

THE STANDARD

News From ETSI · September 2016



ETSI Mobile Edge Computing publishes foundation specifications

In April 2016, ETSI Mobile Edge Computing Industry Specification Group (MEC ISG) has released three foundation-level Group Specifications which define mobile edge computing terminology, study technical requirements and use cases, and specify the framework and reference architecture of MEC.

[GS MEC 001](#) provides a glossary of terms related to the conceptual, architectural and functional elements of Mobile Edge Computing. This will enable consistent use of terminology within ETSI MEC specifications and, beyond the ISG, more widely

in industry. The second document, [GS MEC 002](#), specifies technical requirements enabling interoperability and deployment and describes examples of uses cases of mobile edge computing. The third specification, [GS MEC 003](#), provides a framework and reference architecture to enable mobile edge applications to run efficiently and seamlessly in a mobile network. It also describes the functional elements and the reference points between them, and a number of mobile edge services that comprise the solution.

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ETSI awards first three ETSI Fellowships

Award granted for outstanding contribution to ETSI's work

On 19 April, during the 67th General Assembly dinner, ETSI awarded the first of its newly-launched ETSI Fellowship awards to Karsten Meinhold, Julian Pritchard and Karl Heinz Rosenbrock.

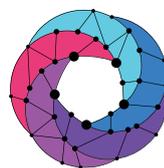
The award ceremony took place in the beautiful Negresco hotel, a place full of history and art, located on the Promenade des Anglais in Nice.

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ETSI Open Source MANO sets ambitious delivery plans: Release 0 ahead of schedule

Successful kick off meeting

The ETSI Open Source MANO (OSM) group was launched during Mobile World Congress in Barcelona. It has successfully completed its inaugural meeting at ETSI in Sophia Antipolis, France, in April, to lay the technical and community engagement foundations for the group's 2016 roadmap. During this collaborative session, the initial OSM architecture was discussed, community leaders were elected, and the project governance was agreed. Francisco-Javier Ramón Salguero of Telefonica was elected as chairman of the group, Pål Gronsund of Telenor and Andy Reid of BT were both elected as vice chairs.



Open Source
MANO

"We want to move fast to become a reference implementation for the industry. Starting with running code aligned with ETSI NFV work is a key advantage for OSM as it allows us to start from a sound basis and evolve the code based on the feedback from the community, and puts us in a better position to influence other forums based on our practical experience," states Francisco-Javier Ramón Salguero, chairman of the group.

New OSM releases are to be issued every six months, with the group using best-in-class open source workflows and tools to ensure rapid development and delivery.

To accomplish OSM's objectives of production-ready code, an End User Advisory Group consisting of leading global operators provides essential guidance to overcome the challenges in functional requirements of the code and those arising from the real world integration with existing systems, notably the existing OSS/BSS systems of service providers.

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Welcome to the World of Standards



Welcome to this latest edition of The Standard. In this issue we have three main themes in our coverage of news from ETSI: new work in new committees, in particular a groundbreaking Open Source initiative which is a first for ETSI; 5G standardization with the latest news from 3GPP; and IoT standardization with a focus on oneM2M. Around each of these three themes we have put together a collection of articles.

In addition, you will read about ETSI's new Fellowship Awards programme, with the first Fellowships of ETSI being awarded at our recent General Assembly. We also cover the Radio

Equipment Directive, the driver of a significant number of new Harmonised Standards we are currently producing. We have an update from our Seconded European Standardization Expert in China, new ETSI White Papers published, and a selection of recommended events. Please don't forget to consult the full list of upcoming events on the back page.

As always I hope you enjoy this edition.



Luis Jorge Romero,
Director General, ETSI

ETSI Open Source MANO sets ambitious delivery plans: Release 0 ahead of schedule – Continued (from page 1)

The roadmap for Release 1, expected within six months, includes plans to extend current multi-VIM (Virtualized Infrastructure Manager) and multi-site support

"As many other groups have covered broad deployment use cases like vEPC or vCPE; we will consider much more specific use cases illustrating topics such as resource orchestration, interworking of inventory management, or more specific deployment related scenarios, for instance," says Andy Reid, ETSI OSM vice chair. "Moreover, the requirements will be suitably described to ensure that they map to the most practical and cost effective solutions possible."

Release 0 already available

On 26 May, ETSI's Open Source MANO (OSM) initiative has announced the availability of its Release 0 code package, a month ahead of schedule. OSM Release 0 integrates the seed code supplied by Telefonica, RIFT.io, Canonical and others, into a documented package of running code. OSM Release 0 is available now for [download](#) from the OSM project website, together with its accompanying [Release 0 documentation](#).

ETSI OSM was established to deliver an open source NFV Management and Orchestration (MANO) stack using best-in-class open source workflows and tools to ensure rapid development and delivery. The activity is closely aligned with the evolution of ETSI NFV and will provide a regularly updated reference implementation of NFV MANO. OSM enables an eco-system of NFV solution vendors to rapidly and cost-effectively deliver solutions to their users.

Release 0 meets the commitment made at MWC 2016 to deliver working code that enables end-to-end service instantiation and represents a number of significant steps forward since the MWC 2016 demonstration. It provides a solid platform on which to develop further releases.

The roadmap for Release 1, expected within six months, includes plans to extend current multi-VIM (Virtualized Infrastructure Manager) and multi-site support, as well as further additions to service modelling and Enhanced Platform Aware resource allocation.

"Service providers are encouraged by the collaborative and pragmatic approach which has enabled OSM to deliver very rapid results. We now need to build on what has been achieved and ensure OSM remains responsive to service provider's needs," says Andy Reid, BT, ETSI OSM Vice Chair and chair of the OSM End-User Advisory Group.

The Importance of OSM for ETSI



Open Source
MANO

I think I don't exaggerate when I say OSM is an important breakthrough in ETSI. After many months of high level discussions and nice words about the convenience of having the standards and Open Source communities working together, including a Workshop devoted to it, a few of our Members decided that it was time for ETSI to "jump into the swimming pool and start to swim". And so we did! To start with, we were fast enough to put the necessary tools and conditions in place to enable our members to work together "Open Source"-like. And we accompanied this by building internally, in parallel, some of the required competences. A huge challenge where ETSI was able to live up to the expectations, if not beyond.

Now, looking back we can acknowledge ETSI did a great job enabling OSM. Looking forward, ETSI is proud of having incorporated this asset into its toolbox. Being able to work with and like the Open Source space and furthermore, being able to grow with it under the perspective of enhancing our role as a standards making organization is a gigantic step forward, which I think we will only be able to realize in all its dimension in some years' time, when we then understand that this move was inevitable and we were able to anticipate it.

Luis Jorge Romero,
Director General, ETSI

ETSI Mobile Edge Computing publishes foundation specifications –

Continued (from page 1)

“MEC has created great momentum in the industry and is evolving into a key building block in the evolution of mobile broadband networks, complementing NFV and SDN,” says Nurit Sprecher, Chair of ETSI MEC.

ETSI Mobile Edge Computing ISG is now working on nine new studies related to MEC APIs, management interfaces and essential platform functionality. In addition, they will study mobile edge computing in an NFV environment, and work on end-to-end mobility. Proofs of Concept demonstrations have already been showcased to demonstrate the feasibility of the Mobile Edge Computing concept and the value it offers.

MEC is identified as a key enabler for IoT and mission-critical, vertical solutions and is recognized as one of the key architectural concepts and technologies for 5G. Mobile edge computing enables a myriad of new use cases across multiple sectors as well as innovative business opportunities.

To know more about Mobile Edge Computing, visit our [technology page](#).

ETSI NFV renews leadership team, prepares for Release 3

Diego Lopez, Telefonica
Elected as ETSI NFV Chairman from 1 August 2016

ETSI's Industry Specification Group for Network Functions Virtualisation (NFV) has renewed its leadership team and established a new structure to meet the demands of its forthcoming set of protocol and data model specifications.

Following the successful two year mandate of Steven Wright (AT&T) as chairman of ETSI NFV, during which he steered the group through rapid growth and a second release of specifications, Diego Lopez of Telefonica has been elected to continue this work and lead the NFV community over the next two years. He aims to keep the Industry Specification Group as a central reference point for the NFV community, consolidating the NFV technology base across the various initiatives built on it. Maintaining a well-balanced interaction with the Open Source initiatives born out of the NFV concepts will be key to future consensus development and community building.

In order to properly address the features from current Release 2 and future release specifications, ETSI NFV has created a new working group, Solutions (SOL), charged with the task of delivering a consolidated set of protocols and data model specifications to support interoperability. The chairman and vice-chairman of this group are Bruno Chatras (Orange) and Tinh Nguyenphu (Nokia) respectively.

Further recent leadership changes include a new chair of the Evolution and Ecosystem (EVE) working group, Yun Chao Hu (Huawei), a new chair and vice-chair of the Testing and Open Source (TST) working group, Marie-Paule Odiini (HPE) and Pierre Lynch (Ixia Technologies), respectively; and two additional vice-chairs appointed to the Interfaces and Architecture (IFA) working group to manage the increased workload in Release 3: Ning Zong (Huawei) and Marc Flauw (HPE).

