the internal affairs, the internal affairs information system and the education and training of the Ministry's officers.

## Plan-S



Plan-S is the largest private initiative in satellite and space technologies in Turkey. Plan-S produces and develops space technologies; they design and build small satellites for low-earth orbit, geostationary satellites, and small spacecrafts. Plan-S combines the internet of things (IoT) and big data expertise with space & satellite technologies and provides services for various industries such as agriculture, meteorology, maritime, aviation, energy, finance, etc.

## SPECTRONITE



Spectronite is a leading innovator that has developed a unique software-defined technology for wireless backhaul which allows for the longest and highest capacity microwave links ever designed: X-Series. It achieves capacity up to 10 Gbps and can reach multi-Gigabit over distances of 150km and more. Spectronite designs, develops and manufactures products, capitalizing on strategic partnerships with some of the world's leaders in the supply of radio subsystems.

## UBiqube



UBiqube is a leading provider of Hybrid Cloud Solutions covering Orchestration, Automation and Application deployment. Its programmable orchestration software spans Cloud, Network, Security, IoT and 5G/Edge domains. It eliminates the integration pain through highly abstracted modelling, removing the main obstacle in IT infrastructure automation. Their solution allows businesses to achieve efficiencies due to the ability to scale in a vendor agnostic manner and simplifies the complexities of managing a multi-domain, multi-vendor infrastructure by providing a single management interface.

## University of Twente



The University of Twente is a public technical university located in Enschede, Netherlands. The university has been placed in the top 170 universities in the world by multiple central ranking tables. The university connects technology, science and engineering with social sciences. It comprises 3,300 scientists and other professionals who work on cutting-edge research, innovations with real-world relevance and inspiring education for more than 12,000 students.

Standards may play a **key role** in managing the **trust** and **reliance** we can put in **AI**.

Dr. Philippe  
**Dallemagne**

Senior Expert at CSEM (PDA)

Dr. Philippe Dallemagne joined CSEM in 1999. He is responsible for the IoT & Vision activities at CSEM and for European affairs for the Integrated and Wireless Systems Business Unit. He is also a Senior Expert in the domains of autonomous wireless sensor networks and real-time communication. He received his PhD in Computer Science in 1998 from the Université Henri Poincaré of Nancy, France. He has extensive experience in software design and development in the context of industrial automation and communication systems. He was the leader of the ETSI Project Team 49 for the Videotex Enhanced Man-Machine Interface (VEMMI).



You present CSEM as an enabler to transfer world-class technologies for the industrial sector; how do you achieve this?

CSEM develops next-generation technologies with the ambition to foster innovation in the industry and eventually improve people's lives. Together with our extensive scientific, engineering and manufacturing

**“ CSEM transforms science discoveries into innovative technologies.**

experience, we transform science discoveries into innovative technologies, through continuous interaction and collaboration with academia and industry. The resulting technological building blocks allow our customers to develop new and impacting products, processes and digital services to address the unique needs of their end users.

30 years ago, you were the lead of the ETSI group who developed the Videotex Enhanced Man-Machine Interface standard. Did this technology represent the infancy of Web technologies?

In the early 90s, telecommunications, including GSM, and graphical user interfaces (GUI) were all the rage. Refreshing the legacy Telematics with VEMMI, ETSI members successfully brought GUI into these resource-limited environments.

**“ In the early 90's security aspects were barely tackled.**

Based on other standards, Internet was a reality for years, waiting for the Web ecosystem to appear and later supersede the Telematics. In both cases, these standards generated a lot of opportunities for businesses and applications, along with benefits and risks, in particular for the confidentiality of the information involved. Security aspects were however barely tackled at that time, although extensively studied across the world.

Why did CEM decide to focus on security and privacy of IoT solutions, for instance related to Industry 4.0 and digital health?

When applications such as home automation, healthcare, etc. adopted the Internet of Things, security and privacy shortcomings immediately showed up, calling for adapted solutions. More recently, the GDPR and other laws reminded stakeholders about their responsibilities and solidified the definite need for security and privacy, e.g. for giving individuals control over their personal data, in addition

**“ In an ever more digitized society, security and privacy are the basic milestones towards robust, resilient and trustworthy solutions.**

to secure exchange and storage. In an ever more digitized society, security and privacy are the basic milestones towards robust, resilient and trustworthy solutions. In fact, sharing data with third parties for analytics and learning while preserving privacy requires specific mechanisms and tools, which must be validated and commonly approved by the various stakeholders. For that matter, it is not so much about inventing new algorithms or fundamental techniques, but mostly about correctly using and elegantly combining the existing ones into commonly agreed frameworks, which enable the applications and their stakeholders to comply with regulations and ethics. Eventually, this is a textbook

case for standards, which can be applied to most application domains.

CSEM is also very active in AI and Machine Learning; tell us more about it.

Indeed, CSEM develops software and hardware building blocks for the innovative use of AI in many kinds of applications, such as factories, comfort, food and transportation, including when constraints are numerous and resources scarce. For example, CSEM successfully transferred AI-based technologies into devices to help art experts in authenticating paintings; to control grain flow, check its quality and optimize the milling processes; to estimate physiological parameters, etc. AI and Machine Learning bring additional complexity to key issues such as trustworthiness and authenticity. For example, a question raised using ChatGPT, Midjourney and others is how to distinguish the output of such generative AI tools from the captured reality (e.g., a raw photograph, a human creation such as a text or a drawing, etc.) As a matter of fact, it looks like AI will be everywhere and standards may well play a key role in managing the trust and reliance we can put in it as individuals and as a community.

CSEM is about innovation; how would you link standards and innovation?

Standards complement CSEM's role in enabling innovation out of scientific results and in making them practical and efficient in products and services. Before ensuring interoperability, standardization allows for disseminating and debating the merits of the candidate technologies in concrete contexts, from an industrial point of view. They boost their industrial exploitation, refining and improving them by putting them under the scrutiny of many stakeholders, such as experts, industry actors, end users, regulation bodies, etc. Standards also comprehensively formalize new ideas, which, in a sense, also reassures the industry before the standards are adopted.



# Quantum Key Distribution: certifying the unconventional

QKD is a security primitive to establish shared keys by the transmission of quantum states and ETSI ISG QKD is developing ways to approach the security evaluation of QKD products within an established certification scheme

## QKD protocols

There is no doubt that QKD is a bit different. Like other key establishment primitives, it can agree confidential, shared, random digital keys, but under the hood things are not even similar. Generally, QKD uses optical signals so weak that their quantum mechanical properties can be significant. QKD protocols exploit this to provide legitimate parties with an advantage over any adversary – even those with arbitrary capabilities.

Associated with a QKD protocol is a composable security parameter. The security parameter denotes the maximum probability that any of the properties confidential, shared, or random is not assured during a single execution of the QKD protocol. Typically, this security parameter is set very low.

## Standards in certification

Certifying a new class of security product is a complex task, for both vendors and certification bodies. Vendors need to develop products with a view to being able to demonstrate that they are secure and meet the requirements of a certification scheme. A certification body's reputation depends upon the certificates it issues.

