ETSI World Class Standards

THE STANDARD

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ETSI Newsletter • September 2015

Roundup of oneM2M news

The oneM2M partnership project, developing global standards for Machine to Machine communications and the Internet of Things, has had a busy year, with a number of key achievements.

oneM2M issued its first release of specifications in January 2015. Release 1 is a set of 10 specifications, all publicly available from oneM2M's website (www.onem2m.org/release1), covering requirements, architecture, API specifications, security solutions and mapping to common industry protocols such as CoAP, MQTT and HTTP. oneM2M Release 1 also makes use of OMA and Broadband Forum specifications for Device Management capabilities. Release 1 provides sufficient building blocks to enable today's generation of M2M and IoT applications to interwork with each other. The set of specifications have since been published by the partner standards bodies, including ETSI.

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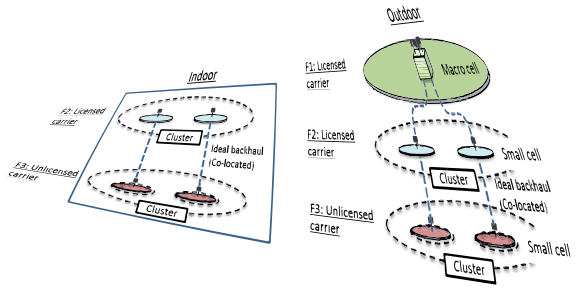
3GPP outlines plans for Licensed-Assisted Access

A workshop on Licensed-Assisted Access (LAA) has been held in Beijing, to consider coexistence mechanisms being designed for LTE to operate in unlicensed spectrum. Over 100 delegates attended the workshop on 29 August, which studied the newly completed 3GPP Technical Report (36.889) featuring LAA:

- Regulatory requirements
- Spectrum considerations and carrier aggregation feasibility
- Deployment scenarios
- Design targets, functionalities and solutions
- Coexistence evaluations

Specifications will now be written to provide a complement to LTE coverage over a licensed Primary Component Carrier (Pcell) via a Secondary Component Carrier (SCell) using unlicensed spectrum. 3GPP will initially specify LAA SCells operating with downlink transmissions only, but the RAN group aims also to agree the principles of uplink channel access so that the uplink for LAA SCells can be added in a future release - without modifications to the downlink design.



The objective of Release 13 work is to specify support for the following functionalities:

Channel access framework including clear channel assessment

- Discontinuous transmission with limited maximum transmission duration
- User Equipment (UE) support for carrier selection
- UE support for Radio Resource Management (RRM) measurements including cell identification
- Automatic Gain Control (AGC), coarse and fine time and frequency synchronization
- Channel-State Information (CSI) measurement, including channel and interference

The work item should also specify base station and UE core requirements for 5GHz spectrum.

Further Reading:

3GPP RAN LAA Workshop Report and presentations:
ftp://ftp.3gpp.org/workshop/2015-08-29_RAN_LAA/

3GPP TR 36.889 - Feasibility Study on Licensed-Assisted Access to Unlicensed Spectrum:
www.3gpp.org/dynareport/36889.htm

European Parliament makes eCall mandatory from 2018

On 28 April 2015, the European Parliament adopted the legislation on eCall type approval requirements and made it mandatory for all new models of cars to be equipped with eCall technology from 31 March 2018 onward. Studies have found that getting immediate information about an accident and pinpointing the exact location of the crash site can cut emergency services' response time by 50% in rural and 60% in urban areas, leading to 2,500 lives saved per year across the European Union. ETSI's Mobile Standards Group Technical Committee, together with the 3GPP (Third Generation Partnership Project), of which ETSI is a founding member, has developed the standards which describe the transmission of eCall data.

2,500 lives per year expected to be saved throughout Europe with eCall

eCall is an in-vehicle road safety system which automatically calls the emergency services in case of a serious accident, even if the driver and passengers are unconscious. eCalls can also be made manually by car occupants. As soon as the eCall sensors register a severe impact on a vehicle or a call is initiated manually, the system automatically dials the pan European 112 emergency voice call number and calls the relevant Public Safety Answering Point (PSAP).

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Welcome to the World of Standards

Welcome to the September 2015 edition of The Standard. We have a longer issue than usual, because there is simply so much to report on!

We have the latest news from our partnership projects, 3GPP and oneM2M. We also see how the GSM-R, our version of the GSM system tailored for the needs of railway operators, is evolving to cater for IP traffic and is becoming a key component in the European Train Control System, the signalling system for trains being deployed across Europe.

For the first time in The Standard we hear from two of our National Standards Organizations, who play a key role in ETSI by assembling national opinions on our draft European Standards. In this edition we see two different approaches to educating the world about standards, one, from ILNAS the Luxembourg National Standards Organization, through formal education, and one by demonstration, from Danish Standards.

Our two seconded European standardization experts, in China and India, are kept busy. However they have found the time to prepare information for us on the state of standardization in their local markets.

We have three new white papers to announce, and there are more in the pipe so please watch our website and social media feeds to be notified of the next white paper. And speaking of the website, we have refreshed it slightly. The changes will be most visible on the home page. However, we have also redeveloped the search facility when searching for ETSI specifications. New features have been added and I encourage you to take a look.

These stories, and many more, await you in this edition.
I hope you enjoy it.

Luis Jorge Romero, Director General, ETSI

ETSI launches Quantum Safe Cryptography specification group

Protecting information in the age of quantum computing

ETSI has launched a new Industry Specification Group on Quantum Safe Cryptography (ISG QSC) with the first meeting held at ETSI on 24-26 March 2015.

At this meeting Mr. Mark Pecen of Approach Infinity, Inc. was elected as the chairman of the group while Mr. Michael Groves of CESG was elected as the vice chairman. Mr. Pecen has a long track record of research and standards executive leadership in large ICT companies and has invented a number of technologies that have later been adopted in global standards. He holds more than 100 fundamental patents in the areas of wireless communication, networking and computing.

"ISG QSC was created to help industry address the threat to cryptographic techniques of quantum computers when the time comes to launch them on the market. As it is the next generation of computer technology, we want to be ready in terms of standardization and offer guidance on timescale and migration costs," says Mr. Mark Pecen, newly elected chairman of ETSI's ISG QSC.

During the meeting, participants agreed to start work on the following items:

- Quantum safe algorithmic framework
- Cryptographic primitive characterization
- Cryptographic primitive suitability assessment
- Quantum safe threat assessment
- Quantum safe standards assessment

"ETSI is used to working on innovative technologies and help shape the future of ICT through high quality standards. Quantum technologies infer security issues which are at the top of the agenda of many organizations and governments, and ETSI is keen on addressing them. The ISG will address the challenge of secure cryptography in the quantum era and help fill the gap between academics and industry in this domain, a key factor for emerging technologies," says Luis Jorge Romero, ETSI Director General.

The Quantum Safe Cryptography ISG will liaise closely with ETSI's existing standardization committees, including the Cybersecurity Technical Committee, the Quantum Key Distribution ISG, the Security Algorithm Group of Experts or the Electronic Signatures and Infrastructures Technical Committee. Collaboration with other standards bodies such as ITU, NIST, IETF and agencies such as ENISA is also part of the work programme.

Participation in the Quantum Safe Cryptography Industry Specification Group is open to all ETSI members as well as organizations who are not members, subject to signing ISG Agreements. A complete list of ISG QSC members is published on the ETSI Portal pages for QSC. For information on how to participate please contact ISGsupport@etsi.org.

Upcoming ETSI event

ETSI/IQC Quantum-Safe Cryptography workshop, 5-7 October, Seoul, Korea

This workshop on Quantum-Safe Cryptograph, organized together with the Institute for Quantum Computing of the University of Waterloo (Canada) and hosted by SK Telecom, will identify future developments in the area of Quantum-Safe Cryptography as well as their practical applications. Presentations will also include the latest requirements from industry and administrations, and potential solutions stemming from the latest research.

ETSI Security Week paves the way for cybersecurity standards

ETSI held its Security Week from 22-26 June, with a Security Workshop followed by three thematic sessions. The sessions focused on machine-to-machine communications and the Internet of Things (M2M/IoT), security assurance in Intelligent Transport Systems and Electronic identification and trust services (eIDAS). The closing days of the week were dedicated to the meetings of two ETSI technical committees, TC CYBER and TC ESI (Electronic Signatures and Infrastructures), which exceptionally were open to non-members of ETSI.

The event brought together ICT security experts from various stakeholders, including counterparts from other standards bodies and fora, ITU, ISO, CEN/CENELEC, NIST, IETF and W3C, and security experts from industry, government, regulators and academia.

Setting the scene, the ETSI Director General and the ETSI General Assembly and Board chairmen underlined ETSI's long term expertise in security while, in a later session, presentations from 13 ETSI committees gave an overview of their achievements and ongoing work on security and privacy.

Delegates to the event were reminded that the threat landscape is now very dynamic, challenging and always evolving, and that education of all relevant parties, including developers, on security standards is important. ETSI sees a real need to make 'security by design' the default approach in standards development.

To address security issues on a global scale, a growing concern in today's digital world, ETSI established its CYBER technical committee on cybersecurity issues. As well as developing standards for cybersecurity, it coordinates work in other ETSI committees and pays specific attention to European requirements from policies such as the Digital Single Market. It has already published a technical report TR 103 305 on Critical Security Controls for Effective Cyber Defence and will publish later this year a Technical Report on Security Assurance by Default. In addition, following the outcome of the workshop, the committee started a new work on a practical introductory guide to privacy.

Two ETSI White Papers have been published to coincide with the Security Week. Security for ICT – The Work of ETSI, updated yearly, provides an overview of all ETSI standardization topics related to Security. Quantum Safe Cryptography and Security discusses how future development of quantum computing poses risks to current encryption techniques, and the security of today's data, where today's encryption algorithms may not provide sufficient protection against quantum computing. ETSI has two industry specification groups developing specifications in this field, one on Quantum Key Distribution, and a second on Quantum Safe Cryptography.

All presentations of the Security Week are freely available on ETSI website at www.etsi.org/securityweek and if you want to continue discussions, use #etsisecurityweek on Twitter. If you missed the event, join us at the Security Week at ETSI headquarters next year.

ETSI Summit 2015: Standardization and Open Source - the Best of Both Worlds

Standardization appears to be at crossroads: are standards and standards bodies such as ETSI relevant in today's world of ubiquitous and ever increasing Open Source products and projects?

ETSI believes the answer is a firm yes, even more so when the two work together. ETSI sees standardization and Open Source as complementary and not just competing, as generally perceived.

But how to get the best of both worlds? How can ETSI play a leading role in this context?

Join us on 19 November at ETSI to find out more.

www.etsi.org/etsi-summit

ETSI is pleased to endorse the Mobile Edge Computing Congress

MEC

29-30 SEPTEMBER 2015

KENSINGTON CLOSE, LONDON, UK

FREE FOR OPERATORS

Meet ETSI in the exhibition area to learn more about our new Industry Specification Group for Mobile Edge Computing.

MEC will enable operators to open their Radio Access Network (RAN) edge to authorized third-parties, allowing them to flexibly and rapidly deploy innovative applications and services. MEC might also be a key building block for the emerging 5G architecture.

