THE STANDARD

ETSI World Class Standards

MADE IN EUROPE FOR GLOBAL USE

ETSI Newsletter • February 2011

Welcome to the World of Standards

This new edition of 'The Standard' features an 'open letter to Members' by the newly appointed Chairman of ETSI's Human Factors committee, Matthias Schneider, and I encourage you to follow his example to communicate with the ETSI Community. You will also read about 3GPP's achievements in delivering Long Term Evolution through LTE and LTE Advanced Technology, and learn about the strategic challenges that I foresee for the future of the Institute.

'The Standard' is introducing an ETSI cluster in every edition and this issue looks at the 'Transportation' cluster in more detail. Also you will find the first contribution of a series of 'success stories in validation and testing' in which Jean-Yves Monfort, TC STQ Chairman, and Hans Gierlich TC STQ Vice-Chairman, outline ETSI's approach to testing the quality of terminal equipment with the aim of enhancing end-to-end speech performance.

I look forward to seeing many of you in person at Mobile World Congress in Barcelona in February and at the next ETSI General Assembly in Cannes in April.

Walter Weigel,
Director General, ETSI

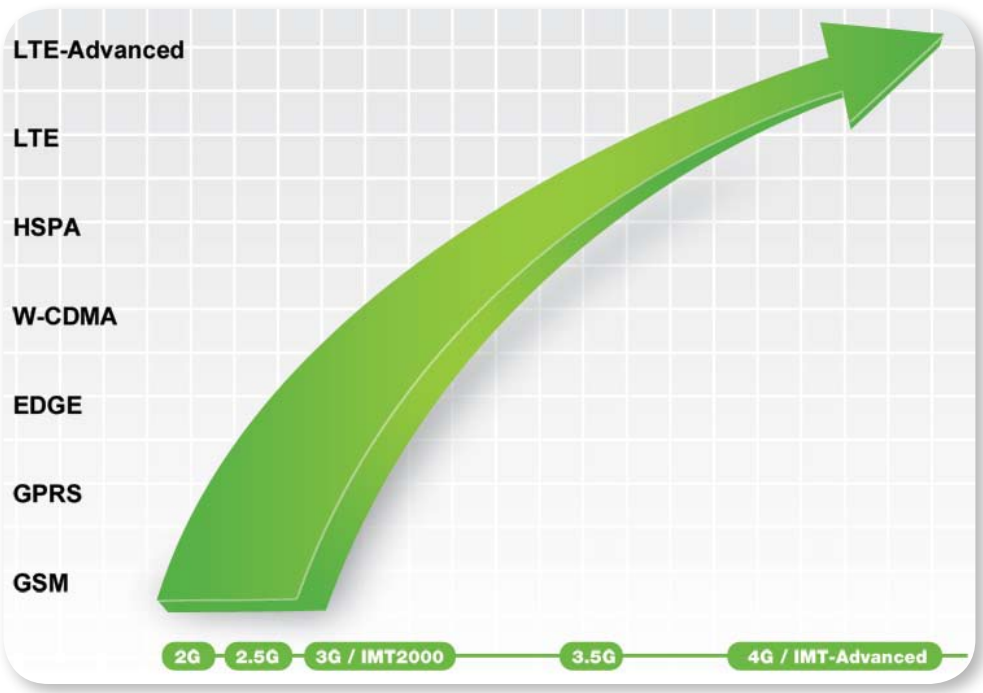
'The Standard' provides an information platform for ETSI Members, to inform you of the latest developments - both within our technical committees and the Secretariat - and offers a space for our Members to communicate with each other.

3GPP delivers its Long Term Evolution

LTE is a major success story for ETSI Members, with the underlying 3GPP specifications ensuring that LTE is set to become the de-facto network choice for mobile operators for years to come.

The GSM mobile system was initially a European activity that blossomed into a huge international success so that, by the time the 3rd Generation Partnership Project (3GPP) was created in 1998, it was essential that the next phase of the work must include all of the contributing Regions. Partners were subsequently drawn from Europe, Japan, North America and Korea, with China joining soon afterwards.

3GPP brings six standards organizations together, ensuring that the evolution of the GSM family of technologies (see graphic) has continued as an international effort and is not bound by one national or regional border.



Milestones of success - 3GPP Releases

With its first launch at the end of 2009 and further progress in 2010, we have now seen the successful debut of 3GPP-compliant LTE mobile networks. The expected successful launches of LTE in the coming months will once again confirm the effectiveness of the 3GPP process and quality of the industry commitment behind it.

Within the project the work is organized around the concept of a "Release", which defines the complete set of functionalities for any new cellular network to be deployed by operators. For LTE the key Releases are R8 and R9 which define the Evolved UMTS Terrestrial Radio Access Network (E-UTRAN) and an Evolved Packet Core (EPC) to support it.

An early LTE milestone was the 3GPP RAN Evolution Workshop, in Toronto in November 2004, attended by member companies of ETSI and the five other 3GPP Partner organizations. The Workshop discussed the evolution of the UMTS networks towards LTE and identified the following high-level requirements that would allow Release 8 to deliver the new system:

- Performance improvements (Data throughput, cell edge performance, cell range, reduced latency, power consumption)
- Improved use of the radio spectrum (More flexibility, readiness for future spectrum availability, convergence between paired and unpaired solutions, coexistence with legacy and handover, evolved antenna design)
- Simplified system design, open interfaces (OFDMA chosen for downlink, SC-FDMA for uplink, simplified architecture, All-IP)
- Economic benefits (Reduced capital and operational expenditure based on all of the above)

Against a background of massive interest and support from the industry, 3GPP has completed the work on LTE at the critical moment, to satisfy the growing demand by data and speed hungry services which are part of the wave of change that expects 'DSL like' mobile broadband.