Certification schemes provide a framework for evaluations and define approaches for the assessment of common security requirements. While this helps ensure a uniform approach to familiar technologies, when faced with something new, standards are often a comfortable fit. They represent the opinion of a body of experts and being written in a normative manner, are well-suited to evaluation processes.

Standards can help developers focus on the most critical requirements and reduce the risk of a particular design decision rendering a product insecure or overly expensive to evaluate.

## QKD should be a challenge

The security of QKD and proofs of its protocols are both very different from existing techniques to establish shared keys. Inevitably this is a challenge for certification but it is also the point.

QKD is a complementary technology that doesn't rely upon computational complexity, so it doesn't face the same set of threats, helping to diversify the available security primitives.

## Identifying emerging trends

ETSI took an innovative step in establishing an Industry Specification Group (ISG) on QKD. It was ETSI's first ISG, and the concept was to encourage researchers and companies to consider standards at an early stage. Quantum technology was a radical choice at the time and the ISG has been influential in guiding consideration of QKD. Commercial shoots of a new industry are starting to develop and attention is increasingly turning to certification.

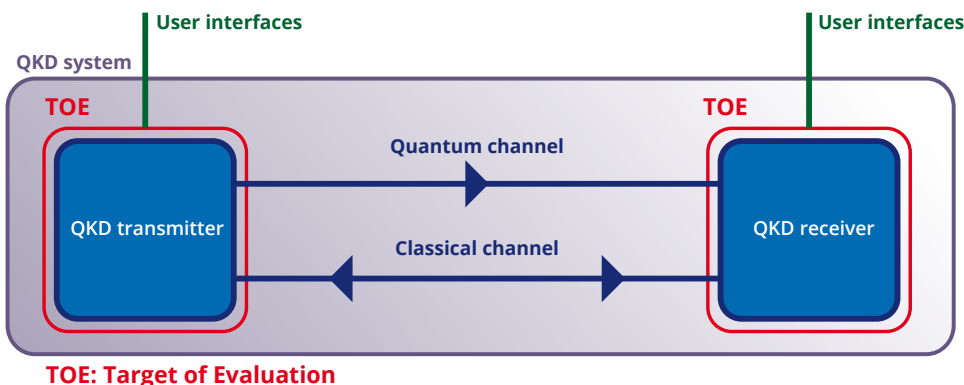
## Why a Protection Profile?

ISG QKD identified a need to structure security work towards a certification scheme and to bring security evaluation experts to the ISG.

The Common Criteria is a widely recognized international security certification scheme. It uses documents called Protection Profiles (PPs) to set out security requirements for a class of products. From PPs, developers derive more specific Security Targets for the evaluation of products.

The Target of Evaluation (TOE) for the initial PP (**ETSI GS QKD 016**) is a pair of QKD modules, where one acts as a transmitter and the other a receiver of quantum states. The core of the PP deals with the QKD protocol, which operates over a quantum channel and a classical channel (optionally in a common fibre) when QKD modules are connected to form a QKD system. ISG QKD is currently working to certify an update to its PP with the BSI (German Federal Office for Information Security).

■ Martin Ward,  
Chair of ETSI ISG QKD.



# A user-centric approach of smart digital identity

Today, users expect to be able to communicate anywhere, with anyone, anytime, on any device and network. At the same time, users wish to use various services helping them to save time in their daily lives.

These services are essential for the full participation of everyone in their social and economic life and therefore, it is important to deliver digital services in an intuitive and fluid way to allow any users to benefit from it, whether they are comfortable with digital tools or not.

The ETSI User Group places digital inclusion among its major concerns and has been working for several years to promote an organization of the new generation digital ecosystem around the user.

To achieve these goals, it was decided to start by exploring one of the essential elements of this model, namely the representation of the user's identity in a digital environment. Indeed, to personalize and simplify access to digital services, it is essential to have a "digital copy" of the individual, what we have called a user digital clone. This is a representation in the digital world of who the user is, what the user

does and what the user has (connectivity resources). To be effective and therefore intelligent, this clone must also be able to anticipate, as much as possible, what the user will be, what the user will do, what the user will have, according to their own agenda and objectives. This is what we call the "potential profile" of the user, which enriches the "user profile" and thus constitutes the User Information System (UIS).

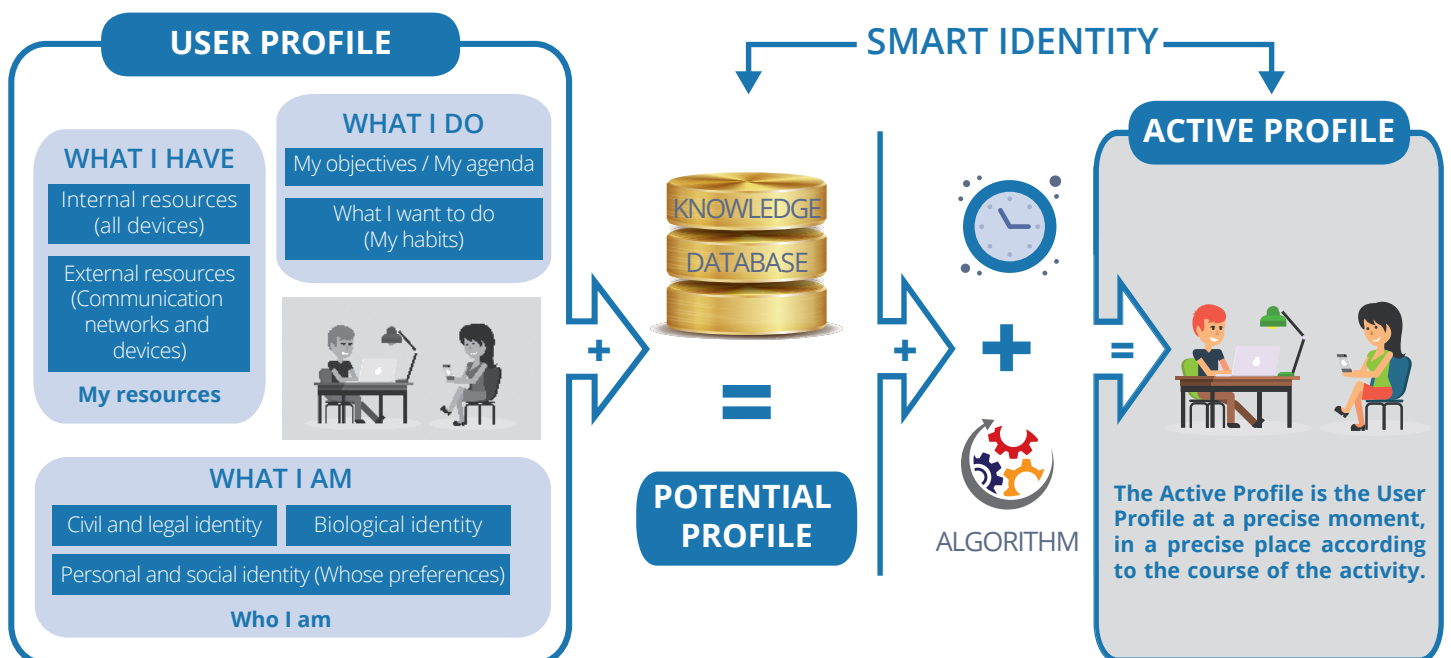
The intelligent (smart) identity is therefore built from this approach by composing a knowledge base relating to the user on which we then apply algorithms (AI). This will enable to deliver at any time the active profile from which we will be able to offer desirable services in a simple and efficient way.