Nurit Sprecher, Chairman of ETSI MEC ISG, Yun Chao Hu, Chairman of ETSI MEC ISG Industry Enablement Working group and Jørgen Friis, ETSI CSO, Services Division Senior Representative will be speaking at the conference.

For more information please visit www.meccongress.com

ETSI's network of National Standards Organizations

ETSI is assisted in its role and responsibility as a European Standardization Organization by our network of National Standards Organizations (NSO), an essential part of the ETSI community. Each NSO performs the important task of organising national approval procedures for each European Standard delivered by ETSI. European Standards are approved using national voting at ETSI, where each NSO delivers their countries' opinion.

But NSOs are more important to ETSI than agents handling EN approvals. They form part of the European Standardization System and are in close contact with local industry in their countries, especially with small businesses. When an SME looks for information on standards, the local NSO may well be the first point of contact. NSOs distribute ETSI standards, but can also act as information points on the status of ETSI's work, or even accompany local SMEs in their first steps in standardization. Most of our NSOs are also members of CEN or CENELEC, so can play a part in ensuring alignment between the work of the three European Standardization Organizations, especially in fields where ICT is an enabling technology for other industries.

For these reasons ETSI has worked to improve our understanding of the needs of NSOs, working with individual NSOs on particular projects, and bringing them together as a community within ETSI. The following two articles from Danish Standards and ILNAS, the NSO for Luxembourg, will give a taste of the diversity of approaches being taken by NSOs in developing their mission.

ILNAS, University of Luxembourg and ETSI strengthen collaboration on education about standardization

Innovative smart ICT certificate supported by ETSI starts as of September

Left to right : ***Dr. Johnatan PECERO*** *[GIE ANEC - Agence pour la normalisation et l'économie de la connaissance],* ***Dr. Hermann BRAND*** *[ETSI],* **Mr. Nicolas DOMENJOUD** *[GIE ANEC - Agence pour la normalisation et l'économie de la connaissance],* ***Prof. Dr. Pascal BOUVRY*** *[University of Luxembourg],* ***Dr. Jean-Philippe HUMBERT*** *[ILNAS],* ***Mr. Alain WAHL*** *[ILNAS]*

Technical standardization plays a crucial role in smart Information and Communication Technology (ICT), not only giving a first-hand insight into latest developments, thus supporting innovation, but also contributing to harmonization of systems and procedures, opening access to external markets and ensuring constant progress. In the frame of developing a standardization culture at national level, specifically in an economically meaningful field[1], Luxembourg's standards body (ILNAS), in partnership with the University of Luxembourg (UL), has developed a smart ICT oriented certificate (lifelong training framework) at the end of 2014. UL will welcome the very first class this academic year in September.

Intended for ICT professionals, the Smart ICT for Business Innovation certificate offers a broad view of smart ICT concepts and puts various tools at the disposal of students, so as to develop their sense of innovation. The focus will lie on important aspects of smart ICT and their applications, including development of smart cities, smart grid, big data and analytics, cloud computing and environmental issues related to ICT. Digital trust and ICT governance issues will likewise be addressed by international experts during the course. Technical standardization will remain at the core of the curriculum as an uncontested source of knowledge in constant evolution. Also, standardization committees constituting the basis of smart ICT developments will be considered in this context as the unique platforms gathering manufacturers, researchers, business innovators and other stakeholders, making them the beating heart of ICT progress, and thus creating a conducive technical "ecosystem" for certificate students.

ILNAS
Institut luxembourgeois de la normalisation, de l'accréditation, de la sécurité et qualité des produits et services

UNIVERSITÉ DU LUXEMBOURG

In February 2015, ETSI, ILNAS and the University of Luxembourg established cooperation in the framework of this new diploma. Indeed, ETSI aims at strengthening education about standardization and fosters innovation through standardization. Thus, ETSI (together with six other supporting organizations and ten private ICT sector partners from Luxembourg) strongly supports this new university certificate, and will be involved in different courses (notably regarding the domain of "ICT prospective" in the "Digital Intelligence" module). ETSI recognizes the ambition of ILNAS and the University of Luxembourg to help students with boosting their smart ICT skills, and therefore being able to take on new responsibilities as well as to seize career opportunities within their organizations.

Programme Structure

The Smart ICT for Business Innovation certificate will include six different modules, an internship and students will be awarded 18 European Credit Transfer System (ECTS) points:

- Smart ICT concepts: foundations of Smart ICT;
- Business innovation: fundamental knowledge and tools concerning business innovation;
- Technical standardization: overview of ICT standardization and its economic benefits;
- Digital intelligence: inputs on technology trends, opportunities and challenges for Smart ICT
- Smart platforms: introduces a broad range of technological platforms that enable the creation of products and processes supporting current and future developments in the digital world (Cloud computing, Smart cities, Internet of Things, Green ICT);
- Smart interactions: focuses on interactions which enable smart interfaces taking into account environmental factors (Sensor networks, Big data and analytics, Digital trust);
- Internship and Certificate report: concrete learning outcomes for the student will be to transfer smart ICT knowledge (from the six modules above) directly into business innovation. This will be accomplished through the prism of the competitive and innovative tool of technical standardization, during the internship (inside the enterprise), and by presenting a related final report.

For more information, please visit:

http://goo.gl/MtzxJX
or
http://goo.gl/fIpY0I

Common thread

The university certificate "Smart ICT for Business Innovation" relies on an innovative approach addressing two main dimensions.

The first part of this matrix concentrates on a horizontal convergence that combines information technologies, consumer electronics and telecommunications, also known as ICT. As we can foresee, the future of

ICT will be "smart", therefore the university certificate focuses on a holistic approach through technical standardization as an enabler of the horizontal development of ICT. Indeed, this "engine" will strengthen the horizontal convergence by bringing mainly: interoperability, compatibility, quality and compliance (specifications, requirements, common components, etc.). Moreover, this field provides the state of the art in each smart ICT domain, the knowledge expansion and the latest research and innovation developments, answering directly to market needs, completely business driven and globally based on a broad consensus.

The second part of the matrix corresponds to a vertical convergence in order to address each economic sector. When the matrix is in place, the point of interaction between each of the two parts relies on technical standardization in a particular area: technical committee(s), more specifically one or more current technical standards, or technical standards in development.

In this framework, "technical standardization" is not only one specific module in the university certificate, but is present inside each module as a reference and as a key factor in support of innovation. This domain represents the general keystone of the university certificate.

From the matrix, that is the backbone of the different courses of the university certificate, the students will transfer "Smart ICT" concepts (through the information "received" from one or more specific technical standardization committees) into business innovation, in order to provide a real added value for the enterprise concerned (the outcome could be a new service, a new product, a new internal development, a new market to address, a new part of knowledge development for the enterprise, e.g. technology watch, a new certification scheme or a certification project, etc.). In this framework, the student has to be registered by ILNAS as a national technical standardization delegate, in one or more dedicated technical committees (the point of interaction of the matrix).

Planning & Calendar

For the first academic year 2015/2016, the sessions will be held every 2 weeks from September 2015 to May 2016 and will be scheduled on Thursday and Friday evenings and on Saturdays.

For the first class, 19 students have been accepted by the steering committee and are thus enrolled in the certificate.

For more related information, please visit:

http://goo.gl/dCFQED

http://goo.gl/3o9Qdv

http://goo.gl/JyW52b

About ILNAS

ILNAS stands for "Institut Luxembourgeois de la Normalisation, de l'Accréditation, de la Sécurité et qualité des produits et services" (www.portail-qualite.public.lu/fr/acteurs/ilnas/index.html). Created in 2008 as a public administration under the authority of the Minister of the Economy, ILNAS currently represents a network of competencies at the service of competitiveness and consumer protection.

ILNAS, as Luxembourg's standards body, is member of the European and international standards organizations (ISO, IEC, CEN, CENELEC, and ETSI). In this context and through the "Luxembourg Standardization Strategy 2014-2020", ILNAS raises awareness and encourages companies to engage in technical standardization.

[1] **Education about standardization is inscribed in Luxembourg's Policy on ICT Technical Standardization 2015-2020: http://goo.gl/GEBp4r**

[2] **http://goo.gl/oJaGAJ**

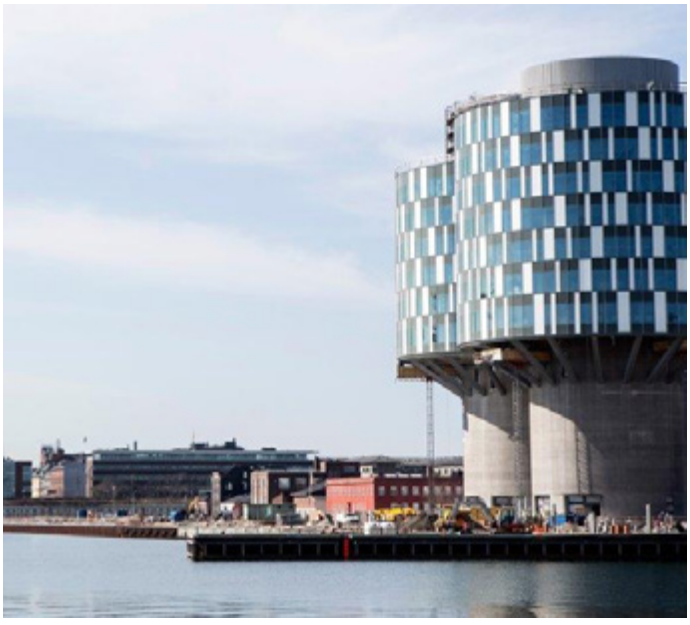
The Danish House of Standards

In Denmark a revolutionary – if somewhat unorthodox – presentation form is used to spread knowledge of standards. The Danish Standards Foundation has created an experimentarium for standards – a learning centre where you can see, touch and feel what standards are about.

Standardization is an abstract notion, and famously difficult to apprehend, yet its influence on growth and job creation is second to none. Studies reveal that companies using standards in the development of products and solutions record better export sales and higher productivity than their counterparts that do not use them. The verdict is clear: standardization does improve competitiveness.

"As Denmark's national standardization body, we address the dissemination of knowledge of standards, clarifying the benefits of standards to the outside world so that even more people can gain from these benefits. Accordingly, we have decided to create a learning centre where you can experience what standards are all about, and learn about the value they create for Danish business and society," explains Per Crety, Head of National Delegation, Senior Consultant at the Danish Standards Foundation.

No sooner said than done: the standards Experimentarium was born. Danish Standards called its new home the House of Standards, headquartered in a striking building in Nordhavn, a waterfront-turned-business district of Copenhagen. This is where Danish standards are developed and where you can learn about standards in a novel and interactive way.



Fun and informative

To achieve its dream, Danish Standards enlisted the competencies of science communication experts from the Danish Science Museum, Experimentarium City in Copenhagen, a centre that has had great success with increasing people's inquisitiveness about natural sciences. The result is quite a feat. The state-of-the-art exhibition consists of eight interactive installations that take visitors through an inspiring "story of standards" and their significance for Danish trade and industry.

