

# INCLUSIVENESS & DIVERSITY **STANDARDS FOR ALL**



## **THE INTERVIEW**

*Stephen Russell, ANEC. p.4-5*

## **WORKING TOGETHER**

*Danish Standards and ETSI. p.17*

## **IN THE SPOTLIGHT**

*The European Accessibility Act. p.13-16*



## The ETSI community has always favoured open dialogue and consensus.

These days it is difficult to distance ourselves from the war going on in Ukraine, where Europe is facing a situation we thought would never happen again. To assist the Ukrainian people in their daily life, the Secretariat has chosen to send a donation to a humanitarian organization. We hope this conflict will soon find an end through diplomatic channels and open dialogue

The ETSI community, being shaped by inclusiveness and diversity, has always favoured open dialogue and consensus. In this edition of *Enjoy!* we wished to highlight these values in its various articles, interviews and testimonials.

As the European Accessibility Act comes into force this year, the **Spotlight** features the European standard for eAccessibility, EN 301 549, and how it is being implemented in India. In **Tech Highlights**, we focus on consumers and end users with the global success story of the security standard for IoT consumer devices. We also give an update on the ETSI Advanced Mobile Location (AML) standard developed to comply with the Galileo location positioning for emergency calls, a requirement for all smart phones sold in the European Union as of 17 March 2022. Our main **Interview** features Stephen Russell, secretary general of ANEC (the European consumer association), while in our **Interview with a**

**New Member**, Aarti Samani, SVP Product & marketing of SME iProov, tells us about their innovative solutions for online security verification.

Our newly created Technical Committee eHealth (formerly an ETSI project) discusses data in eHealth leveraging security for patients and practitioners. In **Working Together**, Dansk Standard, the National Standards Organization from Denmark, highlight their involvement in ETSI over the past four years, while several SMEs and universities talk about the benefits of being an ETSI member.

Another highlight of this edition is our new **Research & Innovation** pages that will be the place for researchers, both in and out of ETSI, to find news and share their ideas relating to Research, Innovation and Standards.

Enjoy reading!

Luis Jorge Romero,  
Director-General ETSI



## The Interview

Stephen Russell,  
Secretary-General of ANEC.

P4/5

## Meet the New Standards People

P6/7

## New Member Interview

Aarti Samani,  
iProov's SVP Product  
& Marketing.

P8/9

## Tech Highlights

The S in consumer IoT  
stands for security.

P11

## In the Spotlight

The European Accessibility Act  
and the Harmonized Standards.

P13-16

## Research & Innovation

Welcome to the new  
Research section.

P18/19

## What's On?

Upcoming events.

P27

## Enjoy! The ETSI Mag

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## New Technical Committee on eHealth

As 20/21 drew to a close, a new spirit of optimism grew with the expectation that the Covid-19 crisis was also on the wane. EP eHEALTH had produced a Special Report on how best to use ICT to support society in what was surely to be a challenging time. Building on this positive approach, the ETSI Board created a new technical committee, **TC eHEALTH**, to replace the original EP eHEALTH. This new technical body was warmly welcomed by members and in turn led to a call for two new Vice-Chairs who would increase the resources of the group and support the present chair, Suno Wood.

The new Vice-Chairs, Francisco da Silva and Scott Cadzow, are both long-term supporters of eHEALTH and technical experts in the field.

The challenge now is to create a programme for the new group which will build on what we have achieved so far and retain its flexible approach. Our White Papers continue to inform and underwrite our discussions and new Work Items. Our present focus is on the development of AI in eHEALTH. We invite all members of ETSI to join us.

The widespread fear engendered by Covid-19 is now less evident in society, but the work items which resulted from it, and particularly on the group working on the interoperability of the Covid apps in Europe, will require on-going maintenance by TC eHEALTH. We will aim to create a balance between writing informative documents and investigation into gaps in the normative literature available.

## Homage to Phil Kidner Former CEO of TCCA



Phil Kidner, the former CEO of TCCA, sadly passed away on 7 January 2022. He was a very vocal supporter of ETSI and a frequent visitor to our premises. He played a leading role in establishing an evolution path for TETRA towards 3GPP-based technologies and the eventual creation of a specific group in 3GPP for that work. As a result, TCCA became a Market Representation

Partner in 3GPP under his signature. Phil, an affable character who enjoyed life to the full, will be greatly missed by all who knew him. Our deepest sympathies go to his family.

## Cybersecurity Standardization Conference

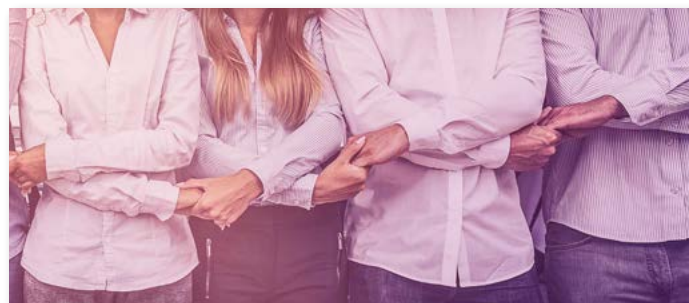
On 15 March, the European Standards Organizations (ESOs), CEN, CENELEC and ETSI, joined forces with ENISA, the European Union Agency for Cybersecurity, to organise their 6th annual conference. The virtual conference focused on 'European Standardisation in support of the EU cybersecurity legislation' and attracted over 900 attendees from the EU and from around the world. The closing panel concluded on the need for closer collaboration between all stakeholders and outlined the strategic relevance of standards.



## #WeareETSI campaign

ETSI is committed to help raise awareness of the value of gender diversity and we wanted to highlight the people behind our standards: #TheStandardsPeople.

To start this campaign and to mark International Women's Day, we dedicated the month of March to showcase our female contributors.



"We are convinced that global standards can be developed by a diverse community," says Neviana Nikoloski, Sonova Communications AG (CH) - Chair of ETSI General Assembly.

"Both men and women are at their most creative when they work together," says Suno Wood, Association of users for life cycle resource management for information communication technology (FR) - Chair of ETSI TC eHealth.

Watch the testimonials on our website: <https://www.etsi.org/media-library/2049-we-are-etsi-women-of-etsi>



*Stephen Russell shares with us his active involvement in ETSI and why consumers are important in the standardization landscape.*

*You're the European consumer voice in standardization; do you think consumers are aware of the benefits ICT standards can bring to their daily life?*

Well, most consumers don't need to have a detailed understanding of standards as such, nor are they terribly interested in them. The important thing is for standards to reflect the expectations of consumers for a product to be safe, interoperable, accessible, sustainable and so on. ANEC exists to collate these expectations, and bring together the expertise needed to define and voice collective consumer positions in the standards work.

# Stephen Russell

Secretary-General of ANEC

Stephen Russell has been Secretary-General of **ANEC**, the European consumer voice in standardization, since January 2007. Apart from two years working as a political assistant in the House of Commons, Stephen has been a career standardizer. He joined the British Standards Institution (BSI) as a graduate administrator in March 1989, rising to be Head of Technical Policy, British Standards in June 1998. Having been

the UK member of the Technical Boards of ISO and CEN, he moved to Brussels and joined CEN as Director, Standards in January 2004. Stephen has been a member of countless standardization groups and the convenor of several more. A graduate of the University of St Andrews (Scotland), he holds post-graduate qualifications in management.

**"The ETSI Human Factors technical committee has a wide range of activities that reflect consumer interests, with accessibility very much to the fore."**

***What is one of the success stories of ANEC contribution to ETSI standards?***

We have been participating for many years now in ETSI Human Factors, and indeed one of our experts is a Vice-Chair. The technical committee has a wide range of activities that reflect consumer interests, with accessibility very much to the fore. If I could mention one project where we have extensively contributed in close alliance with another ETSI member, the European Disability Forum, it is the work on EN 301 549 on ICT accessibility. This standard is becoming increasingly adopted globally, and here in Europe it has been given added importance by the pending entry into force of the European Accessibility Act. We therefore look forward to participating in the consequent updates to this standard as a harmonized European standard.

***ANEC has been involved in several European funded projects. Is there one you would like to outline?***

Resource use and waste generation of electrical and electronic equipment have significantly increased over the past decades. ANEC participates in PROMPT ("PRemature Obsolescence Multi-stakeholder Product Testing programme"), a project that receives funding from Horizon 2020. PROMPT aims to push for popular consumer products that are designed to last through improved product design – in terms of durability and reparability – consumer information, technical standards and legislation. It runs from May 2019 to April 2023.

We are leading the tasks relating to standardization, and coordinating dissemination of the results of the project to the European Standardization Organizations.

We are also active (and vociferous) in Ecodesign activities linked to the impact of ICT products on the environment, notably through their durability. For example, last year we contributed to the ETSI technical committees Energy Efficiency and on cybersecurity position on Ecodesign and Energy labelling requirements for mobile phones and tablets. Here, we believe it essential that consumers have the option not only to upgrade, but also downgrade their operating system at any time, so going back to the functionalities they originally bought but which may not be compatible with later releases.