All of this approach and terminology is illustrated by the following diagram:

Artificial intelligence and machine learning enable this efficient processing of data, helping to improve our user profiles.

To do this, ETSI User Group developed a proof of concept (PoC) by proposing a model for designing a user-centric digital clone for smart identities. This model is application-agnostic, which opens the door to all potential services.

The implementation of the PoC combines a "user Centric" informational model and the choice of relevant AI tools for Smart ID. It uses artificial neural networks to understand and interpret user needs and improve their profiling. With an accuracy of 95%, the result is encouraging for our next steps, which is now to develop the smart interface, including quality of service, safety and security, based on the smart identity, for all the users.



## World's First Quantum Key Distribution Protection Profile

ETSI has achieved a significant milestone in secure communication with the introduction of the world's first Protection Profile for Quantum Key Distribution (QKD), **ETSI GS QKD 016**. The ETSI specification will help manufacturers to submit pairs of QKD modules for evaluation under a security certification process. Such modules can be used by telecom operators and enterprises in securing their networks with the knowledge that certified products have been subjected to the scrutiny of a formal security evaluation process. The Protection Profile specifies high-level requirements for the physical implementation of prepare and measure QKD protocols through to the output of final secret keys. "This initial Protection Profile is an important step to help certify QKD modules under the widely recognized security certification scheme of the Common Criteria for Information Technology Security Evaluation," says Martin Ward, Chair of the ETSI ISG QKD.

## Use Cases for Reconfigurable Intelligent Surface

ETSI has announced the release of the first set of use cases for reconfigurable

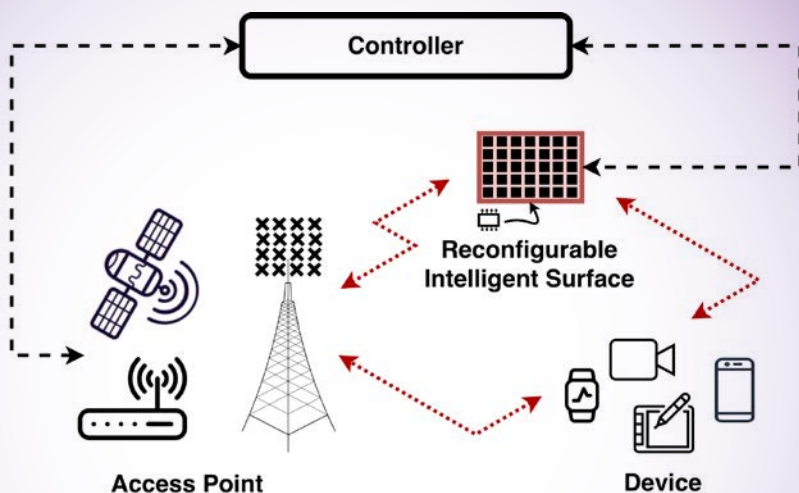


intelligent surface (RIS), an innovative and environment-friendly wireless technology. These use cases include enhancements to the capacity, coverage, positioning, security, and sustainability, as well as the support of further sensing, wireless power transfer, and ambient backscattering capabilities. The ETSI Report, **ETSI GR RIS-001**, specifies 11 concrete key use cases where RIS deployment may provide enhancements or new functionalities with corresponding general Key Performance Indicators (KPIs). "A RIS can reconfigure the radio environment to sense human posture and detect someone falling, a

useful application for elderly care," explains Arman Shojaeifard, Chair of the ETSI RIS group. **The Group Report** use cases demonstrate the practical applications of RIS in different environments, showcasing its ability to optimize wireless coverage, improve network efficiency, and contribute to energy savings.

## Enabling Next Generation of Emergency Communications

ETSI releases an upgraded specification **ETSI TS 103 479** for next-gen emergency services communications. It enables multimedia communication, networking of control centers via ESN, and improved data sharing. Accessibility is prioritized with support for Total Conversation and Real-time text. European harmonization is promoted, while international interoperability is achieved through collaboration with NENA. Location data can be updated during emergencies, ensuring accurate routing and roaming management. **The ETSI specification** facilitates network integration with ESN's next-gen core services, enhancing compatibility and empowering mobile device communication with 3GPP VoLTE. "We are pleased to contribute to the continuous improvement of emergency services for all European citizens" says Wolfgang Kampichler, ETSI rapporteur of this specification.



Illustrative diagram of RIS, a new type of system node with smart radio surface technology, where its response can be adapted to the status of the propagation environment through control signalling - ©ETSI



The Standards People

35 years to shape our word

# ETSI standards: shaping our world

1991

## SIM

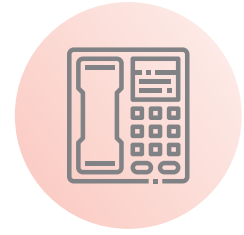
ETSI defined the SIM card, a unique aspect of GSM. Users could purchase any GSM phone and use it with their SIM card – they were no longer forced to buy the phone from the operator. Operators could securely identify and bill their subscribers. It is also key to enabling roaming between networks.



1992

## DECT

The DECT standard dominates the global market for cordless telephony, with billions of DECT chipsets shipped. Besides domestic use, you'll find DECT in professional and industrial applications, including the IoT.



## GSM

ETSI's ground-breaking mobile standard became a worldwide commercial success, leading to the foundation of 3GPP and ETSI's global leadership in 3G, 4G and 5G mobile standards.



1990

## SMS

While only a component of GSM, the SMS service led to new ways of using mobile phones (and caused the demise of paging).



1991

## Electronic Signatures

Together with CEN, ETSI's standards on Electronic Signatures are securing online commercial exchanges between businesses throughout Europe.



2002

2011

### eCall

eCall standards, in every new car sold in Europe today, enable a vehicle involved in a crash to call the emergency services automatically, even if the driver is incapacitated.



2014

### Accessibility

EN 301 549 on accessibility requirements for ICT products and services has received attention across the world and is either referenced or is triggering local variations in many countries.



2019

### CyberSecurity (for IoT)

ETSI's standard for the cyber-security of IoT devices is the first in the world, and is inspiring similar work elsewhere.



### ITS

ETSI's standards for Cooperative Intelligent Transport Systems are already in use in Europe and beyond.



2013

### NFV

Network functions virtualization (NFV) has been the catalyst of a radical change to the telecom industry, leading the transition from the traditional physical (hardware) network appliance into a new software-based virtualized network function era.