You will learn, but in a wonderfully involving way, moving from short films to mind-boggling live demonstrations of what standards can do. As well as computer-enhanced activities, the educational exhibits are hands-on and dynamic, shaking off any preconceptions you might have of standards being dusty and boring. Be prepared to find standards concealed inside the walls, in floorboards and in elevators. Test yourself, trick yourself and be surprised. The Experimentarium reaches out to a broader audience than the usual standards professionals and hopes to show customers and the simple citizen that standards are a big part of our community – locally as well as globally.

A springboard for growth

Over the years, Denmark has embraced more than 25 000 International Standards as national adoptions. Yet, market surveys run by Danish Standards have shown time and again that companies – especially small and medium-sized enterprises (SMEs), which make up the bulk of the Danish business community – fail to understand the impact standards can have. SMEs, in particular, often have trouble identifying the standards that might be relevant to them. Danish Standards, therefore, is on a mission to encourage more SMEs to use International Standards.

"It is crucial that more companies, big and small, are able to learn about standards and the value they bring to their core business, acting as a springboard for growth," says Per Crety.

Danish Standards works on many levels to achieve its goal to promote knowledge about standards and their value in order to enhance the competitiveness of Danish businesses and benefit society at large. Not only by publishing standards and technical handbooks, but by answering customer queries through its information centre (WTO Enquiry Point), and providing consultancy and training services. It also runs a number of standardization committees, spearheading the development process in many fundamental areas.

"Essentially," Per Crety summarizes, "*we play an active role in spurring more people to participate in the development and application of standards. Our Experimentarium is just one example of how we strive to become more visible and better reach our target groups."*

Explore the House of Standards

At the Experimentarium you will find out all you ever wanted to know about standards, but never dared to ask. Touch, prod and explore fun phenomena as you move around the House... and get smarter. It's all part of the experience!

The Experimentarium consists of several audio-visual and interactive installations illustrating the value of standards:

Meet Nova. At the reception desk, you will meet Nova, the resident robot who welcomes you to Portland Towers. Nova is an expert on standards and will introduce you to the House and help you get around.

Explore the House. Your visit requires a mobile phone. Nova will ask you to turn on Bluetooth and download an app, which will signal ten important locations as you move around the building. When the tone sounds, a message will pop up on your screen explaining about that part of the construction and the relevant standards that were used to make it.

Click the kaleidoscope. At reception, a kaleidoscope with changing photos gives you an insight into the different construction elements used in the building. Scroll between photos at a touch of the screen : for each construction element, a beautiful interpretation appears in the kaleidoscope.

Get a picture of management systems. What does Plan-Do-Check-Act mean? Through a touch screen, ask representatives of four different enterprises how their business has implemented the four-step management system for continuous improvement of products and processes.

Harness wind power. How do you anchor a wind turbine on the seafloor? How much wind is needed to power said turbine ? And how much noise should a wind turbine produce ? Find out by placing a mock-up of a "suction bucket jacket" on the sand and feel how the platform is sucked in... until it is completely steady, whilst you blow on a real wind sensor cup (anemometer) and listen to wind turbine noise in your headphones.

Focus on freight. Gone are the boxes, barrels and sacks in which goods

were shipped across the water. On the 11th floor, learn how one standard revolutionized the freight industry by defining the size of shipping containers, lowering transport costs and significantly reducing CO2 emissions.

Go solar. Standards for photovoltaics and energy-efficient pumps provide great commercial value for Danish businesses. On the roof terrace, catch the rays on a 1 m2 photovoltaic panel and experience how much electricity the sun produces – and enjoy the great view over Copenhagen.

Check your canteen. The House of Standards' canteen carries the Nordic Ecolabel, a guarantee that the food produced has a low environmental impact – from the detergent dosages used to waste sorting. On the 12th floor, test how close to obtaining the Nordic Ecolabel your canteen or restaurant is.

Roundup of oneM2M news
- continued (from page 1)

Showcases and Interoperability Testing

oneM2M will hold its first interoperability testing event from 14 to 16 September 2015. This will be the first opportunity for organizations implementing the oneM2M Release 1 specifications to validate interoperability and end-to-end functionality via oneM2M interfaces.

ETSI and TTA (Telecommunications Technology Association of Korea) will host the event at the ETSI headquarters, in Sophia-Antipolis, France.

Richard Brennan, oneM2M's MARCOM Chair explains the event's significance: *"Within the industry we see more initiatives building towards a ubiquitous Internet of Things. oneM2M is working with multiple organizations to establish interoperability standards for connected things, across multiple industry sectors. We are excited about this first Interoperability event and the support from oneM2M, ETSI, TTA, and the European Commission. We encourage industry players to attend this event and test their implementation of the oneM2M standards."*

In June oneM2M partner TIA hosted a special oneM2M Showcase Workshop at their TIA 2015 event in Dallas. The event focused attention on adoption and deployment of the standard and featured a showcase of technologies along with keynote presentations, exhibits, and panel discussions. In May, oneM2M partners ARIB and TTC organized a oneM2M workshop in Tokyo. Targetted at a local audience, the event attracted over 200 delegates.

Open Source Projects and Initial Implementations

The first commercial implementations of oneM2M Release 1 were announced as early as December 2014. In addition, several open source projects are actively developing oneM2M-based solutions.

The largest such open source project is OCEAN (Open alliance for iot standard, www.iotocean.org/main/). This was established in January 2015 by the Korean government and research institute KETI. It has now attracted 158 members and develops code for the oneM2M-based IoT platforms called "Mobius" and "&Cube".

The Eclipse Foundation hosts an open source project to develop an open source IoT platform based on oneM2M. The OM2M project (http://eclipse.org/om2m) aims to deliver a oneM2M based solution in September 2015.

Within the popular OpenDaylight project, a team is developing a oneM2M-based IoT Data Broker to enable authorized applications to retrieve IoT data uploaded by any device. The IOTDM (https://wiki.opendaylight.org/view/IoTDM:Main) project has been running since December 2014 and code is already available to download and test.

Alongside these open source initiatives, commercial oneM2M-based products or services have been announced by:

- Fraunhofer Fokus (www.openMTC.org),
- HP (www8.hp.com/us/en/hp-news/press-release.html?id=1919110),
- InterDigital (http://ir.interdigital.com/releasedetail.cfm?releaseid=899365),
- LG U+ (www.koreatimes.co.kr/www/news/tech/2014/12/133_169665.html)
- SK Telecom (www.sktelecom.com/en/press/detail.do?idx=1124)

To assist developers and early adopters with the inevitable questions which may arise when implementing new specifications, oneM2M set up a Technical Questions e-mail list. Experts involved in developing oneM2M specifications will try to answer questions on interpretation of the documents. The list is accessible from the oneM2M website: www.onem2m.org/technical/technical-questions

Developing oneM2M Release 2

Work on oneM2M Release 2 began immediately on delivery of Release 1. Ten new specifications have been identified for Release 2, in addition to updates of the existing Release 1 specifications, driving deployment of the following features:

- Enablement of Industrial Domain ("Smart Factories") and of Home Domain ("Smart Home")
- Dynamic authorization and end to end security
- Semantic interoperability
- oneM2M as generic interworking framework (incl. support for OMA LWM2M, AllJoyn and OIC)
- Application developer APIs and guidelines

Release 2 of oneM2M is planned for delivery in autumn 2016. In parallel with the development of Release 2, a revised set of Release 1 specifications is in preparation to take account of early implementation experience. These will be released in autumn 2015.

The latest draft oneM2M specifications for Release 2 and the revised Release 1 are available at: www.onem2m.org/technical/latest-drafts

New Partners TSDSI and GlobalPlatform

oneM2M expanded its coverage with the addition of two new partners to the project. The Telecommunications Standards Development Society, India (TSDSI) and GlobalPlatform were both accepted as its two newest Partners. oneM2M is now a partnership between eight leading standards development organizations: ARIB (Japan), ATIS (USA), CCSA (China), ETSI (Europe), TIA (USA), TSDSI (India), TTA (Korea), and TTC (Japan), whose members participate in developing oneM2M specifications, and six leading ICT industry associations: BBF (Broadband Forum), Continua, GlobalPlatform, HGI (Home Gateway Initiative), New Generation M2M Consortium - Japan, and OMA (Open Mobile Alliance) who directly contribute to oneM2M.

The significant inclusion of TSDSI and its members into the oneM2M standards development process helps extend the reach of the partnership into the important Indian market and enable globally interoperable solutions for the Internet of Things.

Dr. Asok Chatterjee, Director General, TSDSI said "Joining one M2M as a full Partner enables TSDSI to bring the strong voice of India's technical abilities and market potential to the full range of both standards development and management activities within the global oneM2M community."

GlobalPlatform's participation will help ensure that oneM2M will satisfy the future security demands of the Internet of Things. "We're happy to formalize our relationship with oneM2M," commented Kevin Gillick, Executive Director of GlobalPlatform. "oneM2M documents already reference GlobalPlatform Card and Device Specifications and working more closely will benefit the evolution of specifications within both organizations. This will in turn standardize the development, deployment and management of M2M technology and applications, saving time and money."

oneM2M: Solving the IoT Platform Challenge

Opportunities and pitfalls in the IoT's new wave of innovation

Access to low-cost electronics has made it relatively easy to embed connectivity capabilities into a wide variety of devices and sensors. Whereas previous generations of connected devices could only be justified for expensive and business-critical machines, nowadays connectivity is becoming the norm in many inexpensive devices including lightbulbs, tooth-brushes and wearables.

To get a sense of the connectivity mega-trend, consider fleet-management, the work-horse machine-to-machine (M2M) use-case, which optimizes the management of delivery routes and fuel consumption for industrial vehicles. The underlying principles have been adapted, at lower cost, to create a framework for new, connected car applications. Similarly, the inventory management techniques for remotely managed vending machines have inspired new business opportunities for connected, coffee dispensers.

This swell of innovation is driving long-term service aspirations within industry and consumer groups. Companies such as Bosch, GE and Salesforce.com envisage significant business benefits from reshaping their business practices with IoT at the core. It is no surprise to see such high expectations for the Internet of Things (IoT) market in the context of analyst forecasts for tens of billions of connected devices and trillions of dollars in economic benefits.

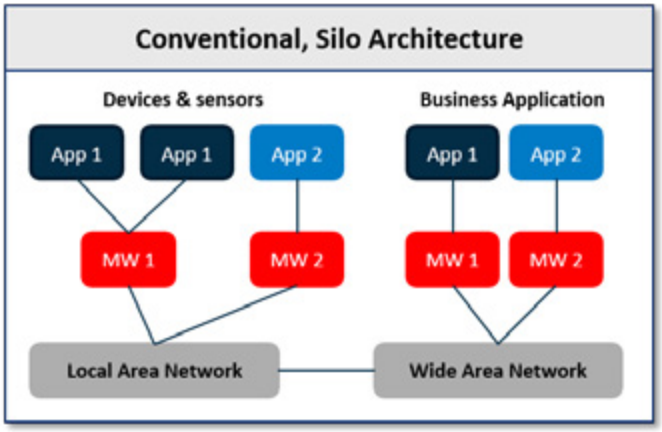
However, in the rush to launch IoT applications and services, are companies making wise technology, service and business-model choices? Will today's solutions provide an adequate platform for large-scale growth, with an evolutionary road-map that supports new features and revenue-generating business opportunities? To understand these issues, let us first consider the key characteristics of an IoT application and the eco-system that is conducive to launch and support IoT services.