Broadband World Forum

18-20 October 2016, London, UK

Endorsed by ETSI and 3GPP, Broadband World Forum is renowned as one of the world's largest telecoms, media & technology events, where senior executives from fixed, mobile, cable and OTT operators all around the globe, congregate to learn and discuss the future of the broadband industry.

For more details go to: <https://tmt.knect365.com/bbwf>

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3GPP on track to 5G

The latest plenary meeting of the 3GPP Technical Specification Groups (TSG#72) has agreed on a detailed work plan for Release-15, the first release of 5G specifications.

The plan includes a set of intermediate tasks and check-points (see graphic below) to guide the ongoing studies in the Working Groups. These will get 3GPP in a position to make the next major round of work plan decisions when transitioning from the ongoing studies to the normative phase of the work:

- ▶ In December 2016: the start of Working Group SA2 normative work on Next Generation (NexGen) architecture
- ▶ In March 2017: the beginning of the RAN Working Group's specification of the 5G New Radio (NR).

At the Plenary meeting, 3GPP's RAN group further agreed that the target NR scope for 3GPP Release 15 will include support of:

- ▶ Standalone and Non-Standalone NR operation (with work for both starting in conjunction and running together)
 - ▲ Non-standalone NR in this context implies using LTE as control plane anchor. Standalone NR implies full control plane capability for NR.
 - ▲ Some potential architecture configuration options are shown in RP-161266 for information and will be analysed further during the study

- ▶ Target Use cases: Enhanced Mobile Broadband (eMBB) and Low Latency and High Reliability.
- ▶ Frequency ranges below 6GHz and above 6GHz.

The meeting did stress that this content is subject to eventual study conclusions and RAN Working Group agreement on the scope of the Work Items.

During the discussion at TSG#72 the importance of forward compatibility - in both radio and protocol design - was stressed, as this will be key for phasing-in the necessary features, enabling all identified use cases, in subsequent releases of the 5G specification.

"We now have a more concrete plan to guide the studies in the Working Groups and to put us in the position to address both short term and long term opportunities of 5G" Dino Flore, Chairman of 3GPP TSG RAN, said.

"3GPP continues to actively coordinate radio access NR and Next Generation system level work to standardize target services on schedule" added Erik Guttman, Chairman of 3GPP TSG SA.

The latest agreed requirements and deployment scenarios for NR can be found in 3GPP TR 38.913.

SA1 completes its study into 5G requirements

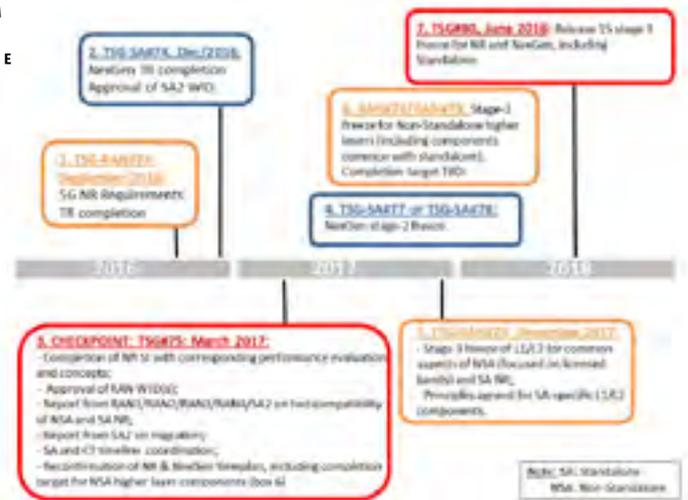
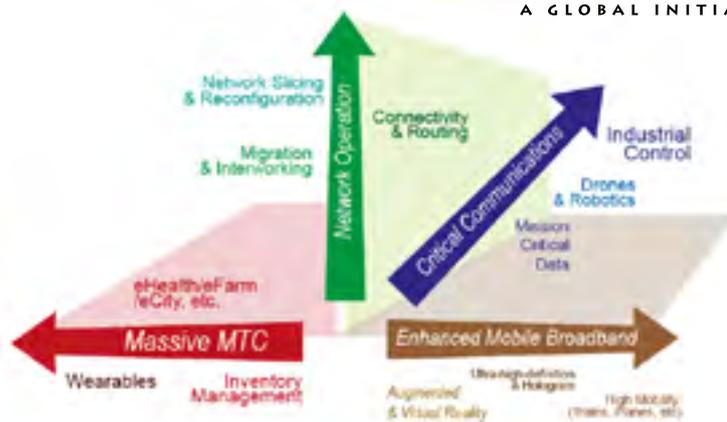
Some major stepping stones on the way to being able to agree on the timeline for the work plan for Release 15 onwards, are the four new Technical Reports from 3GPP SA1, outlining the New Services and Markets Technology Enablers (SMARTER) for next generation mobile telecommunications.

All four were approved at the recent 3GPP SA#72 meeting, which now clears the way for the subsequent normative specification work to begin.

The Study started in 2015 - looking at potential 5G requirements - resulting in TR22.891 which contains more than 70 different use cases, now categorized into four groups - split into the four Technical Reports (TR) - (table below).

3GPP SA1 is now starting to consolidate the four Technical Reports into a single Technical Specification with normative Stage 1 requirements for next generation mobile telecommunications, guiding the work of the Stage 2 and Stage 3 groups in 3GPP.

A draft version of this specification is expected to be available in December 2016; an approved version is planned for March 2017. Meanwhile, other Working Groups can use these four SMARTER Technical Reports as input for their studies in this area.



The 4 Technical Reports (TR)

TR 22.861: FS_SMARTER – Massive Internet of Things	Massive Internet of Things focuses on use cases with massive number of devices (e.g., sensors and wearables). This group of use cases is particularly relevant to the new vertical services, such as smart home and city, smart utilities, e-Health, and smart wearables.
TR 22.862: FS_SMARTER – Critical Communications	The main areas where improvements are needed for Critical Communications are latency, reliability, and availability to enable, for example, industrial control applications and tactile Internet. These requirements can be met with an improved radio interface, optimized architecture, and dedicated core and radio resources.
TR 22.863: FS_SMARTER – enhanced Mobile Broadband	Enhanced Mobile Broadband includes a number of different use case families related to higher data rates, higher density, deployment and coverage, higher user mobility, devices with highly variable user data rates, fixed mobile convergence, and small-cell deployments.
TR 22.864: FS_SMARTER – Network Operation	The use case group Network Operation addresses the functional system requirements, including aspects such as: flexible functions and capabilities, new value creation, migration and interworking, optimizations and enhancements, and security.

5G-ENSURE: Takeaways from 1st International Workshop on 5G Security Standardization



The 5G-ENSURE project brings to the European 5G Infrastructure Public Private Partnership (5G-PPP) a consortium of telecom and network operators, IT providers and cyber security experts addressing priorities for security and related standardization efforts. The project will provide an initial set of security and privacy enablers for the core 5G reference architecture to expand the mobile network, with a test bed demonstrating the enablers.

5G-ENSURE early contributions to standards organizations was the main focus of its first international workshop on 5G Security Standardization last June, with representatives from the European Commission, ETSI, 3GPP, ENISA, the 5G PPP, and industry. 5G-ENSURE presented its contributions to standards organizations, primarily ETSI and the 3GPP, through partner participation. The workshop helped build consensus on the relevance of both ETSI and 3GPP for 5G security standardization.

The main target is the 3GPP SA3 working group with its work on the security aspects of the next-generation system and 3GPP RAN Technical Specification Group responsible for requirements and design of the new radio. 5G-ENSURE also contributes to ETSI TC CYBER on access control enforcement mechanisms and policy rules for personally identifiable information (PII) protection on smart devices, cloud and mobile services with a proposed extension on specific 5G privacy needs.

Key findings from the 5G-ENSURE public consultation with peers from the 5G PPP, among other relevant stakeholders, show that relevant areas for 5G security include trust, authentication, authorization and accounting, privacy, security, monitoring, network management, and virtualization. Privacy in 5G should provide end-to-end data confidentiality and enable user control. Security certification is required to provide security assurance in 5G networks. Security in multi-tenant virtualization scenarios requires isolation and monitoring mechanisms to avoid abuse. Key concerns around network softwarization include trust and liability.

A representative from ETSI ISG NFV also shared the focus of its various working groups (WGs) in investigating a new NFV Management and Orchestration (MANO) Framework with impact on other WGs, including Interfaces and Architecture (IFA), Security (SEC) and Reliability (REL) WGs. From a security perspective, it is key to analyse threats to security in virtualized environments and derive service and security requirements.

On-going work in 3GPP SA3 illustrates the importance of taking action now on standardization, with initial results expected by the end of 2016. However, with the 5G standardization process just beginning and early development of new use cases taking place, the potential impact on new security requirements is still an open book. On the other hand, the many security aspects being analysed, such as authentication and subscriber privacy, present opportunities for 5G-ENSURE contributions.

A key take-away from the workshop is the need to start pushing security aspects in standardization now, bearing in mind that 5G security is not just a technical issue but also a business opportunity, as well as an opportunity to educate on risk management.