2014

# Congratulations to ETSI Fellows 2023!

The ETSI Fellowship Programme was established to honour and reward those individuals who have made an outstanding personal contribution to ETSI, to building the work of ETSI, or raising its reputation in specific sectors of standardization.

Following the call for Nominations for the ETSI Fellowship Awards, we are happy to introduce our 2023 ETSI Fellows.



Mr Scott Cadzow

**Director, Engineer, Cadzow Communications Consulting Ltd (C3L), United Kingdom**

Scott has been an active member of ETSI's community since 1995 and over that period has contributed to developments across a vast swathe of ETSI's technical work. He is currently the Chair of our technical committee on Encrypted Traffic Integration (ETI), of our Securing AI group and Chair of the working group Security in our Intelligent Transport Systems (ITS) committee. He is also the Vice Chair of our technical committee eHealth.

From TETRA (as RES.6, then TETRA and TCCE) to TIPHON/TISPAN, including Human Factors, Method for Testing and Specification, eHealth and NFV he has always pushed for the acceptance of security as a horizontal domain through the special SEC group until adoption as the technical committee CYBER.

Scott is a recognized expert in cybersecurity and its application across a number of technologies addressing core aspects of risk analysis, methods, and applications, in many cases breaking new ground for ETSI in domains such as AI, virtualized environments, and quantum migration.



Mr Hans Johansson

**Radio Expert, Kapsch TrafficCom, Sweden**

Hans has been a key contributor in ETSI from 2002 onwards for standards on road vehicle radio communication. He is currently the Chair of the media and medium related ITS working group (WG) and of the ERM ITS WG. His work started with developing harmonized standards for 5.8 GHz CEN/DSRC used in road toll equipment and similar applications.

Later in TC ITS, Hans contributed to standards for 5.9 GHz ITS safety road applications and after some years became chair for the two physical layer groups. For TG37 it was complicated to develop and obtain EU acceptance of the harmonized standards for the new EU RED directive, including 6 years of negotiations.

Hans coordinated the development of coexistence methods for completely different road ITS technologies. Because of the increased interest in using the 5.8 and 5.9 GHz band, Hans participated in other ETSI groups developing coexistence standards and participated in 10 different ECC groups, contributing to 17 CEPT/ECC reports.



Mr Robert Sarfati

**Former Director Technologies and Services for Mobility, SYSTRA Consulting Services, France**

Robert has been the Chair of the Technical Committee for Railway Communications (TC RT) for 21 years. The committee oversaw from 2001 onwards the development of ETSI standards in support of GSM-R and FRMCS.

The work later expanded to the investigation and development of a common technical solution applicable to Urban Rail and coexisting with ITS in 2014. Robert initiated a key move of the rail sector from analogue telecommunications to the digital telecommunications world.

He introduced and maintained a perfect complementarity between GSM-R Railway community (represented by the 'Union Internationale des Chemins de Fer' (UIC)) system requirements and the ETSI standards which provide the detailed standardized solutions. He was also one of the initiators of FRMCS, the 3GPP MCX-based system for which ETSI TC RT is currently developing ETSI standards as part of a European Commission standardization request. FRMCS will be the successor to GSM-R and Robert was instrumental in obtaining additional frequency for this system.



# Setting future standards In mobile connectivity

When work began to develop a European standard for digital cellular voice communications back in 1983, little did we know how huge the impact of mobile connectivity would be on the world.

Today, mobile connectivity is essential in the lives of more than 5.4 billion people, contributing US\$5.2 trillion to gross domestic product (GDP) around the world. From Argentina to Iceland, China to Zimbabwe, more than 95% of the world's population can now connect to a mobile broadband network, to fulfil many of their banking, shopping, healthcare, citizen services, and entertainment needs.

But none of this would have been possible without the pioneering work carried out by the early members of what is now known as ETSI, and the GSM Association (GSMA), over 35-years ago.

## An ecosystem for innovation

Ground-breaking technology standards - fostered by ETSI and the GSMA - have helped create an ecosystem for innovation and competition in the mobile industry. They have also been one of the key building blocks ensuring seamless interoperability, roaming and improved security for mobile device users.

Both ETSI and the GSMA were born out of the European Conference of Postal and Telecommunications Administrations in the late 1980s, and ever since our partnership and have been strong.

## Collaboration in other areas

Security has been one core area where we have worked in lockstep, through ETSI's Security and Fraud Working Group since 1989, to innovate and move standards forward. During this time our collective teams, and shared mobile network operator membership base, have worked together to identify new threats and specify new security protocols for GSM and later generations of mobile technology.

# GSMA™

Historically, our two organizations have worked closely around security algorithms. Our Security Algorithm Group of Experts (SAGE) have collaborated with industry to agree, specify and distribute authentication, encryption, and establish key agreement mechanisms for a range of mobile technologies. This will be even more important, as 5G networks and technologies continue to permeate through different industry sectors, such as automotive, manufacturing, energy, and smart cities.

## Security is key

We have also seen successes in other areas, including our Network Equipment Security Assurance Scheme (NESAS), which facilitates improvements in network equipment security levels, across the mobile industry. Providing one universal and global security assurance framework ultimately raises confidence and trust in mobile network equipment.

As the world becomes more deeply connected, and we see an even greater convergence between fixed and mobile communications, and a shift to cloud-based computing, we look forward to continuing to work very closely with ETSI and its members. We are already reviewing

industry proposals for a Mobile Device Certification Scheme, based on ETSI's published mobile device protection profile. The GSMA's new Open Gateway initiative - a framework of common network Application Programmable Interfaces (APIs) designed to provide software developers with universal access to operator networks - will also be an area for the mobile industry to deliver even more value for all stakeholders.

We can only imagine what life changing innovations the mobile industry will make possible over the next 35 years.

■ Samantha Kight,  
**Head of Industry Security, GSMA**



# ETSI evolves to comply with the amendment to Regulation (EU) No 1025/2012

In February 2022, the European Commission published its new Standardization Strategy. Amongst the measures put forward, the EC presented a legislative proposal amending Regulation EU No 1025/2012 to request basic criteria to European Standardization Organizations when handling standardization requests. It also called upon the ESOs to “make proposals to modernise their governance to fully represent the public interest and interests of SMEs, civil society and users and to facilitate access to standards”.

With regards to the amendments to the regulation, the key elements of this proposal can be summarized as the National Standardization Bodies (i.e. recognized National Standardization Organizations from the European Economic Area countries) becoming exclusively responsible for:

- the acceptance of Standardization Requests received by ETSI
- the adoption, revision and stopping of Work Items created by ETSI in response to a Standardization Request
- the adoption and withdrawal of European (and Harmonized) Standards and European standardization deliverables elaborated by ETSI in response to a Standardization Request

Under these requirements, the ETSI Secretariat immediately started to work on the needed changes in its processes and the implementation of these in our Directives.