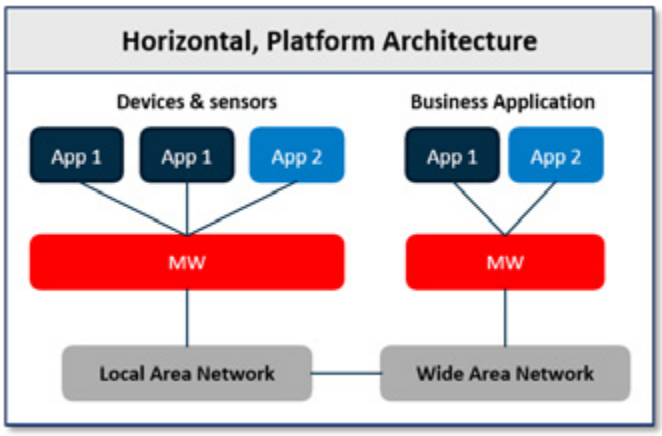
IoT applications, shared services and the value of interoperability

In its recent assessment[1] of the IoT market McKinsey & Co, the consulting firm, introduced the concept of 'settings' to illustrate a range of IoT service scenarios. A 'setting' could be a (smart) home, a (connected) car or an (intelligent) manufacturing plant, for example.

Each of these 'settings' hosts a range of connected devices and sensors. In a smart home, there may be electricity meters, controllable lights, security sensors, personal health monitors, a smart thermostat and more. The basic architecture for each of these systems is a connected device or sensor, which communicates its data via an intermediate application (middleware) to a monitoring or control application. Thus, a sensor might trigger an alarm – "a window has been opened from the outside" - that is communicated to a monitoring station from which a control action – "send for the police" – might be initiated. This highly 'vertical' arrangement is typical of the architecture of a traditional M2M application; cross-vertical interactions, across application silos, are a differentiating characteristic of IoT applications.

Configuring each application in a 'setting' with its own application, communications and middleware leads to a sub-optimal outcome. It results in duplicated hardware, customized software and an inability to share data resources across application silos. Commercially, the situation is also sub-optimal because IoT service providers in the same 'setting' have to manage multiple service contracts and supplier relationships.





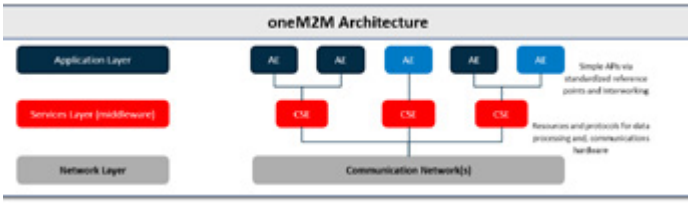
The alternative is to look for service enabling commonalities across the individual applications, resulting in a harmonized architecture, and where inter-operability is a central design principle.

The interoperable, platform architecture consolidates the resources needed to deliver a variety of IoT applications and opens up new service and business opportunities by allowing applications to share resources and data. In the example above, the 'Back-end Application 1' can interact with the device associated with 'Application 2'. According to McKinsey, this kind of interoperability accounts for almost 40% of the value potential from the IoT application 'situations' covered in its analysis. Businesses that do not factor this mode of operation in their strategic product and service roadmaps are effectively capping their long-term business prospects.

oneM2M solves the IoT platform challenge

In 2012 a group of international standards development organizations anticipated the need for a common architecture along with a set of enabling solutions to support inter-operable M2M and IoT applications. Building on a collaborative effort with input from almost 200 member organizations, oneM2M issued its first release of the standard in December 2014.

The standard employs a simple horizontal, platform architecture that fits within a three layer model comprising applications, services and networks.



Application Entities (AEs) within individual device and sensor applications provide a standardized interface to manage and interact with applications. Common Services Entities (CSEs) play a similar role in the services layer which sits between the data processing in the applications layer and the communications hardware in the network layer. The network layer ensures that devices and sensors and applications are able to function in a network-agnostic manner.

One of the benefits of this architecture is that it connects data 'producers' and data 'customers' in a secure manner. This is possible through the use of a configurable policy manger to define which applications and users can access which devices and sensors.

The service layer also controls when communications occur, depending on factors such as the time-sensitivity of communications and the economics of data transfer. For example, in non-time-critical applications, data can be accumulated for efficient transfer. This may be especially relevant where power consumption is an operational priority, for example. The oneM2M service layer hides the complexity of network usage from applications. As a result, it simplifies the implementation burden for application developers.

The oneM2M specification is an important milestone for the IoT market. Not only does it provide a common technical framework and a globally recognized standard but it also addresses key business objectives of lowering costs, reducing industry fragmentation and creating new business opportunities.

oneM2M business benefits	
Lower costs - CAPEX	Lower cost of deployment (library of functions) Programmers can focus on applications (not on underlying communications) Scale economies of horizontal service layer (common functions for diverse use-cases)
Lower costs – OPEX	Efficient communications (policy-driven and event triggered) Sensor data sharing (produce once, consume many times) Transport economics (use best transport network for business needs)
Reduces fragmentation	Common services layer for different verticals and segments eliminates the need for application-specific platforms
Enables new business opportunities	Service innovation and application opportunities from cross sharing of resources and data across silos

oneM2M is currently available as a Release 1 specification which addresses the basic elements of creating, deploying and managing M2M and IoT applications.

The business drivers in today's IoT market are low-cost connectivity and fast time-to-market. As the market develops, performance expectations from IoT applications will rise. A new set of requirements will take center stage which means that IoT solutions, and the oneM2M standard, need to evolve. Work is already underway on Release 2 of the oneM2M standard which will include support for managing contextual data, in effect a value-added form of raw sensor data. Release 2 will also include new policy functions through semantic interoperability for home and industrial domains, and end-to-end security including dynamic authorization.

But aren't there already many platforms to choose from?

Companies that are developing M2M and IoT solutions as well as M2M/IoT service providers face an exciting yet challenging future. On the one hand, IoT applications promise significant economic benefits and new business opportunities. Market entry by large companies such as Cisco, Google, GE, Intel and Samsung testifies to the attractiveness of this market. There is further evidence of market attractiveness based on the many tens of commercial IoT platform providers, each differentiating itself within a geographic market or an application specialization.

The decision for companies that are searching for IoT-enabler technologies is a difficult one, made more complex by the range of choice available. From a strategic viewpoint, companies need to balance rapid time-to-market benefits with business continuity considerations including the following:

- Proprietary IoT solutions offer fast market entry during the early stages of a market, especially where solution providers customize their offerings to meet a specific application's needs. Over the long term, however, proprietary solutions cannot match the economics of open standard solutions which benefit from superior economies of scale and competitive supply through a larger eco-system. In practical terms, this means that companies can chose from different hardware and software vendors offering standard-complaint products. They are also less prone to vendor lock-in because companies can transition from one solution provider to another using the same standard.
- Although most M2M and IoT applications currently operate in silos, future applications will make greater use of interoperability features to: publish data; import data from other device and data sources; and, create cooperative applications. oneM2M contains the tools that allow companies to implement solutions beyond their traditional application and business boundaries without being prey to one-time, systems integration costs.
- oneM2M offers a richer road-map of future features because it draws from a wide range of inputs in developing its specifications. Furthermore, the standards development process provides a degree of predictability that helps to future-proof IoT product and service development plans.
- As companies deploy large populations of connected devices over time, they will face complexities in managing different generations of a given device at the hardware and firmware levels. oneM2M's standardized use of APIs and reference points masks this element of complexity allowing companies to scale their operations and also to source components from a wider supplier base.
- The growth in oneM2M compliant solutions and IoT applications will create a sizeable market opportunity, attracting a large developer community which will contribute economy and ideas to the supply-side eco-system.
- oneM2M builds on a heritage of standards development for the mobile industry. It leverages a proven track record of continuous innovation, the development of a vibrant eco-system and an unrivalled accomplishment for delivering affordable communication services to the majority of the world's population. By replicating these accomplishments, oneM2M will make an equally significant contribution to the IoT market. This development should be an important consideration for companies that are making IoT technology, service and business model choices.

About the author

Ken Figueredo is the founder of 'More with Mobile'. He focuses on business innovation and strategy consultancy projects in the M2M/IoT market. Ken is currently working with several companies that are commercializing IoT-platform services and solutions based on the oneM2M standard.

[1] McKinsey Global Institute, The Internet of Things: Mapping the Value Beyond the Hype (June 2015)

About oneM2M

oneM2M is the global standards initiative that covers requirements, architecture, API specifications, security solutions and interoperability for Machine-to-Machine and IoT technologies. oneM2M was formed in 2012 and consists of eight of the world's preeminent standards development organizations: ARIB (Japan), ATIS (U.S.), CCSA (China), ETSI (Europe), TIA (U.S.), TSDSI (India), TTA (Korea), and TTC (Japan), together with six industry fora or consortia (Broadband Forum, Continua Alliance, GlobalPlatform, HGI, Next Generation M2M Consortium, OMA) and over 200 member organizations.

oneM2M specifications provide a framework to support applications and services such as the smart grid, connected car, home automation, public safety, and health. oneM2M actively encourages industry associations and forums with specific application requirements to participate in oneM2M, in order to ensure that the solutions developed support their specific needs. For more information, including how to join and participate in oneM2M, see: www.onem2m.org.

LTE Broadcast: Successful verification of test specifications for 3GPP Release 11

3GPP™ has always recognized the importance of having standardized test specifications available to manufacturers and certification bodies, in order to ensure the highest level of interoperability of mobile devices. The development of these test specifications is the responsibility of the Technical Specification Group (TSG) RAN Working Group 5 (RAN5) within 3GPP. RAN5, however, uses the services of ETSI's Centre for Testing and Interoperability (CTI) to implement the test cases in the ETSI-standardized language TTCN-3 (Testing and Test Control Notation version 3).

CTI manages a task force (TF 160) of 20 testing experts drawn from 3GPP member companies, with an annual budget of over €1m, two thirds of which comes from 3GPP funding and one third provided voluntarily by individual 3GPP Members and Partners. TF160 maintains a set of 2800 test cases, adding up to 200 new tests per year. These tests are in turn used by the Global Certification Forum (GCF), an independent certification scheme for mobile phones and wireless devices that are based on 3GPP and 3GPP2 standards, and by the PTCRB, the wireless device certification forum established by North American mobile network operators.

In the first half of 2015 a new important milestone was reached by TF160. In collaboration with the test platform vendors (providing wireless network simulators) and device manufacturers (providing real wireless handsets), TF160 have completed the verification of the TTCN-3 implementation of the conformance test cases specified in 3GPP™ Release 11 for the LTE™-Advanced FDD MBMS Service Continuity (eMBMS-SC) feature.