Other important takeaways for the global standards community are:

- Security aspects in bringing DevOps operations to the ecosystem should be investigated further to understand the impact on potential threats to 5G networks.
- Liability is one of the most important factors. More work should be done to connect the legal and technical aspects and find the best solution to transfer the outcome into the legislation framework.
- It is important to define a-priori the minimum level of security, and minimum and maximum tolerable level of trusted infrastructure that the 5G network needs to deliver in order to implement single access to digital services without compromising security against attacks and without impact on the freedom of users.
- The communication of the Digital Single Market on ICT priorities on standardization that the European Commission adopted in April 2016 illustrates the importance of active participation of all national players, relevant standards organizations and key stakeholders in defining 5G standardization from the very outset.
- Bringing to the table vertical industries very early on is also important in terms of 5G standardization to ensure compatibility with innovative use cases and their requirements.

5G-ENSURE is reviewing its standardization plan based on the outcomes of its first international workshop and public consultation as it starts work on a roadmap for 5G security standardization as the basis for broader consensus and collaboration. This approach is aligned with the 5G PPP Pre-standardization Work Group, which also sees co-operation as the way forward to reach common agreement and co-signed contributions to standards organizations, also to avoid a fragmented 5G.

www.5gensure.eu

<http://www.5gensure.eu/news/outcomes-1st-eg-ensure-international-workshop-5g-security-standardisation>

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LAA standardization: coexistence is the key

By Dino Flore, 3GPP TSG RAN Chairman



More than a year ago 3GPP decided to embark in the specification of Licensed-Assisted Access (LAA) to provide operators and consumers with an additional mechanism to utilize unlicensed spectrum for improved user experience, while coexisting with other Wi-Fi and other technologies in the 5GHz unlicensed band.

Prior to any specification work on LAA, 3GPP conducted studies to look at the feasibility of LTE operating in unlicensed bands. A central focus of the studies was fair sharing and coexistence with Wi-Fi where the criterion used to ensure coexistence was that an LAA network does not impact existing Wi-Fi neighbours any more than another Wi-Fi network.

The study had wide participation by LTE manufacturers, Wi-Fi manufacturers, Cellular and Cable operators. Hundreds of papers and simulation results have been submitted from many different companies, including many Wi-Fi stakeholders, and have been thoroughly discussed in RAN1 to enable LAA to coexist, cause no harm, and share the unlicensed spectrum fairly with Wi-Fi. Feedback and active engagement with IEEE, Wi-Fi Alliance, Wi-Fi manufacturers and stakeholders have contributed significantly to the study and have been a good example of cooperation between 3GPP and the Wi-Fi community.

Different proposals on the best coexistence mechanism have been meticulously discussed in RAN1 and captured in the technical report TR 36.889. Listen before Talk (LBT), which is a feature available in Wi-Fi that allows coexistence with other Wi-Fi nodes, has been studied extensively. There were multiple LBT schemes evaluated and based on the evaluation results and based on consensus between all involved stakeholders, 3GPP chose to specify a conservative LBT scheme that is similar to what Wi-Fi nodes use in order to ensure coexistence of LAA with Wi-Fi.

After the successful study, 3GPP specified LAA for downlink operation in Release 13 and is currently working on specifying LAA for uplink operation in Release 14. The constructive communication with IEEE, the Wi-Fi Alliance and other Wi-Fi stakeholders has been continued also during the Work Items.

RAN4 has been working on the conformance and compliance tests for LAA and test specifications were approved for Release 13. In addition, 3GPP RAN has now tasked RAN4 to develop additional tests defining Multi-Node testing guidelines which are due to be finalized in December 2016. The multi-node testing will provide additional verification of coexistence at a system level.

The tests will be conducted between two wireless systems, e.g. between LAA systems or between LAA and Wi-Fi systems, sharing the same unlicensed spectrum while their system performance is measured. The tests will examine the LBT functionality and corresponding parameters, such as Energy detection threshold, Energy detection "accuracy", Maximum channel occupancy time, etc. in order for LAA to operate efficiently in coexistence with Wi-Fi.

NGMN Industry Conference and Exhibition 2016



ETSI is pleased to endorse the 6th NGMN Industry Conference & Exhibition, taking place on 12 & 13 October 2016 in Frankfurt, Germany.

The event features the announcement of leading, international operators' and vendors' requirements for the future 5G technology platform. This will be complemented by an in-depth presentation of new 5G enabled business opportunities and use-cases introduced by executives and subject-matter experts.

For more information, visit <https://ice2016.ngmn.org/>

ETSI awards first three ETSI Fellowships – Continued (from page 1)

Award granted for outstanding contribution to ETSI's work

Karsten Meinhold represented Siemens and later Nokia Siemens Networks at ETSI. Karsten served two terms as a much-appreciated chairman of the ETSI General Assembly, having previously also served as vice-chair. Karsten also led

a reform of the ETSI IPR policy and was the first chairman of the ETSI IPR committee.

Julian Pritchard's first involvement with ETSI dates back to 1988 when he was a technical expert for BT contributing to the writing of EN 300 001 (NET4). He then joined ETSI secretariat as a Technical Editor before taking several positions within ETSI including Secretary to the ETSI General Assembly, to the ETSI Board and to the IPR Special Committee. He finally retired as ETSI's Director of Governance Support in 2014.

Karl Heinz Rosenbrock served as ETSI Director General from 1990 to 2006 and is now Honorary Director General. He was elected as ETSI's second Director General only two years after the foundation of the Institute and has been the longest serving holder of that post. He helped shape the Institute into what it is today, creating a culture based on collaboration, transparency and putting people first.

The ETSI Fellowship programme rewards 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. Any individual representative of an ETSI member may propose a candidate for an ETSI Fellowship. Fellowships are awarded each year by an Award Committee composed of the ETSI General Assembly chairman and vice-chairmen, the ETSI Board chairman and the ETSI Director General.



From left to right: Karsten Meinhold, Julian Pritchard, Karl Heinz Rosenbrock

ETSI 5G Summit: building a real cross-industry dialogue

In April, ETSI's 5G summit, "from Myth to Reality", held at ETSI, attracted nearly 250 attendees. The summit focused on three key drivers for future 5G networks: massive mobile broadband, massive machine-type communication and ultra-reliable and low latency communication. The summit was composed of four sessions of presentations, posters and panel discussions with speakers from across industry sectors.

The first session addressed policy aims and expectations around 5G. The European Commission indicated that standards were of essence for the digitization of the economy. They have identified 5G mobile communications as one of the key technologies that would lead to growth, innovation and jobs (the others being clouds, Internet of Things, cybersecurity and big data). Case studies from the 5GPPP research project covered the impact of 5G in manufacturing, eHealth, energy, automotive, media and entertainment sectors. The panel discussion addressed the issue of spectrum allocation and regulation which needed to work for 5G. The discussion also identified the need for the telecoms sector and other industry sectors to work together.

Mobile broadband evolution was the topic of the second session of the day. It considered the need to cope

with different or conflicting demands at the same time. Use of different frequency bands depending on the nature of the communications (e.g. long range, large volume, short range), flexible network architectures and multiple radio technologies can all be combined to offer 'better bits', a higher quality of service rather than simply an increased peak bitrate. 5G is also expected to offer a richer and more immersive experience in broadcast with an object based broadcasting approach rather than linear or traditional broadcasting.

The third session addressed the issue of massive M2M communication and the challenges we face with the Internet of Things. Big data, energy efficiency, low cost, long range, short range, real time, and scalable data are all requirements but they cannot all be addressed by the same technology. Industry users must be involved in standardization work at an early stage as they do not all have the same needs and demands. Omnipresent communications may cause high interference; spectrum management expertise is all the more important. Perhaps the Internet of Things is moving too fast, failing to address issues such as security, privacy, interoperability, spectrum, legacy equipment, and creating issues for future resolution.

The final session dealt with ultra-reliable and low latency networks. Connected industry (industry 4.0) and other sectors such as healthcare or automotive (autonomous vehicles) can generate new opportunities for telecoms operators in value-added applications with low latency, high reliability and high availability. The Tactile Internet is a promising research topic in the healthcare sector. Technologies such as Mobile Edge Computing may prove essential in this domain. Panelists reminded the audience that collecting requirements from different stakeholders was essential and might lead to decisions where for instance security and low latency may be a trade-off.

The summit impressed upon delegates just how real 5G was, with standardization on the topic already underway. It was also an event where personal networking was just as important as telecoms networking. A recurring theme was the need to bring different industry sectors together and achieve a greater understanding of each other's needs when developing 5G systems. This summit provided just such an opportunity.

Further information on the event, including access to the presentations, is available from the ETSI website: www.etsi.org/Summit-5G.



“No other standard addresses IoT platform harmonization like oneM2M; it encourages modularity which makes commercial sense whether you offer components or the full solution stack.”

Q. Let’s begin with an overview of your role in HPE and IoT market priorities.

JE I’m the CTO of HPE’s Communications & Media Solutions unit which focuses on software driven services for telecoms carriers, network operators and service providers. We supply many of the software components that go into carrier networks.

Over the past year, the market has changed to the extent that HPE is more involved in solving problems directly for enterprise customers; we invariably bring in a carrier as part of a full-stack service offering.

Strategically, we believe that we can have a big impact in the areas of IoT service-enablement and service-platforms.

My own involvement with the IoT goes back to founding the Landscape Committee within ATIS. That is where we launched an M2M focus group and then went on to work with organizations such as the ITU, the IETF and ETSI to launch oneM2M.