By the beginning of 2011 the LTE work has matured, with a high level of stability in the Release 8 and Release 9 specifications, although some mainte-

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3GPP delivers its Long Term Evolution Continued

nance continues. The priority is now turning towards ensuring that LTE develops smoothly into its Advanced form in 3GPP Release 10 and beyond.

LTE-Advanced is a specific response to the ITU's call for proposal for radio interfaces beyond 3G. Its importance was recently confirmed by the ITU-R's announcement that "LTE Release 10 & Beyond (LTE-Advanced)" was accepted as a radio interface as a part of their International Mobile Telecommunications-Advanced (IMT-Advanced) process.

The IMT-Advanced systems are intended support new user and service demands that include commonality of functionality worldwide, compatibility with other radio and fixed systems, higher quality, improved usability, worldwide roaming and higher data rates. In response, 3GPP has developed a clear roadmap that takes LTE in to the next generation.

The essential criterion of all 3GPP work beyond Release 10 is that it must be an evolution of LTE, with full backward-compatibility to allow any future LTE-Advanced technologies to be deployed in spectrum already occupied by LTE and with minimal impact on existing equipment and terminals. As long as that is achieved, the requirements of the LTE-Advanced system will be the same as before, including ever more speed, with download peak rates targeting 1Gbps!

As we move further into 2011, we expect to see discussions at the international level on how to best place networks in the available spectrum in the future. This may result in a shift in emphasis away from standards towards discussions about harmonizing frequencies and providing for the growth in demand for mobile services.

This pause in standardization activity is expected to be only temporary until a new study is needed on the next evolution of the GSM/3GPP family of systems. Meanwhile, LTE-Advanced will be further enhanced to add new features for equipment beyond 3GPP Release 10.

More information on 3GPP is available at www.3gpp.org

Open Letter to Members

The rapid pace at which many aspects of life become accessible online, highlights the need to ensure that everyone has access to online services and at the same time has a positive user experience. The role of ETSI's Human Factors Technical Committee (TC HF) is to put in place the standards and guides that will help ETSI Members to ensure this as a natural part of their day-to-day operations. I have just been appointed as the new Chairman of the Human Factors committee and I, together with every member of TC HF, welcome all the new challenges that these technical and social pressures bring.

> "It is the aim of TC HF to meet the needs of ETSI Members. One way in which that can be achieved is via maximum Member participation in the work of the committee, and it is encouraging to see new Members becoming actively involved in our work."

Principles and the current climate

At the last HF meeting, members agreed that paying attention to the User Experience regarding ICT products and services can bring a wide range of business benefits to companies supplying and providing these products and services in terms of:

- ensuring that customers are able to benefit from the true potential and benefits of technologies currently being researched, developed or deployed;
- maximizing the return on investment that arises from usage patterns that are boosted because customers enjoy and learn to rely on the use of their product or service;
- ensuring that the broadest range of users are provided with personalized access to all of the future services using mainstream infrastructures through accessible, off-the-shelf products and services (e.g. consumerized ICT).

There is increasing worldwide emphasis on ensuring that people with disabilities are not disadvantaged when using ICT and the theme of World Standards Day in 2010 was "Standards make the world accessible for all". Since its inception, the work of TC HF has been aligned with these messages. The European Commission is following the lead taken in NAFTA and Asia in wishing to ensure (in Mandate M/376) that there will be accessibility requirements for public procurement of products and services in the ICT domain within Europe. TC HF has worked with CEN/CENELEC in Phase 1 of the work on Mandate M/376 and Phase 2 of this work is about to commence. ETSI Members are encouraged to take an active interest in this work and to assist TC HF in its goal of ensuring that the outcome is an environment that reflects the realities of ETSI Member companies that wish to meet the requirements for inclusive design with the minimum cost and time penalties on public procurement contracts both in Europe and the rest of the world. TC HF seeks to encourage an environment where manufacturers and service providers are only required to follow the minimum number of standards to be able to sell into these diverse markets. This will be achieved by continuing to encourage strong co-ordination between standardization bodies and minimise unnecessary divergence

TC HF also expects to help Members exploit the rapidly growing market of ageing people who wish to remain active (and follow all the latest technology trends like the more youthful sector of society) by ensuring that future TC HF output is consistent with an inclusive design approach that ensures that the inevitable decline of people's abilities with age will not prevent them from using the products and services produced by ETSI Members.

In carrying out TC HF's work on personalization and user profile management, and earlier work on user identification, issues related to personal privacy were identified as highly important. There is a common interest in privacy issues between the committee and TISPAN Working Group 7 (WG7) and extensive past cross-fertilisation between the two bodies. The need for continuing collaboration was formally recognised at the last meeting of TISPAN WG7.

Working with others

It is the aim of TC HF to meet the needs of ETSI Members. One way in which that can be achieved is via maximum Member participation in the work of the committee, and it is encouraging to see new Members becoming actively involved in our work. Another way is via HF's collaborations with other ETSI committees. Collaboration with TISPAN on issues related to privacy and security is one way that has already been mentioned. TC HF has also supported efforts to enhance the overall quality of the user experience by developing approaches, in conjunction with TC STQ, for the assessment and interpretation of Quality of Experience (QoE) measures.