***At the end of last year, you launched a collective statement to the EC on the upcoming Artificial Intelligence Act (AIA). Can you tell us more?***

Consumer concerns about the risks that are posed – and will be posed – by AI systems are well known. Consumers expect robust legislative proposals to ensure their fundamental rights are protected and that they are protected from harm. Parts of the AIA propose using a regulatory approach similar to the New Legislative Framework, with standards supporting the legislation. This framework is designed for product access in the single market – and has been

**"We contributed to the ETSI position on Ecodesign and Energy labelling requirements for mobile phones & tablets."**

successful in benefitting consumers – but raises questions when applied to the domain of AI, as there are difficulties (if not impossibilities) in transposing fundamental rights, and EU principles and values, into (technical) standards from both a substantive and process perspective.

Standards can indeed deliver the technical robustness, security and interoperability required to meet some elements of consumer AI expectations and needs. However, the performance and outcome of an AI system depend not only on its technical components, but on decisions

about who uses the technology, for what purpose, and in which context. These decisions have the potential to involve and impact on fundamental rights. Our view is that it is not the role of standards to interpret legal requirements, but that of a legislative procedure.

In addition, from the European perspective, the trend towards setting the standards at the global level is a source of concern

**"Standards can deliver the technical robustness, security and interoperability required to meet consumer AI expectations and needs."**

because the influence of consumers and civil society is more limited in discussions on international standards. Conversely, there is strong participation of countries that hold different values, especially in AI standardization. Hence, we welcome the intention of the European Commission to address this imbalance, as announced in the EU Standardization Strategy.

***In the coming years, in your opinion, what will be the strategic issues for consumers that we should address in ICT standardization?***

We believe there is still quite a way to go for standards in addressing the needs of consumers fully. This is not only in terms of the interoperability and usability of existing technologies, but in addressing new developments arising from AI, blockchain and the metaverse. Underlying these efforts are the vital aspects of cyber security and personal data protection. Hence, consumer organizations must be systematically involved in standardization, and the national authorities must come forward and provide the political and financial frameworks that permit the participation of all stakeholders – including consumers and broader societal interests – in standardization.

# Welcome to our **NEW** members

## **Alfred Consulting, United States**

Established in 2014, Alfred Consulting provides intellectual property consulting for the global telecom industry. They provide telecom companies with an understanding and a practical program for the development of standards and license patents. They work with network providers, network systems manufacturers and smartphone and mobile device manufacturers to license mobile standard essential patents (SEP) to the telecom industry.

## **Bit4id, Italy**

The aim of Best Information Technology for Identification (Bit4id) is to contribute to the development and research of new technologies. They drive change and promote digital transformation through simple and innovative solutions and services. The levels of preparation, experience, and completeness in the field of digital identity enables them to discover solutions for any need in critical sectors or contexts. They transform advanced technologies into easy-to-use digital services.

## **CONNECT Centre, Ireland**

CONNECT is funded under the Science Foundation Ireland Research Centres programme, which has established a network of SFI Research Centres focusing on key research areas in Ireland. CONNECT brings together world-class expertise from ten Irish academic institutes to create a one-stop-shop for telecommunications research, development, and innovation. They engage with over 40 companies including large multinationals, SMEs, and start-ups.

## **CSA, Singapore**

The Cyber Security Agency of Singapore (CSA) defends their Critical Information Infrastructure (CII) to ensure the continuous delivery of essential services to Singapore residents and create a safer cyberspace for enterprise and individual end-users. They advocate and practise security-by-design, provide security consultancy services to other government agencies, certify products, and validate systems' security assurance.

## **CTAG, Spain**

The mission of CTAG (Automotive Technology Centre of Galicia) is to contribute to the improvement of companies' competitiveness by incorporating new technologies and promoting development, research, and technological innovation. CTAG provides automotive companies with advice and strengthen the companies R&D and innovation activities. Their main lines of action include engineering and R&D services, European projects, specialised training and integral project management and certification.

## **DIGITAL SME, Belgium**

DIGITAL SME is the largest network of ICT small and medium enterprises in Europe, representing more than 45,000 enterprises in total. It is the joint effort of 30 national and regional SME associations from EU member states and neighbouring countries to put digital SME at the centre of the EU agenda. The Alliance also aims to represent the interests of SMEs in the standardization process.

## **Intersec, France**

Intersec is a global leader in activity and mobility data solutions. Their solutions were built from the ground up using fast data and AI. Intersec has 100+ clients in 80 countries trusting them to access to the location of nearly one billion people and connected objects. Their industry-focused products enable them to turn geodata into actionable insights in the fields of public safety, contextual marketing, geolocated advertising, smart cities, and the management of connected object fleets (IoTs).

## **iProov, UK**

iProov's, the world leader in online biometric face authentication, brings trust to the internet by allowing individuals to prove that they are who they say they are online. They ensure that an online user is the right person, a real person and that they are genuinely present (and not a criminal or machine-driven attack). Today we're faced with the threat of criminal gangs using AI and machine-learning to attack individuals and organizations of every size. iProov helps solve that problem with a simple, unique solution. Turn the page and read the interview with their SVP Product & marketing (P.8).





### **MIMPACT, Belgium**

The Maximal Impact Foundation (MIMPACT™) is an open-membership, not-for-profit organization built for locally driven societal transformation at global scale. They deliver a post-competitive value model based on adaptive financial risk modulation and smart open knowledge engineering, achieving near-zero risk for public servants anywhere when addressing global problems locally and outside of the sandbox.

### **NUS (National University of Singapore), Singapore**

NUS is at the forefront of educational innovation and have implemented a range of initiatives to prepare their students for the future. It aspires to be a vital community of academics, researchers, staff, students, and alumni working together in a spirit of innovation and enterprise for a better world.

### **PROFIBUS, Germany**

PROFIBUS and PROFINET International (PI) is the largest automation community in the world and responsible for PROFIBUS and PROFINET, the two most important enabling technologies in automation today. The common interest of our global network of vendors, developers, System Integrators and end users covering all industries lies in promoting, supporting and using PROFIBUS and PROFINET.

### **Sfera s.r.l., Italy**

Sfera designs and develops software for web and mobile clients. They also design, optimize, and deploy wired and wireless networks and high-throughput point-to-point wireless bridges. They deal with network security and take care of existing networks. Specializing in custom system integration, they can develop SW-to-SW and HW-to-SW adaptation layers for heterogeneous systems.

### **Tektronix GmbH, Germany**

Tektronix designs and manufactures test and measurement devices such as oscilloscopes, logic analyzers, and video and mobile test protocol equipment. Tektronix solutions have supported many of humankind's greatest advances of the past 70 years in health, communication, mobility and space. With offices in 21 countries, they are committed to the scientists, engineers and technicians around the world who will define the future.

### **Tessares, Belgium**

Tessares is a spin-off from the Université catholique de Louvain (UCLouvain), Belgium where researchers have contributed to the design, implementation and standardization of a new Internet protocol: Multipath TCP (MPTCP). Tessares is headquartered in Belgium with development and sales teams in Europe, North America, Asia and Latin America. Today, almost 60% of Tessares' staff are shareholders.

### **TTP plc, UK**

TTP is an independent technology company where scientists, engineers and designers collaborate to invent and develop new products and technologies. TTP was founded in 1987 with a culture of freedom to explore new technologies and to share new opportunities with their clients. They are employee-owned and are free to make the right decisions for the long-term success of their clients and business.

### **Xiaomi, China**

Xiaomi Corporation was founded in April 2010. Xiaomi is a consumer electronics and smart manufacturing company with smartphones and smart hardware connected by an IoT platform at its core. Xiaomi continuously pursues innovations, high-quality user experience and operational efficiency. Xiaomi products are present in more than 100 countries and regions around the world.

*Aarti Samani,  
SVP Product & Marketing  
at iProov tells us why  
we need strong online  
security verification in our  
digital world.*

***The demand for secure online verifications is soaring, how does iProov meet this challenge?***

iProov enables organizations to verify that an online user is who they claim to be. Before the internet, if I wanted to open a bank account or apply for a visa or a government support program, I had to go into a building for an in-person check. I'd present my ID documents to an official who would verify that my physical face matched the photo on the ID.

iProov enables that check to be done remotely when the individual is using a mobile device or a computer at home, or they're using a kiosk. The individual scans their ID document. They then complete a brief biometric face scan.

# Aarti Samani

iProov's SVP Product & Marketing

Aarti leads *iProov's* Product & Marketing organization with responsibility for formulation and execution of business strategy including product, pricing, positioning and brand. Before joining iProov, Aarti led the international product and market development for SwiftKey, culminating in a successful \$250M exit to Microsoft. At Microsoft, she managed the mobile text input business in emerging markets.