Q. How does HPE view oneM2M in relation to other industry initiatives?

JE There are two quite unique aspects to oneM2M. Firstly, we know that the standards development organizations (SDOs) managing oneM2M have a successful track record of driving standardization processes.

Secondly, nobody else has a harmonization vision for the IoT.

There are too many initiatives out in the market and this is confusing for customers. Many of these efforts are either pushing de facto standards or they have gaps in what they offer. We are a firm advocate of harmonization because this encourages modularity which makes commercial sense for any company wanting to sell its solutions into many more markets.

Q. So, what are the key IoT markets for HPE?

JE HPE focuses on three industry verticals which we can take into many different regions thanks to our global footprint.

While we see a lot of demand in many different parts of the market, our immediate focus is on IoT solutions for smart-energy management, smart transport (connected cars, electric vehicles, fleet-and asset-management) and smart enterprise. Smart enterprise includes applications such as factory automation, smart cities and home-automation, a segment where we’ve recently had good commercial success.

Q. With all of these opportunities, how is HPE organizing itself to tackle the IoT market?

JE Well, the early work on oneM2M and IoT began in my group. Over the past year, as the market opportunity has developed, HPE has made IoT much more visible at the corporate level. In fact, we set up a Steering Committee to oversee four activity streams: platforms and infrastructure; go-to-market initiatives; industrial segments; and software solutions.

On a day to day basis, Nigel Upton (WW CMS IoT Senior Director) has P&L responsibility for our IoT business. He and his team will have a lot more to say about our strategic objectives over the coming months.

Q. To what extent is partnering a part of HPE’s strategy?

JE Partnering is essential to our strategy; there are too many moving parts in IoT applications to think differently.

Looking at a smart-energy application, we have to work with utility-sector specialists, module vendors and telecoms service providers. HPE is in the business of providing IoT platforms but we also supply components to established platforms such as Jasper. We can also build IoT applications or we might partner with specialists from the energy sector, depending on what our customers request.

Q. How do you see the IoT market developing over the next 3-5 years?

JE Our recent experience is that the market is growing tremendously; we can’t respond to all the customer enquiries we keep receiving. So, while we are growing our staff, scalability is a challenge that will remain with us for some time.

The bigger issue is one of fragmentation. Take smart cities as an example; one municipality might start with smart parking and another with smart lighting. In many cases, these municipalities are struggling to find good advice let alone viable solutions. They often end up with point solutions which don’t help them to deal with the bigger, smart-city opportunity where you need a platform to deal with multiple applications.

In the enterprise sector, we know of cases where somebody comes up with a bright idea to solve a particular business problem. From this, they build a solution using a vertically integrated stack. Later on, somebody else comes up with another idea and this leads to a second stack being built. Not only is this costly but the business misses the opportunity to capture correlation types of value from their data. As an industry, we have to do a much better job of educating the market about service platforms to avoid wasted investments and missed business opportunities.

Q. What advice would you give to companies that are deploying IoT services and solutions?

JE I actually have three pieces of advice to offer. Firstly, businesses won’t derive value simply by making connections to machines because the value is in the data. Secondly, think about your IoT strategy holistically. If you build single use-case silos, you’ll spend your money poorly and eventually have to deal with re-building.

And thirdly, companies should go with a standards-based solution. HPE chose to go with oneM2M which makes everything modular. This means that we can plug-and-play in a full-stack solution or we can contribute a data analytics or a monetization module to somebody else’s solution.

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The oneM2M Executive Viewpoint Series features business insights from senior executives in companies that are commercializing products and services based on the oneM2M standard. For more information, including how to join and participate in oneM2M, see www.onem2m.org.

oneM2M welcomes CEN and CENELEC as new partners

oneM2M, the global standards initiative for Machine-to-Machine (M2M) and the Internet of Things (IoT) has two new partners – CEN, the European Committee for Standardisation, and CENELEC, the European Committee for Electrotechnical Standardisation.

As contributing “Type 2” partners, both CEN and CENELEC can now influence oneM2M specifications and help raise awareness of oneM2M in the industry. The significant inclusion of both organizations into oneM2M’s standards development process will further extend its European presence and reach into the industries which use the IoT, driving forward interoperable solutions for the IoT market.

CEN and CENELEC are two of the European Standardization Organizations, the other being ETSI, officially recognized by the European Union. They provide a platform for the development of European Standards and other technical specifications across a wide range of sectors. Their work helps protect consumers, facilitate cross-border trade, encourage innovation and technological development, and guarantee product interoperability.

Friedrich Smaxwil, CEN President, said, “CEN is very pleased to become a partner of oneM2M, and we look forward to collaborating with all the

members and partners of this initiative to develop state-of-the-art standards. Increasingly, digital technologies are being integrated into products and services in sectors where CEN and its members have been active for many years – from energy and transport to healthcare and security services. We look forward to using this knowledge and expertise to contribute to the development of standards in the fields of Machine-to-Machine (M2M) and the Internet of Things (IoT).”

Bernhard Thies, CENELEC President said, “Becoming a partner of oneM2M offers exciting opportunities for CENELEC and its members, because we can cooperate with stakeholders from around the world and keep up-to-date with all the latest technologies and innovations in the fields of Machine-to-Machine (M2M) and the Internet of Things (IoT). So we look forward to getting involved in the oneM2M initiative, while at the same time continuing to develop our cooperation with the other European Standardization Organizations (CEN and ETSI) and our collaboration with the International Electrotechnical Commission (IEC).”

CEN and CENELEC are the latest partners to join oneM2M. In doing so, they ensure that the industrial users of IoT technologies will have a direct input into the development of standards

for the sector, as well as helping promote oneM2M to industries such as telematics and intelligent transportation, healthcare, utilities, industrial automation, and smart homes.

oneM2M provides the global standards backbone needed for industries to adopt IoT and M2M technologies. oneM2M standards are jointly developed and published by standards bodies in China, Europe, India, Japan, South Korea and North America.

Fran O’Brien, Cisco, Chairman of oneM2M’s Steering Committee, said, “CEN and CENELEC develop important European Standards in their respective sectors, which address a broad cross-section of the industry. They also cooperate closely with ISO and the IEC. We are delighted to have both organizations on board and look forward to working with our new colleagues to further progress the goals and objectives of oneM2M.”

oneM2M provides the global standards backbone needed for IoT. oneM2M standards are jointly developed by standards bodies in China, Europe, India, Japan, South Korea and North America

Home Gateway Initiative transfers smart home related requirements to ETSI

ETSI signs Publicly Available Specifications agreement with HGI

ETSI and HGI were pleased to jointly announce that they have signed a Publicly Available Specifications (PAS) agreement during ETSI’s 67th General Assembly, on 19 April. In this agreement, HGI, also known as the Home Gateway Initiative, transferred three of its already completed and published requirements specifications documents to ETSI, where they will be handled, adapted and maintained by ETSI’s SmartM2M Technical Committee in coherence with the technical work already performed within oneM2M.

HGI’s Chairman Luca Giacomello said: “We decided last year that HGI would complete its activities and make available all our results on HGI’s long term web site at www.homegatewayinitiative.org by June of 2016. We are very pleased that ETSI has agreed to publish, with the possibility to extend in future, several key HGI documents that are important

to the smart home industry. ETSI has a very strong reputation and global reach, and this step ensures that our work will be readily available within oneM2M and other IoT fora in the industry.”

An ETSI Publicly Available Specifications (PAS) agreement enables other fora to bring their work to ETSI for publication through ETSI committees, thereby gaining access to ETSI’s expertise, quality control and global community of members and followers, in addition to attaining the status of a formal publication from a recognized European Standardization Organization.

The three requirements specifications documents transmitted from HGI to TC SmartM2M form a foundation for addressing a smart home solution. Based upon the Home Gateway as a modular applications platform, HGI participants developed a smart home architecture with an abstraction approach that enables applications

to connect with devices on any home network interface. These documents form a cornerstone that will complement other HGI work already transferred to oneM2M, and work by ETSI and other industry groups to define smart home solutions.

- HGI-RD048, “Requirements for HGI Open Platform 2.1”
- HGI-RD036, “Smart Home Architecture and System Requirements”
- HGI-RD039, “Requirements for Wireless Home Area Networks”

Enrico Scarrone, chairman of ETSI SmartM2M Technical Committee, said: “HGI consulted closely with ETSI SmartM2M during the development of these key documents. This work complements our own work on smart appliances very well, and we’re happy to integrate these HGI requirements into our family of specifications.”



oneM2M hosts second successful interop event



Standards organization will now look to build on success with more regular testing events

oneM2M has held its second successful interoperability testing event on 10-13 May, with a total of 20 companies taking part. Co-organized by oneM2M's founding partners Telecommunications Technology Association of Korea (TTA) and European Telecommunications Standards Institute (ETSI), oneM2M Interop 2 gave organizations implementing oneM2M standards the opportunity to validate interoperability and check end-to-end functionality via oneM2M interfaces.

The European Commission and the Korean Ministry of Science, ICT and Future Planning supported the free event which took place in Seongnam, South Korea. Following the success of the recent event, oneM2M now plans to host similar sessions more regularly.