But above all else, TC HF welcomes the maximum interest and involvement of all ETSI Members in identifyinsg areas of importance for which it is appropriate for the committee to work on in order to provide the most valuable standards, support and advice for the benefit of ETSI Members.

Matthias Schneider,
Chairman Human Factors Technical Committee

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Strategic challenges for the future

When taking over ETSI as Director General in 2006, the merger between classical telecom technologies and information technology was fully active. As we in ETSI typically come from the traditional telecommunication sector we commissioned an analysis of the status quo by consultants Booz, Allan and Hamilton. This led to a feeling that ETSI was in danger of “drying out”, where there were no new technology standardization activities in the pipeline. In the current “ETSI portfolio”, which shows the starting dates and the scale of activities in ETSI, you can see this reflected in the very noticeable gap between 2002 and 2006.

Since then, we have undertaken many actions, including addressing other than telco businesses, linking more closely to research and creating a new concept - the Industry Specification Group (ISG), in order to put our world famous Institute back on track. This resulted in many new activities since 2006, as depicted in the portfolio: six Industry Specification Groups, eight Technical Committees and one ETSI Project.

I am currently seeing what I call a “new merger”. It seems to me that traditional Information and Communication Technology (ICT) industry players are coming into the “web business” (e.g. hardware suppliers are moving into web applications),and the web industry is going into the ICT business (e.g. Internet companies are offering mobile phones or are going into IP telephony).

For me it is clear that the strategies for standardization in these two fields are quite different (e.g. formal standardization versus open standards) and that we have to position ETSI in this new “merging market”. Moreover, research results from, for instance, European Union Framework Programme projects are finding their way more and more into the “Internet of the future” - including various Machine-to-Machine (M2M) applications.

There is also a clear trend that, in many “vertical” industries, ICT is an extremely important enabler with a big influence on future competitiveness. Examples include intelligent transport systems, smart grid applications, aeronautical technology and e-health. Moreover, the whole broadcasting industry is in a process of change, with IPTV in particular developing rapidly.

In ETSI we are already very successfully active in these new fields, as can be seen in the portfolio graphic:

- RRS (Reconfigurable Radio Systems): one of the core businesses of ETSI, RRS includes new radio technologies such as software-defined radio and cognitive radio
- M2M (Machine-to-Machine communication): Smart metering and planning for the "Internet of Things" in the future internet
- MCD (Media Content Distribution): Standards linked to the broadcasting and media industry
- CLOUD (Cloud communications): Taking responsibility for the Cloud computing paradigm in future communications
- ITS (Intelligent Transport Systems): Standards addressing the challenges of future transportation worldwide
- ATTM (Access, Terminals, Transmission and Multiplexing): Network Access, encompassing fibre, copper, xDSL and radio backhaul
- INT (IMS Network Testing): Ensuring interoperability of the IP Multimedia Subsystem (IMS)
- e-Health: Supporting the application of the latest ICT in the health business
- ISG ORI: Open Radio Interface, defining the interface between elements of base stations for cellular mobile networks
- ISG QKD (Quantum Key Distribution): The latest security technology internationally available
- ISG AFI: Autonomic network engineering for the Future Internet
- ISG MOI: Measurement Ontology for IP traffic
- ISG MTC: Mobile Thin Client
- ISG INS: Identity and access management for Networks and Services.

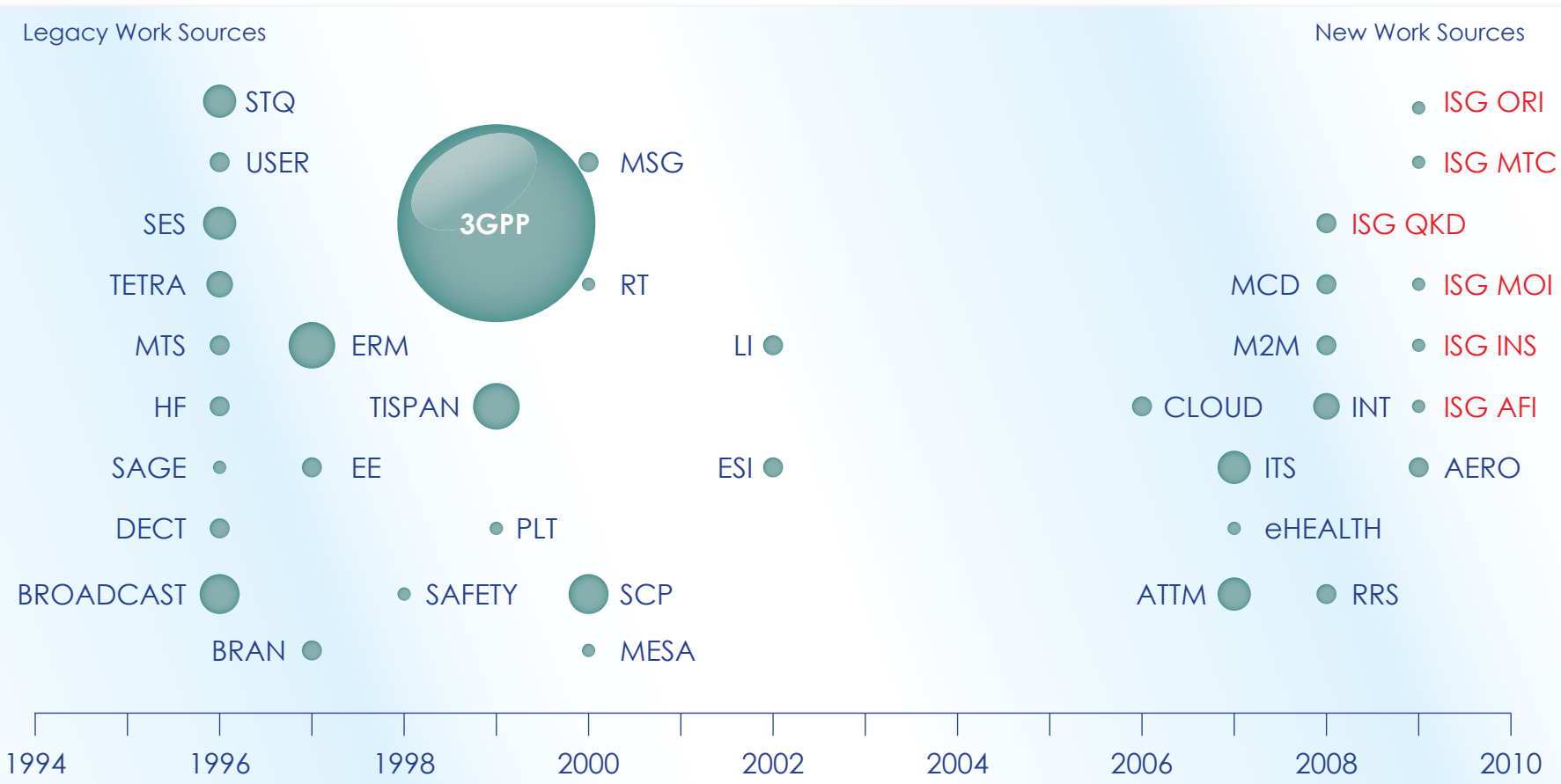
The last four ISGs listed above are the initial activities of ETSI concerned with standardizing parts of the Internet of the Future. They confirm that ETSI is a player in this future emerging standardization field but much more work has to be done (with the support of our current and potential new Members) in order to address issues such as the architecture of the future internet.