Prior to SwiftKey, Aarti led the management of Nomura's Global Portfolio Sales and Trading products. This included the integration of technology acquired from Lehman Brothers and transitioning the global business to the integrated product. Aarti holds a BSc in mathematics from Durham University, UK.



Our solution can provide that biometric face scan in two ways. In the first approach, we assure the genuine presence of an individual by checking for three things: Is this the right person (not an imposter)? Is this a real person (not a photograph or video or mask)? And are they authenticating right now (not a digital injected attack)? It's highly secure, because it creates a one-time biometric using a multi-dimensional scan. It's also effortless for the user because there are no complex instructions - no moving or reading out words or numbers is required.

The second approach checks for liveness. This verifies that the user is the right person and a real person, which makes it ideal for

**"It's been proven that technology is now more accurate than humans at checking a physical face against a photograph."**

when the risk profile is lower - for example, if a verified customer is accessing a bank account to check a balance, they would use Liveness Assurance. If they want to transfer \$500, they'd need Genuine Presence Assurance.

The benefits of verifying user identity with iProov are countless. It's extremely convenient for the individual, it's inclusive, and it respects user privacy. It's also highly secure - it's been proven that technology is now more accurate than humans at checking a physical face against a photograph, so the in-person check is now less reliable than completing the process digitally.

***We remember Queen Elisabeth dancing on TikTok during her Christmas 2020 video address, that was a trick and an example of deepfake, is this another threat you tackle?***

Deepfakes are absolutely being used for criminal intent online. We recognized many years ago that deepfakes would present a serious threat to identity verification and online security. This is why we built our iSOC (iProov Security Operations Center). Technology on its own does not provide the level of future-

**"We regularly see deepfakes being used in presentation attacks and digital injected attacks."**

proof security that governments, banks and other organizations need. The iSOC enables us to monitor, detect and analyze spoof attacks on an ongoing basis so that we can understand what techniques criminals are using. This then allows us to harden our defenses. Attacks evolve - every day, criminals are finding new ways to attack any cybersecurity system. We regularly see deepfakes being used in presentation attacks and digital injected attacks.

***How did you help the UK National Health Service (NHS) and patients go through the sanitary crisis?***

We are supporting the NHS by enabling citizens in England to securely set up their NHS login online. The NHS login then supports the NHS App, which enables people to order repeat prescriptions and book medical appointments. The app also provided access to the NHS COVID Pass. 12 million people downloaded the app and started using it after the COVID Pass was added in May 2021. iProov has

**"The NHS App enables people to order repeat prescriptions and book medical appointments."**

helped to make that secure, simple and safe so that healthcare staff could focus on other tasks while citizens were given an efficient way to access services easily and securely.

***You're an SME but you made the choice to join ETSI and even recruit a head of standards, how can standards help grow your activity?***

The digital identity landscape is new and rapidly evolving. Global trust frameworks and appropriate standards are needed to ensure the protection of personal privacy

but also that the appropriate levels of biometric security are consistently applied to maintain trust in online environments. iProov recognizes the vital role that ETSI is playing in the development of these standards.

iProov believes that clear and robust standards will protect citizens and institutions from the risk of identity misuse, manipulation and financial crime.

Until strong standards are applied to all vendors there is risk that poorly designed or weak solutions could damage citizen or industry trust in the use of biometrics. iProov holds itself to the highest standards of security and usability and is looking forward to working with ETSI to sustaining those standards across our industry.

***As the SVP Product and Marketing, is there any new exciting solution or product you can talk about in your future roadmap?***

It's a very exciting time at iProov. We recently raised \$70m from Sumeru Equity Partners, the Silicon Valley fund that will be supporting our next wave of growth. That will mean global expansion of our services and our team, as well as further product innovation.

As an example of that, we recently announced our 22nd patent for technology to combat digitally or physically altered and forged driver's licenses and government ID cards. There's an epidemic of fraud in this area. We've also been working with the National Science Foundation (NSF) on a project to protect against the dissemination of false and manipulated content online. Both of these are examples of how assuring the Genuine Presence of people, information and things is critically important to society and that's where iProov is focused.

**"iProov believes that clear and robust standards will protect citizens and institutions from the risk of identity misuse, manipulation and financial crime."**

# The importance of accurate and timely location information for emergency services

*A person in an emergency situation is under a lot of stress and may not be able to communicate where the incident is occurring. One of the biggest challenges for the Emergency Services is determining the location of mobile callers. ETSI has developed Advanced Mobile Location (AML) to allow accurate and timely location.*

## AML to localize emergency calls

Cell-based location has been available for more than ten years, but it is not accurate enough. Ambulance Service measurements show that, on average, 30 seconds per call can be saved if a precise location is automatically provided. Several minutes can be lost when callers cannot verbally describe their location due to stress, injury, language, or simple unfamiliarity with an area, and this issue had to be tackled.

AML allows native smartphone technology to send GNSS, including Galileo, or Wi-Fi-based location data to Public Safety Answering Points (PSAPs). It is already helping emergency services dispatch the needed resources efficiently in Europe and worldwide. AML is not an app; when setting up an emergency communication, the smartphone sends the handset's location information through SMS or HTTPS to the PSAP.

## AML standardized in ETSI

AML was developed by the ETSI technical committee on emergency communications (EMTEL) in the specification ETSI [TS 103 625](#). Published in December 2019, the standard covers handset and mobile telecommunication network functionalities, such as the need to send AML data while the emergency call is ongoing. In addition, operational guidelines for PSAPs were detailed and data formats for SMS and HTTPS were

agreed upon. A new version is currently finalized, it will include roaming and fine tunings of the message formatting. Publication is expected in April 2022.

## Helping Europeans comply with the EU regulation

The Delegated Regulation 2019/320, based on Article 3(3)(g) of the Radio Equipment Directive 2014/53/EU, requires that all the smartphones sold in the European single market provide the functionality of sending handset-derived location information of the caller when launching an emergency communication. Furthermore, smartphones need to process data from Global Navigation Systems, compatible and interoperable

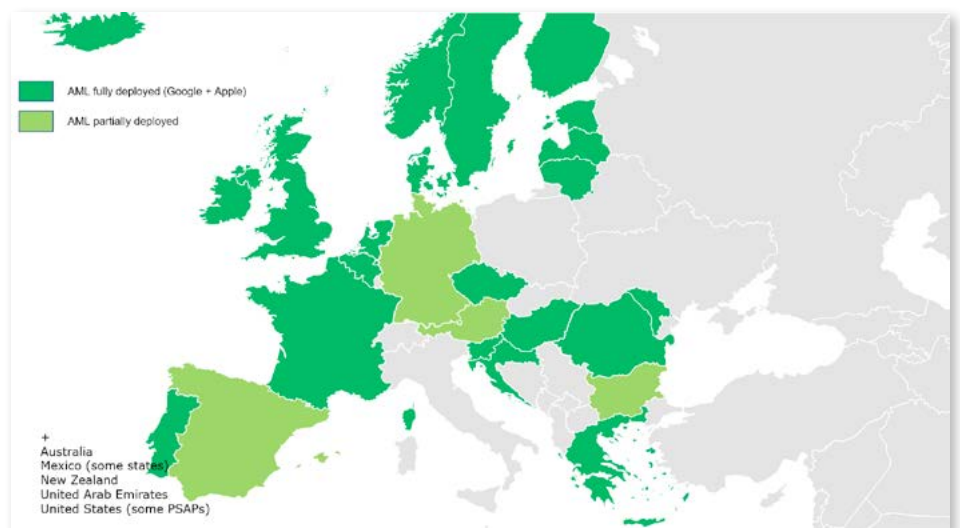
with at least the Galileo system, and Wi-Fi data to establish the caller's position.

Since 17 March 2022, all the smartphones sold on the European single market have to offer the possibility of sending handset-derived location information of the caller to the emergency services. The ETSI [TS 103 625](#) standard enables vendors to comply with this regulation.

In parallel, ETSI is finalizing ETSI TS 103 825 that will provide the Test Purposes to develop AML test descriptions for handsets. This document will help Notified Bodies assess the compliance of smartphones.

As of February 2022, 30 countries worldwide have deployed AML.

■ *Cristina LUMBREERAS, Chair of the ETSI EMTEL Technical Committee.*





# The S in consumer IoT stands for security – ETSI helps out with a European standard

*Day by day, the world is getting more connected and with the number of internet-connected devices in our homes growing exponentially, security is of essence. ETSI EN 303 645, the standard to secure IoT devices, meets this requirement and has been adopted round the world.*

## Setting the scene

With around 30 billion internet-connected devices – from health trackers to home assistants, from smart TVs to smart lightbulbs, and from dishwashers to doorbells – the consumer Internet of Things (IoT) includes the exploding Smart Home market.