"Like our first interop event, this second session was a great success and well-attended, showing the importance of interoperability to the whole industry," said oneM2M's Technical Plenary Chair Dr. Omar Elloumi, of Nokia. *"The full promise of IoT will only be realized if the technology is truly interoperable and these testing events provide a significant step towards that."*

Testing took place based on test scenarios described in oneM2M specification [TS-0013](#). The following oneM2M Release 1 specifications were used by implementations at this event: [TS-0001](#) (Functional Architecture), [TS-0004](#) (Service Layer Core Protocol), [TS-0008](#) (CoAP Protocol Binding), [TS-0009](#) (HTTP Protocol Binding) and [TS-0010](#) (MQTT Protocol Binding).

The full list of organizations which participated in this event is: Anritsu Corporation, AT4WIRELESS, C-DOT, CETECOM, Easy Global Market, ETRI, Handysoft, HERIT, Hewlett Packard Enterprise, Huawei Technologies Co., Ltd, InterDigital, KETI, KEPCO, KT, LAAS-CNRS, LG Electronics, LGU+, MODACOM, NTT, Sejong University and Sensinov.



Engineers taking part in oneM2M Interop 2

Now published by ETSI, newly updated global IoT standards from oneM2M will enable interconnection across devices and applications

Next release to incorporate security and interworking across IoT device ecosystems

ETSI announced on 21 March that it has published the complete set of updated oneM2M Release 1 specifications. oneM2M, the global standards initiative for Machine-to-Machine (M2M) and the Internet of Things (IoT), and of which ETSI is a founding partner, recently issued updated editions of its Release 1 global specifications. These have now been published by ETSI as Technical Specifications. Each oneM2M partner standards body publishes the complete set of oneM2M specifications as its own local specifications, thereby ensuring there is one global set of specifications, recognized in each region.

These specifications show a development that promises to enable IoT interworking and create a foundation platform to interconnect IoT devices and applications. The standards cover requirements, architecture, application programming interface (API) specifications, security solutions and mapping to common industry protocols such as CoAP, MQTT and HTTP. The updated specifications, released just one year after initial publication, have incorporated improvements based on early implementation experience and feedback from oneM2M's first Interop event held last year.

By building upon well-proven protocols that allow applications across industry

segments to communicate with each other, the updated standard enables service providers to combine different IoT devices, technologies and applications, a critical feature in their efforts to provide services across a range of industries. Release 1 has already been used in service provider deployments in South Korea, Asia and Europe for smart city and transport system deployments.

"oneM2M enables interoperability across IoT applications regardless of the underlying technology used," said Dr. Omar Elloumi of Nokia, oneM2M Technical Plenary Chair.

"oneM2M enables interoperability across IoT applications regardless of the underlying technology used," said Dr. Omar Elloumi of Nokia, oneM2M Technical Plenary Chair. *"This reduces the complexity for the application developer and lowers CAPEX and OPEX for service providers; most importantly, the updated standard presents the industry with the first scalable and future-proof platform upon which it can invest and develop IoT applications, without fear of vendor lock-in or needing to commit to one connectivity technology."*

The oneM2M global alliance is now working on the second release of its specifications, which it expects to complete by mid-2016. The updated standard will include enhanced security, features for home domain and industrial domain deployment, semantic interoperability, and interworking with popular IoT device ecosystems such as AllSeen Alliance, OCF and OMA LightWeightM2M. These features will present the unique value proposition that application developers have been looking for – one common core interworking platform technology for the Internet of Things.

"Tenders are now explicitly requiring that oneM2M be incorporated in deployments; the first release and the impending Release 2 will respond to a critical need as service providers and application developers tackle connectivity demand across industries and across platforms," added Dr. Elloumi.

More than 200 member companies from across the world contributed to the development of oneM2M Release 1 through the eight leading ICT standards development organizations and six industry consortia that form oneM2M. The standards are all publicly available at ETSI's website: www.etsi.org/standards

Mobile and Broadcast converge in new ETSI specification group

ETSI has unveiled a new Industry Specification Group, the Mobile and Broadcast Convergence (MBC) ISG. ETSI MBC ISG will explore the deployment and business models of converged networks from the perspectives of all interested parties, including broadcasters, satellite, mobile and terrestrial broadcast network operators, content owners and providers, network infrastructure vendors and manufacturers of consumer equipment and consumers. The group will study the means to support delivery of media including linear and non-linear elements over converged networks, taking into account the potential benefits and challenges from a commercial and technical perspective.

TV delivery has traditionally been dependent on one-way, one-to-many delivery networks to fixed TV sets

(i.e. broadcasting). Nowadays, an increasing number of consumers watch linear or non-linear content on their traditional home screens as well as on their smartphones and tablets. Although much of this content is currently delivered via WiFi networks, these new forms of media consumption dramatically increase the load on mobile networks. This situation may require new solutions, such as the leveraging of a one-to-many broadcasting approach.

“Increasingly consumers are using Smartphones and tablets to access linear and non-linear content interchangeably and the old model of a screen in the living room to watch TV broadcasting is becoming more and more irrelevant. Broadcasters and mobile operators will have to adapt their business models to these

changed bandwidth flows and there is uncertainty about the optimum technology choices. This ISG is to allow all interested parties to engage with the technical debate now, ahead of whatever standardization work will be needed subsequently.” says David Hendon, convenor of the MBC ISG.

While the ISG will not make recommendations about spectrum allocation, spectrum authorization models which impact the regulatory framework and/or business model may need to be considered in the ISG work.

Participation in the Mobile and Broadcast Convergence Industry Specification Group is open to all ETSI members as well as organizations who are not members, subject to signing ISG Agreements. For information on how to participate please contact ISGsupport@etsi.org

ETSI creates new standardization group to pave the way for Next Generation Protocols

At the beginning of the year, ETSI opened a new Industry Specification Group to commence work on Next Generation Protocols, looking at evolving communications and networking protocols to provide the scale, security, mobility and ease of deployment required for the connected society of the 21st century. The first meeting of this group took place on 21 January 2016, and was hosted by BSI, the UK National Standards Organization, at their offices in London.

The telecommunications industry has reached a point where forward leaps in the technology of the local access networks will not deliver their full potential unless, in parallel, the underlying protocol stacks used in core and access networks evolve. The development of future 5G systems presents a unique opportunity to address this issue, as a sub-optimal protocol architecture can negate the huge performance and capacity improvements planned for the radio access network.

The ETSI Next Generation Protocols Industry Specification Group (NGP ISG) will identify the requirements for next generation protocols and network architectures, from all interested user

and industry groups. Topics will include the following:

- Addressing
- Security, Identity, Location, Authorization, Accounting/Auditing and Authentication
- Mobility
- Requirements from Internet of Things
- Requirements from video and content distribution
- Requirements from ultra-low latency use cases from different sectors (i.e. automotive)
- Requirements from network operators (e.g. challenges with E2E encrypted content)
- Requirements from eCommerce
- Requirements for increased energy efficiency within the global ICT sector

The ISG will provide a forum for interested parties to contribute by sharing research and results from trials and developments in such a way that a wider audience can be informed. An action plan to engage other standards bodies will be developed so that parallel and concerted standardization action can take place as a further step in the most appropriate standards groups.

Andy Sutton, Chairman of NGP ISG said *“The TCP/IP protocol suite has undoubtedly enabled the evolution of connected computing and many other developments since its invention during the 1970’s. NGP ISG aims to gather opinions on how we can build on this momentum by evolving communication systems architectures and networking protocols to provide the scale, security, mobility and ease of deployment required for the connected society of the 21st century.”*

David Bell, Director of Standards Policy at BSI, said *“Bringing together interested parties to solve current and future technical challenges such as this one, is why standards developing organizations exist. So BSI is pleased to work with ETSI and we were proud to host the kick-off meeting for a project which could have such a profound effect on the way networks run in the future.”*

Participation in the Next Generation Protocols Industry Specification Group is open to all ETSI members as well as organizations who are not members, subject to signing ISG Agreements. For information on how to participate please contact ISGsupport@etsi.org

ETSI Harmonised Standards: the preferred means to comply with the new EU Radio Equipment Directive

On 13 June, the new [Radio Equipment Directive](#) started to be applied in Europe. This major update of Europe's single market rules for radio equipment was published in May 2014. ETSI's Harmonised European Standards, developed in support of the Directive, are the preferred means for manufacturers to comply with the regulation.

If a manufacturer chooses to build equipment according to Harmonised Standards he may declare conformity with the essential requirements of the Directive under his sole responsibility. EU Member States are required to presume that such equipment is compliant, and shall not impede equipment from being placed on their market. ETSI Harmonised Standards are a very powerful tool: they unlock access to the EU/EEA market, the biggest unified market in the world. Radio equipment which was compliant to the R&TTE Directive before that date may still be placed on the market until 13 June 2017.

Why this new Radio Equipment Directive?

The European Parliament and Council Directive on Radio and Telecommunication Terminal Equipment was revised in 2014 to become the Radio Equipment Directive (RED) 2014/53/EU. The previous (R&TTE) Directive aimed to encourage innovation. It regulated a market in the European countries estimated at around 50 billion Euros. It removed the previous requirement for type approval, under which manufacturers had to have equipment tested and certified in each European country before it could be sold. 1999/5/EC allowed the manufacturer to declare conformity on his own responsibility, and relied on the National Authorities to check that equipment on sale was really compliant (move from "ex-ante" to "ex-post" control). In addition, it reduced the technical requirements to the minimum: seeking to rely on market forces where possible. As an example, when terminals were no longer required to demonstrate that they could not harm the network, it became in the interest of network operators to take necessary steps to protect the network – without the need for regulatory intervention.