Equally, M2M, ITS and e-Health are the first activities where ETSI can demonstrate that our know-how and experience can very effectively support vertical business segments outside our traditional domain. Again, effort has to be invested to convince more “players” - mainly industry, but also regulators and governments - that standardizing in ETSI is very efficient in terms of speed and cost, and helps industry to reduce its involvement in too many standards organizations, fora and consortia.

ETSI already is, and will continue to be, one of the key partners in standardizing, on a global scale, this new merger of ICT and web technologies, and the enabling ICT in vertical businesses that will ensure quality, interoperability and time to market.

Walter Weigel, Director General, ETSI

Technical Committee/ISG Activity in 2010



The size of the bubble indicates the number of Work Items in progress in 2010
Technical Committees created before 1996 appear here as having been initiated in 1996

ETSI's first Open Machine-to-Machine Workshop broke all records for attendance, laying out the next steps for achieving M2M applications worldwide, and confirming a leading role for the standards organization.

ETSI Workshop confirms leadership role for Machine-to-Machine standards

'Machine-to-Machine (M2M) communications need standards - and ETSI is taking the lead to make sure that the standards are in place.' This was the main conclusion from ETSI's M2M workshop which took place on 19 and 20 October. With over 220 attendees from across the world, this was the most popular ETSI workshop to date, with the high degree of interest reflecting the enormous potential that is foreseen for M2M applications and technologies.

Among the speakers and delegates were representatives from the world's major telecommunication manufacturers and network operators, security companies, utilities, regulators, universities and research institutes. The workshop presented the current status of Machine-to-Machine standards work, both in ETSI and in other standards bodies, and examined how M2M capabilities will be a stepping stone toward the 'Internet of Things'.

Participants heard how existing and evolving communication technologies networks (mostly wireless (cellular and low-power), but also fixed networks, including power line communications) provide a firm basis for connecting M2M sensors and applications. Specification of appropriate interfaces that allow network technology neutrality is a priority, and one that ETSI is already addressing.

The workshop included two live demonstrations of an M2M gateway and core network, and an M2M Wireless Personal Area Network. The implementations were based on current specifications from ETSI's M2M Technical Committee and confirmed the effectiveness of both the implications and of the ETSI specifications.

ETSI's M2M Technical Committee is currently finalising the architecture for the service platform that will enable the integration of multiple vertical M2M applications. The workshop confirmed that ETSI is well placed to address a vital aspect of standardization in support of M2M - the specification of interfaces that will facilitate the interconnection and interoperability of the diverse applications and of the networks that will underlie them.

