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ETSI World Class Standards

ETSI Newsletter • February 2014

Welcome to the World of Standards

Welcome to this February 2014 edition of 'The Standard'. In this issue we take a look at some of the technologies we can expect to see in the years to come.

In November last year we organized the ETSI Future Mobile Summit: A 2020 Vision for 5G. As part of our celebration of 15 years of 3GPP, this event explored the latest thinking related to 5G mobile networks. 5G systems are not expected to be on the market before 2020. In the meantime, 3GPP continues to improve LTE, and in this issue the chairman of 3GPP's Radio Access Networks committee describes some of the developments underway.

In the area of core networks, we see how our Network Functions Virtualisation (NFV) ISG has delivered its first five specifications in only 9 months of activity. This group is attracting a lot of attention and further confirms that ETSI can quickly deliver the standards that industry needs. Our Cloud Standards Coordination activity was completed in December with the delivery of their final report, highlighting that cloud standardization is much more focused than expected.

We welcome a new vice-chairman of our General Assembly, Mr. Peter Statev of UEAPME. The chair of our eHealth project talks about our upcoming workshop on telemedicine. We hear how many of our standardization projects combine to contribute to the reduction of carbon emissions, and we see how our Seconded European Standardization Expert in India is progressing.

Finally, we have a large selection of workshops and events planned over the next six months, which I encourage you to take advantage of. Please book your place quickly, as the most popular events fill fast.

I hope that you enjoy this issue and remain yours sincerely,

Luis Jorge Romero, Director General, ETSI

'The Standard' provides an information platform for ETSI Members, to inform you of the latest developments - both within our technical committees and the Secretariat - and offers a space for our Members to communicate with each other.

ETSI delivers report on Cloud Computing Standards

The final report from ETSI's Cloud Standards Coordination initiative was made public on 11 December in Brussels. The report was delivered at an event jointly organized between ETSI and the European Commission attended by over 100 experts from the cloud community.

The overall objective of the Cloud Standards Coordination initiative led by ETSI was to identify a detailed map of the standards required to support a series of policy objectives defined by the European Commission. The initiative attracted cloud industry players, public authorities, user associations and more than 20 standards setting organizations to work collectively on this objective.

"I am pleased that ETSI launched and steered the Cloud Standards Coordination (CSC) initiative in a fully transparent and open way for all stakeholders. Today's announcement gives a lot of hope as our European Cloud Computing Strategy aims to create 2.5 million new European jobs and boost EU GDP by EUR 160 billion by 2020," says Neelie Kroes, European Commissioner for the Digital Agenda.

The report provides:

- A definition of roles in cloud computing;
- The collection and classification of over 100 cloud computing use cases;
- A list of around 20 relevant organizations in cloud computing Standardization and a selection of around 150 associated documents, Standards & Specifications as well as Reports & White Papers produced by these organizations;
- A classification of activities that need to be undertaken by Cloud Service Customers or Cloud Service Providers over the whole Cloud Service Life-Cycle;
- A mapping of the selected cloud computing documents (in particular Standards & Specifications) on these activities.

Finally, the report offers a set of recommendations on the way forward. The analysis shows that cloud standardization is much more focused than anticipated and that standards are maturing in some areas.

"Cloud computing has gained momentum and credibility, thus generating new offers and demands for more complex use cases and services," says Luis Jorge Romero, Director General at ETSI. *"In this perspective, standardization is seen as a strong enabler for both investors and customers and can help increase security, ensure interoperability, data portability and reversibility".*

The report is available on the homepage of ETSI website.

Meet ETSI at ITS Europe

from 16 to 19 June in Helsinki
Come and visit us on booth G11-G12!
www.itsineurope.com/its10/

ETSI publishes first specifications for Network Functions Virtualisation

Guidance for the industry on future direction of NFV technology

ETSI has published the first five specifications on Network Functions Virtualisation (NFV). This is a major milestone towards the use of NFV to simplify the roll-out of new network services, reduce deployment and operational costs and encourage innovation.

These documents clearly identify an agreed framework and terminology for NFV which will help the industry to channel its efforts towards fully interoperable NFV solutions. This in turn will make it easier for network operators and NFV solutions providers to work together and will facilitate global economies of scale.

The IT and Network industries are collaborating in ETSI's Industry Specification Group for Network Functions Virtualisation (NFV ISG) to achieve a consistent approach and common architecture for the hardware and software infrastructure needed to support virtualised network functions. Early NFV deployments are already underway and are expected to accelerate during 2014-15. These new specifications have been produced in less than 10 months to satisfy the high industry demand – NFV ISG only began work in January 2013.

> **The work has attracted broad industry support and participation has risen rapidly to over 150 companies of all sizes from all over the world**

NFV ISG was initiated by the world's leading telecoms network operators. The work has attracted broad industry support and participation has risen rapidly to over 150 companies of all sizes from all over the world, including network operators, telecommunication equipment vendors, IT vendors and technology providers. Like all ETSI standards, these NFV specifications have been agreed by a consensus of all those involved.

The five published documents (which are publicly available via www.etsi.org/nfv) include four ETSI Group Specifications (GSs) designed to align understanding about NFV across the industry. They cover NFV use cases, requirements, the architectural framework, and terminology. The fifth GS defines a framework for co-ordinating and promoting public demonstrations of Proof of Concept (PoC) platforms illustrating key aspects of NFV. Its objective is to encourage the development of an open ecosystem by integrating components from different players.

Work is continuing in NFV ISG to develop further guidance to industry, and more detailed specifications are scheduled for 2014. In addition, to avoid the duplication of effort and to minimise fragmentation amongst multiple standards development organisations, NFV ISG is undertaking a gap analysis to identify what additional work needs to be done, and which bodies are best placed to do it.

Dr Prodip Sen of Verizon Communications, who is Chairman of ETSI's NFV ISG, said:

"These publications provide important guidance to the industry on the requirements that should be the basis for future development of NFV technology. ETSI's openness to all players means that we have been able to involve everyone and reach a broad consensus. The documents, and the PoC framework in particular, send a strong message that we want to encourage multi-party interoperability and the growth of an open ecosystem.

"We have been especially concerned not to impede progress with a protracted standardisation effort in NFV ISG. As a result, these initial specifications have been developed in record time – under 10 months of intensive work. This is a major achievement for the industry. We hope to maintain this momentum and produce additional guidance soon.

"We challenge the industry to work with us to get NFV and related technologies into the mainstream of the networking industry, and to make them the mainstay of service provider networks."

NFV ISG is open to non-members of ETSI. For information on how to participate, please contact NFVsupport@etsi.org.

Network Functions Virtualisation (NFV)

Network Functions Virtualisation first came to prominence in a white paper from a group of network operators published in October 2012 to coincide with the announcement of the formation of NFV ISG (http://portal.etsi.org/NFV/NFV_White_Paper.pdf).

In this paper the authors described how network operators' networks are populated with many different pieces of proprietary hardware. To launch a new network service often requires yet another type of hardware. Finding the space and power to accommodate these various boxes is becoming increasingly difficult, and the costs and level of skills needed are rising. In addition, hardware-based appliances rapidly reach the end of their life, often before achieving a return on investment. All this is inhibiting innovation.

NFV aims to address these problems by leveraging standard IT Virtualisation technology to consolidate many network equipment types onto industry standard high volume servers, switches and storage, which could be located in datacentres, network nodes or end-user premises. NFV is applicable to a wide variety of networking functions in both fixed and mobile networks.

NFV could provide significant benefits for both network operators and users:

- Reduced operator CAPEX and OPEX through reduced equipment costs and reduced power consumption
- Reduced time-to-market to deploy new network services
- Improved return on investment from new services
- Greater flexibility to scale up, scale down or evolve services
- Openness to the virtual appliance market and pure software entrants
- Opportunities to trial and deploy new innovative services at lower risk

Network Functions Virtualisation is highly complementary to Software Defined Networking (SDN). These topics are mutually beneficial but are not dependent on each other. Network Functions can be virtualised and deployed without an SDN being required and vice-versa. NFV ISG is co-operating with other bodies working on SDN.

Introducing the **Networks** Cluster

The way we communicate changes as technology evolves. Nowadays consumers expect services to be easily accessible and available everywhere, on whatever devices they are using. Technically, this means networks must converge. Our network activities provide a comprehensive set of standards for networks that meet today's – and tomorrow's – needs.

Now that the technologies for Next Generation Networks (NGN) are stable, the industry is considering the future trends which may drive the development of telecommunications networks. New services need to be taken into account; these include machine-to-machine communications, the growth of user-generated video and other content, the increasing use of mobile internet access, social networking, advanced device capabilities, and the ever-growing numbers of connected devices. With the proliferation of such demanding services, networks will be required to have the capability to manage complexity, openness to new applications and external service providers, and the need for ubiquitous connectivity.

End-to-end Network Services

Previously, standards for communication networks have been developed in isolation, despite the fact that, when deployed, these networks aim to provide end-to-end services to users and therefore need to implement all the necessary technologies and related standards together. In addition, gaps in standards have been identified which hamper the smooth implementation of these end-to-end networks. In our End-to-End Network Architectures Project (EP E2NA) we are developing a global end-to-end system view of ICT networks, focusing on the fixed segment and on interconnection to other networks and including our long-term vision of the evolution of networks.