After a very long and hefty activity, including continuous consultation and involvement of all ETSI bodies and stakeholders, ETSI can now proudly announce that these changes have been approved by our members and implemented in our Directives, making us fit for purpose.

ETSI took the opportunity of these modifications to also consider the additional request from the European Commission and “represent the public interest and interests of SMEs, civil society and users and to facilitate access to standards”. In this vein, the new process developed by ETSI invite Annex III organizations to comment during the enquiry phase of the adoption of ENs and European standardization deliverables, as per their request.

Furthermore, work keeps going on in the Board. With the support from the Secretariat and by means of several of the different ad-hoc groups installed for this purpose, many other important matters

related to ETSI's governance are being addressed and developed in response to EC's requests, such as:

- Adapting the voting weight associated to ETSI Classes of Contribution and, with it, reconsider the funding model in ETSI
- Limiting the number of terms of office of chairs to create more opportunities for all
- Making the meetings of the ETSI General Assembly hybrid by default (i.e. physical with remote access) to allow for a broader participation of SMEs and societal stakeholders

... to mention just a few.

Improving ETSI's governance and having ETSI rules adapting to the changes is embedded in ETSI's spirit, which is what is keeping ETSI fit for purpose throughout the years.



# ETSI tools for Researchers and Innovators



## The ETSI CAT•ALYST Tool

In chemistry, catalysts are substances that increase the reaction rate without being consumed in the process by providing alternative pathways that require lower activation energy.

In ETSI, the “Come-and-Talk” (CAT•ALYST) tool is designed to increase the interaction rate between researchers and standards experts and enable alternative pathways to bring research results into standardization.

CAT•ALYST sessions are designed as open workshops where researchers and standards makers are encouraged to come together and openly discuss potential areas of new work emerging from innovative research initiatives that may eventually feed into ETSI's future work programme.

The research projects may be European Commission funded, nationally funded or otherwise funded, the important element being that the technology area is relevant to ETSI.

These open workshop sessions are made available upon demand and are designed to help build links and synergies between the researcher and standardization communities around technical topics of common interest.

They bring people from research projects, universities and public/private research labs to ETSI, ideally face to face, so they may present their work and see how it may relate to current ETSI work items to eventually address gaps (future ETSI work in new or existing groups).

### Benefits for Researchers:

- gain knowledge on relevant standards activities,
- deepen their understanding of the standardization landscape,
- facilitate the outreach of research projects into standardization,
- expand the community and potential reviewers of the research topics.

### Benefits for ETSI:

- help respond to the recent EC code of practice on standardization for researchers,
- improve links to research projects / researchers and academia,
- increase the amount of innovative research work coming into ETSI,
- learn about the latest technology trends that can be captured in the ETSI technology radar,
- identify potential new technical standards groups (ISGs/TBs) and/or new work items that may be brought to ETSI by our members.

## Example of the HEXA-X & ETSI CAT•ALYST:

In 2022, ETSI and the European 6G flagship initiative HEXA-X came together on two occasions to discuss eventual synergies and opportunities to move identified research topics into pre-standardization.

These CAT•ALYST sessions examined the multitude of technologies that HEXA-X has identified as potentially relevant for 6G with a specific focus on Terahertz communications.

One clear outcome of this exchange between European funded research and ETSI was the creation of **ETSI ISG THz**.

## Build your own CAT•ALYST:

We would be interested in hearing from any research projects and/or directly from researchers should they have an interest in using the ETSI CAT•ALYST tool in order to bring their research work closer to standardization.

Feel free to provide your ideas and suggestions to [research@etsi.org](mailto:research@etsi.org)

■ David Boswarthick,  
**ETSI Director New Technologies**

# ETSI – 35 years at the centre of mobile

Mobile standards for commercial services predate the creation of 3GPP by a whole decade, with the Global System for Mobile (GSM) from ETSI in Europe and a handful of other National and Regional systems already making terrific progress in the 1980s.

ETSI was created in 1988 to help establish pan-European telecom infrastructures & services via a common set of standards that would allow the region to reap the benefits of the creation of a liberalized market, as the next step beyond the restricted national solutions that had served up to that point.

gave the standard momentum and made it a benchmark for what would follow.

Another development that has passed the test of time was ETSI's taking up the idea of having a permanent team of experts – Project Team 12 (PT12) – inspired by the CEPT's Permanent Nucleus (PN), who were

of mobile standards should happen there, but this time in a partnership that would allow for the evolution of GSM into a proponent of the IMT-2000 family of systems for 3G. At the time, getting America, China, Japan and Korea to agree on a single future technology stream was far from a 'done deal'. However, a desire



At the same time, mobile phones were being developed and ETSI had been designated as the home of the new GSM standard for Europe, with the transfer of the first set of implementable GSM specifications from the European Conference of Postal and Telecommunications Administrations (CEPT) to ETSI in 1989.

The ETSI Technical Committee SMG (Special Mobile Group) quickly became ETSI's most populous TC, between 1989 and 1998, with twelve working groups in its peak period – reporting to the TC SMG Plenary. The development of the GSM specifications and their enhancement for data services

the creators of the change request process still in use for 3GPP specification work. In PT12 a mix of ETSI support staff and seconded experts from industry drafted ETSI's GSM specifications, implemented approved change requests and prepared the deliverables for publication. When 3GPP was created in 1998, PT12 was transformed into the Mobile Competence Centre (MCC), hosted in ETSI for the same purpose as the previous incarnations of the team.

During the 1990s, the worldwide success of GSM allowed the membership of ETSI to embrace the idea that the next generation

for partnership was in the air and ETSI's agreement to make the whole catalogue of GSM specifications available to 3GPP was a huge incentive for the regional partners to settle on a collective roadmap for future developments.

The role of ETSI in the past 35 years has been one of a catalyst for the growth of the most successful communications technology of our time, but the institute has also proved itself to be a good partner, building trust over four successive generations of mobile.

■ Kevin Flynn,  
**3GPP Marketing and Communications.**

# Continuity and technology strategy in IoT standardization

Continuous IoT standardization is critical for a harmonized approach that supports new requirements and technology breakthroughs.

ETSI's 35th anniversary represents a remarkable landmark, worthy of celebration. It also signals the strategic importance of standardizing information and communications technologies (ICT) for advancing economies on the global stage.

Many ICT technologies are constantly evolving. User expectations continue to rise. Researchers are always delivering technical breakthroughs. In the market, ICT service providers routinely innovate their commercial models. These factors argue for standardization procedures that are open to industry exploration, amenable to consensus forming and, inclusive of testing across the standardization life cycle. This disciplined approach has certainly been the case in regard to the internet of things (IoT) and ETSI's role in founding oneM2M.

## Laying the groundwork for IoT standardization

Although oneM2M began life on July 24, 2012, it did not start with an empty canvas thanks to prior work conducted by its founding partners. Beginning with the first Technical Plenary (TP), oneM2M's partners agreed on principles for the transfer of work to oneM2M. The alignment of different approaches and forward work planning took some time, culminating in the first release of oneM2M in 2014.