Although the R&TTE had proved to be very effective in stimulating the market for these devices, the European Commission identified a number of points for improvement.

A broadened scope

Like the R&TTE, the RED with the new legislative framework for the marketing of products ensures a single market for radio equipment by setting essential requirements for health and safety, electromagnetic compatibility and the use of the radio spectrum to avoid harmful interference. Under the new RED, radio equipment also needs to demonstrate the performance of its receiver part, as well as its transmitter, as both are considered to affect the efficient and effective use of the spectrum. The RED applies to radio equipment operating at frequencies below 3 000 GHz, and now also including radio equipment operating below 9 kHz that is not covered by the R&TTE Directive or by National frequency regulations.

The RED now also covers broadcast receivers and products using radio to determine position: e.g. radar equipment which derives its location from satellite navigation. The RED applies to equipment which intentionally transmits or receives radio waves for communications or radiodetermination, regardless of its primary function. For example, a "connected" device that uses an embedded radio module for communications or to determine its position has to meet the same radio requirements as a purpose-built radio equipment.

Nonetheless, equipment which uses radio waves, but only for purposes other than communications or radio determination, is not covered by this Directive. Also specifically excluded is equipment exclusively for use by public security, defense or radio amateurs. Equipment covered by specific International Conventions on shipping and aircraft are also excluded. Other examples of excluded equipment are domestic microwave ovens, RF welding equipment, induction hobs for cooking etc. In contrast to the R&TTE, the RED does not cover wired telecommunications terminal equipment that does not function using radio.

In summary, the new Radio Equipment Directive now covers all equipment which can either transmit or receive radio signals, either for communications or radio determination purposes, with a very few specific exceptions. The LVD and EMC Directives no longer apply to such equipment: conformity assessment is carried out uniquely under the RED. This gives the Directive a very broad scope including, for example, any equipment which includes a GPS receiver, a Bluetooth radio, Near-Field Communications... The Commission has the power to clarify any grey areas around the scope via an "implementing act" after examination by a committee of Member States.

ETSI work programme and third parties involvement

In August 2015 the European Commission requested ETSI and CENELEC to produce the Harmonised European Standards which the Commission will reference in the Official Journal of the European Union, and which manufacturers can then use for presumption of conformity.

At the end of June ETSI had published 64 of these Harmonised Standards, and a further 143 are expected to be published within the next 12 months, despite very stringent time constraints, and the need to ensure high quality for these important specifications. ETSI's Harmonised European Standards are developed by our members in our technical committees, with much of the work being done in our committee for Electromagnetic compatibility and Radio spectrum Matters (TC ERM), but other groups are also working on this topic, including our DECT, MSG and Satellite Earth Stations and Systems committees.

ETSI had to prioritize its work to meet the Commission's requirements as much as possible. New market trends such as IoT have emerged and have generated new equipment and new standardization needs. These "connected" or "smart" equipment, sometimes referred to as "combined" equipment, include smart home appliances such as washing machines, industrial machines or even light bulbs. The working assumption is that the RED also applies even if the radio frequencies used are in ISM bands (e.g. Short-range devices, Radio LAN, Wireless Power Transfer).

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ETSI Harmonised Standards: the preferred means to comply with the new EU Radio Equipment Directive –

Continued (from page 12)



New standards had to be created to address these needs. Stakeholders such as ZVEI, one of the most important industrial associations for the electrical industry in Germany, the European Committee of Domestic Equipment Manufacturers (CECED), a trade association focused on the home appliance industry in Europe or SICK, one of the leading sensor manufacturers, participate in our work as active members.

A close cooperation with CENELEC ensures that there is no overlapping of work with ETSI. We have also taken part in an ad-hoc group with the European Aviation Safety Agency to discuss radio equipment.

Under the new RED radio equipment also needs to demonstrate the performance of its receiver part, as well as its transmitter, as both are considered to affect the efficient and effective use of the spectrum.

Still confused about the new Radio Equipment Directive?

To assist industry, ETSI has released a guide for the application of articles 3.1b (EMC) and 3.2 (effective and efficient use of the radio spectrum) of the Radio Equipment Directive, [EG 203 367](#).

This guide makes it easier for all manufacturers to comply with the new requirements and avoid duplication of testing wherever possible. The field of application of this Directive covers a large scope of equipment, ranging from satellite communications to radars, to products operating below 9 kHz such as telecoil hearing aids and sound and TV broadcast receivers. Examples of equipment covered by the guide include the combination of multiple radio products in one radio equipment, the combination of radio and IT or electro-technical equipment, RLAN enabled domestic appliances, radio controlled heating systems, radio controlled lighting systems, products including GPS, Wi-Fi, Bluetooth, etc.

ETSI is also organizing a workshop on the subject of the Radio Equipment Directive. The workshop, [“53 shades of RE-D: 6 months to go. How to place compliant radio equipment on the European market”](#), is open to all and will take place on 1 December 2016. Register now to secure your place!

You can also watch our [webinar](#) at: <http://www.etsi.org/news-events/webinars>.

But the best way to be part of the standardization process and the creation of the relevant Harmonised Standards is to join our committees. The list of Harmonised Standards under development for the Directive, including status information and links to published standards, is publicly available in [ETSI’s online work programme for the Radio Equipment Directive](#) where you can find which technical bodies are involved.

From our expert in China: Chinese standardization news

In the following, the SESEC team provide information on the latest developments in China on standardization reform, reform of enterprise standards in particular, as well as news of ICT developments in China.

China standardization reform - SAC explanation on the reform of enterprise standards

According to the SAC official who is heavily involved in revising the part of enterprise standards in the standardization law, the scheme of self-declaration and disclosure of enterprise standards introduced aims to return the rights of developing and managing standards to enterprises. Before the reform, enterprises were required to file the standards fulfilled, be it international or domestic, with local AQSIQ (authority for quality surveillance). After the reform, the filing system will be removed and the new system will require enterprises to declare the standards fulfilled on the official platform dedicated to online disclosure of enterprise standards. Enterprise standards shall be understood as various internal specifications of an enterprise, a description of product quality features or a product manual. The indicators for performance, function and testing method of a product shall be disclosed, and there may be a third party conducting verification of standards disclosed to ensure the compliance with disclosure requirements.

Enterprises shall pay great attention to the disclosure of their standards, as it is regarded as a legal commitment. Enterprises shall be responsible for the authenticity, completeness and compliance of the standards disclosed that are effective at the moment of disclosure. Correction of the information disclosed can be made only

under the circumstance that the initial mistake is not made out of malicious intention, which requires further clarification and definition. The current draft requires the disclosure of product standards of an enterprise, whereas service standards of an enterprise are encouraged to be disclosed.

Starting from January 2015, the pilot project of self-declaration and disclosure of enterprise standards is currently carried out in 7 provinces and cities. The disclosure of enterprise standards is regarded as the filing of enterprise standards, which is an obligation of enterprises prescribed by the incumbent China Standardization Law. SAC's initiative is to encourage good practice of enterprises by the introduction of this disclosure mechanism. Currently, there are tens of thousands of standards that have been disclosed. It is identified that 4%-5% of the standards disclosed are in violation of mandatory standards. China Association of Standards is in charge of the supervision of the disclosure mechanism, and notification of administrative punishment measures.

Some other major takeaways from the meetings are as follows:

- It is compulsory for an enterprise to disclose its standards, but what to be disclosed is purely voluntary and up to the enterprise itself. Therefore, the information related to business intelligence and IPR are allowed not to be disclosed. However, the indicators for key quality features of a product claimed by an enterprise must be disclosed.
- There is a possibility the products with existing evaluation and approval mechanism for market access be exempted from the requirement to disclose enterprise standards.

CCSA holds a seminar on "LTE and 5G V2X Internet of Cars"

CCSA TC5 (Wireless Communication) held a seminar on "LTE and 5G V2X Internet of Cars" on 20 April 2016. LTE V2X technologies, including communication between vehicles (V2V), vehicles and infrastructure (V2I), vehicles and person (V2P), vehicles and cloud (V2C), mainly provide solutions to sensor sharing among transport entities. Guest speakers from the Research Institute of Highways, Huawei, Datang, China Mobile, ZTE, SAIC Motor and Qualcomm presented on the following topics:

- ITS requirements for internet of vehicles
- LTE V2X industrialization and outlook on its applications
- Key technologies and standardization of LTE V2X
- V2X service operation
- R&D on LTE/5G V2X, IEEE 802.11p and LTE V2X technologies etc.

CCSA TC 5 WG3 (WLAN and Wireless Access Workgroup) started research on developing a ministry-level standard "General Requirements for Public LTE-Based Wireless Communication of Internet of Vehicles" in 2015. WG8 (Frequency Workgroup) is researching on ITS V2V/V2I frequency requirements for active safety application and relevant research on interference and coexistence.