EP E2NA work is complemented by TC NTECH (Technical Committee for Network Technologies) which provides detailed technical specifications for network solutions fitting the overall architecture defined by EP E2NA.

ETSI's Vision of a Connected World

ETSI's cluster concept aims to provide a simplified, yet comprehensive, introduction to our activities in ICT standardization. Clusters facilitate access to ETSI's diverse work enabling the identification of areas of interest based on business relevance or application domain rather than purely on technical work areas.

Each cluster represents a major component of a global ICT architecture and encapsulates the work of a number of Technical Committees (TCs) and associated Working Groups (WGs) that share a common technological scope and vision.

Network Access

Network access specifications are the responsibility of TC ATTM (Access, Terminals, Transmission and Multiplexing) and TC CABLE. TC ATTM produces specifications for xDSL. Its work also includes specification of optical components, especially optical fibre and passive components, and optical access networks, and contributes to point-to-point and point-to-multipoint radio systems and infrastructures used for the fixed service, covering all equipment aspects, including antenna parameters.

TC CABLE produces specifications on integrated broadband cable and television networks, including DOCSIS (Data Over Cable Service Interface Specification) with HFC (hybrid fibre coaxial).

Network Management

Our Industry Specification Group on Autonomic network engineering for the self-managing Future Internet (ISG AFI) has been working at the forefront of evolved technologies related to network management, looking at scenarios, use cases and requirements for the autonomic/self-managing future Internet, as well as a set of different reference architectures. This group has recently transferred its work to TC NTECH to ensure a wider involvement in its activities.

Ontology for IP traffic measurement is also being defined by our Measurement Ontology for IP traffic (MOI) Industry Specification Group. The ontology will allow a unified context for information exchange and thus better service level agreements.

New Technologies

Our new Industry Specification Group on Network Functions Virtualisation (ISG NFV) is working to leverage standard IT virtualisation technology to consolidate many network equipment types onto industry standard, high volume servers, switches and storage. This new approach to defining and deploying telecommunications functionality in networks is seen as complementary to the related topic of Software Defined Networking (SDN). Having commenced work in January 2013, NFV have put together an ambitious work programme. The group has attracted strong participation and the first five specifications have already been published.

Cloud

Our Cloud Standards Coordination initiative has delivered its final report at the end of 2013. Launched in December 2012 in response to a request from the European Commission (EC), this initiative has identified a detailed map of the standards available and those required in areas such as security, interoperability, data portability and reversibility.

Our Cloud Technical Committee looks at the convergence between IT and telecommunications, in particular ubiquitous network access to scalable computing and storage resources. In addition the committee provides support to ETSI's Plugtests™ activities on interoperability of cloud services. The committee is currently studying the impact of cloud computing as a mitigating technology to reduce greenhouse gas (GHG) emissions in other (non-ICT) sectors.

SCOPE
Access, control and services in next generation networks

VISION
Fulfilling the promise of unlimited bandwidth

ETSI signs agreement with newly founded Indian standardization organization

ETSI is pleased to announce the signature of a partnership agreement with the Telecommunications Standards Development Society, India (TSDSI). This Letter of Intent is a joint initiative with four long-standing partners of ETSI, the Association of Radio Industries and Businesses (ARIB) and the Telecommunication Technology Committee (TTC), both of Japan, the Korean Telecommunications Technology Association (TTA) and the China Communications Standards Association (CCSA).

TSDSI is the newly founded recognized organization for telecommunications standards development in India. It will represent Indian stakeholders in all international telecommunications standardization organizations. TSDSI's mission is to facilitate a coordinated development of standards for telecoms especially suited to the Indian market.

"I am very proud to be present at the launch of TSDSI and to sign this agreement," says Luis Jorge Romero, Director General of ETSI. *"India has the second largest telecoms market by mobile connections and unique subscribers in the world. TSDSI can help India take its place at the forefront of global telecom standardization."*

This letter of intent will enable ARIB, CCSA, ETSI, TTA and TTC to exchange information on their work with TSDSI, increasing coordination and encouraging the development of complementary 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 the SESEI project, please visit:

www.eustandards.in

The SESEI project completes one year

The Seconded European Standardization Expert in India (SESEI) project is now reaching the end of its first year of execution. The SESEI expert, Mr. Dinesh Sharma, is now capitalizing on his extensive network built up over the past year to progress on topics of importance to ETSI and the other project partners, CEN, CENELEC, the European Commission and EFTA. With his assistance, ETSI is now reaching out to the Indian standardization community and policy makers. Quite recently the ETSI SmartM2M technical committee responded to an open consultation by the Indian government's Department of Telecommunications on their planned M2M policy rollout in India. This was an opportunity to present ETSI's extensive work in this area. ETSI's M2M standards were also highlighted during the India Telecom 2013 conference by Mr. Joachim Koss, ETSI Board Member. His presence at this event was coordinated by Mr. Sharma.

Similarly, with regard to the allocation of spectrum for cordless telecommunication systems in India, ETSI, with the support of the SESEI expert, was given the opportunity to present to the Indian government its work on Digital Enhanced Cordless Telecommunications (DECT™), the ETSI standard for short-range cordless communications. ETSI was pleased to provide all necessary support for the smooth induction of DECT in India and offered its assistance if required. Finally, in the domain of energy efficiency for telecommunications, ETSI's technical committee for Environmental Engineering (EE) continues to share, via the SESEI expert, its work with the Telecommunication Engineering Center (TEC), presently implementing the Telecom Regulatory Authority of India (TRAI) recommendations on "Approach toward Green Telecommunications".

New partnership with local standards organization

In parallel, through the SESEI project, ETSI is continuously monitoring the establishment of the new Indian standards development organization, the Telecommunications Standards Development Society, India (TSDSI), which has now been recognized by India's Department of Telecommunications under the Ministry of Communication & IT. The ETSI Director-General, Mr. Luis Jorge Romero, was among the distinguished guests invited to the launch ceremony of TSDSI in November 2013. TSDSI is now close to being fully operational as India's sole telecommunication standards organization.

Gaining from the presence of the SESEI expert on the ground, ETSI has been able to formalize relations and build new partnerships. As an example, the ETSI General Assembly in November warmly welcomed the signature of a new partnership with the Cellular Operators Association of India (COAI - www.coai.in). This new link will serve to promote ETSI-India cooperation on standards and policy related issues. Concretely, it will open a route to bring ETSI's standardization achievements and current work in the mobile area directly to the Indian mobile network operators. Benefiting from Mr. Sharma's presence in Europe, the General Assembly also had the opportunity to receive a presentation of the SESEI Project and its achievements to date.

2014 will be a challenging year for the project as it will have to capitalize on its first year of intensive promotional activity, strengthening the many links already established and ensuring follow up on several activities kicked off in 2013. To help meet these objectives, the SESEI Project now has a new website (www.eustandards.in) where all relevant information on the project and deliverables from the expert can be accessed. Other promotional tools include a quarterly newsletter for European and Indian communities delivered by the expert, available to all, from the website.

Upcoming conference

Entering in the second year of its three year life-span, in 2014 the SESEI project will continue to help to promote ETSI's work and ongoing activities in India. To that effect ETSI has decided, in coordination with the SESEI expert, to organize a one and a half day event in New Delhi on 13 - 14 March 2014. This will start by a conference with the theme "Indo-European dialogue on ICT standards & Emerging Technologies", on March 13th and a focused half day Workshop on "Security and Energy Efficiency" will take place on March 14th. The conference will provide stakeholders with an update of present and future ETSI standardization activities and will trigger dialogue with Indian stakeholders to assess where potential standardization gaps can be bridged and where new venues for collaboration can be established. The agenda will cover technologies and standardization activities being developed in the area of Machine to Machine communication (M2M), Intelligent Transport Systems (ITS), improving radio spectrum efficiency, Network Functions Virtualization (NFV), future mobile technologies (5G), security and energy efficiency aspects of technology. The half day workshop on the second day will be a focused effort on bringing together key stakeholders to debate and discuss best practices in the areas of security and energy efficiency. The event will target high level presence from the Indian government, EU delegation, local industry representatives and local stakeholders. The ETSI delegation will be led by the ETSI Director-General.

For more information on the event, including registration, please visit ETSI's website.

ETSI elects Peter Statev (UEAPME) as new General Assembly Vice Chairman

ETSI members have elected Mr. Peter Statev as the Vice Chairman of the ETSI General Assembly representing the user members of ETSI. Mr. Statev was nominated by UEAPME, the European Association of Craft, Small and Medium-Sized Enterprises, a new member of ETSI.

Mr. Peter Statev is co-founder and chairman of the managing board of the Bulgarian Cluster for Information and Communication Technologies as well as co-founder of the Bulgarian Cluster for Microelectronics and Embedded Systems and co-founder and chairman of the Bulgarian Association of Business Clusters. Prior to that, he was chairman of Smartcom Bulgaria AD – a leading telecom system integrator and developer and the most innovative Bulgarian enterprise according to the Sixth Bulgarian National Innovation Forum 2010. Mr. Statev graduated with a master's degree in telecommunications from the Technical University in Sofia, Bulgaria.

Already a successful Bulgarian ICT entrepreneur, Mr. Statev stated: *"My duty will be to use my knowledge, experience and professional network in order to represent the interest of all European SMEs and ICT entrepreneurs in ETSI, as well as continue the positive dialogue with the large industry players. Interoperability and standards are necessary to create the conditions for European SMEs to grow."*

Mr. Peter Statev is also a member of PIN-SME, the first European association of the ICT sector focused on representing the interests of SMEs.