But when a market evolves quickly, the pressure to be the first to innovate can cause security efforts to be lost creating large attack surfaces for malicious activities from hackers. This has happened in the consumer IoT, where default passwords are widely used and poorly secured products threaten consumer privacy. Some devices are exploited by attackers to launch large-scale DDoS cyberattacks, mine cryptocurrency and spy on users in their own homes.

## Made in Europe for global use

To provide guidance on preventing the success of large-scale, prevalent cyberattacks in consumer IoT, ETSI TC CYBER published in 2019 a standard (ETSI TS 103 645), that was evolved in 2020 into the European standard ETSI EN 303 645 as the first globally applicable standard on IoT security. Today both standards – ETSI TS 103 645 and ETSI EN 303 645 – have the same technical content. This European standard provides baseline security requirements for 13 cyber security areas, with the top three being: no default passwords, implement a vulnerability disclosure policy, and keep software updated. It further provides



specific data protection provisions for consumer IoT devices. The European standard is therefore considered in current (and certainly also in future) IoT certification schemes.

## ETSI as a pioneer for consumer IoT security standards

ETSI TC CYBER is working intensively on further standards to complement and support EN 303 645 including recent publications such as:

- the assessment specification ETSI TS 103 701 specifying baseline conformance assessments against the provisions of ETSI EN 303 645;
- the implementation guidance ETSI TR 103 621 helping manufacturers and other stakeholders to meet the provisions defined for consumer IoT devices in ETSI EN 303 645; and

- ETSI EN 303 645 security requirements for other domains such as the standard for consumer mobile devices such as smart phones in ETSI TS 103 732.

Therefore, current and future work at ETSI in developing consumer IoT security standards will in particular consider vertical domains of ETSI EN 303 645 such as:

- Smart Door Lock security requirements
- [Home Gateway security requirements](#)
- Sensor hub security requirements
- to be continued ...

Along with the aforementioned domain specific security requirements, ETSI TC CYBER recently published a corresponding [template](#) in order to facilitate the development of future standards. ETSI TC CYBER is also expecting vertical assessment specifications, for which a template is currently under development.

■ Dr. Samim Ahmadi, Consultant, umlaut.

# SMEs and universities talk about their involvement in ETSI



**“The ETSI model makes it quicker and easier to reach solutions, especially when compromises have to be made.”**

Niels Peter Skov Andersen,  
CEO, Anemone Technology - [Enjoy! January 2020](#).

**“We’ve joined ETSI so we can more openly collaborate with other industry leaders to put effective standards in place.”**

Ted Ross,  
CEO & Co-founder of SpyCloud - [Enjoy! April 2021](#).



**“ETSI can help the establishment of ecosystems that will stimulate business interactions.”**

Prof. Panagiotis Demestichas,  
Wings ICT Solutions - [Enjoy! January 2019](#).

**“Standards are incredibly important. We are glad to be part of ETSI to continue standards work.”**

Alex Gruzen,  
CEO, WiTricity - [Enjoy! October 2021](#).



**“ETSI is the only standards body in the world developing standards for context information management.”**

Arkady Zaslavsky,  
Research Center Director, Deakin University, Australia - [Enjoy! October 2020](#).



# eAccessibility



Inclusiveness in ETSI is not only a word, hence we wanted to highlight the Accessibility Act and in particular the globally implemented European standard [EN 301 549](#). We invited Inmaculada Placencia Porrero, Senior Expert, Disability and Inclusion at the European Commission to give us an update on the European Accessibility Act and the upcoming related harmonized standards. These will support industry, public administrations, persons with disabilities and the elderly. Our showcase gives us the example of an implementation in India. As the country ratified the United Nations Convention on the Rights of Persons with Disabilities, passed the “Rights of Persons with Disabilities Act”, and has been rapidly digitalizing in the last few years, the Ministry of Electronics and Information Technology decided to implement a standard on accessibility for ICT products and selected the European standard EN 301 549.

# The European Accessibility Act and the Harmonised Standards

*European standards resulting from European Commission Mandates, including EN 301 549, are helping the daily living of persons with disabilities. The products and services it covers, websites, software and digital devices, are used more and more in all kinds of activities, from education and employment to leisure and administrative procedures. The standard is already implemented in several countries round the world.*

## What is the European Accessibility Act?

The European Accessibility Act (EAA) is a directive adopted in 2019 that requires that certain products and services, many with a strong ICT component, be placed or provided in the market only when they are accessible. Their “accessibility” is described by functional accessibility requirements that are listed in Annex I of the Directive. The Directive also contains rules to use the same accessibility requirements for complying with relevant obligations on accessibility set out in other EU legislation such as the public procurement directives. The Public Procurement Directives require the consideration of accessibility in technical specifications when the subject matter of the procurement, i.e. the product or service that is bought, is meant for use by natural persons, whether members of the public or staff of a public buyer.

This “common use” of accessibility requirements of the European Accessibility Act is very powerful for the harmonization of the market. Public purchasing authorities

**The European Accessibility Act is having a positive impact on the daily living of persons with disabilities.**

and economic operators will use the same accessibility requirements for making products or delivering services and for buying them for the public sector.

The EAA Directive has a direct positive impact on the daily living of persons with disabilities. The products and services under its scope are used more and more in all kinds of activities, from education and employment to leisure and administrative procedures.

## State of play

The EAA Directive was first proposed by the European Commission in December 2015 and was adopted and published in the Official Journal of the EU in April 2019. Member States are working on its transposition. They shall adopt and publish, by 28 June 2022, the laws, regulations and administrative provisions necessary to comply with it. Economic operators are working on its implementation in order for their products and services to become accessible in line with the requirements of the EAA Directive. Member States shall apply those measures from 28 June 2025.

## The role of standards

The EAA Directive is based on the internal market legal base and contains provisions for the use of standards. Its Article 15 indicates that products and services, which are in conformity with harmonized standards, shall be presumed to be in conformity with the accessibility requirements in its

Annex I. In addition, its Article 25 contains a provision that specifies that those harmonized standards can also be used to provide presumption of compliance for accessibility obligations set out in other EU legislation, such as the public procurement directives of some EU Funds Regulations.

## Existing European accessibility standards

The European Commission issued a number of standardization Mandates that have resulted at least in three

### NO/LIMITED VISION/ NO PERCEPTION OF COLOR

- Magnification, reduction of required field of vision and control of contrast, brightness and intensity.
- Audio output of visual information.



### NO/LIMITED HEARING

- Visual and tactile user interfaces.
  - Sign language.
- Visual output (such as captions, subtitles, real time text transcripts).



### NO/LIMITED VOCAL CAPABILITY

- Keyboard, pen or touch user interfaces.
  - Computer-generated speech or other sounds.



### LIMITED MANIPULATION OR STRENGTH

- Speech user interface.
- Sequential key entry.



© ETSI



## The EN 301 549 is used by other governments around the world.

very important European accessibility standards, developed by the European Standards Organizations: ETSI, CEN and CENELEC.

The first **standard is EN 301 549<sup>1</sup>** that contains accessibility requirements addressing information and communication technologies including products and services as well as the web. EN 301 549 is currently being used already, as a harmonized standard, to provide presumption of conformity in the context of the Web accessibility Directive<sup>2</sup>.

EN 301 549 was intended to be coherent with other accessibility standards developed outside Europe such as the US standards for section 508 of the Rehabilitation Act and section 255 of the telecommunications act. It was also developed having in mind international standards such as those from W3C/WAI. In particular, EN 301 549 contains and points to the provisions of the W3C web content accessibility guidelines<sup>3</sup>. This standard is also used by other governments around the world for their accessibility policies such as the case of Canada, India and Australia.

The second standard is EN 17210<sup>4</sup> that contains accessibility provisions for the built environment from a functional perspective and provides explanation as to the reasons of those requirements to remove barriers faced by persons with disabilities and illustrate their use.

The third standard is EN 17161<sup>5</sup> that contains provisions to apply design for all in organizations so that the products and services that they produce or deliver will be accessible for persons with disabilities. This standard focuses on processes and organizational issues.

## Accessibility standards in the pipeline

The European Commission is finalizing the preparation of a new standardization Mandate to require the development of harmonized standards on accessibility to provide presumption of conformity with the accessibility requirements of the EAA Directive. The draft Mandate, which has been open for extensive public consultation, refers to the above-mentioned standards, namely EN 301 549, EN 17210 and EN 17161, and asks for their revisions. In addition, it requires the development of two new accessibility standards, one related to the provision of non-digital information and

another one related to the accessibility and interoperability of emergency communications including access to the single European emergency number 112. Furthermore, the draft Mandate indicates that in relation to the web, the resulting revised standard would be able to provide presumption of conformity for the Web Accessibility Directive, and support the application of the European Electronics Communications Code with regard to accessibility, this once more with a focus on harmonization in the European market.

Harmonized accessibility standards support industry, public administrations, persons with disabilities and older persons.

## Conclusion

The forthcoming EAA-related standards will be a cornerstone for the application of European accessibility legislation. Until they become available, existing European accessibility standards can already be used to meet the accessibility needs of ICT users.