The Evolved Multimedia Broadcast/Multicast Service for LTE (eMBMS), also referred to as "LTE Broadcast", is a feature set that is part of the LTE technology for broadband mobile communications. eMBMS enables the delivery of the same content simultaneously to a very high number of users through the efficient usage of radio resources. It is particularly suited to the delivery of live video events (sports, news feeds, etc.), public alerts and the distribution of software updates for mobile devices.

eMBMS was initially introduced in 3GPP Release 9 with improvements arriving with both Release 10 and Release 11, including the enhancement of mobility procedures to ensure the continuity of both unicast and broadcast services when the wireless device is moving around and regularly changing access points.

The conformance test cases delivered by TF160 for Release 11 eMBMS-SC, in addition to already delivered test cases for Release 9/10 eMBMS, ensure that the mobile devices correctly implement the eMBMS protocol requirements specified in the LTE standards. These tests have already been selected by the Global Certification Forum (GCF) to create and operate an eMBMS certification scheme to ascertain that eMBMS-capable mobile devices will work effectively on any LTE network in the world having deployed eMBMS services.

For the future, both 3GPP working group RAN5 and TF160 are now developing conformance test cases for the new features added in Release 12. Two key features are of particular interest to the industry:

- Wireless Local Area Network (WLAN)/3GPP radio interworking (to improve offload to/from WLAN decisions by the network, thus enhancing the user experience).
- Device-to-device proximity services (the first set of LTE-Advanced enhancements to support the requirements of public safety and critical communications).

Upcoming ETSI event

UCAAT is ETSI's annual conference on test automation focusing on both automated test design and test execution automation. The conference brings together experts from industry and academia to share their experience in advanced test automation techniques, methods and tools.

UCAAT is dedicated to the practical engineering and application aspects of automated testing including model-based testing, test methodologies, test management and use of test languages such as TTCN-3. This industrial conference gives users from different application domains such as Telco, Banking, IT Services, Automotive, Robotics, Software vendors and Defence a chance to meet and share their practical experiences & lessons learned.

For more information, please visit **http://ucaat.etsi.org/2015/**

A brand new homepage for the ETSI website!

In our wish to continuously improve our services, our ETSI website homepage has been redesigned. Our latest news stories are now more visible while our standards and related products are only one click away. A new standards search engine provides additional functionalities such as browse by technology, multiple downloads, various sorting options and much more. **Enjoy!**

Low-cost LTE for M2M applications

As LTE networks start to be dominant, it is vital that they become suited to the M2M industry's requirements. To achieve this, 3GPP has published a study on optimizing LTE for machine-type communications (MTC) for devices that are cost competitive with existing 2G equipment.

With the publication of a "Study on the provision of low-cost MTC User Equipment based on LTE" (TR 36.888) 3GPP has set the minimum requirements to ensure that 2G data rates, spectrum efficiency and coverage are respected and that MTC modules achieve good radio frequency coexistence with legacy LTE equipment on the same carrier.

While LTE-based low cost machine-type communications will require optimizations for both FDD and TDD modes, it will re-use the existing LTE network architecture and LTE base station hardware, according to the new study.

3GPP Technical Specifications will now pave the way for operators to migrate MTC traffic from 2G to LTE networks via a new device category for low data rates and delay tolerant transmissions. The new device category (UE Category '0') was introduced in Release 12 – setting the performance requirements to reduce complexity and power consumption. Further progress will also be achieved in Release 13, bringing in:

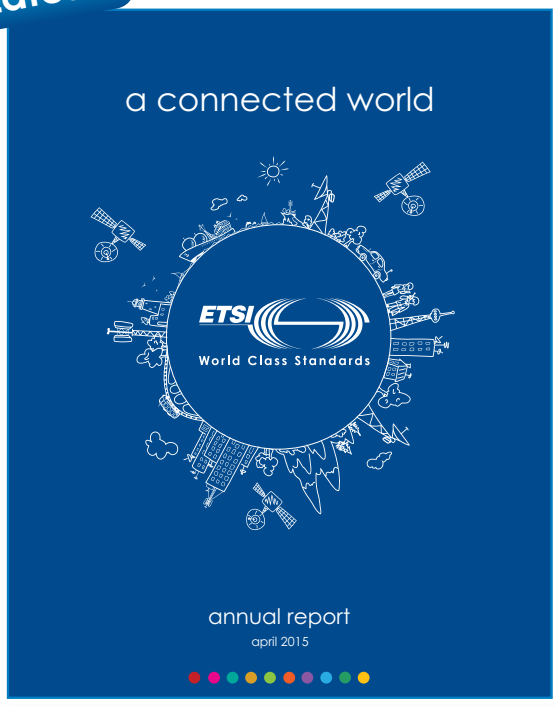
- 75% modem complexity reduction compared to Cat-1 UE
- Reduced UE receive bandwidth to 1.4 MHz
- 10+ years battery life
- 15-20 dB coverage enhancement

With the completion of work on low-cost machine-type communications, LTE is set to be a major carrier for this type of data for the foreseeable future.

ETSI Annual Report

The ETSI Annual Report of 2014, published in April 2015, provides an overview of the activities of the institute during the course of the year.

Latest



The Annual Report April 2015 can be downloaded from the ETSI website.

www.etsi.org/about/annual-report

Hardcopies are available from the ETSI Secretariat upon request at info@etsi.org

ETSI Work Programme

ETSI Work Programme 2015-2016 provides an overview of the ongoing work in our technical bodies and ISGs, structured according to our clusters. It presents the full extent of our forthcoming standardization activities to readers who may not wish to navigate our online database. Since ETSI's work never stops and our work programme is never frozen, the electronic format of the brochure contains links to the online work programme on the portal, for the latest status of our work.

Latest

You may download the ETSI Work Programme 2015-2016 now at:
http://etsi.org/technologies-clusters/white-papers-and-brochures/etsi-work-programme

Hardcopies are available from the ETSI Secretariat upon request at info@etsi.org

2015 ETSI M2M Workshop and oneM2M Showcase

9-11 December 2015, at ETSI

ETSI's popular M2M workshop returns for 2015, with a particular focus on Smart Cities and Smart Living. This year will again feature a oneM2M Showcase: a set of multi-party demonstrations presenting oneM2M standards in use.

Secure your place by registering here: **www.etsi.org/m2mworkshop**

GSM-R Radio System and Services evolution towards IP

ERTMS/GSM-R offers a portfolio of features, implemented to support traffic management as well as operational staff work and the applications to enhance services to passengers. This system is being rolled-out all over Europe and is becoming an international standard with projects in five continents. It is the basis for the migration of transport services toward a smart public transport system. Robert Sarfati, Chairman of the ETSI Technical Committee for Rail Telecommunications explains more.

INTRODUCTION

GSM-R – the European new generation digital radio communication system based on GSM – has been implemented in several countries. It has entered full nationwide commercial service in most of Western Europe and partial operational service in several additional Eastern European countries.

Indian railways, the railways in China, Saudi Arabian railways, all North African railways and several others outside Europe are either in the planning phase or considering its introduction in their networks.

In addition GSM-R is the bearer for ERTMS/ETCS – the European Train Control System – which is being gradually introduced as a true intelligent traffic management system all over European railway lines and is now extending to several worldwide countries as a recognized operating system. This system is the cornerstone for a sustainable transport system.

It allows transport services to migrate towards a user oriented system and services. This evolution driven by services and cost improvement is the basis allowing for an evolution towards IP-based transport systems and services.

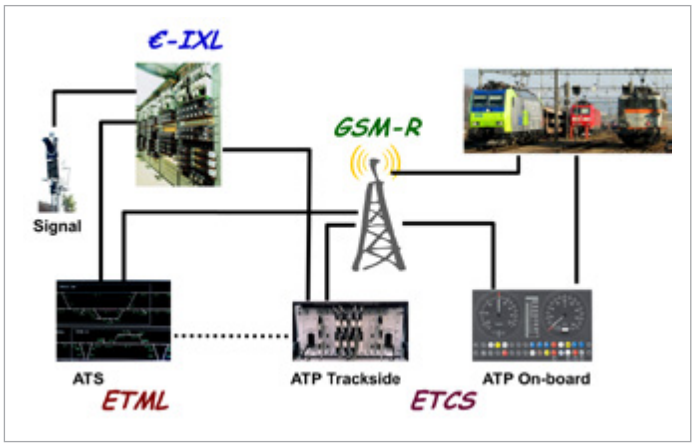


Fig. 1 ERTMS Components

THE DRIVERS FOR EVOLUTION TOWARD ERTMS

With its stable specifications and tested products, ERTMS/ETCS is seen as the right answer when renewing signalling equipment. The obsolete nature of the traditional signalling systems, their high costs, especially as regards maintenance, and their non-interoperability led most of stakeholders to see ETCS as the only signalling option for the future trans-European rail networks.

ERTMS integrates the components necessary for an evolving rail traffic management system composed of GSM-R, ETCS, ETML and Euro-Interlocking functions (Fig. 1).

THE EVOLUTION OF GSM-R TOWARDS IP

From the legislative point of view

An ERTMS Memorandum of Understanding (MoU) was signed between the European Commission, the European Railway Agency and rail sector organizations, stating in particular that:

- "The Parties note the commitment of the GSM-R Industry Group members to the long-term support of GSM-R technology, at least until 2025". Today the support of GSM-R is extended until at least 2030. It was noted that "Nevertheless telecommunications systems usually have a much shorter life cycle than signalling systems. For this reason, it should be possible to replace the telecommunications part of on-board equipment without this having an impact on the safety critical signalling path".
- Current ETCS applications work with GSM-R circuit-switched services. It does seem possible, however, to use packet-switch systems (e.g. GPRS) and, in the longer term, other IP-based standards, without impacting on the ETCS specifications.

From the European mandate perspective

A Mandate was notified and endorsed by CEN/CENELEC and ETSI. Mandate M/483 – Mandate for programming and standardization addressed to the European Standardization Organizations under Directive 2008/57/EC in the field of the interoperability of the rail system within the European Union. This system is the cornerstone of a sustainable transport system.

These basic assumptions led to the start of work not only on GPRS and EGPRS for ETCS but also to pave the way for an evolution of the network components by introducing an architecture based on Release 4 Bearer Independent Core Network (BICN) in the EIRENE Radio specification.

It was intended to allow addressing existing and future needs through software and hardware evolution. It allows evolution with the introduction of modern systems as well as offering the availability of a secure information system to develop new applications aiming at improving operation of Railways.