ETSI's contribution built on the activities of its Technical Committee (TC) M2M which the ETSI Board established in 2009, before the IoT term entered mainstream use. Nowadays, ETSI supports oneM2M through its Smart M2M Communications committee which focuses on IoT and smart city application opportunities.



## Investment in strategic IoT technologies

Beyond the technical aspects of connecting IoT devices and sensors, a significant value driver in IoT systems is the ease of sharing data semantically and allowing developers to combine devices from multiple vendors. To these ends, Smart M2M invested in developing the Smart Applications REference (SAREF) ontology and the SAREF Communication Framework. This was followed by the publication of SAREF extensions in smart city, industry/manufacturing and agrifood domains. With EC/EFTA support, Smart M2M also published SAREF extensions in automotive, wearable, e-health/ageing well and watering domains. oneM2M's horizontal architecture benefits from SAREF as a general-purpose ontology with the additional tailoring to manage domain specific attributes.

Another area where ETSI continues to support oneM2M is via its pre-standardization, specialist task forces (STF). One such example is the STF on AI for IoT which studied emerging use cases at the intersection of AI and IoT to identify common requirements. The STF delivered open-source, proof of concept implementations to benefit the IoT developer community. Issues examined during this work led to a formal oneM2M work item to prepare the technical specifications for IoT standardization.

ETSI's ongoing activities across a range of complementary ICT technologies continue to be a valuable resource for oneM2M and the wider commercial market where communications and IoT interoperability continue to grow in importance.

■ Ken Figueredo,  
**oneM2M MARCOM**

## ETSI Annual Report and Work Programme

The ETSI 2022 Annual Report and the ETSI 2023/2024 Work Programme have been published. They outline the achievements of the past year while also providing details of our current and future technical activities.



The Annual Report 2022 puts the spotlight on the major achievements of the institute in the previous year, both technically and in other aspects of our activities, including the association's financial performance. Full details about the work of our Technical Committees, Industry Specification Groups and other technical bodies can be found [online](#) and on [our portal](#).

Our standards-making is based on consensus and openness. Our programme of work – the choice of what to standardize, the timing and resourcing of the task and approval of the final drafts – is all decided by our members.

The ETSI Work Programme 2023-2024 provides an overview of our current standardization projects plus an insight into future plans and predictions. These include the development of technologies which have had a major global impact, but also the latest emerging areas to keep in step with market demand.

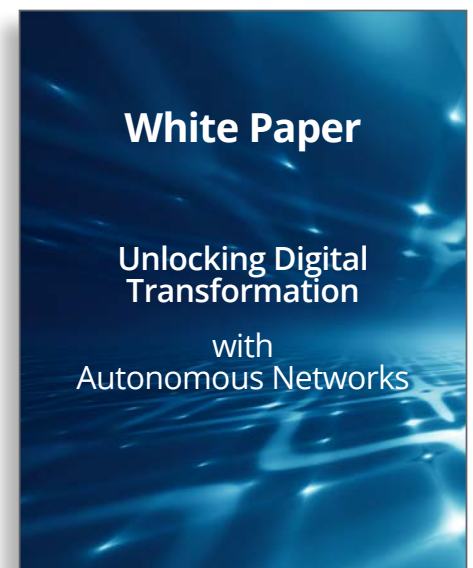
We encourage readers to use the electronic versions, especially of the work programme due to the links within it, which take readers to the latest status of the work carried out at any time. Both documents are available on [our website](#).

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## New White Paper - Unlocking Digital Transformation with Autonomous Networks

Autonomous Networks are considered one of the most important evolutions to enable Digital Transformation, offering new service opportunities and significant cost saving in network operation. It is one of the most attractive environments where leveraging Artificial Intelligence in the Network and activities around Autonomous Networks have gained momentum in Standards and ICT Industry.

This new ETSI White Paper, "[Unlocking Digital Transformation with Autonomous Networks: ETSI perspectives and major achievements](#)", highlights different works on autonomous networks, which are implemented by at least nine different ETSI groups, mixing a large range of expertise. This document was developed by the Operational Co-ordination Group on Autonomous Networks (OCG AN) which monitors and looks to coordinate the ETSI's work on autonomous networks. The aim is to present the status of AN standardization in ETSI, to point out achieved results, relevant trends and core topics, and to highlight the benefits of autonomous networks.



# News from the organization



ETSI is having a little reshuffling of its first line management. In order to increase the focus of some of ETSI's activities, gain some synergies and be better prepared to serve its members, ETSI has split its Operations Division into two. One of these parts keeps the name of Operations (OPS) and has the key objective of taking care of all of our technical groups, with the aim of improving support and enhancing our officers' skills. Issam Toufik, former Director of the Mobile Competence Centre (MCC) is taking the lead of this Division as Chief Technology Officer (CTO).

Following this split, ETSI is also creating a new Division under the name Standardization Services (STS), whose objective is making sure that our officers are properly attended and provided with the needed tools and methodologies, including interoperability testing, support for our Software Development Groups and the relationship to our partners. This Division is under the lead of Ultan Mulligan, former Director of the Centre for Testing and Interoperability, as Chief Services Officer (CSO).

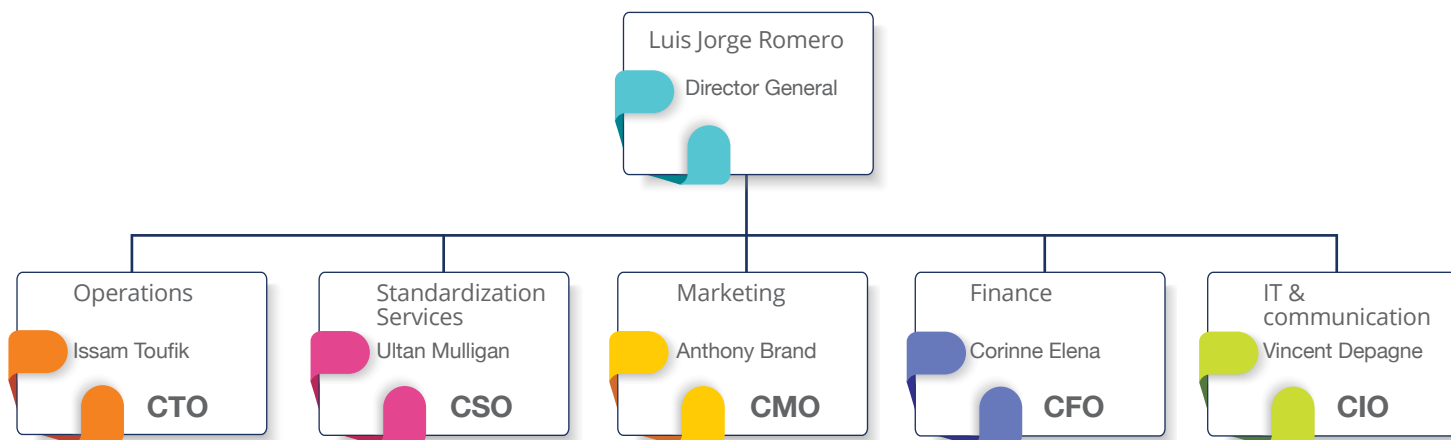


Another change taking place in parallel to the above is that Anthony Brand, former Director of the Standardization Development Centre, is now taking responsibility of our Marketing activities as Chief Marketing Officer (CMO).