Harmonized accessibility standards support industry, public administrations and ultimately persons with disabilities and older persons by helping to remove the barriers that they face when participating in economy and society.

■ *Inmaculada Placencia Porrero, Senior Expert, Disability and Inclusion, European Commission.*

**Disclaimer:** The information and views set out in this article are those of the author and do not necessarily reflect the official opinion of the European Commission.

1. Developed by the ETSI Technical Committee Human Factors (HF), and the eAccessibility Joint Working Group (JWG) of CEN/CENELEC/ETSI. A result of Mandate 376 on accessibility of ICT.
2. Mandate 554 issued for Directive (EU) 2016/2102,
3. W3C/WAI/WCAG 2.0
4. Developed by CEN, a result of Mandate 420 on accessibility of the built environment.
5. Developed by CEN, a result of Mandate 473 on accessibility following design for all.

### EN 301 549: EXAMPLES OF ACCESSIBILITY REQUIREMENTS FOR ICT PRODUCTS AND SERVICES\*.

\*Non exhaustive list



• PRIVACY PROTECTION • PERSONAL ADAPTATION



#### LIMITED REACH

- Considering the needs of wheelchair users and the range of user statures in the placing of operational elements of stationary ICT.



#### PHOTOSENSITIVITY

- Limiting the area and number of flashes per second.



#### COGNITIVE, READING OR LEARNING IMPEDIMENTS.

- Audio output of the text.
- Spelling aid and word prediction of the text.
- Easier interaction with content by presenting tasks in steps.

# India adopts EN 301 549 for ICT Accessibility



***Accessibility in Information & Communication Technologies (ICT) is a measure of the extent to which a product or a service can be used by Persons with Disabilities (PwDs) as effectively as it can be used by others. According to the 2011 Indian Census, 2.21 % of India's population are PwDs.***

## The background

India ratified the United Nations Convention on the Rights of Persons with Disabilities (CRPD) in 2007 and passed the “Rights of Persons with Disabilities Act (RPwD Act)” in December 2016. In the RPwD Act 2016, twenty-one types of disabilities have been recognized and listed. The Act clearly states that the Central Government shall, in consultation with the Chief Commissioner, formulate rules for persons with disabilities, laying down the standards of accessibility for the physical environment, transportation, information and communications, including appropriate technologies and systems, and other facilities and services provided to the public in urban and rural areas.

India has been rapidly digitalizing in the last few years, with accelerated growth of broadband, internet and mobile penetration, affordable cost of data and devices and a vast majority of services from government and private organizations offered to citizens in areas ranging from e-commerce, banking and finance, health, education, mobility, and urban governance. This growth has been fuelled by near universal adoption of unique identity, AADHAAR, public facilities like Unified Payments Interface (UPI), use of India stack in many digital platforms and widespread use of Indian languages in the ICT space.

## Decision to use the standard

In the above context, the development of the Indian standard on Accessibility for ICT Products and Services was initiated by the Ministry of Electronics and Information Technology (MeitY) under the “Knowledge and Resource Centre for Accessibility in

ICT (KAI)” Project led by the Centre for Development of Advanced Computing (C-DAC), Pune. The objective of the project included conducting of study on various prominent international standards, including [EN 301 549](#) and development of an Indian standard that is harmonized with them while also meeting India specific requirements. It was to be prepared for early adoption through Bureau of Indian standards and follow-up implementation by public and private agencies, as legally required under the RPwD act.

Based on the study, it was the recommendation by the KAI team in C-DAC, in consultation with experts, that EN 301 549 (latest version) should form the basis for the Indian standard, and India specific requirements shall suitably be added in the best way global harmonization goal is ensured. Subsequently, MeitY asked Bureau of Indian Standards (BIS) to work with C-DAC and collaboratively and speedily formulate the Indian accessibility standard for ICT, taking inputs from other key stakeholders including other Ministries, Indian ICT industry and Indian users – including People with Disabilities (PwD) community.

During the development of the standard, India-specific requirements, namely support to Indian languages, broadcasting accessibility requirements of captioning, sub-titling and Indian sign language and stationary ICT physical attributes were identified and included.

## The details

The finalized Indian accessibility standard for ICT products and services is divided into two parts, with Part – 1 covering requirements and Part – 2, Conformity Assessment. The present Indian Standard IS 17802 (Part 1) is the European Standard

EN 301 549 v 3.2.1 with modifications limited to the above-specified areas and the main context referencing the Indian legal provisions (Rights of Persons with Disabilities Act, 2016). Part-2 is under finalisation for its publication soon. Electronics & Information Technologies Department (LITD) Sectional Committee (SC-35) of BIS is responsible for the formulation of this Indian standard and its adoption is completed through an agreement between BIS-ETSI.

## Getting the benefits of cooperation with European standardization

With the publication of the standards, one can expect efforts to pick up momentum across sectors in India on adoption by all stakeholders. This is a perfect example of India benefitting from years of European standardization efforts. Indian implementation experience - given India's and Indian industry's size, scale and diversity, and adoption by public and private sectors, should help nurture future cooperation between BIS/Indian stakeholders and ESOs in other areas of ICT as well.

■ *Shri. Dinesh Sharma, Director, EU Project SESEI; Smt. Reena Garg, Head, LITD (Electronics and IT Department) – BIS; Dr. N. Subramanian, Head, Corporate R&D, C-DAC, Convener – BIS LITD 35/P1 Panel; Shri Bhanu Krishnadev P, Member Secretary – BIS LITD 35/P1 Panel; Shri Srinivasan Ramakrishnan, Former Director General, C-DAC & Member – BIS LITD 35/P1 Panel.*

# Danish Standards and ETSI

## are gaining increasing attention from their Danish stakeholders

*Danish Standards employees Maria Skou and Marika Vindbjerg have been the spearhead of the national delegation for Danish Standards (DS) at ETSI for the past four years. Through an active effort, they have managed to double the number of national stakeholders represented in DS working groups.*



### Sustainability and digital issues: the drivers for NSOs involvement

The National standardization organizations (NSOs) play an important role, and this role is gaining in importance due to an increased European awareness of and focus on sustainability and digital issues, such as internet technologies and cyber security. These developments go hand in hand with the new EU standardization strategy.

Traditionally, Denmark has not been a country with large corporations or activities in the field of information and communication technologies. Through a sustained effort we have spread the word about ETSI, and as technologies

are converging these years, we have managed to double the number of national stakeholders in DS working groups during the past five years. We are proud to see that Danish organizations consider DS and ETSI as increasingly important.

Although the stakeholder representatives are still predominantly men, there is an increasing number of young women in the traditional engineering graduate programmes, so we hope that things will change gradually. We would like ETSI to take a lead in promoting these young female role models to increase diversity among technical experts.

### The important role of NSOs in ETSI

As a national standardization organization DS is trying to keep our customers and stakeholders, including the administrations

and related government agencies, updated. We help them navigate in the huge and sometimes confusing universe of standards. ETSI has a lot of different technical bodies and groups, and this is hard for even larger companies to oversee and keep track of.

DS and other national standardization organizations have an important role to play in helping their stakeholders to find relevant information, documents, and groups. Keeping colleagues, stakeholders and government agencies informed and trying to promote the ETSI activities has demanded a considerable effort. Internally, we have formed working groups across sectors to be able to keep our main stakeholders, such as the national cyber security agency, the police, and key industries, informed.

■ *Maria Skou, Head of Department International Affairs; Marika Vindbjerg, Senior Consultant. Danish Standard.*



# Welcome to the new Research section

*Technology innovation and research make up the lifeblood of modern ICT standardization. ETSI recognizes the importance of encouraging researchers to bring their work into the standards process in order to create value for all.*

*Therefore, we are pleased to introduce the new Enjoy! Research pages that will be the place for researchers to get the latest news and share their ideas relating to Research, Innovation and Standards.*

*Should you have ideas for future editions of this section pages please feed them back via [research@etsi.org](mailto:research@etsi.org)*

*David Boswarthick, ETSI Director New Technologies*

## Research Inside

### University of Piraeus, bridging the gap between research and standardization for 6G

For more than a decade our research group has focused on innovative research for advanced wireless technologies such as IoT over cellular, Network MIMO, THz and Reconfigurable Intelligent Surfaces (RIS).

Always preferring the revolutionary path, we approach such topics very early, often several years before the discussion on their adoption begins. One example is the research we initiated in 2019 on RIS (ARIADNE project), when the scientific literature on the topic was limited.

The advantage of high-risk research is that opportunities for championing technology innovation are unlimited. The disadvantage is the significant efforts required to convince the industry before the technology adoption and the creation of the requisite standards. We have often witnessed great technologies fail to reach the market.

We believe that developing the ecosystem, maturing the technological concepts and defining the early standards are essential for moving innovative ideas through standardization and onto global deployments.