Fraport news contribution

Frankfurt Airport introduces European Standard on Airport-CDM

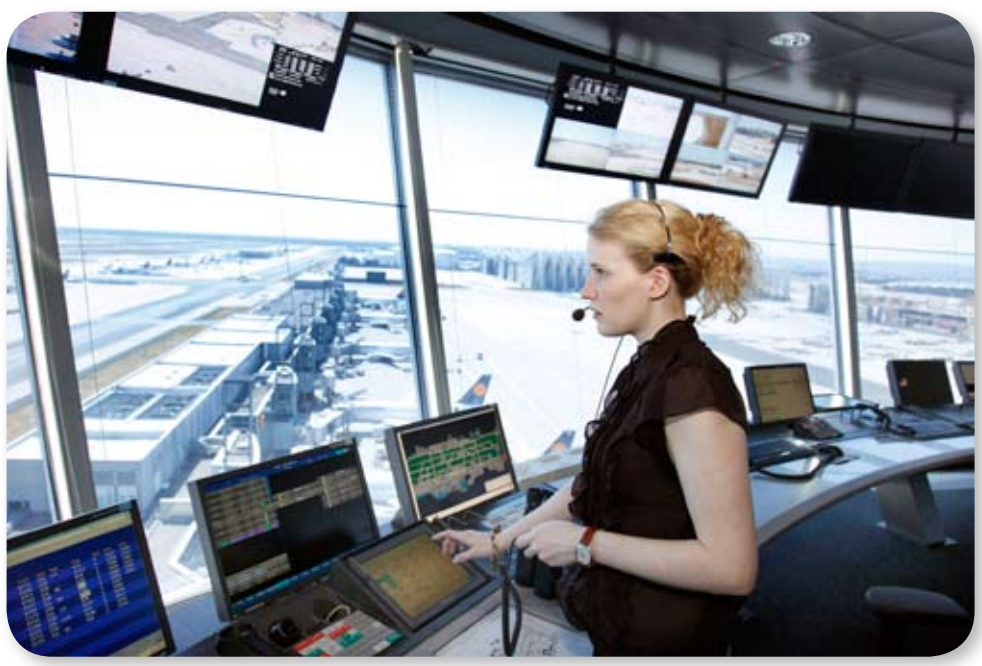
Airport Collaborative Decision Making (A-CDM) matters to all airlines flying to Frankfurt Airport. A-CDM helps to improve transparency of the turn-around of a flight and assures common situational awareness for all stakeholders involved. In addition, it helps to avoid delays and to save fuel.

CDM is a standard process long-established in many industries. When people from different organizations are involved in a dynamic process, coordination is a real challenge. Airport Collaborative Decision Making begins three hours before the ATC flightplan estimated off-block time. It includes approach, landing, taxiing in and out, the turn-around on the ground, and it ends with the departure.

Airport CDM is based on target times mandatory for all

The main subject of A-CDM is departure target times based on a pre-departure sequencing which are binding for all parties involved. The whole process is based on the Target Off Block Time given by the airline. All other target times are calculated from this, in particular the Target Start-up Approval Time which is when pilots request engine start clearance. A-CDM provides permanent matching and correlating of related arrival and departure flight times and data.

At Frankfurt Airport the A-CDM project is jointly managed by Fraport, the



airport's management company, and DFS, the German Air Navigation Service Provider. Since the summer of 2008, a team of operational specialists have been working on A-CDM, and on 3 November 2010 the trial operation phase was started. During the local trial phase in Frankfurt, Eurocontrol, the pan-European Organization for the Safety of Air Navigation, has not been directly involved: however this will change when A-CDM is phased into regular operations in February 2011. From this time on, Eurocontrol will automatically receive real-time departure information by standardized data exchange. Data exchange between Fraport and the Eurocontrol Central Flow Management Unit in Brussels is key because delays on the ground could cause the loss of valuable airspace capacity.

A-CDM was designed by Eurocontrol. In Munich, Brussels and Paris CDG it is already in operation and it will become standard at all major European airports. Frankfurt is now the fourth airport where the procedure has been inaugurated and where the Community Specification EN 303 212, developed by ETSI's Aeronautical Technical Committee (TC AERO), has been applied.

Frankfurt Airport is managed by Fraport AG, a full ETSI member. Frankfurt Airport serves 140.000 passengers each day to 303 destinations in 112 countries, moving over 70,000 pieces of baggage and 6,600 metric tons of freight.

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Introducing the Transportation Cluster

ETSI supports the various transportation domains with standardization activities which are carried out by key industry players and therefore reflect true market demand.

Standardization for road transport is focused on wireless communications for vehicle-to-vehicle and vehicle-to-roadside communications, with a priority on the safety of life through the reduction of road fatalities and injuries, traffic efficiency with reduction of transport time and economic consequences, and polluting emissions. Intelligent Transport Systems (ITS) add information and communications technology to transport infrastructures and to all types of vehicles in an effort to improve their safety, reliability, efficiency and quality. They also help to optimize transportation times and fuel consumption, thus providing greener, safer and more economical transportation.

Standards activity currently focuses on co-operative systems, electronic fee collection and interoperability of these technologies. Great attention is given to creating commonly agreed standards for the network architecture, protocols and transmission formats since such a set of standards helps lead to a global harmonization of ITS services and applications. A key issue is the safeguarding of interoperability. Here, ETSI's Centre for Testing and Interoperability (CTI) provides the expertise on all aspects of interoperability.

Road transport, railways, aviation and maritime services will benefit greatly from the deployment of ITS, whilst end-users will have the advantage of customizable services. The introduction of connected vehicles will improve electronic toll collection and navigation systems, e.g. real-time maps that take account the current traffic situation derived from the co-operative systems network. Knowledge of exact geographical locations is important to all these services, so the standardization of Global Navigation Satellite Systems (GNSS) such as GPS and Galileo also plays a vital role. Furthermore, the combination of communications and services can lead to smart handling such as the eFreight and the Single European Sky (SES) initiatives.

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.

A Connected World

Following the introduction of the Content Delivery cluster in the September issue, this issue of 'The Standard' focuses on the Transportation cluster. Future issues will explore other clusters.

In aviation, ICT is gaining an increasingly important role for civil aviation. The continuing growth in passenger numbers, short and long-haul flights, and demands for advanced services require true harmonization. Applications such as air traffic control systems and services for passengers, e.g. on-board telephony and Internet access, are specified by ETSI. In addition, ETSI supports the Single European Sky initiative which aims to replace the traditional, highly fragmented air traffic control structures within Europe by means of greater harmonization and an assured interoperability.