The other Divisions, Finance and Administration (FIA) and IT and Communications (ITC), remain as they are, with Corinne Elena (CFO) and Vincent Depagne (CIO) respectively at their helm.

These changes are meant to keep the support and value ETSI gives to its members, making ETSI second to none.



**ETSI is well placed to remain a world leader in standards development.**

# Adrian Scrase

ETSI former CTO, Visiting Professor at Surrey University

Adrian Scrase played a central role in the creation of the "3rd Generation Partnership Project" (3GPP) and was responsible for the operations of the 3GPP Project Co-ordination Group. He led 3GPP's Mobile Competence Centre (MCC) which provides comprehensive support to the Project. He was also principally involved in the formation of the "oneM2M" Partnership Project and oversaw ETSI's support to that initiative. He was CTO within ETSI for the last 20 years with operational responsibility for all of ETSI's standards production activities.



You have been ETSI CTO for many years now. Tell me, how many years have you been involved in standardization?

I began my career in standardization during the mid-1980s. At that time I was working in London for the British Government and was involved in both national and international standardization activities. The EMC Directive had recently been published and industry was concerned as to whether they would still be able to place their products on the market. I was assigned as a delegate (and secretary) to the newly created ETSI Group RES09 that was to address this subject, which is how I first became involved in ETSI activities. The French Riviera had certain attractions and so in 1992 I took a full time posting at ETSI and the rest, as they say, is history.

Obviously, a lot of things have changed during that time...

Of course a lot has changed but much also remains the same. Standardization is a process that requires the building of consensus among a diverse community of interests. That hasn't changed at all. The tools we have available today to help build consensus have evolved considerably from the mid

**“ Standardization is a process that requires the building of consensus among a diverse community of interests.**

80's when we didn't even have email or access to an Internet, but the human characteristics that are so essential in building communities are still the best tools available to standardization engineers. That ability to find the middle path where all stakeholders feel that the standard will meet their needs is central to the work that we do. What has changed though is the emphasis on standardization. The economic benefits have been proven over the last three decades and so now standards are seen

**“ Now standards are seen much more as being “essential” rather than “nice to have”.**

much more as being “essential” rather than “nice to have”. This is particularly true for small and medium-sized enterprises where standards provide them with access to markets that would otherwise be difficult to enter.

Actually, some of these standards have not always been commercial successes, haven't they?

There is no way of telling from the outset whether a standard will be a commercial success or not. There are certain indicators, like the size of the involved community or the support of regulation but there are many factors that need to be aligned for a standard to be successful. Timing is a critical factor here. Standards can be too far ahead of the market or can be too far behind. I remember very well the pan-European Radio Messaging standard (ERMES) that ETSI developed in the mid 90's. It was a beautifully crafted standard that had both regulatory support and dedicated spectrum but it was completed too late to fill a market that had been overtaken by the arrival of GSM. The standardization process is about creating opportunities, enabling industry to pursue their ideas, but there is certainly no guarantee of success.

ETSI is European at heart but international in outlook, do you see any conflict there?

On the contrary. ETSI is based in Europe and produces certain standards that are intended to meet European needs, but that is not the end of the story. ETSI's membership is international and those members wish to serve global markets not just national or regional markets. ETSI's standards are renowned for technical excellence and so it is quite natural that they should be the basis for international trade. I have also observed that, for emerging technologies, industry

will often wait for ETSI to produce a standard and then use it for the basis of standards in other regions. As they say, “imitation is the best form of flattery” and ETSI encourages other regions to adopt their work where appropriate for them to do so.

**“ ETSI's standards are renowned for technical excellence, it is quite natural that they should be the basis for international trade.**

Given your insight and experience, where do you see ETSI in 10 years from now?

ETSI was created more than 30 years ago and during that time has proven to be a very successful standards body. Key to that success has been the adherence to WTO principles and an underlying culture where all players are welcomed on equal terms which allows standards to be developed on the basis of technical excellence rather than the origin of contributors. Openness and neutrality have therefore formed the cornerstones on which ETSI has operated since its inception and if these are preserved for the future I have no doubt that ETSI will thrive and prosper. ETSI continues to attract members from many different sectors and is well placed to remain a world leader in standards development.