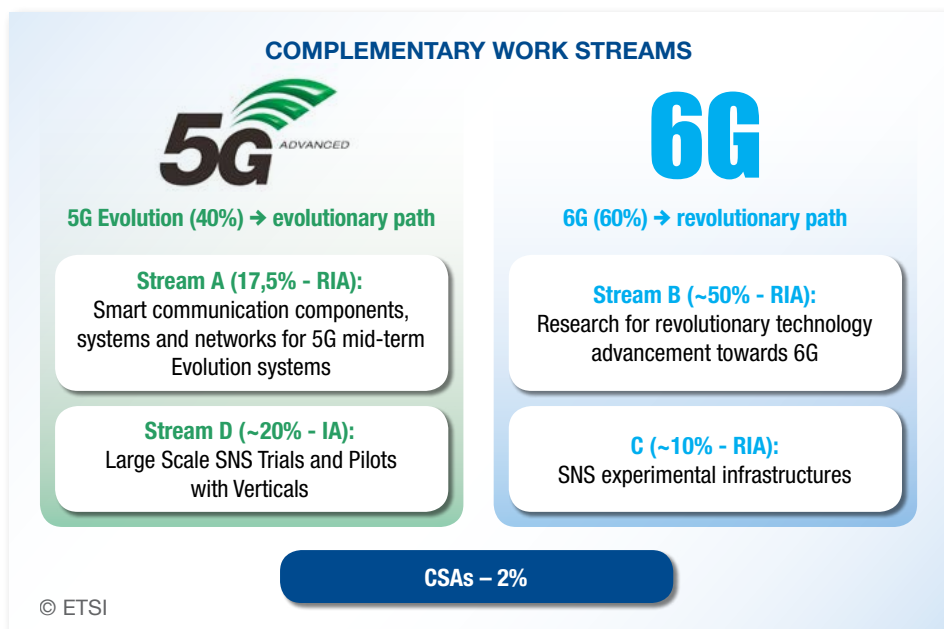
The work of ETSI, particularly in ISGs such as the recently established *ISG RIS* (where we are active members), can catalyse the roadmap, bridge the gaps between blue-sky research and technology adoption and help accelerate innovative technology adoption through global standardization.

■ *Angeliki ALEXIOU, Professor of Broadband Communication Systems, University of Piraeus .*

## Research in Europe

### Smart Networks and Services Joint Undertaking

**6GSNS** The recently launched European Smart Networks and Services Joint Undertaking (SNS JU) aims to ensure industrial leadership for Europe in 5G and 6G.



The SNS JU investments will reach at least €1.8 billion for the period 2021-2027, with a €900 million contribution from the EU Horizon Europe programme adequately complemented by industry investments. The SNS JU provides financial support in the form of R&I grants to projects following open and competitive calls.

The key goal of the SNS JU is to secure European leadership in the development and deployment of next-generation network technologies and services, while accelerating European industry digitization.

The SNS JU has recently adopted its first research Work Programme 2021-2022 with the Calls for Proposals being launched in January 2022 with four complementary work streams (graph p.18):

- Stream A: Smart communication components, systems, and networks for 5G Evolution.
- Stream B: Research for radical technology advancement for 6G and radical advancements of IoT.
- Stream C: Enablers and Proof of Concept (PoCs), including experimental infrastructure(s).
- Stream D: Large-Scale Trials and Pilots with Verticals.

These four streams are complemented by Coordinated Support Actions (CSA) to support EU-wide synergies and international cooperation.

## Research in ETSI

ETSI has established a dedicated Board strategy group entitled Research, Innovation and Standards Ecosystem (RISE) with the unique objective to establish ETSI as the preferred partner of R&D organizations to enable the transfer of innovation through standardization and onto global industrial deployments.

RISE is interacting with both European and International research ecosystems. One example: the Strategic Research and Innovation Agenda (SRIA) of the NetworkEurope *European Technology Platform* (ETP) has been examined and mapped to the ETSI technical organization, the result being offered to researchers to help identify relevant landing zones and contacts for research topics in ETSI standards groups.

A further collaboration with our European partners is the initiative with the 6G Industrial Association (6G-IA) that is planned for

the upcoming European Conference on Networks and Communications (*EuCNC*) taking place in Grenoble in June. ETSI and 6G-IA propose a special session to guide researchers through examples using success stories of moving research into early standards such as the ETSI Industry Specification Group on Reconfigurable Intelligent Surfaces (RIS).

ISG RIS was created following input from a number of European and National research initiatives and already attracts substantial attention from both academia and industry. The group is defining early standards for a new type of system node with surfaces that may have reflection, refraction, and absorption properties through many small antennas or metamaterials elements which can be adapted to a specific radio channel environment.

ISG RIS is a good example of the model that clearly demonstrates how Europe can build upon its funded research programmes through standardization in order to achieve fast time-to-market for technology innovations.

■ Markus Mueck, Chair of the ETSI Board Research, Innovation and Standards Ecosystem group (RISE).

## Helpdesk for Researchers



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



<https://www.linkedin.com/showcase/etsi-standardization-research-innovation-education>



**Helpdesk:**  
[research@etsi.org](mailto:research@etsi.org)



**Director New Technologies:**  
[David.Boswarthick@etsi.org](mailto:David.Boswarthick@etsi.org)



Dedicated research Webpages

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Support to EU Projects

Advice on EU Research

Setting up new Standards Groups

Advice on Standards Activities

... and more

# Strong processes will bring equality

*The foremost challenge for 3GPP has been to provide a reliable and trustworthy platform for the membership to be able to work uninterrupted on standards that meet the network needs for a variety of geographies, populations and economies.*

## A new challenge

Over twenty-four years of tough technical debates, 3GPP has managed to drive the system forward in a harmonious way, leaning on a vastly experienced and talented community and on trusted working procedures – as the rule book for ensuring that things are done right.

Now comes a new challenge – one being faced up to by the very best organizations and companies. It is now time to measure our performance on the growing call to deliver societal change, by putting equality and inclusion on the table for debate and decision.

## Some good decisions made

Discussion on the topic, within 3GPP, has recently led to a rule change to improve the language used in specifications and in the procedures themselves. During 2021, 3GPP took steps to replace gender specific titles for our leaders (Chairs, Vice-chairs, etc) and any gender specific text around that (he, him, his, etc). All groups also agreed to extract outdated language in the specifications, with the replacement of expressions such as ‘master’ and ‘slave’ and terms that suggested ‘white’ is good and ‘black’ is bad. These were important steps, because by using inclusive language and losing divisive terms we have made a start on our journey.

Where we go next is not so obvious. Becoming proactive on addressing the imbalances that still exist and any barriers still standing in the way of inclusion and equality cannot be achieved by the



stroke of a pen. With 700+ companies participating in 3GPP, it isn't easy to insist on change nor on the pace of it.

There are however some things we can do right away. One would be to project a positive way forward, by telling our stories in a way that reflects where we are going – not where we are today. We can showcase the work of women in the groups, show images with a variety of delegates interacting successfully – disabled and able bodied, people of different origins and a variety of ages. Although this will put a burden on a few volunteers, their efforts will help encourage participation by others, or - at worst -not discourage it.

We are not alone, every organization is faced with this challenge and the work already done by the most responsible and ambitious organizations can also help us.

In 3GPP, our working processes are well tested and have inspired many others. For initiatives on diversity, equality and inclusion we may have to take inspiration from others. There is no shame in that, but it will be a great shame if we are satisfied with the efforts we have made so far.

■ Kevin Flynn, 3GPP Marketing and Communications professional.



# Addressing Societal Challenges with IoT

Over a 6-week period late in 2021, several European and Korean organizations hosted an international, oneM2M hackathon. The goal for participating teams was to build IoT solutions that addressed major environmental and societal issues, using one of several available oneM2M platforms.

## The event

The event coincided with the 30th anniversary of the Korea Electronics Technology Institute (KETI). The event's supporters included Korea's Telecommunications Technology Association (TTA) and Ministry of Science and ICT as well as ETSI and the EU-funded *InDiCo* project. Twenty-six teams participated in the event, representing universities from China, France, Korea, India, Spain, and the USA.

## One Standard, Many Solutions

oneM2M standardizes a set of common service functions (CSFs). These are the building blocks for designing and deploying IoT systems. They were designed to be re-usable across many different application areas. That covers smart cities, connected-healthcare, industrial internet, transportation, and cross-silo data-sharing among others.

oneM2M's general applicability shows up in the wide variety of hackathon projects. Unsurprisingly, pandemic conditions motivated many of the projects. One involved a sensing system to manage access to restrooms. Another project addressed growing inequality among 6–13-year-old who have to study remotely. Injecting a sense of fun, this 'talking potatoes' project aimed to develop students' cooperation and communication skills. Behind these functions, a oneM2M platform provides teachers with tools to check individual students' progress in real time. Other projects addressed

environmental monitoring, agricultural crop management, irrigation, recycling, smart shopping-cart, and smart working experiences.