ETSI's Aeronautics Technical Committee (TC AERO) has responsibility for preparing European 'Community Specifications' (i.e. European Standards that acquire Community Specification status when listed in the Official Journal of the European Union) that provide essential requirements in support of the Single European Sky Interoperability Regulation for the European Air Traffic Management Network (EATMN). These first standards were published and acquired the status of Community Specifications in 2010: these concern Airport Collaborative Decision Making (A-CDM) and the Advanced Surface Movement Guidance and Control System (A-SMGCS, to assure the safe movement of vehicles and aircraft on the ground at airports). The committee is currently preparing other Community Specifications for use under the Interoperability Regulation: these include standards for Data Link Services (DLS). The committee also develops other specifications related to the European Air Traffic Management Master Plan.

The transportation cluster encompasses the various transportation domains, whether they be road transport, railways, aviation or maritime services

SCOPE
Systems for people on the move

VISION
Bringing the power of ICT to a world of mobility

Did you know that ETSI's partnership policy comprises three types of partnership agreements?

- The Letter of Intent (LoI)
- The Memorandum of Understanding (MoU)
- The Co-operation Agreement

Partnerships

ETSI believes that international futures are built around international partnerships and has therefore built up a portfolio of Partnership Agreements with partners ranging from fora and consortia, to international and regional Standards Development Organizations (SDOs). The Institute has long recognized that working with others is also the best way to ensure coherency between the standards produced by ETSI and those of others, in order to avoid the duplication of effort and to ensure that the standards are widely accepted and implemented.

It is well known today that the standards production market is fragmented and the convergence of sectors, especially when using ICT, a reality. ETSI's investment in new partnerships is an important means to adapt its activities to new standardization trends to facilitate the development of better and far-reaching standards. ETSI's partnership portfolio contains over 80 such Partnership Agreements and the list is growing. Most of these new agreements are the direct result of ETSI's increasingly diverse technical activities which are attracting interest in new domains.

Under the guidance of the ETSI Operational Coordination Group (OCG) and the ETSI Board, the Partnerships Unit of the ETSI Secretariat works to meet the demands of our Technical Committees and responds to the orientations of the ETSI strategy overall. In particular, Partnership Agreements are crucial in those new areas where ETSI is just starting to establish its footprint. Recently established Technical Committees such as Machine-to-Machine (M2M) and Intelligent Transport Systems (ITS) have invested time and resources to build a solid network of partnerships which have helped their respective work plans to evolve rapidly. Both Committees, which have been operational for less than three years, have already attracted worldwide recognition.

The ETSI name can become more widely known through collaborations within these new markets, which are converging more and more with the ICT services. Ultimately, partnerships can serve as a vehicle to attract further members from new areas.

The 56th General Assembly in November 2010 welcomed the approval of nine new partnership agreements, which will impact the activities of many of our Technical Committees. In particular, new partnerships were established with partners coming from new segments now impacted by ICT, such as the postal market (MoU with the Universal Postal Union) and traffic management (MoU with the Traveller Information Services Association).

> "Failure to adapt to the global environment by failing to participate actively in global standardization activities may result in European standardization work (including its safeguards) becoming both sidelined and irrelevant."
>
> EU

Welcome to Corinne Elena!

Corinne Elena joined ETSI on 1 October as the new Vice-President for Business Administration (BAC). The Standard invited her to give her first impressions of ETSI.

The Standard: Corinne, welcome to ETSI. What is your role as VP of BAC?

Corinne Elena: Thank you for the warm welcome! My new role as VP of BAC is quite diverse, but it's mainly concerned with ensuring strict control of the budget allocation as approved by ETSI's Members, making sure that resources are properly managed and that the internal rules and the French regulations are fully respected.

TS: So what attracted you to ETSI?

CE: The fact that ETSI works in the ICT sector - we can't ignore the technical challenges of today's world. ETSI offers its staff the opportunity to be at the leading edge of innovation and advanced technologies, though I must confess that I'm still struggling to understand all the acronyms and abbreviations!

The baseline to the ETSI logo, "World Class Standards", particularly attracts me as it perfectly summarizes the kind of vision that I wish to share in an organization. Also, I am attracted by ETSI's multicultural environment and by the values of the ETSI Secretariat, which match my own.

TS: What challenges and opportunities do you see in your new job?

CE: Both the industry we serve and ETSI itself is going through challenging times. The BAC unit is a service provider both to our Members and to other parts of the Secretariat, so I am looking to ensure that we maintain at least the same level of service with reduced resources. BAC staff will need to draw on their skills and adaptability to make this happen.

As for opportunities, this is the time to rethink and align our business processes, procedures and priorities. Much of our financial software is outdated and some of it was "home-made" so it does not integrate well. Updating our business IT systems will be costly but it should bring very significant benefits as we optimize our processes. It is of course essential that the updating is successful, and I'm committed to ensure that it is!

TS: What are your plans for the future of BAC and how do they fit within the strategy of ETSI?

CE: I'm determined to ensure that BAC continues and enhances its role of service provider to the entire Institute. We stand ready to offer our skills - especially those concerning financial aspects - to support ETSI strategic initiatives. Also, with the introduction of the new software, I believe that we can contribute strongly to the ETSI Green Agenda strategic topic, for example by offering our Members electronic invoicing.

TS: What did you do before you joined ETSI?

CE: I have been working in financial posts for more than 25 years, with various job titles - Chief Accountant, Internal Auditor, Controller, Finance Director…! I've spent the last nine years in the pharmaceutical industry. I'm really looking forward to broadening my experience in ETSI, and I look forward to meeting many of our Members as we move the Institute forward together!