New partnership agreements

At the 62nd General Assembly in November 2013, ETSI signed or renewed partnership agreements with 5 organizations from around the world.

COIT: Enrique Funke, Member of the board of COIT with Luis Jorge Romero, ETSI Director General

Cellular Operators Association of India (COAI): Dinesh Chand Sharma, SESEI, Dirk Weiler, Chairman of ETSI GA, Rajan S.Mathews, COAI Director General with Luis Jorge Romero, ETSI Director General

OMA: Isabelle Valet-Harper, OMA External Liaison WG chairman with Luis Jorge Romero, ETSI Director General

ULE Alliance: Dirk Weiler, Chairman of ETSI GA and Avi Barel, Director, Business Development, ULE with Luis Jorge Romero, ETSI Director General

NGMN: Dr. Peter Meissner, NGMN Operating Officer and Member of the Board with Luis Jorge Romero, ETSI Director General

5G mobile system requirements discussed at ETSI Future Mobile Summit

The ETSI Future Mobile Summit held on 21 November 2013 in Mandelieu, near Cannes, France, gathered high level experts from the research and academic community, industry leaders and the European Commission to discuss the next generation of mobile technology which will be developed to succeed the 4G systems currently being deployed.

To support the development of 5G technologies, the European Commission has committed €700 million to leverage industry investment in R&D between 2014 and 2020 and has announced the 5G Public Private Partnership programme to accelerate and structure research and innovation for interoperable 5G networks.

5G has yet to be defined, but some factors which will shape the development of 5G systems are already known. The fifth generation of mobile systems will have to achieve ubiquitous, very-high-speed connectivity at reduced cost, and we are unlikely to see true fifth generation systems on the market before 2020. But 5G needs to offer more than a faster 4G system. Data traffic will continue to increase dramatically over time, as will the number of devices connected to mobile networks, with probes, sensors, actuators, meters and machines contributing to this surge.

3GPP 15th anniversary

The ETSI Future Mobile Summit was also a tribute to the work of the 3GPP standardization group. ETSI celebrated the 15th anniversary of this project in the beautiful Mandelieu La Napoule castle, on the eve of the summit. The 3rd Generation Partnership Project (3GPP) is a joint initiative of six telecommunications standards development organizations, including ETSI as a founding partner, to pool their mobile system standardization activities, from GSM up to the current LTE Advanced, more widely known as 4G.

From a user's perspective, 5G networks will need to be more available, dependable and reliable, offering increased speed, better throughput, decreased latency and improved device autonomy… at an affordable cost for users. The perception of infinite capacity, the dawn of a tactile internet with augmented reality and cloud services were also topics discussed during this summit.

Presentations, pictures and videos of the summit are available here: www.etsi.org/news-events/past-events/682-2013-etsi-future-mobile-summit

ETSI organizes Global Standards Collaboration

The series of Global Standards Collaboration (GSC) meetings provides a strategic opportunity for dialogue between senior officials from national, regional and international standards bodies and the ITU. The initiative to create GSC was the result of concern that multi-national cross-forum bodies may not be sufficiently focused on global issues (such as mobile wireless aspects) at a time of increasingly rapid evolution in this sector.

The GSC is formed of ten regional standards organizations coming from the USA, Canada, Japan, China, Korea and Europe, and the ITU. They meet approximately once a year for 3 days at one of the members' sites. The ETSI delegation includes the Director General, the Chairman of the General Assembly, the Chairman of the Board and technical body officials.

Topics for discussion cover international cooperation on a broad range of subjects. These typically include mobile communication systems, next generation networks, emergency communications, security, lawful interception and identity management, intelligent transportation systems, ICT and the environment, smart grids, cloud services, ICT accessibility, wireless charging systems, home networking and machine-to-machine communications.

ETSI is hosting the next GSC meeting at its headquarters in Sophia Antipolis during July 2014, where we expect to welcome around 100 delegates over 3 days.

New history of mobile standardization published

A new book has been published and made available for free detailing the technological and organizational steps taken during the development of GSM™, UMTS™ and LTE™ from 1982 to 2012, at ETSI and 3GPP™.

The authors of this book, Mr Friedhelm Hillebrand, Mr Karl Heinz Rosenbrock and Mr Hans Hauser, have been key actors in each step of the development of these technologies. In particular Mr Hillebrand was chairman of ETSI's Special Mobile Group technical committee from 1996 to 2000, and Mr Rosenbrock served as ETSI's Director (later Director General) from 1990 until 2006. They have kindly offered this book as a free download and have offered it to ETSI and to 3GPP in celebration of ETSI's 25th anniversary and 3GPP's 15th anniversary, both celebrated last year.

The book is available as a free download at this link:
www.etsi.org/news-events/news/710-2013-11-new-ebook-published-and-made-available

3GPP RAN: Release 12 and beyond

3GPP RAN (Radio Access Networks) has started a new innovation cycle which will be shaping next generation cellular systems. The work spans a variety of new technology areas, which are briefly described in this article by Dino Flore, Chairman of 3GPP RAN.

LTE: capacity and cell-edge performance improvements

In order to meet the growing mobile data demand, 3GPP is looking at a variety of technologies that will improve network capacity and cell edge performance of LTE networks. The key focus here is on network hyper-densification, as it is generally agreed that this approach can deliver significant capacity gains.

3GPP started working on Small Cells (low-power nodes) in Release 8, with focus on residential or enterprise use for a Closed Subscriber Group of users. But with Release 12 it is taking the use of Small Cells and network densification to a whole new level in order to achieve the desired capacity gains. This includes the development of a number of radio and protocol solutions that are aimed at improving spectral efficiency and operation when the density of small cells increases.

To improve spectral efficiency a higher-order modulation scheme is being added to the downlink operation (i.e. 256 QAM), while Small Cells discovery mechanisms are being studied allowing the network to efficiently switch on/off cells in order to maximize its capacity. Another key feature is Dual

Connectivity allowing terminals to connect to two cells simultaneously. This for instance could be used to anchor connections to macro cells while boosting datarate via Small Cells. For LTE TDD (Time Division Duplexing) networks, robust interference management techniques are being looked at for the case when neighbor LTE TDD cells have different uplink/downlink resource allocations to better adapt to varying traffic conditions in different cells.
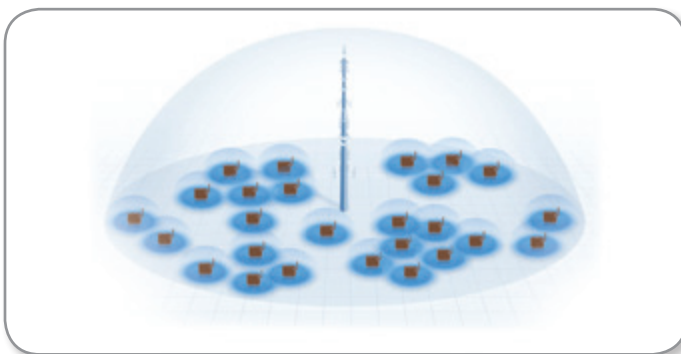

Figure 1: hyper-dense networks

While essential for LTE TDD networks, synchronization has become increasingly important for LTE FDD (Frequency Division Duplexing networks) as well in order to implement some of the advanced interference management and multi-point coordination schemes developed in Rel-10 and Rel-11 (namely eICIC, Enhanced inter-cell interference coordination and CoMP, Coordinated Multi-Point). Synchronization can be quite challenging for Small Cells due to their location and non-ideal backhaul,
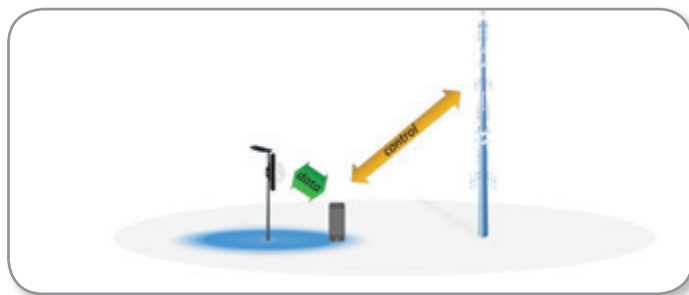
Figure 2: example of Dual Connectivity

and operators may not rely on traditional synchronization schemes such as GPS and backhaul mechanisms. To address this issue over-the-air synchronization schemes are being studied.

Finally, as hyper-dense networks will pose new challenges in terms of mobility management and network planning, 3GPP is looking at mechanisms to optimize mobility and to automate network planning and optimization for Small Cells.

To further enhance the spectral efficiency and cell edge performance of LTE networks, 3GPP is looking at enhancements of MIMO (Multiple-Input, Multiple-Output), CoMP and advanced interference suppression mechanisms standardized in previous releases. A 3D channel modeling study is ongoing to enable future work on terminal-specific Elevation Beamforming and Full-Dimension MIMO (MIMO systems with large number of antennas, e.g. 64 x 4, which will become relevant with the use of higher frequencies in the future). CoMP enhancements are being discussed for the case when cells are connected via a non-ideal backhaul, which is particularly relevant when Small Cells are employed in multi-point coordination schemes. Finally, the group is evaluating advanced interference suppression techniques at the terminal, including support of interference suppression on the data channel, with and without network assistance.