**“ Openness and neutrality have formed the cornerstones on which ETSI has operated since its inception.**

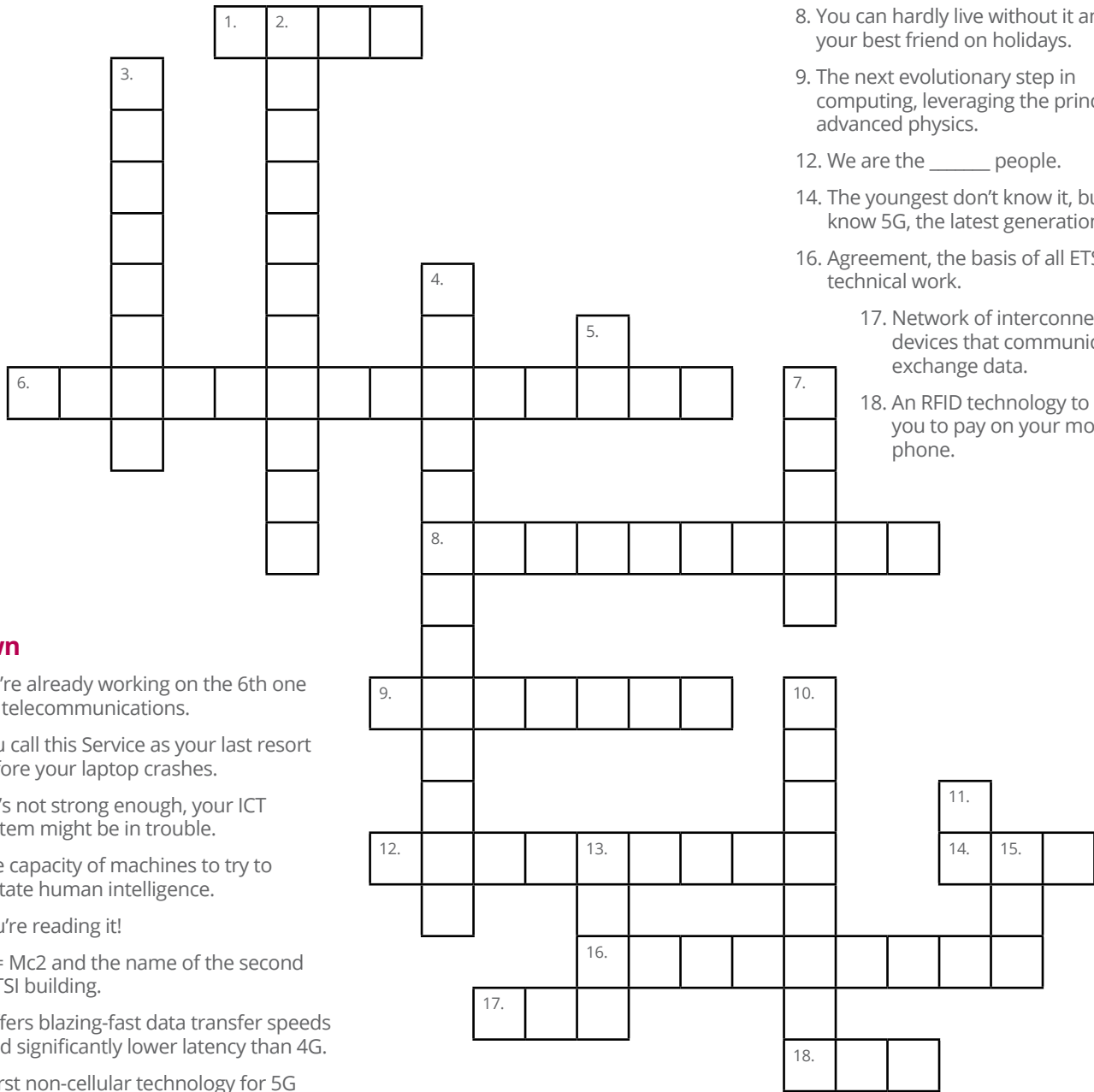


*Scan the QR code to listen to the full interview. (7 mins).*

# Crossword

to do it online, go to:

<https://crosswordlabs.com/embed/etsi-crossword-2>



## Across

1. The partnership project shaping the future of mobile telecommunications.
6. The first word of the first column on page 5 of Enjoy April 2023 edition.
8. You can hardly live without it and it's your best friend on holidays.
9. The next evolutionary step in computing, leveraging the principles of advanced physics.
12. We are the \_\_\_\_\_ people.
14. The youngest don't know it, but they know 5G, the latest generation.
16. Agreement, the basis of all ETSI technical work.
17. Network of interconnected devices that communicate and exchange data.
18. An RFID technology to enable you to pay on your mobile phone.

## Down

2. We're already working on the 6th one for telecommunications.
3. You call this Service as your last resort before your laptop crashes.
4. If it's not strong enough, your ICT system might be in trouble.
5. The capacity of machines to try to imitate human intelligence.
7. You're reading it!
10. E= Mc2 and the name of the second ETSI building.
11. Offers blazing-fast data transfer speeds and significantly lower latency than 4G.
13. First non-cellular technology for 5G
15. The ancestor of chat, still widely used today, an ETSI standard.

Answers available on page 27

# Join us at upcoming events

## Organized by ETSI

### ▶ [3rd FRMCS Plugtests™](#)

📍 Paris, France

📅 3-7 July

This Interoperability testing event is organized by ETSI with the support of the European Commission (EC), the European Free Trade Association (EFTA), the TCCA-Critical Communications and the Union Internationale des Chemins de fer (UIC). The goal of the FRMCS Plugtests™ event is to validate the interoperability of a variety of implementations using different test scenarios based on the 3GPP Mission Critical Services framework with focus on the rail-specific features.

### ▶ [ETSI IoT Conference](#)

📍 ETSI, Sophia Antipolis, France

📅 4-6 July

The 2023 edition of the ETSI IoT Conference will focus on IoT Technologies for Green and Digital Transformation. This gathering of IoT experts has become the must-attend event for anyone involved in IoT and who understands the importance of standard-enabled technologies for IoT service deployments. The event will offer attendees the opportunity to learn and share experiences related to IoT technologies, services, activities and requirements, looking at present and future standardization work. The presentations will be complemented by demonstrations showcasing IoT use cases and technologies (in-person event).

### ▶ [8th MCX Plugtests™](#)

📍 Malaga, Spain

📅 9-13 October

The 8th MCX Plugtests™ event will take place at the University of Malaga, Spain, from 9 to 13 October 2023. The goal of this event is to validate the interoperability of a variety of implementations based on 3GPP Mission Critical Services.

### ▶ [ETSI Security Conference](#)

📍 ETSI, Sophia Antipolis, France

📅 16-19 October

This year, ETSI's annual flagship event on cybersecurity will coincide with the European Cybersecurity Month 2023. This edition will focus on Research and Innovation and will provide an exceptional opportunity for the Security Community to come together to exchange with experts, network with peers, and share facts and opinions around the subject of cybersecurity standardization.

Find out more and register on our website at <https://www.etsi.org/events>

### ▶ [TeraflowSDN Hackfest #3](#)

📍 Barcelona, Spain

📅 16-17 October

The third edition of the TFS Hackfest will be dedicated to the use of P4 in TeraFlowSDN, starting with an overview, followed by a gradual walkthrough of an end-to-end P4-based demo, followed by more interactive sessions lead by key TeraFlowSDN community members. Participants will have the opportunity to build their own hands-on experience of P4 forwarding with TeraFlowSDN deployment, configuration, operation, monitoring, update, etc.

### ▶ [LTA Signature Augmentation and Validation Plugtests 2023](#)

📍 Barcelona, Spain

📅 23 October - 24 November

This interoperability testing event is organized by ETSI's Centre for Testing and Interoperability (CTI) on behalf of ETSI's Technical Committee for Electronic Signatures and Infrastructures (TC ESI) and will focus on Electronic Signature Validation. The aim of this remote event is to check the interoperability of digital signatures augmentation to LTA (Long-Term Archive) level and the validation capacities of LTA level signatures.

## Crossword answers

1. 3GPP - 2. GENERATION - 3. HELPDESK - 4. CYBERSECURITY - 5. AI - 6. SUSTAINABILITY - 7. ENJOY - 8. SMARTPHONE  
9. QUANTUM - 10. EINSTEIN - 11. 5G - 12. STANDARDS - 13. DECT - 14. GSM - 15. SMS - 16. CONSENSUS - 17. IOT - 18. NFC

 **916**  
members

 **463**  
standards  
March-May 2023

 **27%**  
SMEs

 **716**  
standards  
under development

 **+130**  
technical groups

 **6 M**  
standards' downloads  
March-May 2023

 **12**  
conferences  
& Plugtests  
March-May 2023

 **6.923**  
unique participants  
March-May 2023

 **665**  
meetings  
March-May 2023

 **106**  
partnerships

 **Members from**  
**63** countries

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## About ETSI

ETSI provides members with an open and inclusive environment to support the development, ratification and testing of globally applicable standards for ICT systems and services across all sectors of industry and society. We are a not-for-profit body with about 900 member organizations worldwide, drawn from over 60 countries and five continents. Members comprise a diversified pool of large and small private companies, research entities, academia, government and public organizations. ETSI is officially recognized by the EU as a European Standards Organization (ESO).


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