IMPLEMENTATION STATUS

Today, the status of GSM-R implementation in Europe is given in the following picture. (Fig.2)

Fig. 2 GSM-R Roll out status in EUROPE

GSM-R is also being developed worldwide as a global standard for Rail Communication System over all continents. (Fig.3)

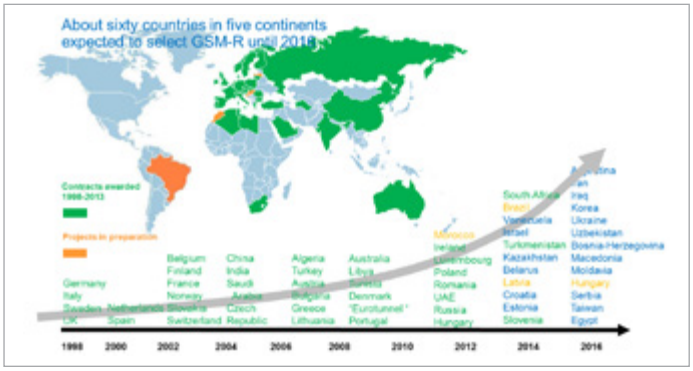


Fig. 3 GSM-R Roll out status worldwide

THE PHASED EVOLUTION OF GSM-R FEATURES AND FUNCTIONS

The current status

The GSM-R benefits from the GSM data transmission and includes already General Packet Radio Service (GPRS) which allows efficient adding of new operational services such as logistics, diagnostics, remote control, passenger services through access of railway staff to data bases through intranet, time scheduling and tariffs, automatic seat reservation to existing applications mainly based on voice transmission. Location dependent addressing feature allows geographic segregation when several dispatch areas are implemented in the operational network (Fig. 4).

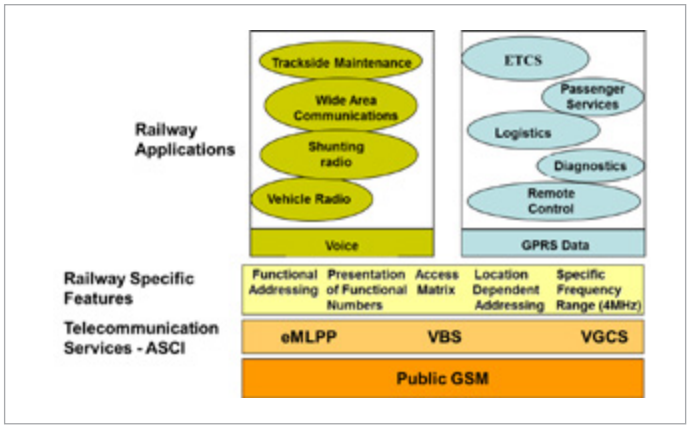


Fig. 4 Current applications

GSM evolution (Fig.5) includes operational applications for rolling stock maintenance, optimized freight load management through tracking and tracing features as well as development of other on-board applications for passenger services such as basic ticketing.

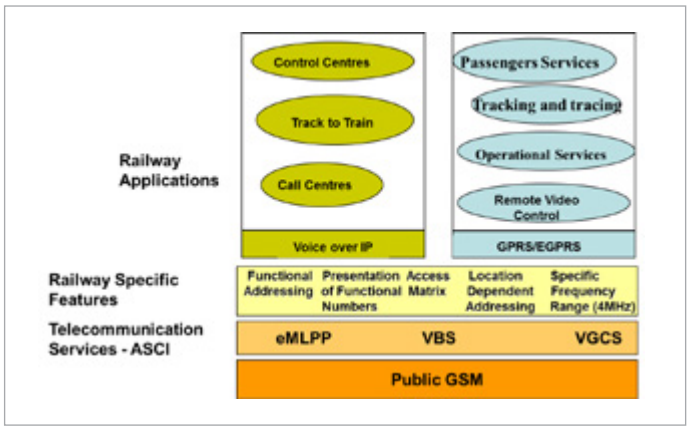


Fig. 5 Additional applications with GSM-R

Users requirements study

The UIC launched a study on Railway Mobile Communications System Users Needs which resulted in a report showing that mission critical communications such as train radio, ETCS, operation and maintenance teams, train maintenance crew applications operate over narrow band where future evolution might imply wide band systems for driver look ahead CCTV or real-time passenger video information. It should be noted that e-mail access on-board, web access for passengers are Public Operators licensed applications.

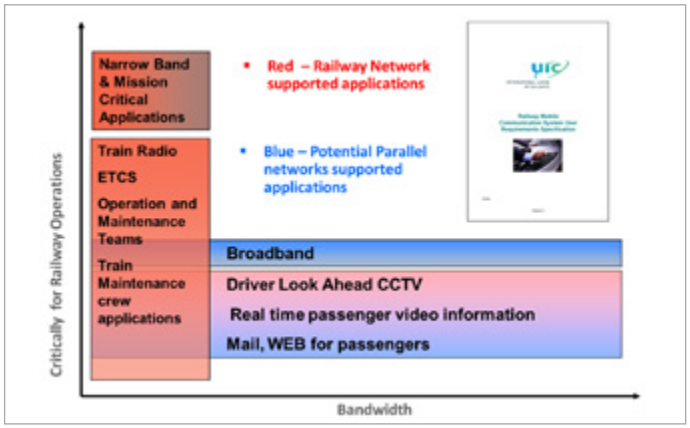


Fig. 6 Needs Analysis

Specifications development at ETSI

In parallel with the study of User's needs, it was decided to allow for network architecture evolution towards release 4.

The first phase allowed to specify and introduce BICN architecture based on an MSC Server and Media Gateways according to the ETSI TS 103 066 in order to ensure the full compatibility of features for Railways applications.

The decision was also taken to develop a new specification defining the interface between the Network Sub System (NSS) and the Fixed Terminal System (FTS) using Session Initiation Protocol (SIP) according to TS 103 389. This standard evolved to accommodate SIP Voice Recording System interface and introducing supplementary services.

The introduction of EGPRS as a bearer for ETCS will be specified within a future TS defining the features necessary for operation with ETCS.

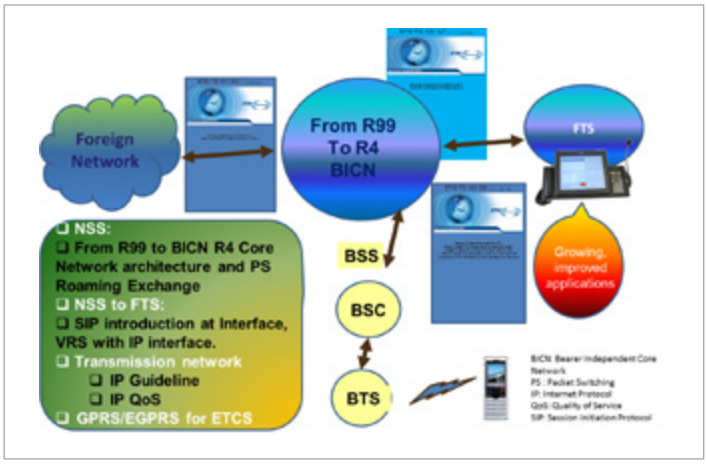


Fig. 7 ETSI standards development

CONCLUSION

ERTMS is based on digital communication for voice and data.

Current railway applications are now available on an integrated and standardized platform able to evolve with the users needs. The system is able to perform all the existing day to day operations and offer a platform for evolution towards IP.

The high performance data transmission features of GSM-R allow new applications, such as IT systems for passenger information, on-board ticketing, diagnostics, maintenance and so forth.

The introduction of this system represents for most transport organizations:

- A Reduction of operating costs
- A Reduction of maintenance costs (reduced spare parts and training costs)
- Increased spectrum efficiency with Packet Switching
- Reduced capital expenditure by using standard equipment
- Increased flexibility of operation

The transport organizations aiming at renewing their current costly to maintain equipment, should consider the alternative of using GSM-R/GPRS as the answer to their existing and future needs. This system is widely deployed in the demanding European railway environment. GSM-R equipment has been developed and several industries are able to offer it off-the-shelf provided that the frequency range is within the overall GSM 900 Extended frequency range 873-915 MHz coupled with 918-960 MHz and now in the 1800 MHz frequency range.

About the author

Robert Sarfati is Chairman of the ETSI Technical Committee for Rail telecommunications. He is also Chairman of the UIC ERTMS/GSM-R Operators Group, Chairman of the UIC European Rail Implementers Group, plus Director Consultant at SYSTRA.

Credit: first published in European Railway review, January 2015, Issue 1, Railway Signalling and Telecommunications supplement, www.europeanrailwayreview.com

ETSI's digital signature standard PAdES tested remotely all over the world

On behalf of ETSI's Technical Committee for Electronic Signatures and Infrastructures (TC ESI), ETSI's Centre for Testing and Interoperability organized a remote Plugtests™ interoperability event for PAdES, PDF digital Signatures, the ETSI specification for digital signatures for PDF documents, from 4 May to 5 June 2015.

This five-week long event was the latest in a series of Plugtests in this area.

This particular event conducted conformance and interoperability testing on PAdES digital signatures, including testing the evolution of signatures thus simulating real life situations. The remote testing was performed via a Plugtests portal, available 24/7 for the full duration of the event to enable participants from all time zones to generate, upload and verify signatures at their own convenience.

More than 100 participants from 62 organizations from all over the world took part and included government bodies, public entities and enterprises involved in trust services. As PAdES is already implemented within ETSI's secretariat to sign NDAs, joining the event was only one click away!

The ETSI PAdES specifications, in the TS 102 778 series, are in the process of becoming European Standards (EN 319 142 series) and were developed under Mandate M/460, a European Commission initiative to harmonize the standards on digital signatures in support of the European Digital Single Market. It is part of the broader EU Regulation No 910/2014 on e-identification, e-signatures, e-delivery and related Trust Services.

PAdES signature data is incorporated directly within the signed PDF document allowing the complete self-contained signed PDF file to be copied, stored and distributed as a simple electronic file. The signature can also have a visual representation as a form field.

The ETSI specification allows electronically signed documents to remain valid for long periods, even if underlying cryptographic algorithms are broken. At any time in the future, in spite of technological and other advances, it must be possible to validate the document to confirm that the signature was valid at the time it was signed – a concept known as Long-Term Validation (LTV).

PAdES is complementary to two other digital signature concepts also developed by ETSI's ESI committee, both widely recognized within the European Union and suited for applications that do not involve human-readable documents. Those are Cryptographic Message Syntax digital signatures (CAdES) and XML digital signatures (XAdES). They both underwent or will undergo testing events where interactive and field proven ETSI testing tools help stakeholders (CAdES Plugtests from 10 June until 11 July 2015, XAdES Plugtests in October 2015).

European Parliament makes eCall mandatory from 2018

- **continued (from page 1)**

A Minimum Set of Data (MSD) of 140 bytes is transmitted as part of the call. This data contains the exact geographic location of the vehicle, the direction of travel, the triggering mode (automatic or manual), the Vehicle Identification Number and other information to enable the emergency response teams to quickly locate and provide medical and other life-saving assistance to the accident victims. An eCall is a normal voice call, which enables the vehicle occupants to provide the emergency services with additional details of the accident if they are able to speak. Should the MSD not be transmitted or received for any reason, or if the PSAP is not equipped with equipment to read the data, the emergency call still proceeds as a normal voice call.

3GPP has specified the eCall service telecommunications requirements, data transmission protocols and network signaling aspects. The in-band modem used to transfer the MSD from the vehicle to the PSAP has also been specified by 3GPP. The Minimum Set of Data (MSD) has been defined by CEN Technical Committee 278. ETSI TC MSG has provided overall guidance and has developed standardized test specifications to enable eCall equipment manufacturers to ensure the interoperability of their products.