LTE: making more spectrum available at the terminal

Operator demand for more spectrum aggregation remains quite high, primarily to be able to fully utilize their often fragmented spectrum holdings and deliver higher data rates to the users. This has led to some advancements of the Carrier Aggregation (CA) technology: while the group is finalizing the RF requirements specification of 2 downlink / 1 uplink CA combinations, new work is being planned on 2 downlink / 2 uplink as well as 3 downlink / 1 uplink CA combinations.
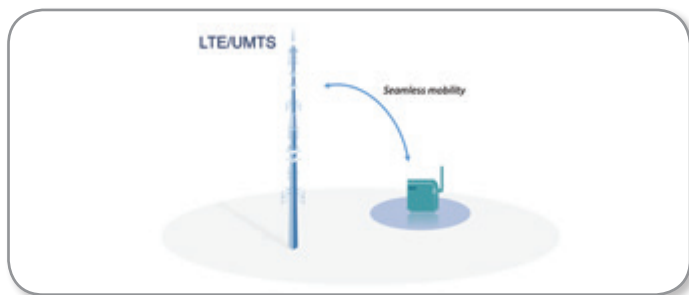

Figure 3: LTE/UMTS radio interworking

As many operators around the world own paired (FDD) and unpaired (TDD) chunks of spectrum, it should not come as a surprise that 3GPP has started working on a framework that will allow operators to aggregate FDD and TDD carriers.

More and more 3GPP operators are using unlicensed spectrum for traffic offloading, and this motivated the ongoing evaluation of radio solutions for steering terminals between LTE/UMTS and WiFi. The goal here is to improve inter-working between the two systems in terms of mobility and load balancing capabilities.

LTE: new service enablers

One important area of work is on solutions optimizing LTE operation for low datarate, delay tolerant, Machine-Type Communications (MTC). A number of radio solutions are being considered in order to reduce modem cost of MTC devices, including a new low datarate User Equipment (UE) category, 1-receive antenna operation, narrowband data channel operation and half duplex operation. Receiver, repetition and bundling techniques are

instead being considered to extend the coverage of control and data channels. MTC signaling enhancements are also being discussed in order to optimize power consumption and reduce signaling overhead. This includes the introduction of a new power-saving state for MTC devices as well as the introduction of assistance information about the terminal and its traffic pattern, to help RAN nodes to configure connections accordingly.

Another feature being developed for the LTE system is Device-to-Device (D2D) communication, which will enable a number of new Public Safety and consumer use cases and business opportunities. In particular 3GPP is designing solutions that will allow terminals to discover and communicate with each other under network supervision, and in some cases even without network supervision as for some Public Safety use cases where terminals will be outside network coverage.

Work is ongoing on Group Communication, which together with D2D is the other key enabler of many Public Safety use cases. Here the goal is to evaluate the suitability of the LTE radio interface for Group Communication.
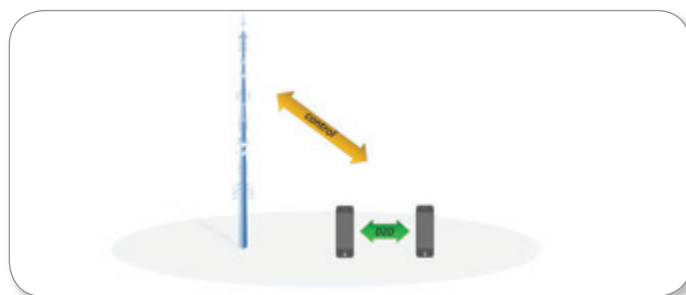

Figure 4: device-to-device

New eMBMS (evolved Multimedia Broadcast Multicast Service)-related measurements will be defined so that they can be used by operators to optimize the quality of MBMS services being delivered. The new measurements will be collected using the MDT (Minimization of Drive Tests) framework standardized in Rel-10.

UMTS evolution

The UMTS system is also being evolved with a variety of new features. The main focus is on improving the system capacity and user-experience of next generation networks. Like for LTE, one of the key technology areas being discussed is the support of heterogeneous networks, with particular focus on solutions that address mobility and interference issues in case of network densification.

In the past few years, HSPA (High Speed Packet Access) networks have experienced a considerable increase in number of users and traffic, both in downlink and uplink. While in recent releases a variety of techniques have been standardized to improve the downlink performance of HSPA networks, 3GPP is now working on uplink enhancements that improve capacity and coverage of uplink operation. This includes overhead reduction, datarate boosting, enhancements to access control and optimized Transmission Time Interval (TTI) switching.

Dedicated channel (DCH) remains the main over-the-air transport option for Circuit-Switched (CS) services in UMTS networks. This motivated the work on DCH enhancements such as removal of pilot overhead and support of Early Frame Termination. These enhancements can significantly improve dedicated channel capacity when supporting CS voice services, something particularly suitable for emerging markets.

Carrier Aggregation advancements are also being planned for UMTS. In particular, one novelty for UMTS is the RF requirements definition of a first Supplemental Downlink CA combination, which will allow operators to employ one TDD carrier as a supplemental downlink carrier for FDD operation.

Another interesting feature being evaluated is Scalable UMTS, which enables UMTS operation in channel bandwidths smaller than 5 MHz, e.g. 2.5 MHz. The feature can be useful for operators that own fragmented chunks of spectrum and to facilitate re-farming of GSM spectrum to UMTS.

In this article we provided a brief overview of the radio technology enhancements being developed by 3GPP for next generation LTE and UMTS networks. These technologies will help address the explosive mobile data growth as well as enable new services, thus meeting the evolving demand of cellular operators and their customers.
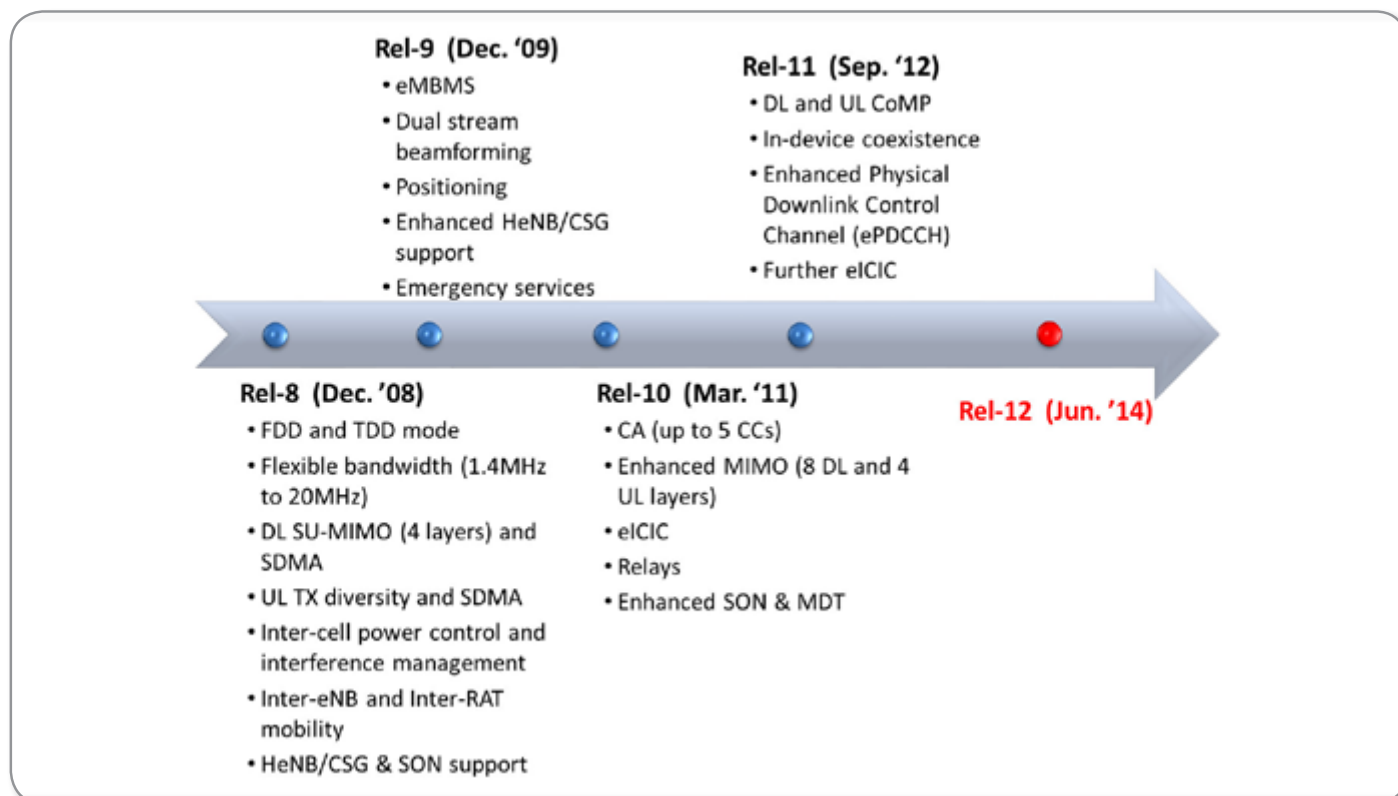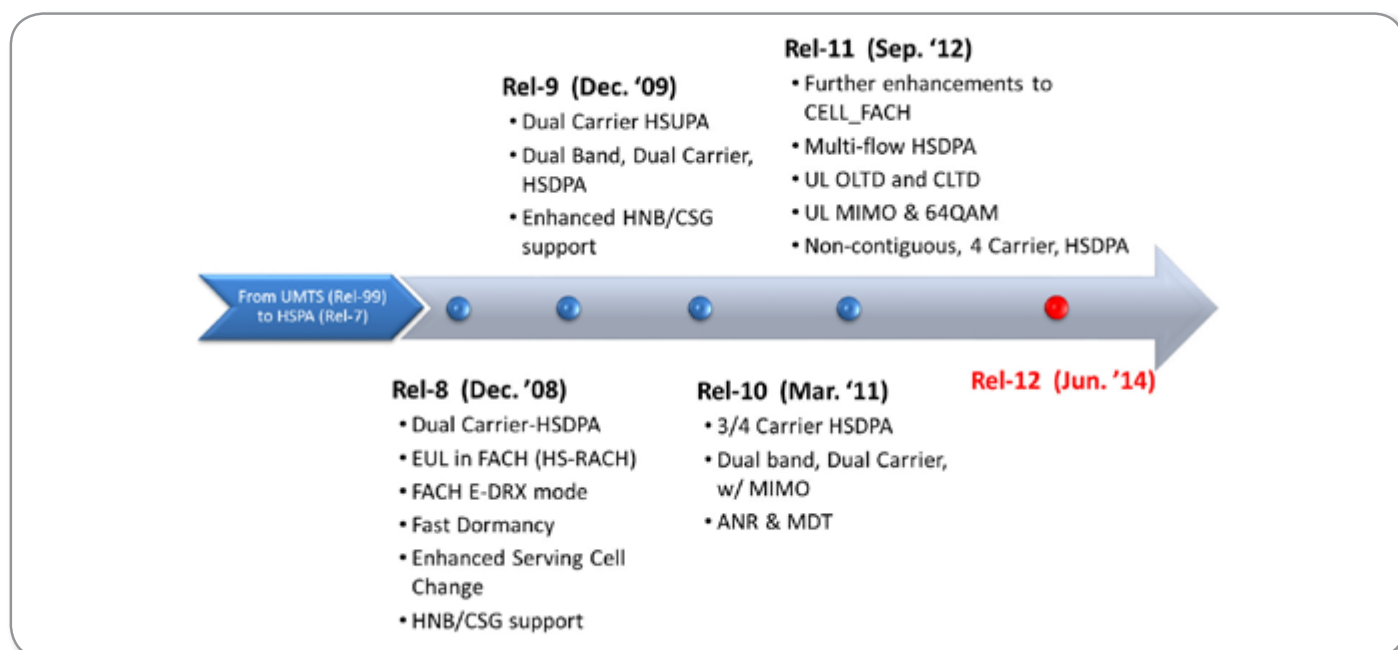
LTE/UMTS evolution – a brief history (BACKGROUND)