> "The baseline to the ETSI logo, "World Class Standards", particularly attracts me as it perfectly summarizes the kind of vision that I wish to share in an organization."

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ETSI standardizes M2M Communications

ETSI's Members have recognized that the human centric market becoming highly saturated, and the new business segment of connecting machines to machines offers great new business opportunities. Machine-to-machine applications and their standardization is pushed by an increasing number of stakeholders. We have already seen many successful M2M vertical applications, and this is planned to increase exponentially in the near future with the possibility to interconnect billions of objects to develop new services.

One of the first examples of an M2M application is Smart Metering, which has been enhanced by the European Commission Smart Metering Mandate (M/441). Millions of communicating meters for electricity, gas, water and heat will continue to be installed in Europe during the coming years, and this will further evolve to encompass wider Smart Grid applications.

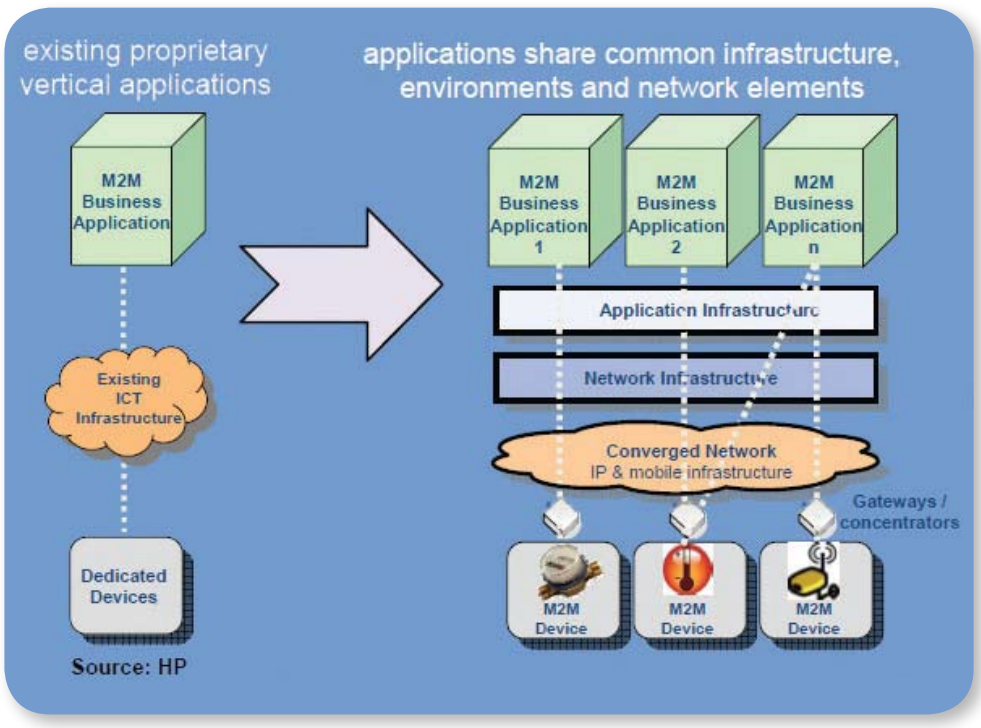
In response to this increasingly significant shift in market demand, M2M was declared as a key strategic topic in ETSI in 2008. The first ETSI M2M workshop, which took place in June 2008, produced a detailed report on the scope of M2M standardization. One of the key findings from industry was the strong need for an end-to-end view focused on interoperability and interworking of M2M equipment based on already existing standards. Therefore at the end of 2008 the ETSI Board decided to create the Technical Committee M2M (TC M2M). Since then, TC M2M has held 13 plenary meetings, published two M2M specifications and is working on a further ten documents for inclusion in the M2M Release 1.

The group includes European, American and Asian experts from telecoms network operators, equipment vendors, administrations, research bodies, and of course M2M specialist companies.

Vision and mission

TC M2M considers machine-to-machine communications as automated data exchange between machines including virtual machines such as software applications without (or with only limited) human intervention.

The group's overall objective is to create a set of open standards for M2M communications that will be one building block of the IoT (Internet of Things). The fundamental idea is to evolve the existing vertical M2M applications, which use a multitude of technical solutions and diverse standards, into a fully interoperable M2M service platform that permit horizontal business models, as illustrated below.



The horizontal M2M architecture would allow applications to share common data, infrastructure and network elements.

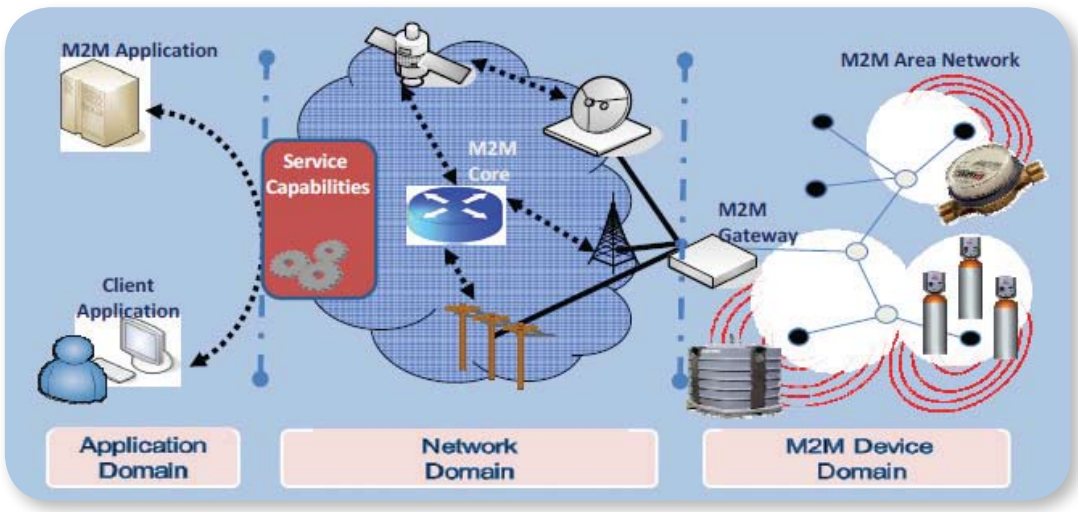
An M2M system clearly defined in open standards with specified network transitions, and open interfaces and protocols ensures the interoperability of all system elements.