Work is ongoing to develop the specifications to make sure they can be implemented on LTE/4G networks, and to find methods of delivering positional information from smart phones with built in navigation systems.

eCall information sources:

https://goo.gl/eWG8aH

http://ec.europa.eu/digital-agenda/en/ecall-time-saved-lives-saved

New ETSI specifications for scenarios for emergency communication in disasters

Disaster situations often require additional emergency communications networks to be set up locally to enable responders (e.g. medical, rescue, care etc.) to coordinate their operations more effectively in the disaster area. To set up these networks efficiently, a standardized basis for estimating the capacity and other characteristics for communications by responders is highly desirable. This basis could then be used by many organizations including satellite network operators, equipment manufacturers and responders for design and development of systems, equipment and applications, not only for voice and data but also multimedia services.

However there are currently no publicly available disaster characteristics that could provide standardized "user" requirements, particularly any based on realistic field activity and which are agnostic to the communications technology and yet provide enough elements to derive more technical requirements.

Hence the task of ETSI's Technical Committee for Satellite Earth Stations and Systems (TC SES) has been to specify "reference scenarios" for emergency telecommunications. These specifications have been prepared by a group of experts and delegates from ETSI, coming from the sectors of both disaster management and ICT.

They cover two different cases:

- a major earthquake in an urban environment specified in the technical specification TS 103 260-1
- a mass transportation accident in a countryside environment (chosen as a train crash) specified in the technical specification TS 103 260-2

For the first scenario emergency responders are likely to be distributed over a large area, and response actions are likely to be diverse (fire-fighting, search and rescue, first aid, emergency sheltering). Satellite communications are capable of replacing disabled infrastructures.

For the second scenario, responders are concentrated in a small area (i.e. a train crash), and responses are more restricted to a few specialties. Satellite communications can provide a communication hub to supplement the minimal existing infrastructures.

These scenarios have been specified to be representative in many respects of such disasters in order to allow their extrapolation to similar events.

The term "reference scenario" encompasses definitions of:

- the event that causes the emergency
- the responses (e.g., search-and-rescue; logistics; first aid; emergency sheltering, etc.), and their key parameters
- the information exchange needed for the responses
- requirements for actors' communication exchange types and dimensioning aids
- a topological model defining how responders are deployed/move.

Alice de Casanove, Chairman of the SatEC working group of TC SES commented: "*We must thank the European Commission and the European Free Trade Association for their support of the industry experts that have completed this work. These specifications are intended to stimulate applications benefitting victims of disasters as well as the satellite industry and encourage the development of better emergency communications.*"

ETSI White Papers:

Latest

ETSI White Paper No. 8

Quantum Safe Cryptography and Security

An introduction, benefits, enablers and challenges

June 2015

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Security for ICT – the Work of ETSI

Each year we update our popular white paper 'Security for ICT – the Work of ETSI'.

This white paper, authored by Charles Brookson and Carmine Rizzo, provides a comprehensive overview of the current state of work in ETSI in all fields related to security. Fully cross-referenced to all of the security specifications published by ETSI, with hyperlinks to enable direct download of each, the white paper has become an essential reference work for all experts in security standardization.

The white paper can be downloaded for free from the ETSI website: www.etsi.org/securitywhitepaper

Quantum Safe Cryptography and Security

An introduction, benefits, enablers and challenges

Developed by members and participants of our Quantum Safe Cryptography Industry Specification Group, this white paper explores the threat to current encryption systems by future quantum computers. This paper is designed to be a practical introduction and reference for those in the ICT community. The primary objective is to help raise awareness of the potential impacts of quantum computing on information security globally.

E-Band and V-Band - Survey on status of worldwide regulation

This white paper, produced by members of our Millimetre Wave Transmission Industry Specification Group, provides an up to date overview of the state of regulation and spectrum allocation of both the V-Band and E-Band. Given the market need to effectively exploit both of these frequency bands, an exhaustive investigation has been carried out among administrations and regulatory bodies to gather allocation status, licensing regime and other relevant data. This white paper presents the results of this investigation.

ETSI hosts successful first ever remote Small Cell LTE Plugfest interoperability test

The Small Cell community saves time and money for product deployment

ETSI and Small Cell Forum organized the first remote Small Cell LTE Plugfest over two weeks, on 13-24 April 2015. This event was supported by the European Commission. From all over the world including Europe, Asia and North America, companies connected their equipment to the remote test infrastructure and tested their solutions from their own labs.

The main features addressed during the test sessions were Closed Subscriber Group (CSG) which allows to reduce the signalling load on access networks, Voice over LTE (VoLTE), Emergency Alerts (CMAS), as well as mobility.

To make remote testing among small cell equipment and core networks possible, ETSI deployed a VPN based secure transport network interconnecting them. On top of it, a flexible LTE network allowed participants to evaluate the interoperability of their solutions with any possible testing partner. Recent enhancements in ETSI's Plugtests™ tool suite have facilitated interaction among companies and ensured consistent reporting of results.

Over 70 reported test sessions and 500 documented test results have been issued over this two week event.

"This fully remote approach - infrastructure, tools, organization - was a real challenge and this is something we aim to apply beyond Small Cell events" says Anthony Wiles, Director of ETSI's Centre for Testing and Interoperability, *"We have already done so for many years with our electronic signature Plugtests but Small Cell was the first proving ground for doing remote testing with a heavily hardware-dependent technology. A major milestone has been reached!"* he adds.

Remote Plugfests will not replace face to face events since they are required to test radio aspects, for instance, but they will help to reduce the number of meetings, improve their efficiency and contribute to a greener world, an issue ETSI has been keen to integrate in its organization and standards making process.

Kreso Bilan, Interoperability Group Chair of Small Cell Forum, believes the work that takes place in the Plugfests is important in accelerating the deployment of small cell networks. *"Conducting the event remotely made it a more convenient and effective exercise for all involved. It allowed our full focus to be on the work with headway being made around Closed Subscriber Group, Local IP Access and Carrier Aggregation."*

TSDSI India signs cooperation agreement with ETSI

On 28 April, the Telecommunications Standards Development Society, India (TSDSI) signed a cooperation agreement with ETSI, strengthening relations after the establishment of a first Letter of Intent to cooperate with ETSI in November 2014. Collaboration between the two standards organizations now happens at the level of the Global Standards Collaboration (GSC) initiative where TSDSI is a full member. GSC fosters cooperation among standards organizations from different regions of the world to facilitate the exchange of information on standards development, build synergies and reduce duplication of work.

Dr. Asok Chatterjee, TSDSI Director General
Luis Jorge Romero, ETSI Director General

This enhanced relationship is all the more important as "Make in India" and "Digital India" are Indian policies, where reinforced collaboration is needed to enable and ensure joint efforts between EU and India market players. TSDSI has also signed agreements with 3GPP and oneM2M partnership projects, of which ETSI is a founding member.

With a leadership and Technical Organization in place, TSDSI is fully operational and has developed its own IPR policy, making sure that the respective IPR Policies of TSDSI and ETSI were aligned. The collaboration between the two standards bodies will facilitate exchange and work on identified common areas such as M2M and IoT, energy efficiency, mobile terminal safety, to name a few. As TSDSI wished to use ETSI standards, recognized as high quality and globally implemented standards, the cooperation agreement grants TSDSI the right to adopt ETSI standards.

ETSI is supported in India by the Seconded European Standardization Expert for India (SESEI) project. This project is established by the European Standards Organizations CEN, CENELEC and ETSI, the European Commission and the European Free Trade Association (EFTA). A seconded standardization expert, Mr. Dinesh Chand Sharma, has been appointed in India to increase the visibility of European standardization and to promote EU/EFTA-India cooperation on standards and related policies and legislations. For more information about SESEI project, please visit www.eustandards.in.

Network Virtualization Forum

Meet ETSI at the 4th IIR Network Virtualization Forum, 15-17 September, Madrid

ETSI's David Boswarthick will be speaking, as will Klaus Martiny and Francisco-Javier Salguero of ETSI's NFV Industry Specification Group.

http://networkvirtualizationeurope.com

Wireless Media Distribution beyond 2020: ETSI, EBU and the way ahead

To provide on-demand TV and reduce costs in the future, content providers and network operators need to work together

The world of broadcast and mobile industries came together on 6 May 2015 at ETSI to discuss the future: 5th Generation of mobile communications, enabling it to distribute broadcast media services to people on the move. Delegates described 5G as a golden opportunity to bring together broadcasters and the mobile industry and to cover their needs for the next twenty years. This event was organized with ETSI's long term partner EBU, the European Broadcasting Union, and gave broadcasters and the mobile industry the opportunity to discuss the specific needs of broadcasting and what features should be introduced into 5G to meet them.

Focusing initially on an analysis of the developing broadcast market and user trends, the workshop went on to discuss the market models of network distribution, before discussing technology advances.

While 80% of TV consumption is still linear today, the proliferation of affordable, large screen mobile devices with the capability to display compelling content is driving users to demand new complementary services. Broadcasters identified key requirements that would need to be built into a future 5G system to enable it to be used to meet this demand. These include supporting free to air distribution, with no gatekeepers, delivering broadcast quality of service throughout the service area, brand visibility, ease of use, robustness in emergencies, large geographic coverage and analytics to support targeted advertising. Currently data caps and tariffs are a limiting factor for outsourced distribution by a mobile network operator. Speakers also compared other models, including transaction-based, ad-funded and subscription, for monetizing TV content. Others identified the trend for network operators to acquire broadcast content providers.

Today's broadcasting networks cannot deliver on-demand services, whilst current mobile networks cannot provide scalable delivery of high-quality video to large numbers of devices. To provide on-demand TV and reduce costs in the future, content providers and network operators need to work together to define cost-effective and spectrum-efficient delivery mechanisms that meet the needs of consumers, content providers and network operators. ETSI and EBU have successfully worked together on standards for broadcasting since 1990 and this experience will be the foundation for future dialogue also involving other parties such as DVB, 3GPP and the NGMN Alliance.

ETSI delivers Radio Access Networks energy efficiency measurement method

ETSI has recently published ETSI Standard ES 203 228 that deals with the definition of metrics and methods to measure the energy efficiency performance of mobile radio access networks. It adopts an approach based on the measurement of such performance on small networks, for feasibility and simplicity purposes. This specification was developed jointly with ITU-T Study Group 5 and in liaison with 3GPP™ and GSMA.

ES 203 228 deals with the radio access part of the mobile network, and more specifically radio base stations, backhauling systems, radio controllers and other infrastructure radio site equipment. The technologies covered include GSM, UMTS and LTE (including LTE-A). The specification helps provide a common reference whenever a test of mobile network energy efficiency is performed over a radio access network. The document includes implementation guidelines, an extrapolation method to extend the applicability of the assessment of energy efficiency to wider networks as well as an "Assessment report", requested as the outcome of the measurements.

ES 203 228 is the first specification providing energy efficiency measurement methods and defining metrics on live mobile networks, facilitating a uniformity of evaluation. The liaison with 3GPP and GSMA and the joint cooperation with ITU-T confirm the need that the sector has for a specification on these issues.

ETSI previously delivered ETSI ES 202 706 dealing with the measurements of the efficiency of Base Stations in testing laboratories.

From our expert in China: Chinese standardization news

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) and the European Standardization Organizations (CEN, CENELEC and ETSI).