Rel-9 (Dec. '09)
- eMBMS
- Dual stream beamforming
- Positioning
- Enhanced HeNB/CSG support
- Emergency services

Rel-11 (Sep. '12)
- DL and UL CoMP
- In-device coexistence
- Enhanced Physical Downlink Control Channel (ePDCCH)
- Further eICIC

Rel-8 (Dec. '08)
- FDD and TDD mode
- Flexible bandwidth (1.4MHz to 20MHz)
- DL SU-MIMO (4 layers) and SDMA
- UL TX diversity and SDMA
- Inter-cell power control and interference management
- Inter-eNB and Inter-RAT mobility
- HeNB/CSG & SON support

Rel-10 (Mar. '11)
- CA (up to 5 CCs)
- Enhanced MIMO (8 DL and 4 UL layers)
- eICIC
- Relays
- Enhanced SON & MDT

Rel-12 (Jun. '14)

Figure 5: LTE evolution

Rel-9 (Dec. '09)
- Dual Carrier HSUPA
- Dual Band, Dual Carrier, HSDPA
- Enhanced HNB/CSG support

Rel-11 (Sep. '12)
- Further enhancements to CELL_FACH
- Multi-flow HSDPA
- UL OLTD and CLTD
- UL MIMO & 64QAM
- Non-contiguous, 4 Carrier, HSDPA

From UMTS (Rel-99) to HSPA (Rel-7)

Rel-8 (Dec. '08)
- Dual Carrier-HSDPA
- EUL in FACH (HS-RACH)
- FACH E-DRX mode
- Fast Dormancy
- Enhanced Serving Cell Change
- HNB/CSG support

Rel-10 (Mar. '11)
- 3/4 Carrier HSDPA
- Dual band, Dual Carrier, w/ MIMO
- ANR & MDT

Rel-12 (Jun. '14)

Figure 6: UMTS/HSPA evolution

Dino Flore
Chairman of 3GPP RAN

ETSI WORKSHOP ON **HUMAN** FACTORS

2 - 3 JUNE 2014, SOPHIA ANTIPOLIS (FR)

Open Letter to Members

The very word 'eHealth' is subject to debate. Its meaning unclear, its purpose fuzzy and yet you will find it now in every important document concerning the future provision of health services in Europe and abroad. Some will quote critical sources, 'eHealth has failed to realize its potential.' Others excitedly point to a dazzling future when eHealth will provide state of the art health care to people in far-flung villages and inner city centres, from the isolation of the Arctic tundra to the high density populations of the world's capital cities.

There are good reasons for the apparent delay in rollout of eHealth. Successful implementation of eHealth was perceived as one of the 'building blocks' of the Digital Agenda for Europe. But eHealth can only prosper where the Digital Agenda has already been implemented. There can be no 'snail mail' application! eHealth requires low cost, high capacity bandwidth to supply top quality, secure transmission of data.

There is still much to be done and in particular we need standards to aid the development of new products and bring them to market. At present there is a serious lack of interoperability. It is hard to build an eHealth 'virtual' clinic without it.

ETSI has a long tradition of partnership and cooperation to achieve European standards with world-wide application. We are now bringing this competence to the discussion of strategic issues concerning the development of standards to promote eHealth, with a workshop focusing on telemedicine.

As chair of the ETSI eHealth project, I cordially invite you to attend a workshop on Telemedicine on 6-7 May 2014 at the ETSI headquarters in Sophia Antipolis, France. This will be special in that it will be the first conference to be held in the newly rebuilt amphitheatre. We will also enjoy the opportunity to hold live demonstrations in the foyer of ETSI. This is a moment to reveal your latest products for telemedicine and eHealth and we expect to demonstrate exciting new developments from around the world: from the USA and Russia and Japan, as well as from Europe.

This Workshop will explore current moves in:

1. Roll-out of telemedicine services in Europe and across the world

2. Development of standards and specifications for telemedicine needed for:

- confidential and secure electronic transmission of medical data from individual measuring devices
- medical data transmission quality
- interoperability between medical devices

3. Telemedicine use cases

Please note that the workshop and demonstrations are all free and we welcome non-members as well as all from ETSI. This workshop will aim to stretch the boundaries of the existing eHealth discussions and to explore how we can 'think outside the box' to improve our health provision, so please come with your problems as well as your solutions! For more information on the workshop please visit www.etsi.org/ehealthworkshop

I look forward to seeing you at Sophia Antipolis in May!

Suno Wood
Chair of ETSI EP eHEALTH

ETSI eHealth workshop on Telemedicine

The ETSI eHealth workshop on Telemedicine will take place at
ETSI, Sophia Antipolis (FR) on 6-7 May 2014.
Please register at www.etsi.org/ehealthworkshop

ETSI showcases benefits of test automation for industry productivity

The ETSI User Conference on Advanced Automated Testing (UCAAT), in Paris, from October 22 to 24, was jointly organized by ETSI – The European Telecommunications Standards Institute, Smartesting and ALL4TEC. Dedicated to advanced test automation, the conference focused on integrating model-based testing into the testing ecosystem. The event brought together companies and research bodies from industries as diverse as telecommunications, IT (including banking, pharmaceutical, and entertainment sectors), automotive, railway, defence, industrial automation, energy, software and gaming, and coming from the US, South America, Europe and India. The IT sector showed the largest growth of interest in the event in terms of presentation and participation.

"UCAAT was an excellent showcase for the variety and maturity of those technologies ."

"As test process automation has proven to increase productivity and product quality, the latest developments in testing technologies pave the way for cheaper, faster and more efficient testing in industrial development processes," says Tibor Csöndes, UCAAT Programme Chair. *"UCAAT was an excellent showcase for the variety and maturity of those technologies".*

Conference attendees had the unique opportunity to share their experience and have a flavour of the latest trends in model-based testing as well as test automation with TTCN-3. Exhibitors also had the opportunity to demonstrate their products and tools on their booths. The conference programme included tutorials and business cases showing large scale applications and innovative approaches, as well as a barcamp and lightning poster introductions. Topics covered included cloud, agile testing, embedded systems, TTCN-3 test frameworks and applications, standardization and safety critical systems.

Organized by ETSI Technical Committee Methods for Testing and Specification (TC MTS) and attracting over 200 participants, UCAAT 2013 was the largest and most diverse ETSI user conference related to testing to date, confirming that test process automation is now an essential part of industrial development. Bringing together test practitioners from many different testing domains was no doubt one of the biggest achievements of the conference. ETSI will use this synergy to start to build a new community on advanced automated testing.