## Winning Hackathon Entries

The winning entry came from a team studying at Sejong University (Korea). Their project addressed the challenge of delivering packages using drones. The team's motivation was to facilitate non-face-to-face deliveries and to explore methods for reducing traffic and environmental pollution. The scope of the project included

facial-recognition capabilities, real-time delivery status reporting as well as the use of remote sensors to monitor elevators and drone stations.

The hackathon's sponsors recognized different facets of innovation through a series of prizes. In addition to the winning entry, there were awards for the best device and best user applications as well as recognition for the best idea, best technology, and best educational effort.

## oneM2M Tools and Techniques

In addition to creating an occasion for international collaboration, this oneM2M hackathon provided the opportunity to assemble developer resources from across the world. This includes teaching materials delivered by KETI and by the International Institute of Information Technology, Hyderabad. The event also leaves behind an international network of project-advisor, tutor, and developer relationships.

Each project had to document its solution with a step-by-step implementation guide as well as a short video showing the solution in action. They illustrate how it is possible to implement IoT applications and the ease of using third-party platforms which included the ECLIPSE open-source oneM2M platform, KETI's Mobius platform and, the educational ACME Common Services Entity (CSE) Platform. All three adhere to the oneM2M standard.

Watch the Hackathon closing ceremony at: <https://www.youtube.com/watch?v=WZw-Xb0NwNA>



# Data in eHealth

## - securing patients and practitioners

*The SARS-Cov-2 induced crisis of 2019, widely referred to simply as COVID, has impressed on many in the general public the importance of accurate and timely data.*



### The role of data

Get the wrong data, or interpret it badly, and lives are put at risk. In any domain where lives are impacted getting the data right is essential, and taking the right actions from what the data is telling us is similarly critical.

In eHealth the role of data is not trivial – it is needed for accurate diagnosis, it is needed for effective treatment, and it is needed for health planning and many other patient centric activities. In short, without data health systems don't work.

In TC eHEALTH the view of data is captured in the following simplified use cases:

- A *Diagnostic sensor* delivers a *Measurement* taken at *time t* in *Context* relating to *Patient* to a *Health professional*.
- A *medical actuator* delivers a *stimulus* at *time t* in *Context* relating to *Patient*.

**“Get the wrong data, or interpret it badly, and lives are put at risk.”**

For each italicised item more models exist, including the role of things like standards for the specification of Measurement or a Stimulus.

### Correlation versus causation

In looking at something like COVID the data problems seen in practice are in large part having to determine a path from uncertainty to certainty.

**“For COVID, the data problems are having to determine a path from uncertainty to certainty.”**

Initially many of the symptoms of COVID are similar to other respiratory illnesses and as coronaviruses are responsible for up to 30% of upper respiratory tract infections in adults. It is a significant data filtering and analysis job to identify what is special about this coronavirus that leads to a pandemic crisis, as opposed to one that we live with daily such as the common cold. This is part of the correlation versus causation debate.

The ice-cream sales to murder rate correlation suggests that ice-cream is a trigger to murder, whereas adding more data would instead suggest that both increase when the weather is nice. The causation of one is closely related to the causation of the other but they are not the causes of each other. In health care many symptoms cross-correlate to a diagnosis, and there is genuine risk of correlation bias in data modelling.

**“In eHealth, there is genuine risk of correlation bias in data modelling.”**

The question we are posing, and trying to use standards to answer, at ETSI is: Can the data be reliably identified as used in diagnosis and treatment, and ultimately in prevention? Thus for COVID knowing it is an aerosol transmitted virus, and knowing that filtering can limit inhalation of the virus, a public health response can be to strongly recommend the use of filtering face-masks. Data can then indicate the effectiveness of such preventative measures.

At ETSI across the entire set of technical bodies, coordinated and stimulated by eHEALTH, we are working to develop standards that ensure data transparency and explicability such that when we use that data in diagnosing, treating, and

**“At ETSI, we are working to develop standards that ensure data transparency and explicability.”**

developing policies for patient health, we can give assurance that the data chain is a contributor to the security and safety, and health, of our patients. Ultimately our patients will trust the data in the eHealth system.

■ Scott Cadzow, ETSI TC eHEALTH vice-chair.

# Report on Coordinated Vulnerability Disclosure



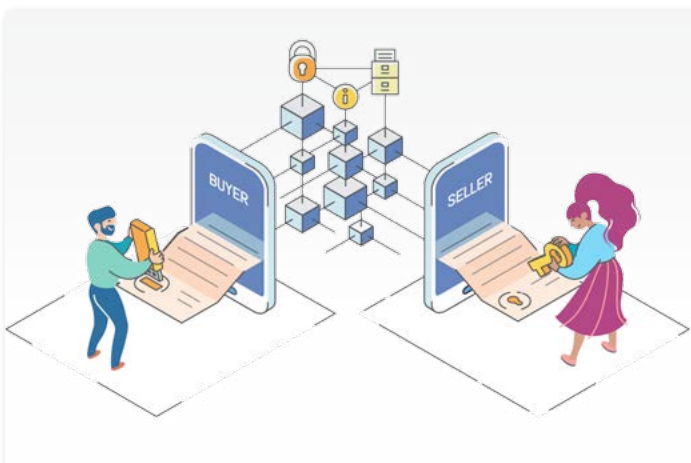
ETSI has released a Guide to Coordinated Vulnerability Disclosure. The Technical Report ETSI [TR 103 838](#)

will help companies and organizations of all sizes to implement a vulnerability disclosure process and fix vulnerability

issues before they're publicly disclosed. The ETSI Report contains advice on how to respond to and manage a vulnerability disclosure, a defined triage process, advice on managing vulnerabilities in third party products or suppliers. It also includes an example of a vulnerability disclosure policy. This is especially important for SMEs or larger companies who do not already have experience of CVD schemes or dealing with security vulnerabilities that are reported by security researchers. Having a clearly sign-posted disclosure process demonstrates that an organization takes security seriously.

## First Specification for Smart Contracts

ETSI has just released [GS PDL 011](#) the first in a series of specifications that are concerned with the implementation of permissioned distributed ledgers (PDL). This and following specifications will help with the realisation of the numerous operational and security advantages of a decentralised approach to the recording of transactions, while simultaneously being both inexpensive to perform and inherently scalable. The new PDL group specification, GS PDL 011, will provide a functional framework to adhere to when smart contract activities are being undertaken, without repudiation being a threat. This will thereby prevent the prospect of fraud occurring. Any contract changes will be tracked - showing where, when and by whom they were made.



## Self-Adapting Autonomous Networks



Following on from meetings conducted in late 2021, ETSI has now completed Release 2 of its Experiential Networked Intelligence (ENI) specifications with the system architecture ETSI [GS ENI 005](#). ETSI GS ENI 005 and associated documents will provide better insight into network operations - allowing more effective closed-loop decision making plus better lifecycle management. Through its use, operators will be able to leverage acquired data and apply artificial Intelligence (AI) algorithms to it. This will mean that they can respond much quicker to changing situations and gain far greater agility. The services being delivered across their networks may thereby be rapidly adapted and the resources they have available correctly assigned in accordance with subscribers' requirements, or any other alterations in circumstances (either operationally or commercially driven).



# New Enterprise Resource Planning solution



In January 2022 we successfully launched the new version of our Enterprise Resource Planning software. This was more than a simple update of the solution.

We had been operating for 10 years with the same version, and since then the vendor had considerably changed the architecture of its software. It took more than a year to complete the project.

Among the many challenges we had to overcome, there was in particular migration from an on-premises solution to a Software as a Service solution. We particularly emphasized the fact that the code had to keep pace with the annual updates imposed by this type of solution. At the same time, we aligned the functionalities with the new way of financially managing xTF projects and moved most of the ETSI membership functionalities to an in-house solution. Finally, we had to review the way we build and produce financial reports.

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# New application for “Call for Expertise”

As part of the project to replace our Enterprise Resource Planning (ERP) software, we have developed a new version of the application that allows ETSI to call on experts before starting xTF projects. This application, called “Call For Expertise” (CFE), is based on a new user interface technology and interfaces with the ERP using web services.

It is available on the ETSI portal at <https://portal.etsi.org/cfe>. The list of open CFE is publicly available, with their Terms of Reference. Applicants must have a valid ETSI Online account to submit their application and follow their status.

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## Welcome to our new staff members



**Kim  
Dongwook**

*Technical Officer at MCC.*

Coming from a diverse and professional educational background, Dongwook graduated from KAIST (Korea Advanced Institute of Science and Technology) with a B.A. in Physics and a Ph.D. in Innovation & Technology Management.

He started his career at KT (Korea Telecom) in the department of technology strategy, where he formulated a holistic framework for R&D portfolios and devised strategies for network (fixed and mobile) technology.

From 2015 to 2020, he worked at the GSMA as a networks technical specialist, where he was initially in charge of facilitation of VoLTE interconnection and roaming.