2016 International Big Data Forum held in Guiyang

Organized by NDRC, MIIT, MOFCOM, CAC and Guizhou Provincial People's Government, the 2016 Big Data Expo and Big Data Standardization Forum was held in Guiyang on 26 May. With the theme of "Big Data Leading the Era of Intelligence", the Expo focused on 5 areas, including big data analytics and application, data centre and related products, smart manufacturing and equipment, Internet innovation and e-commerce. The big data working group of SAC/TC 28 National Technical Committee on Information Technology released a White Paper on Big Data Standardization (2016) at the forum. CESI assumes the secretariat of the big data working group of TC 28. National standards are being developed with regards to the reference architecture, opening and sharing, data transaction and maturity model of big data.

Register now for UCAAT 2016!

4th UCAAT User Conference on
Advanced Automated Testing

Budapest, 26-28 October 2016



Full details including tutorials and conference programme available at <http://ucaat.etsi.org/2016>

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From our expert in China: Chinese standardization news – Continued (from page 14)

“The Multi-level Protection Scheme General Requirements Part 5: Industry Control System Security Extended requirements” Drafting Team meeting was held in Guangzhou

The Multi-level Protection Scheme (MLPS) is a policy framework designed by the Ministry of Public Security that aims to impose information security compliance requirements on information systems in critical infrastructure.

To develop MLPS standards for information security in industrial control, SAC/TC 124 (National Technical Committee on Industrial Process Measurement, Control and Automation) organized a drafting team and held a meeting on 6-7 June in Guangzhou. The participants at the meeting analyzed the applicability of the categories and control points specified in GB/T22239.1 (Information security technology - Baseline for classified protection of information system security) in industrial control systems. It was agreed at the meeting that the draft standard will be based on GB/T30976.1-2014, IEC 62443-3-3 and GB/T22239.1, and public consultation will be conducted by the end of June.

TC260: Drafting of Personal Data Security Specifications Started

The kick-off meeting of the drafting work group to develop a specification on Personal Data Security was held on 12 May in Beijing. The specification on Personal Data Security is a key project of SAC/TC 260 (National Technical Committee on Information Security). Representatives from the Cyber Security Coordination Department of CAC, and the secretariat of SAC/TC 260 attended the meeting.

The following working groups under TC 260 called for unit members recently:

- Special Working Group on Big Data Standardization
- Working Group 4 on Authentication and Authorization
- Working Group 5 on Information Security Evaluation

- Working Group 7 on Information Security Management
- Working Group 3 on Cryptographic Solutions
- Working Group 6 on Communication Security Standards

It is clearly stated in the notice that the unit members will have the rights to vote within the working groups.

Administrative Measures for the Restricted Use of Hazardous Substances in Electrical and Electronic Products (China Rohs) FAQ released

The Administrative Measures for the Restricted Use of Hazardous Substances in Electrical and Electronic Products released in April came into force on 1 July 2016.

The Administrative Measures evoked confusion and heated discussion in industries. An introduction to this Administrative Measures and the official FAQs recently released by MIIT are available on request to the SESEC team.

About SESEC

The Seconded European Standardization Expert in China (SESEC) is a visibility project co-financed by the European Commission (EC), the European Free Trade Association (EFTA), the European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC) and the European Telecommunications Standards Institute (ETSI).

The SESEC's mission is to enhance the visibility of European standardization activities, increase the cooperation between Chinese and European standardization bodies and support European companies by reducing the Technical Barriers to Trade (TBT) between EU and China. After the implementation of the two previous phases, SESEC I (2006-2009) and SESEC II (2009-2012), the SESEC project landed in its third phase starting from December 2014.

Latest ETSI White Papers



mmWave Semiconductor Industry Technologies: Status and Evolution

Developed by members of our millimetre Wave Transmission Industry Specification Group, this document reviews the status of foundry processes, chipsets and packaging technology to address present and future demands in backhaul, fronthaul and enterprise applications in both macro cell and small cell scenarios. It provides information on semiconductor technologies applicable to millimetre-wave transmission systems operating in the frequency bands of 57 to 66GHz (V-Band) and 71 to 86GHz (E-band). It also considers evolution into new frequencies of greater than 90GHz, up to 300GHz.

Next Generation Protocols - Market Drivers and Key Scenarios

Developed by members of our Next Generation Protocols Industry Specification Group, this document reviews the drivers for an evolution in networking protocols and associated network architectures for future information communications networking protocols. It provides some background and context along with exploring the rationale behind the work of ETSI NGP. The paper reviews each fundamental issue and explains the limitations to enable a wider understanding and appreciation of the issues to be addressed. It also explores the requirements of 5G and other communications systems and how they could be realized far more efficiently through a profound transformation of network protocols.

ETSI signs agreement with Eurosmart to cooperate on secure elements

During its 67th General Assembly on 19 April 2016, ETSI signed a Memorandum of Understanding with Eurosmart. This cooperation agreement will enrich the ecosystem of security-related issues in ETSI and help to ensure the security robustness of next generation (5G) telecommunications networks.

Eurosmart is a Brussels based industry association of global technology providers with a strong expertise in the management of digital security within hostile environments. Eurosmart advocates the use of hardware with strong security functions. The association expresses recommendations on the best ways to secure content, and supports

the deployment of certified and standardized solutions that integrate security and privacy by design features.

Sharing a common view on the importance of the role of ETSI in the European Commission's ICT standardization rolling plan and the European Union's Digital Single Market, both organizations will develop collaborative activities in various ways. They will identify experts working on similar issues within their respective working bodies, in order to establish a bridge between EU legislative and political initiatives, primarily followed by Eurosmart, and standardization mandates and activities, ETSI's area of interest.

Eurosmart annual forecast indicates that more than 9 billion secure element units will be shipped worldwide in 2016, out of which nearly 60% are based on ETSI SIM card and UICC card standards, developed by ETSI's Technical Committee for the Smart Card Platform (TC SCP).

Timothée Mangenot, Eurosmart president declared: *"Eurosmart is proud to sign a cooperation agreement with ETSI and work closely with their stakeholders, as some of our key applications for Secure Element are relying on ETSI standards. These include digital signatures, 2G, 3G, 4G, cybersecurity, Single Wire Protocol used in NFC architecture or cryptographic algorithms for telecommunication."*

ETSI and EENA launch the first emergency communications interoperability Plugtests in Europe

Improving emergency communications in Europe!

The first Next Generation 112 (NG112) Emergency Communications Plugtest in Europe was launched by ETSI and its Emergency Telecommunications (EMTEL) special committee and EENA (the European Emergency Number Association) on 14 March. The aim of the event was to trial independently and jointly all components of the 112 communication chain based on Next Generation Networks.

Companies from around the world, including Asia, Europe, and North America, had the opportunity to connect their equipment to the test infrastructure and test their solutions on-site from the ETSI headquarters in Sophia Antipolis, France, as well as from their own labs.

"In emergency communications, interoperability is key and this is a great opportunity for solution providers in the field to put their products to the test. The success of the event does not rely only on the individual performances, but on the lessons learned collectively, and the knowledge we will gain with the aim of improving emergency response for citizens," mentioned Cristina Lumbreras, EENA Technical Director.

Different topics were addressed, including Location Based Emergency Call Routing, Policy Based Emergency Call Routing, and Next Generation Media Types.

This was a unique chance for solution providers of emergency communications equipment to test their products against different implementations and scenarios and maximize the effectiveness of emergency communications solutions in Next Generation environments.

The event was supported by the European Commission.



About the NG112 Emergency Communications Plugtest

The concept of "Next Generation 112" (NG112) has been identified as a potential answer to the increasing requirements and demands of content-rich emergency calling. The interoperability of such NG112 products and services has not been tested in Europe previously leading to this ideal opportunity. This NG112 Emergency Communications Plugtests™ event was a testing campaign based on the use cases developed by ETSI and EENA. It took place from 14-18 March 2016, in Sophia Antipolis, France.



ETSI CTO member of jury for International Critical Communications Awards

The International Critical Communications Awards (ICCA) event took place in the Honourable Artillery Company, London, on 26 February.

Run by the Mark Allen Group, which publishes three wireless communications magazines, ICCA

awarded products, applications and solutions of merit in both mission-critical and business-critical organizations. Adrian Scrase, ETSI CTO, was part of the jury and presented the 'Excellence in radio sites and services' category.

TETRA, an ETSI standard, is implemented worldwide. In 2012 there were 125 countries using TETRA systems in Europe, Middle East, Africa, Asia Pacific, Caribbean and Latin America. ETSI develops standards for mission-critical communications and public safety in several of its technical committees and through 3GPP, of which ETSI is a founding member.

The International TETRA awards was rebranded into the International Critical Communications Award to anticipate 5G and next generation networks, which will be a collection of technologies designed to work together with each operating where it is most suited. As the sector becomes increasingly aligned with the wider communications industry thanks to greater use of broadband this approach is likely to become more popular.

After the night's proceedings had drawn to a close one of the judges commented that with the amount of activity and innovation in the industry and the transition towards broadband the event should go from strength to strength.

To see the full list of winners, go to [the ICCA website](#).



Two ICCA judges, Robin Davis, TCCA Transportation Group chairman (left); and Adrian Scrase, CTO, ETSI (right)

ETSI workshop on research and standardization to trigger new activities

In May ETSI focused on moving "From Research to Standardization", with a workshop bringing together research and standardization stakeholders in the context of the European Union's H2020 research programme. The objective was to pave the way for researchers to downstream their results into standardization and to interact with the industrial experts in the standardization community.