UCAAT 2014 will take place from September 16 to 18, 2014 in Munich. More information is available at http://ucaat.etsi.org/2014/

ETSI receives prestigious Chinese delegation

On November 7th 2013, ETSI welcomed a delegation from the Ministry of Industry and Information Technology (MIIT) of the People's Republic of China, including two standards organizations, the National Information Technology Standardization committee (NITS) and China Electronics Standardization Institute (CESI).
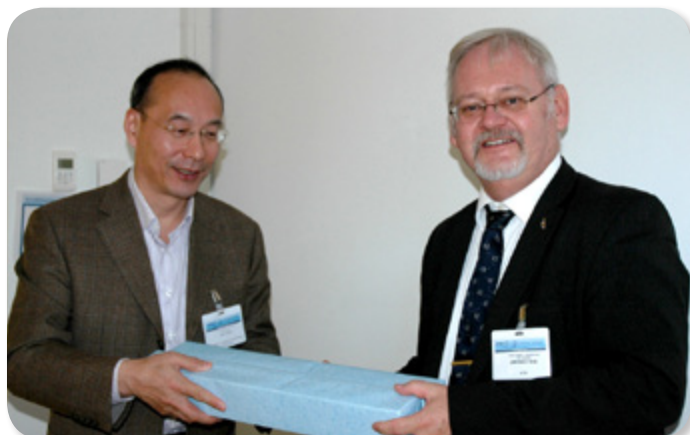
Left: Mr. Guo Jianbing, Deputy Director-General of the department of Software and Information Service, MIIT. Right: Mr. Jorgen Friis, ETSI CSO

Certificate of Appreciation from IEEE Standards Association

The IEEE Standards Association has awarded ETSI their Certificate of Appreciation. This certificate, received in October 2013, comes in recognition of ETSI's outstanding contributions to the development of IEEE Standard 1609.2TM-2013, which were a by-product of the development of TC ITS test specification for the ETSI Trust and Privacy Management profile of IEEE Standard 1609.2TM-2013. IEEE stated: *"The thoroughness, rigour and fresh perspective that the work brought to the review of 1609.2 for purposes of defining the tests was very useful and resulted in some significant improvements to IEEE Standard 1609.2TM-2013 late in the process".*

TC ITS participants have recognized the importance of having standardized test specifications available to ITS device manufacturers, in order to ensure the highest level of interoperability of ITS devices The development of these test specifications is managed by ETSI, in particular by Mr. Sebastian Müller of the Centre for Testing and Interoperability (CTI). Sebastian managed a task force (STF452) of 8 testing experts drawn from ETSI member companies. This is another successful example of ETSI's STF mechanism which accelerates the standardization process in areas of strategic importance and in response to urgent market needs.

Upcoming ETSI event: UCAAT 16-18 September

ETSI, ALL4TEC and German Testing Night are jointly organizing UCAAT, the ETSI User Conference on Advanced Automated Testing, the international conference dedicated to test automation. This conference will take place on 16-18 September 2014 in Munich, Germany.

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 telecoms, banking, IT services, automotive, robotics, software and defence a chance to meet and share their practical experiences & lessons learned.

For more information, please visit http://ucaat.etsi.org/2014/

Workshop on energy efficiency confirms ETSI's involvement in sustainable development

ETSI's Workshop on Environmental Impact Assessment and Energy Efficiency, 7-8 October 2013, in Athens, Greece, emphasized how to evaluate and reduce the environmental impact of Information and Communication Technologies (ICT). Studies show that increased deployment of ICT can help reduce harmful emissions and energy consumption in other industries. ETSI Technical Committees are developing standards and solutions for both of these scenarios.

The workshop brought together prominent delegates from industry, research bodies, other standards organizations and government agencies. The presentations and exchanges reflected on the large scope of ongoing activities within ETSI, including the Environmental Engineering (EE) Technical Committee work, and future developments aimed at improving energy efficiency and environmental impact of ICT networks, equipment and services.

Several ETSI Industry Specification Groups are also involved in our cluster of activities for Better Living with ICT covering fixed broadband and mobile networks, data centres, as well as in-home devices such as broadband modems.

The workshop was also the opportunity for the technical experts to identify research methodologies used for energy efficiency and environmental impact as well as overlaps and harmonization opportunities in standardization.

The workshop was hosted by the Greek Research & Technology Network (GRNET) and supported by the ECONET project, a European Commission funded research project under the Seventh Framework Programme (FP7).

Presentations are available at:
www.etsi.org/news-events/past-events/668-2013-eeworkshop.

ETSI's work on Mitigation Technologies: how ETSI is helping to reduce carbon emissions

The three pillars of the ICT sector response to climate change are first to improve the energy efficiency of the ICT sector itself, then to use ICT to reduce Greenhouse Gas (GHG) emissions in other sectors, and at last but not least to use ICT to improve the ability of countries and communities to adapt to climate change. The main focus of this article is on mitigating technologies and what ETSI is doing through its standards programme to enable these.

A mitigating technology is a technology that is deployed in another sector and leads either directly or indirectly (as a by-product of its main function) to a reduction of GHG emissions in that sector, normally through the reduction of energy consumed by these sectors but also through reductions in the use of non-renewable resources. ICT itself is responsible for around 2% of global emissions, but other sectors are responsible for much higher emissions as shown in Figure 1. Some of the biggest emitters are the energy, road transport, and household and services sectors. Together these emit over 60% of the total and, if ICT could be used to reduce energy consumption by just 10% in each of these sectors, the overall impact would be huge. ETSI standards will contribute to this goal in these and many other sectors.
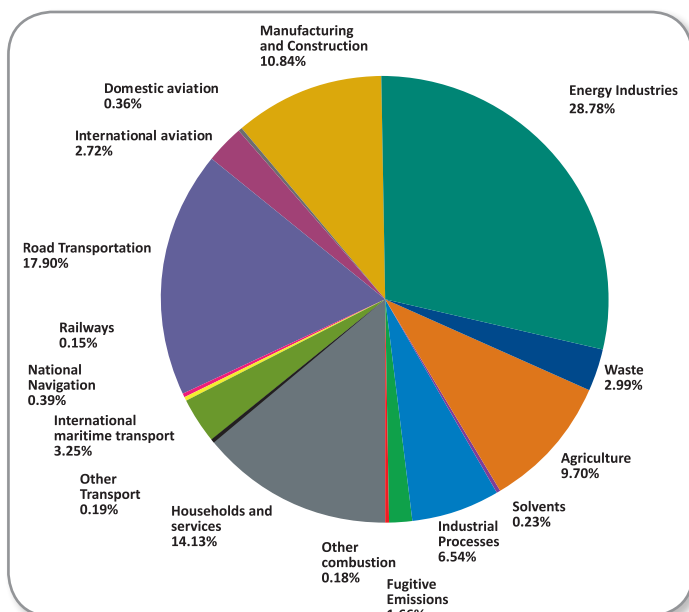
ETSI Technical Bodies that are contributing to emission reductions in other sectors include:

CLOUD

The introduction of Cloud services will reduce emissions in the ICT sector by allowing many out-of-date and redundant local servers on customers' premises to be removed. It will also have a mitigating effect enabling reduced emissions in other sectors by allowing more efficient collection and monitoring of information. The combination of Cloud and M2M will be especially powerful for this. ETSI has defined a roadmap for the new standards required for future Cloud services and applications.

DECT (Digital Enhanced Cordless Telecommunications)

New DECT Ultra Low Energy (ULE) standards being developed by ETSI will reduce the energy consumption of DECT equipment to make it more suitable for new home applications where devices such as sensors, alarms and utility meters need to have a long (over 10 year) battery life. The availability of low energy DECT for such applications could have a mitigating effect on energy consumption in the home if used in an M2M context in conjunction with a suitable energy management system.

eHealth

Work being carried out in EP eHealth and TC SmartBAN (Smart Body Area Networks) should reduce carbon emissions in the healthcare sector by enabling easier remote diagnosis of conditions and illnesses, thereby reducing the need for travel by medical staff and patients. It may also in future reduce the need for centralized hospital facilities.

ITS (Intelligent Transport Systems)

ITS will reduce energy consumption in the transport sector through the use of ICT to provide new mechanisms such as Vehicle to Vehicle and Vehicle to Roadside communication. This could enable vehicles to foresee and avoid collisions, avoid congestion and navigate the quickest route to their destination making use of up-to-the-minute traffic reports, and identify the nearest available parking slot - all of which will minimize carbon emissions. It will also enable vehicle sharing and facilitate multimodal transport.

M2M (Machine-to-Machine)

An M2M network will enable the collection of data from many different heterogeneous sensor networks. An M2M network could, for example, enable optimization of energy consumption in different application areas: e.g. smart homes and smart street lighting. It could also enable the optimization of electricity grids and reduce the size of the infrastructure

Figure 1: GHG Emissions from EU-27 Sectors [1] .

Manufacturing and Construction 10.84%
Domestic aviation 0.36%
International aviation 2.72%
Road Transportation 17.90%
Railways 0.15%
National Navigation 0.39%
International maritime transport 3.25%
Other Transport 0.19%
Households and services 14.13%
Other combustion 0.18%
Fugitive Emissions 1.66%
Industrial Processes 6.54%
Solvents 0.23%
Agriculture 9.70%
Waste 2.99%
Energy Industries 28.78%

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required through better use of resources. Work on M2M is being carried out in the oneM2M Partnership Project and in TC Smart M2M.