Since 2006, there have been two SESEC projects in China, SESEC I (2006-2009) and SESEC II (2009-2012). The project partners worked closely together to implement the third phase of the SESEC project, which builds on the experience that was acquired during the previous phases. In December 2014, SESEC III was officially launched in Beijing, China. Dr. Betty XU was nominated as the SESEC expert to promote EU-China standardization information exchange and EU-China standardization cooperation.

In the following, Dr. Xu gives us an overview of some interesting developments in Chinese standardization.

Made in China 2025

China's State Council unveiled a national plan, called "Made in China 2025" on 8 May 2015. The "Made in China 2025" strategy aims at transforming China into a leading manufacturing power. To fulfil the task, it will focus on nine major projects, including establishing a manufacturing innovation centre, improving intelligent manufacturing, strengthening the industrial base, enforcing green manufacturing and promoting high-end manufacturing innovation. Key sectors comprise new information technology, numerical control tools and robotics, aerospace equipment, and biomedicine.

The Plan draws direct inspiration from Germany's "Industry 4.0" plan. "Made in China 2025", signed by the Chinese Premier Li Keqiang, is the first 10-year action plan. The 10-year plan will be followed by a further two plans.

5G summit in Beijing

Co-organized by the IMT-2020 (5G) promotion association and CCSA (China Communications Standards Association), the third IMT-2020 (5G) Summit took place in May in Beijing, attracting more than 300 experts and representatives. Zhang Feng, General Engineer of the MIIT (Ministry of Industry and Information Technology of the PRC), gave a speech on the Summit and expressed his wish of enhancing international cooperation on 5G, improving R&D and facilitating innovation on this technology. Two deliverables, named White Paper on 5G Wireless Technology Architecture and White Paper on 5G Network Technology Architecture were published during this Summit.

According to the White Paper on 5G Wireless Technology Architecture, 5G will be built on a unified air interface technical framework enabled by novel multiple access, massive MIMO, ultra-dense network and all-spectrum access, and the wireless technology roadmap of 5G will include a new air interface and a 4G evolution air interface. The 5G network is also said to feature a new network architecture and an infrastructure platform built on SDN and NFV technologies.

China Internet Plus strategy

China Internet Plus strategy aims to further promote innovation in traditional industry, by the integration of mobile internet, cloud computing, big data, and Internet of Things with modern manufacturing industry sectors, with an aim to foster a healthy integrated ecosystem of e-commerce, industrial internet and mobile internet and incubate leading businesses from China to explore global markets.

Internet+ is designed as a "new norm" for innovation-driven development in China. It was also pointed out in Premier Li's report that China has set up an investment fund worth 40 Billion RMB to further promote new industry innovation and entrepreneurship under Internet+.

Association Standards: some explanation of association standards from SAC

SAC (Standardization Administration of China) has given some explanation of association standards in China.

The definition of association standards is standards developed by an association, society, chamber of commerce and federation which has legal entity qualification in China. Alliance or consortia standards do not belong to association standards.

Association standards are voluntary standards that are driven by market. National standards, sector (ministry) standards, and local standards are driven by government. Association standards, alliance standards and enterprise standards are driven by market. Association standards can be transferred to national standards, or sector standards. When the association standards are well used in the industry, the sector standard can be abolished.

- Government will establish an association standards information service platform, including the function of updating policy, updating relevant news, interactive consulting, enquiries and complaints.
- It encourages using association standards in local policies. The white name list of association standards that are evaluated by Code of Good Practices on Association Standards will be published on the platform. Association standards can be transferred to national standards or sector standards via national TC or ministry TC. Association standards can be evaluated by an independent third party.
- Association standards will have basic information registered on the platform and will be unified with coding rules. It encourages publishing whole standards on the platform.
- Via the information platform, the public can be informed about association standards.
- The draft guidelines on association standards will be released at the end of year. The two draft national standards on Code of Good Practices on Association Standards and Administrative Measurement and on Association Standards Transferring to National Standards will be released soon.

oneM2M release 1 standards will be transformed into CCSA association standards

A meeting of the Ubiquitous Network Technical Committee was convened in Chongqing in April. The joint conference discussed the state of transformation of the 10 recently released oneM2M Release 1 standards and the specific methods for the transformation. A decision was made in the meeting that the 10 standards would be transformed into CCSA association standards. The general title of the standards, the transformation principles, and the formulation requirements for the standards were also regulated in the meeting.

MIIT issues two regulations on clean production

On May 13, MIIT issued the Regulation on Industrial Clean Production Review and the Regulation on Industrial Clean Production Implementation Effectiveness Assessment. The two regulations mark implementation of the PRC Clean Production Promotion Law and MIIT's Special Action Plans for 2015 Industrial Green Development.

The Review Regulation requires any enterprise that matches any of the following conditions to be subject to a compulsory review:

- Discharges pollutants in excess of the standards specified by the State or local authorities, or exceeds the total controlling indicator for discharge of key pollutants;
- Exceeds the unit product energy-consumption limits, resulting in high energy consumption
- Uses toxic or harmful raw materials for production, or discharges toxic or harmful substances during production

A snapshot of the latest developments in India

India is the world's third largest economy in Gross Domestic Product in PPP (Purchasing Power Parity) terms. In terms of population, India is second in the world, with more than 1.2 billion people, of which nearly two thirds are of working age. With a new Government in place, India looks poised to enter a secular growth phase, with increasing stress on inclusiveness – the greater the proportion of the population that is brought into the financial mainstream, the greater is the scope for growth combined with reduced inequalities – any development economist's dream.

India has taken a technology leap in many areas recognizing the need to align with the developed countries. Taking a cue from the resources available and the opportunities on the horizon, the Government of India has announced key initiatives which will prove to be game changers in the field of ICT, Manufacturing and Skill Development. These government initiatives are adding impetus to projects of national importance such as Digital India or 100 Smart Cities, covering key areas such as smart grid, intelligent transport, Internet of Things and last but not least, the "Make in India" program.

Digital India

Telephone connections in India have crossed the one-billion mark with mobile phones accounting for around 978 million. 5-7 million new connections are added every month. The government, under the National Telecom Policy 2012, has set a target to *"provide affordable and reliable broadband-on-demand by the year 2015 and to achieve 175 million broadband connections by the year 2017 and 600 million by the year 2020 at minimum 2 Mbps (megabit per second) download speed".*

Digital India is an ambitious initiative by the Government of India to integrate the government departments and the people of India. It aims at ensuring that government services are made available to citizens electronically, hence reducing the burden of paperwork. The initiative also includes plans to connect rural areas with high-speed internet networks. Digital India has three core components. These include the creation of digital infrastructure, delivering services digitally and digital literacy. The project is slated for completion by 2019.

Smart Cities

The Government of India announced its decision to develop 100 "Smart Cities" in India with an objective to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' solutions. A total of Rs 98,000 crore (€14 billion) has been approved by the Cabinet for the development of 100 smart cities and the rejuvenation of 500 others. The Prime Minister of India, Mr Narendra Modi, is personally involved in this program, a project that he is strongly supporting.

The Smart Cities mission aims at the development of an entire urban eco-system of cities covering physical, social, economic and institutional infrastructures. The objective is to enable better living and drive economic growth for the benefit of all sections of society. This will be implemented through retrofitting (enhancing infrastructure in already built up areas and adopting smart solutions), redevelopment by demolishing already built up areas with fresh layouts for intensive land use and smart solutions, pan-city projects for the benefit of all citizens like e-governance and appropriate smart solutions. Greenfield projects can be taken up for accommodating people outside existing cities.

Make in India

Make in India is an initiative program of the Government of India to encourage companies to manufacture their products in India, with a view to making India an attractive global manufacturing hub, to help achieve high growth rates and job creation. The aim is that the manufacturing sector's share of GDP rises 60% from the existing 15% to 25%. It was launched by Prime Minister Narendra Modi on 25 September 2014.

The major objective behind the initiative is to focus on 25 sectors of the economy for job creation and skill enhancement. These sectors include automobiles, chemicals, IT, pharmaceuticals, textiles, ports, aviation, leather, tourism and hospitality, wellness, railways, auto components, design manufacturing, renewable energy, mining, bio-technology and electronics. This initiative, economically speaking, targets an increase in GDP growth and tax revenue. In parallel, it also aims at delivering high quality standards and minimizing the impact on the environment. Finally, overall the Government of India hopes to attract capital and technological investment into the country.

About the SESEI Project:

The project to appoint a Seconded European Standardization Expert for India (SESEI) was launched in September 2012, supported by the three European Standards Organizations, CEN, CENELEC and ETSI as well as by the European Commission's Directorate General for the Internal Market, Industry, Entrepreneurship and SMEs (DG GROWTH) and by the European Free Trade Association (EFTA).

It follows from the intent of the EC to establish a "standards attaché" in strategically important regions (as stated in the EC "Action plan for European Standardization") and is a part of CEN, CENELEC and ETSI's strategy on external visibility and promotion of European standardization in the world.

The seconded expert is expected to develop and engage in an EU-India dialogue and cooperation on standards and standards related activities, in support of an increase of trade between India and the EU.

The daily management of the SESEI project is monitored by ETSI who manages the project overall.

More information on the project can be obtained at the SESEI website: www.eustandards.in

2nd Indo-European dialogue on ICT standards & Emerging Technologies, 4 November 2015, New Delhi, India

In view of the success of its first event held in March 2014 in India, ETSI will organize the 2nd edition of the "Indo-European dialogue on ICT standards & Emerging Technologies", on 4 November 2015 in New Delhi. ETSI will once again bring together technical experts from its community and Indian stakeholders to share and learn from each other. Strengthening the existing dialogue further in key ICT standardization areas and by hearing specific requirements and specifications from the Indian perspective, will help bridge the two regions even more and create a true long-lasting Indo-European dialogue.

The event is targeting high level presence from the Indian government, EU delegation, local industry representatives and stakeholders. The ETSI delegation will be led by the Director General of ETSI.

ETSI EVENTS CALENDAR - What's on?
2015

7 September	Webinar: The Radio Equipment Directive is coming in June 2016 – will you be ready?	ETSI BrightTalk channel
15-17 September	Network Virtualization Forum	Madrid, ES
21-23 September	Packet Microwave & Mobile Backhaul 2015	London, UK
29-30 September	Mobile Edge Computing Congress 2015	London, UK
5-6 October	Quantum Safe Cryptography ETSI workshop	Seoul, KR
5-9 October	Intelligent Transport Systems World Congress	Bordeaux, FR
7-8 October	Network Virtualization & SDN Asia	Singapore, SG
12-16 October	SDN and Openflow World Congress	Düsseldorf, DE
20-22 October	ETSI UCAAT conference	Sophia Antipolis, FR
21-22 October	ETSI STQ workshop	Vienna, AT
4 November	ETSI workshop: 53 shades of RE-D: how to place compliant radio equipment on the European market	Sophia Antipolis, FR
19 November	ETSI summit on standardization and open source	Sophia Antipolis, FR
1-3 December	Carrier Network Virtualization	Palo Alto, USA
9-11 December	ETSI M2M workshop	Sophia Antipolis, FR

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For further information, please visit: www.etsi.org

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