Workshop sessions focused on enabling technology for 5G mobile systems, future network architecture and virtualization techniques for 5G. Keynote speeches were complemented by lively technical discussions. In particular expert speakers were invited to talk about their vision, policies and the standardization ecosystem. Live demonstrations and poster sessions were held in parallel and fostered interesting networking exchanges.

The event led to the identification of specific fields for potential new activities in ETSI. These include fog/edge computing as an extension of current ETSI NFV and ETSI MEC work, cross-domain orchestration for commercial and technical domains, x-hauling: combining front-haul and back-haul in future mobile networks,

and tactile networking offering ultra-low latency, high availability and security.

Presentations from the event are available on the ETSI website at: www.etsi.org/news-events/past-events/1016-2016-05-ws-from-research-to-standardization



ETSI publishes European Standards to support eIDAS regulation

Electronic signatures, electronic seals and electronic time-stamps support the digital economy

Since 1 July 2016 the major part of the European Union's (EU) eIDAS regulation applies. The eIDAS regulation is Regulation (EU) N°910/2014 on electronic identification and trust services for electronic transactions in the internal market.

To support this new regulation in Europe as well as the needs of the international community to provide trust and confidence in electronic transactions, ETSI's Technical Committee on Electronic Signatures and Infrastructures (TC ESI) has published a set of standards for trust services providers (TSP), electronic signatures, electronic seals and electronic time-stamps. The set includes a total of 19 European Standards along with guidance documents and test specifications.

A first series of European Standards, which addresses security and policy requirements, is used by conformity

assessment bodies to audit trust service providers and assess their conformity with relevant requirements of the eIDAS Regulation. These standards also form an audit scheme recognized by CA / Browser Forum for certification authorities issuing certificates for website authentication.

A second series of European Standards covers digital signature creation and validation. Digital signatures specified in these standards aim at supporting electronic signatures, advanced electronic signatures, qualified electronic signatures, advanced electronic seals, and qualified electronic seals as defined in the regulation. The well-known signatures formats CADES, XAdES, PAdES and the signature container format ASiC have now become European Standards.

To facilitate the implementation and the use of products and services based on digital signatures, provide

mutual recognition and cross-border interoperability, ETSI TC ESI has released an update of Technical Report TR 119 000 describing the general structure for digital signature standardization and outlining existing and potential standards for such signatures. Stakeholders benefit as well from the publication of test specifications for interoperability and conformance testing.

ETSI is now working on complementing this set of standards with specifications on e-Delivery trust services, registered e-mail trust services, signature creation and signature validation by trust service providers.

A complete list of ETSI's eIDAS standards is available at:

<https://portal.etsi.org//TBSiteMap/ESI/ESIActivities.aspx>, from where they can be downloaded.



IoT, 5G, Security and Privacy focus of the 20th Global Standards Collaboration meeting



The Internet of Things (IoT), 5G, Security and Privacy and the Role of Small and Medium-sized Business Enterprises (SMEs) were the focus of the 20th meeting of the Global Standards Collaboration (GSC), hosted by TSDSI in New Delhi, India 26-27 April 2016. These topics were chosen due to their significance for the development of future global communications. Approximately one hundred people from the twelve member organizations participated in the event.

The Internet of Things (IoT) remains a key topic for standardization and attracts interest from industry, public authorities and end users. GSC members reviewed current standardization activities focused on specific applications and use cases, such as smart cities and intelligent manufacturing. They also explored how IoT can help address global challenges such as electricity access in the developing parts of the world. GSC agreed on the importance of increasing outreach to both end users and industry stakeholders to accelerate the development and adoption of future proof IoT standards. GSC members also addressed the risk of having a fragmented standardization landscape. They concurred that continuing to build on existing collaboration between the various standards setting organizations is vital for accelerating the successful deployment of IoT.

5G will be instrumental in driving the ongoing digital transformation, responding to a wide variety of communication needs. GSC members discussed current and anticipated standardization and research activities in the 5G area. They noted the importance of engaging both regulators and businesses in the development of 5G and reiterated the need for continued collaboration among SDOs. Managing scarce spectrum resources was highlighted as a particular challenge. The non-radio aspects were also seen as key to the success of 5G, e.g. network architecture, integrated control and management, end-to-end performance, fronthaul/backhaul. They further noted the need to better engage developing countries in standardization efforts.

Small and Medium-sized Business Enterprises (SMEs) play a critical role in the growth of the global economy. Standards support innovation, competition and growth by all businesses, particularly SMEs. GSC members shared their experiences on the difficulties and barriers faced by SMEs and discussed ways to foster their involvement in standardization efforts. GSC members agreed that further collaboration and exchange of information on measures to support SMEs is needed. In particular, it was noted that better awareness among SMEs is needed on the benefits and

incentives for engagement in SDOs and that efforts to facilitate their participation be promoted.

GSC members recognized the need, in an increasingly ubiquitous digital environment, to integrate Security and Privacy (Trust) early in the innovation process, by design rather than by mere afterthought. This requires widely understood principles to be used, in particular relating to identity, which are then applied to the particular technology areas. Further concerted global dialogue and standardization across verticals and across SDOs was highlighted as an urgent priority, with a view to developing consistent and harmonized standards. Human-centric innovation and standardization, in which both technological and societal considerations work hand in hand, was seen to be in the interest of businesses and consumers alike. GSC members further noted the need to align and adapt existing standards to increasingly diverse security and privacy requirements arising from the advent of IoT, M2M (machine-to-machine), Cloud, big data and smart environments.

The next GSC meeting will be held in September 2017, hosted by IEEE Standards Association (IEEE-SA).

For more information, please consult the ITU repository of information on past GSC meetings at www.itu.int/ITU-T/gsc

Smart Grids Test Description Languages Mobile-Edge Computing NFV

GNSS ECI For Rights Management Human Factors Wireless Industrial Automation Security Algorithms

Low Throughput Networks Aero Control Systems Proof of Concept Autonomic Networks

Cloud Standards Reconfigurable Radio Systems eHealth Embedded UICC Smart Appliances

Congestion Control Quantum-Safe Cryptography LTE Advanced Pro OneM2M Cognitive Radio

eCall Next Gen Protocols

Advanced Automated Testing

Radio Equipment Directive IPv6 Privacy Protection UWB Energy Efficiency

SDN Evolved Tetra Cooperative ITS New Spectrum Efficiency

NG Radio for Rail Surface Mounted Technologies Compound Content Management Open Source

3GPP New Radio Cable ICT Networks Smart Metering Millimetre Wave Transmission

Building 5G

ETSI 2016 EVENTS CALENDAR - What's on?

8 September	ETSI Webinar: NFV Interfaces and Architecture Overview	Online
8-9 September	Borderless Cyber Conference	Brussels, BE
8-12 September	IBC 2016	Amsterdam, NL
13-14 September	Service Provider Summit	Nashville, US
16 September	ETSI: Open Source & Standards - legal aspects	Sophia Antipolis, FR
19-21 September	4th ETSI/IQC Workshop on Quantum-Safe Cryptography	Toronto, CA
20-22 September	MEC World Congress including ETSI PoC Zone	Munich, DE
27-28 September	Network Virtualization & SDN Asia	Singapore, SG
29 September	Joint ETSI-CEPT workshop on Public Protection and Disaster Relief	Sophia Antipolis, FR
10-14 October	SDN & OpenFlow World Congress	The Hague, NL
12-13 October	NGMN Industry Conference	Frankfurt, DE
18-19 October	Self-Organizing Networks Conference	London, UK
18-20 October	Broadband World Forum	London, UK
26-28 October	4th ETSI UCAAT	Budapest, HU
2-3 November	ETSI workshop on Managing Rail Mobile Communications Evolution	Sophia Antipolis, FR
3-4 November	FOKUS FUSECO Forum	Berlin, DE
5-18 November	ETSI ITS Cooperative Mobility Services Interoperability testing event #5	Livorno, IT
9 November	IEEE Conference on NFV – SDN	Palo Alto, US
10-11 November	Smart Mobility Summit	Amsterdam, NL
15-17 November	ETSI IoT/M2M Workshop 2016 featuring the Smart World	Sophia Antipolis, FR
28 Nov-2 Dec	ETSI eCall #5 Interoperability testing event	Oxford, UK
29 Nov-2 Dec	oneM2M Interop 3	Kobé, JP
1 December	ETSI workshop 53 shades of RE-D: 6 months to go	Sophia Antipolis, FR
5-6 December	ETSI Seminar	Sophia Antipolis, FR
6-8 December	Carrier Network Virtualization	Palo Alto, US
8 December	MEC USA Congress	Palo Alto, US
23 Jan-3 Feb 17	1st ETSI NFV Plugtest	Madrid, ES

Please visit the events section of our website for further details

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About ETSI ETSI produces globally-applicable standards for Information and Communications Technologies (ICT), including fixed, mobile, radio, aeronautical, broadcast and internet technologies and is officially recognized by the European Union as a European Standards Organization. ETSI is an independent, not-for-profit association whose more than 800 member companies and organizations, drawn from 66 countries, determine its work programme and participate directly in its work. **For further information, please visit:** www.etsi.org



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