Smart Grids

Work is also continuing in ETSI in response to the EC Smart Grid Mandate (M/490) which will allow energy consumption to be reduced through the optimization of resources in electricity networks. A Smart Grid Architecture model has been completed that will enable interoperability between equipment. The impact of Smart Grids on the M2M platform has also been identified.

Smart Metering

ETSI continues to undertake work in response to the EC Mandate on Smart Metering (M/441). This will enable smart utility meters (e.g. for water, gas, electricity and heat) to be deployed more cost effectively and will make users more aware of their actual consumption and allow them to reduce this accordingly.

NTECH (Network Technology)

This has incorporated the previous ISG (Industry Specification Group) AFI (Autonomic network engineering for the self-managing Future Internet) and is developing standards for automatic management and control of networks which will enable them to configure themselves and adapt to new requirements. This will reduce network resources required and save energy.

In addition to these mainstream Technical Bodies, ETSI has the following ISGs which are also working on technologies that will facilitate the reduction of energy consumption in other sectors:

ISG NFV (Network Functions Virtualisation)

This is developing standards for the virtualization of network functions that will allow consolidation of network resources based on usage / time-of-day etc. Network equipment can then be shut down to achieve power savings at times of low usage, and also save energy by reducing the amount of cooling required.

ISG LTN (Low Throughput Networks)

This is standardizing a new ultra narrowband radio technology for very low data rates for 'ultra long autonomy' devices. These will be essential for the deployment of efficient and low energy M2M networks in the future.

ISG SMT (Surface Mount Technique)

This is standardizing low power communication modules that can be embedded into host devices which could enable a number of new network applications that would not otherwise be possible due to, for example, short battery life.

The deployment of these technologies will come together to enable the development of Smart Cities and Communities, where everything is interconnected (Figure 2). It will be increasingly important to integrate sensors and applications for Smart Cities on a common platform so that the output from many different systems and devices can be used at a city or community level. This will allow even greater energy savings to be made (e.g. on smart street lighting) as well as making improvements in the quality of life of citizens (e.g. by making it easier to find a parking space).

Smart applications in a smart city will include smart logistics, smart parcel tracking, smart delivery of healthcare and smart traffic routing. Smart Appliances will play a particularly important role. These will work with smart grids to enable "Plug-and-Play" integration of appliances/devices from different manufacturers. Interoperability between heterogeneous systems will enable holistic energy management with "standardized" communication between appliances, utilities and home energy systems.

This year, the ETSI Board has kicked off a strategic initiative to pull together the various strands contributing to 'sustainability', including energy efficiency and mitigation, in order to make the enabling effects of ICTs more explicit and visible. Under initiatives such as these, ETSI will continue to develop standards which will have an even bigger impact on mitigation in the future and so will play its full part in reducing carbon emissions, in Europe and globally.
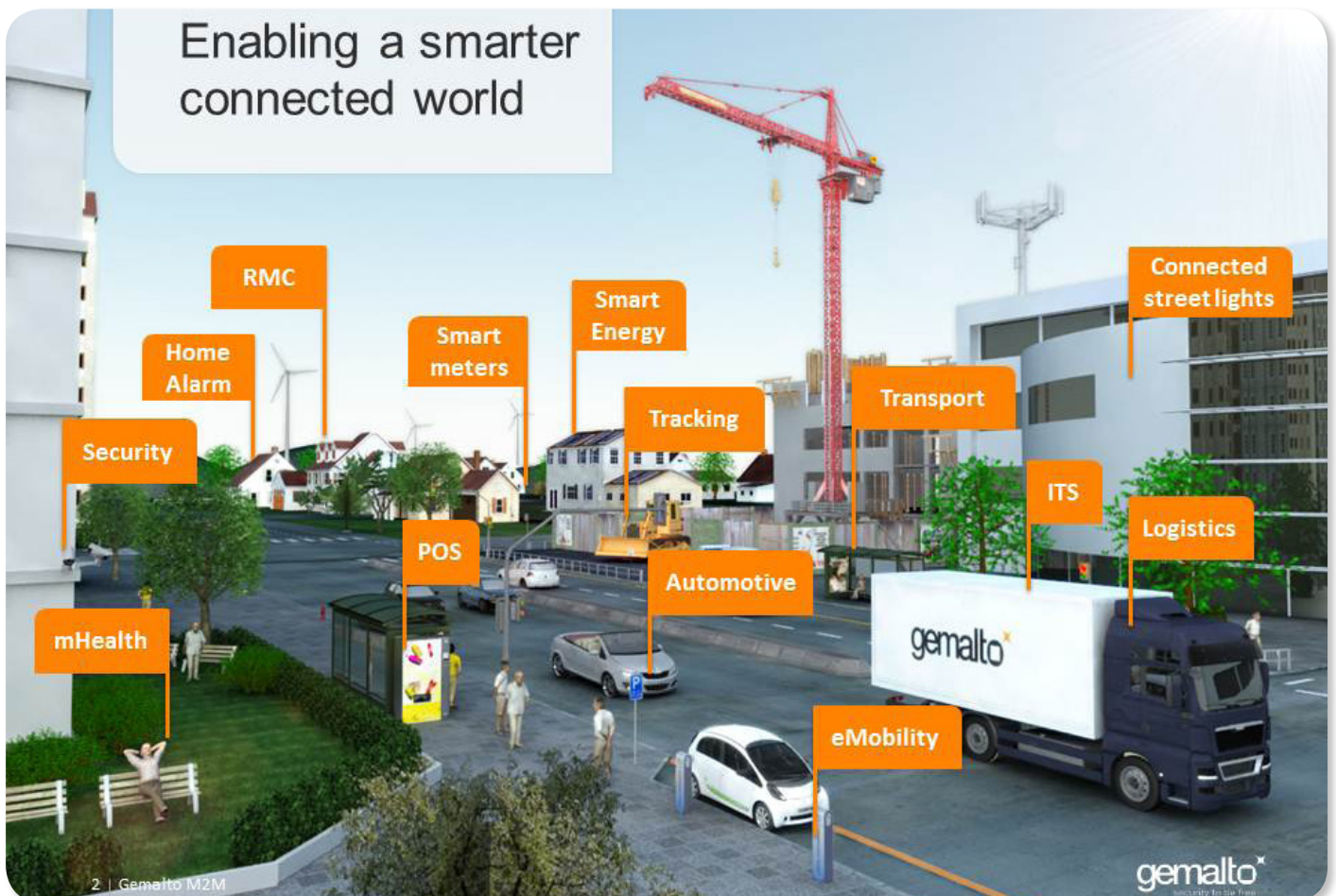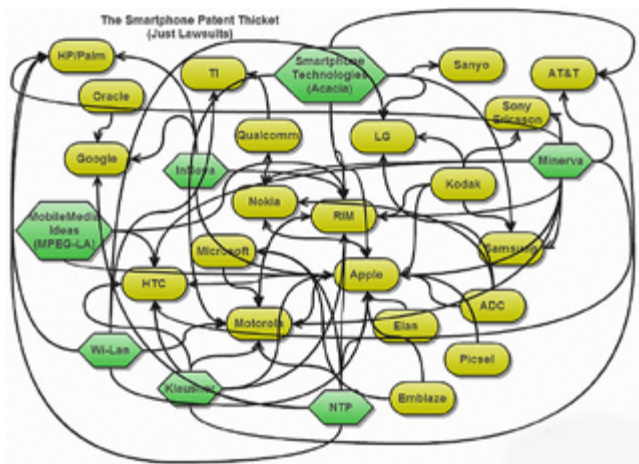
The Green Agenda Team

Figure 2: In a Smart City everything is connected

Arbitration in IPR disputes

The Smartphone Patent Thicket
(Just Lawsuits)

Some of you are probably familiar with this picture, but for those wondering what it is all about, it is an illustration of the litigation engaged during these past years in the smart phones war between some of the most important players in the ICT world.

In most Standards Setting Organizations ("SSO") during the development of a standard, members must inform the organization of their patents that are essential to such standard.

An essential patent or a standard essential patent ("SEP") is a patent claiming an invention that must be used to comply with a technical specification of a standard. In other words if an implementer wants to have a product compliant with a standard, either he has the legal right by the owner of the SEP to use the invention (generally by virtue of a license agreement) or he is infringing such invention and may face the consequences.

ETSI's IPR Policy in Annex 6 of the ETSI Rules of Procedure states that ''each member shall use its reasonable endeavors...to inform ETSI of essential IPRs in a timely fashion.''

Then, upon ETSI's request or on its own initiative, the SEP holder may choose to make a Fair Reasonable and Non Discriminatory ("FRAND") licensing commitment to ETSI.

Even if a FRAND commitment is, at face value, an offer to license to all who use the SEP in their standards-compatible product, the precise royalty terms are typically not specified in advance and need to be negotiated.

But what then does FRAND mean? The short answer is no one knows but that's not a showstopper as it allows flexibility in the discussions and the intended purpose with FRAND is often reached. ETSI, like all other SSOs, has not defined any of the terms of FRAND as these are part of the commercial discussions between SEP holders and potential licensees when they are negotiating license agreements.