From 2017, his responsibilities shifted to 5G issue coordination and 5G industry strategy. In this role, he was the main editor of 5G-related GSMA whitepapers.

Prior to joining ETSI, he briefly worked at TIP (Telecom Infra Project) as a technical specialist accelerating promising telecom start-ups and provided undergraduate level lectures at the Korean National Police University, a highly selective school that educates future senior police officers, and at Chungnam National University. He taught mathematical statistics to first-year students and strategic management to third-year students. As Dongwook has always worked in Korea, ETSI is his first working experience abroad, and he is looking forward to improving his French.



**Dominique  
Arneodo**

*Head of Controlling and Accounting.*

Dominique graduated from the IAE Nice School of Management and later from EUROMED Marseille, where he obtained a master's degree in Finance. While at EUROMED, he completed an apprenticeship at KPMG Audit where he was recruited by PricewaterhouseCoopers (PWC) to start only a couple of months later.

In 2002, he joined a private company, MARINELAND, the largest marine zoological park in Europe based in Antibes, France, as Management Controller and then Accounting Manager.

In 2004, he gave a boost to his career and joined COTY, a company listed at the New York Stock Exchange (NYSE), one of the world's largest beauty companies and the leading fragrance company. In his role as Accounting Manager of the R&D centre and manufacturing plant located in Monaco, Dominique reported to the Europe VP Finance in Paris. Managing a six-person team, he implemented several strategic projects initiated by the New York headquarters (HQ), with whom he worked in close collaboration for all financial reporting.

Prior to joining ETSI, he collaborated with DUFREY, a leading duty-free travel retailer listed in Switzerland, with operations in 64 countries, and a partner of choice for global brands to showcase their products in dedicated boutiques. As Finance Manager, he was accountable for all French activities around the globe.





### 3GPP new website

A new 3GPP website is launched in the spring, with a new look and an improved user experience for newcomers and oldies alike. New site features include a beefed up 'browse our technologies' tool, to showcase use cases and technologies as they arrive in 3GPP.

All of the old website functionality has been preserved behind this new shop window for 3GPP work and the latest news from the project.

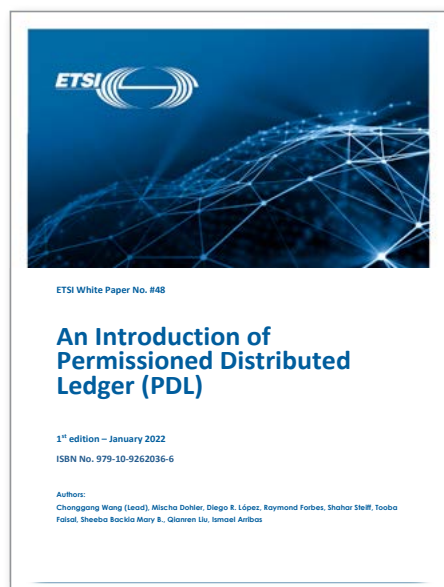
### Watch the first **oneM2M** generic video

Established in 2012, oneM2M is a global community of leading standards development organizations, working with industry experts and researchers to shape this hyper-connected future.

After launching a new website in 2021 oneM2M has now released its first generic video. The aim of the video is to enable everybody who doesn't know about oneM2M yet and has an interest in IoT standards to understand in just two minutes what the mission, vision and fundamental objectives of the partnership project are.



## White Paper: **Permissioned Distributed Ledger**



After the release of the first specification on smart contracts on 18 January, members from the ETSI PDL group published a White Paper entitled "An Introduction of Permissioned Distributed Ledger (PDL)".

Distributed ledgers have consolidated as one of the most disruptive applications of information technology that have appeared in recent years. Their ability to store any kind of data as a consensus of replicated, shared, and synchronized digital records distributed across multiple sites, without depending on any central administrator, together with their properties regarding immutability (and therefore non-repudiation) and multi-party verifiability opens a wide range of applications.

According to access permissions, there are two types of distributed ledger systems: Permissioned Distributed Ledger (PDL) and permissionless distributed ledger. In PDL, governance and corresponding access control policies are agreed by the participant community, thus better preserving privacy and allowing for a more efficient consensus protocol to achieve higher transaction speed and better energy-efficiency, three of the main concerns related to unconstrained, permissionless systems.

PDL as a ledger technology may be applied in a number of technologies, able to work together in different ways to support user applications. To leverage PDL to other technologies, a PDL reference architecture is needed, and draft ETSI GS PDL-012 currently in preparation develops a layered PDL reference architecture, based on three layers. Based on this architecture, PDL-enabled base technologies and PDL operational aspects can be considered.

The *ETSI White Paper* aims to:

- Present a brief introduction on blockchain and distributed technology
- Summarize PDL work items and technologies that have been developed and are currently under development by ETSI Industry Specification Group (ISG) PDL
- Describe selected use cases that PDL technologies can be applied to
- Discuss advanced distributed ledger technologies (DLT) with standardization potentials in future, such as redactable ledgers and payment channel networks



# Join us at upcoming events

organized or supported by ETSI.

Find more information and register on our website at: [www.etsi.org/events](http://www.etsi.org/events)

## April 2022



### *MPLS SD & AI Net World 2022 - 05-07 April, online and Paris, FR.*

ETSI is pleased to endorse the MPLS SD & AI Net World 2022. As it has been the case for decades now, hottest topics will be addressed by the most renowned engineers and visionary people who have made MPLS SD & AI Net World such a valuable event to get a comprehensive overview of where the networking industry is heading to. A session is dedicated to ETSI Network Transformation Update.



### *Layer123 Reunion - 26-28 April, Madrid, Spain*

ETSI is pleased to partner with the 2022 Layer123 Reunion Congress, which will examine the strategies of various sectors in the telecoms industry. Don't miss the ETSI ZSM Forum on 26 April (12-16h), which will discuss advances in zero-touch and automation enabling technologies.

## May 2022



### *FutureNet World - 10-11 May, hybrid, online and London, UK.*

Returning in 2022 as an in-person, networking & thought leadership focused event, and broadcast virtually. FutureNet World brings together the world's leading telco execs to discuss the strategic & commercial priorities in today's digital world and the considerations for the future of the network.



### *2nd FRMCS Remote Plugtests - 16-20 May, Virtual*

ETSI, with the support of TCCA (The Critical Communications Association) and the UIC (Union Internationale des Chemins de fer), is organising the second FRMCS (Future Railway Mobile Communication System) Plugtests™ remote event. The goal of this event is to validate the interoperability of a variety of implementations using different test scenarios based on the 3GPP Mission Critical services framework.



### *eSignature Validation Plugtests 2022 - 16 May - 10 June, Virtual*

ETSI's Centre for Testing and Interoperability on behalf of, ETSI's Technical Committee for Electronic Signatures and Infrastructures, is organizing a remote Plugtests interoperability event on Electronic Signature Validation. This event will be run remotely using a dedicated web portal. The aim of the event is to check the interoperability of ETSI advanced digital signatures and the validation capacities of the participants.

## June 2022



### *2022 EuCNC & 6G Summit*

ETSI is pleased to participate in the 2022 EuCNC & 6G Summit that brings together two successful events: The EuCNC (European Conference on Networks and Communications), supported by the European Commission, and the 6G Summit, originated from the 6G Flagship programme in Finland. The Event focuses on various aspects of technology research and innovations ranging from 5G deployment and mobile IoT to 6G exploration and future communications systems and networks. Its target is to bring together researchers from all over the world. ETSI will be presenting at the Plenary panel sessions and at the special session co-organized in cooperation between ETSI and 6G-IA pre-standards group where we will be examining Research results impacting B5G and 6G through standardization. Join us!

# ETSI SNAPSHOT

**897**  
members

**333**  
standards  
*Dec2021-Feb2022*



**27%**  
SMEs

**740**  
standards  
under development

**+130**  
technical groups

**4.2 M**  
standards' downloads  
*Dec2021-Feb2022*



**12.900**  
online participants  
*Dec2021-Feb2022*



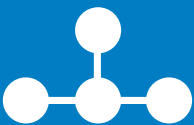
**458**  
eMeetings  
*Dec2021-Feb2022*

**8**  
conferences  
& Plugtests  
*Dec2021-Feb2022*

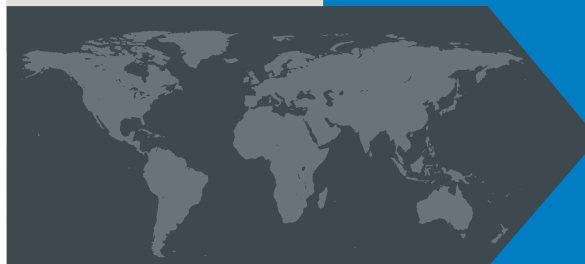
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**86**  
partnerships



**127**  
people  
**16**  
nationalities



Members  
from  
**63**  
countries

## 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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