Despite the inherent ambiguity and despite the current patent war, FRAND licensing usually works. However due to changes in the business models of ICT players and the complexity of current products, discussions between parties have become more complex and difficult.

When negotiating parties cannot reach agreement on the terms and conditions of a FRAND license agreement (or a cross license agreement) and more generally on the royalty rate, the dispute ends up on a judge's desk.

Huge amounts of legal fees and weeks of court testimony and/or investigations are necessary to settle such disputes. Judges have limited resources and not a lot of extensive experience in the matter. US and European regulators are more and more called upon to investigate claims of anti-competitive behavior of SEP holders due to so called

unfair, unreasonable and discriminatory terms of their commitment or their licensing models. Decisions of courts in various jurisdictions may give some very different definitions of FRAND or some very debatable judgments. For example a French court does not have the power to set the price of royalties, when a US court may decide to fix a FRAND rate.

Several different voices have suggested that SSOs might want to explore setting guidelines on what constitutes a FRAND rate or devising arbitration requirements to reduce the cost of lack of clarity in FRAND commitments and to have some coherence in the different decisions.

During 2013 the ETSI legal department worked closely with the World Intellectual Property Organization ("WIPO") Arbitration and Mediation Center, providing all necessary explanation on the standardization work performed by ETSI and the underlying factors of disputes on the determination of FRAND royalties between SEP holders and potential licensees.

ETSI and WIPO recognize that there is a need for time- and cost-efficient arbitration mechanisms to resolve disputes that involve SEPs in ETSI standards, including the determination of licensing terms based on ETSI policy commitments given on FRAND terms. They further recognize that such mechanisms require specific legal and technical expertise and knowledge from neutral and expert witnesses.

ETSI collaborated with WIPO, exploring opportunities to develop tailored adaptations to the standard WIPO arbitration framework and procedures, taking into account the specific needs and consequences of standardization and especially standardization in ETSI. ETSI also shared information pertaining to relevant events and statistical data of mutual interest for the elaboration of such procedures. ETSI can provide further help in identifying specialized neutral or expert witnesses for potential appointment in WIPO arbitration procedures relating to disputes involving patents in standards.

By the end of 2013 WIPO has made available tailored model submission agreements that parties may use in order to refer a dispute concerning the adjudication of FRAND terms to WIPO (Expedited) Arbitration.

The WIPO model submission agreements seek to ensure a cost- and time-effective FRAND adjudication and have been developed further to a series of consultations conducted by WIPO with leading patent law, standardization and arbitration experts from a number of different jurisdictions over the world. WIPO also took into account comments made by some members and the Secretariat of ETSI.

The WIPO model submission agreements offer two FRAND arbitration options: arbitration for FRAND disputes and expedited arbitration for FRAND disputes for urgent matters. The model submission agreements for FRAND disputes can be found on the WIPO website: www.wipo.int/amc/en/center/specific-sectors/ict/frand/annex1/

The next issue was to debate if arbitration should be mandatory or voluntary. Only two SSOs to date have included mandatory arbitration in their IPR policies: VITA and the DVB project; but this was decided before the current patent wars erupted. At this stage it clearly appears that within ETSI arbitration should only be on a voluntary basis, primarily because parties can always voluntarily agree to arbitrate whether an IPR policy mentions the option or not and secondly because if such arbitration was to be mandatory the ETSI directives should be modified and the outcome would be very uncertain.

The choice of working with WIPO was dictated for several simple reasons.

First of all the limited resources in the ETSI legal department implied the need to work with only one organization at a time. Secondly WIPO is a UN organization having already an alternative dispute resolution center and having some experience in the patent field.

For the future ETSI will continue to cooperate with WIPO to improve the procedures but will also collaborate with any other organization interested in benefiting from our experience.

What is arbitration?

Arbitration is a technique for the resolution of disputes outside the courts where the parties to a dispute refer it to one or more persons (the "arbitrators", "arbiters" or "arbitral tribunal"), by whose decision (the "award") they agree to be bound.

Both litigation and arbitration have pros and cons and, typically, there is no "one size fits all" model which will automatically tell which method will be better in any given case.

The advantages of arbitration can be summarized as follows:

- when the subject matter of the dispute is highly technical, arbitrators with an appropriate degree of expertise can be appointed (one cannot choose the judge in litigation)

- arbitration is often faster than litigation in court

- arbitration can be cheaper and more flexible for businesses

- arbitral proceedings and an arbitral award are generally non-public and can be made confidential

- because of the provisions of the New York Convention of 1958, arbitration awards are generally easier to enforce in other nations than court judgments

- in most legal systems, there are very limited avenues for appeal of an arbitral award

However, some of the disadvantages of arbitration can be that:

- if the arbitration is mandatory and binding, the parties waive their rights to access the courts and have a judge or jury decide the case

- there are very limited avenues for appeal, which means that an erroneous decision cannot be easily overturned

- although usually thought to be speedier, when there are multiple arbitrators on the panel, juggling their schedules for hearing dates in long cases can lead to delays

- the rule of applicable law is not necessarily binding on the arbitrators, although they cannot disregard the law

- discovery may be more limited in arbitration

- unlike court judgments, arbitration awards themselves are not directly enforceable. A party seeking to enforce an arbitration award must resort to judicial remedies

- although grounds for attacking an arbitration award in court are limited, efforts to confirm the award can be fiercely fought, thus necessitating huge legal expenses that negate the perceived economic incentive to arbitrate the dispute in the first place.

Christian Loyau
ETSI Legal Director

Security for ICT – the Work of ETSI

Each year, in time for our annual Security Workshop (held at Sophia Antipolis on 15 and 16 January 2014), we update our popular white paper 'Security for ICT – the Work of ETSI'

Latest ETSI White Paper
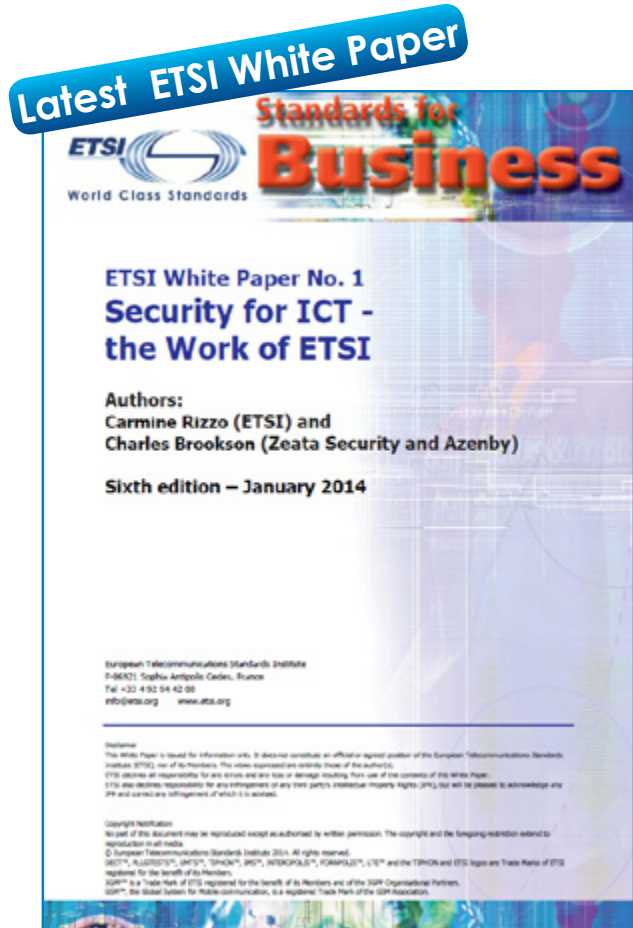
This white paper, authored by Charles Brookson and Carmine Rizzo, provides a comprehensive overview of the current state of work in ETSI in all fields related to security. Fully cross-referenced to all of the security specifications published by ETSI, with hyperlinks to enable direct download of each, 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

ETSI EVENTS CALENDAR - What's on?
2014

24-27 February	Mobile World Congress 2014	Barcelona, ES
7-9 March	CoAP 4 Plugtests	London, UK
13-14 March	Indo-European dialogue on ICT standards and emerging technologies	New Delhi, IN
24 March-11 April	ASiC Remote Plugtests	(remote event)
7 April	Network Security 2014	Berlin, DE
6-7 May	ETSI eHealth Workshop on Telemedecine	Sophia Antipolis, FR
2-3 June	ETSI Workshop on Human Factors and Accessibility	Sophia Antipolis, FR
4-6 June	European Forum on Electronic Signature	Międzyzdroje, PL
16-19 June	ITS European Congress	Helsinki, FI
21-24 July	Global Standard Coordination	Sophia Antipolis, FR
16-18 September	ETSI UCAAT	Munich, DE
03 December	RRS results presentation event	Sophia Antipolis, FR

Please visit the events section of our website for further details

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Please contact newsletter@etsi.org

About ETSI ETSI produces globally-applicable standards for Information and Communication Technologies (ICT), including fixed, mobile, radio, converged, aeronautical, broadcast and internet technologies and is officially recognized by the European Union as a European Standards Organization. ETSI is an independent, not-for-profit association with more than 700 member companies and organizations, drawn from over 60 countries across 5 continents worldwide, who determine the work programme and participate directly in its work.

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

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