The Technical Committee's work is based on the general guideline to always use existing standardized systems and elements. It evaluates them according to M2M Service Capabilities and fills the gaps only if necessary. This entails working with many other standards groups to enhance existing standards or produce supplementary ones.

M2M system architecture - high level approach

The M2M system currently being specified in TS 102 690 (M2M Functional Architecture) consists of 3 main domains, the M2M Device, Network and Application Domains.

M2M Devices operating stand-alone or organized in an M2M Area Network are connected to the network domain by an M2M Gateway, which provides the transition to different types of Telecommunication Networks (wired, satellite and wireless).



Service Capabilities form the interface between the Telecommunications Networks and the M2M Applications.

Conclusion

M2M related technologies are firmly in place, and the M2M market has massive potential for growth. Providing globally compatible standards for open and interoperable networks and services is the key enabler to rapidly develop the M2M market.

In order to achieve the full market potential and to make M2M a mass market, the horizontal M2M approach has to replace the vertical models already in place. This needs a common M2M system architecture which is shared by multiple applications.

This shift from vertical to horizontal M2M solutions will provide a standardized platform to develop applications and devices independently using existing communication infrastructure. The interoperability of M2M solutions can only be achieved by fully standardized open interfaces. In ETSI we recognize that M2M is a major building block of the "Internet of Things" that will also include technologies as RFID (Radio Frequency IDentification), Wireless Sensor Networks, embedded intelligence and CLOUD computing. All of these technologies are being examined in ETSI under the "Connecting Things" Technical Cluster.

More information can be found at www.etsi.org

Joachim Koss
ETSI Board Member
ETSI TC M2M Vice-Chairman

An M2M system clearly defined in open standards with specified network transitions, and open interfaces and protocols ensures the interoperability of all system elements.

New General Assembly Chairman and Vice-Chairmen appointed

Members of ETSI made two new appointments at the 56th General Assembly (GA) in December, and renewed a further appointment

Members of ETSI made two new appointments at the 56th General Assembly (GA) in December, and renewed a further appointment.

Dirk Weiler (Nokia Siemens Networks) was appointed as Chairman of the GA for a first term of office. He replaces John Phillips who had completed two terms as Chairman and had to stand down in accordance with the ETSI rules. Dirk is currently Head of Standards Management at Nokia Siemens Networks where his responsibilities include the standardization and fora membership portfolio, type approval activities and standardization policy issues. Since 2008 he has been an ETSI Board Member and Chairman of the ETSI IPR Special Committee. Dirk is also a member of the ICT Standardization Policy Steering Committee of the European Commission, participates in Digital Europe's Standards & Interoperability working group and is Vice Chairman of the project group "Strategic Standardization topics" in the German Industry association BITKOM.

Kari Marttinen (TeliaSonera AB) was appointed for a first term of office as Vice-Chairman (replacing Armin Toepfer, who had also completed two terms). Kari is Director of Corporate Standardization Co-ordination for TeliaSonera AB. He is TeliaSonera's delegate to the ETSI GA, ETSI's Mobile Standards Group, the 3GPP Technical Specification Group for Service and Systems Aspects, and the GSM Association's Document Approval Group. He served as Chairman of the GSM Association from 1992 to 1993 and was GSM Association Executive Committee Member from 1993 to 2002.

The Members also re-appointed an existing Vice-Chairman, Ms. Karine Iffour (NORMAPME), for a second term of office. Karine has worked in NORMAPME (the European Office of Crafts, Trades and Small and Medium sized Enterprises for Standardization) since 2002 where she deals with various sectors, notably ICT. She was a member of the ETSI Board from 2003 to 2008, has been Chairman of the ETSI User Group since 2004 and Vice-Chairman of the ETSI GA since 2008.

Each of the terms of office is for two years, running from December 2010 to November 2012.

Dirk Weiler, Karine Iffour, Kari Marttinen

ETSI Legal Team News Update

The ETSI legal team provides legal advice across the entire Institute in support of all of ETSI's activities. This encompasses advice on legal issues to the Secretariat, the General Assembly, the Board, the ETSI technical committees and the Members of ETSI, in particular regarding the application of the ETSI Directives and in the area of IPRs, copyrights and trademarks.

The ETSI legal team is composed of three members: Erik Jansen - Legal Affairs Director, Maïssa Bahsoun - Legal Affairs Officer, and Jeanne Lancry-Gulino - Legal Affairs Co-ordinator.

They are deeply involved in drafting and negotiating a broad range of agreements mainly with international bodies such as cooperation agreements, as well as contracts necessary for the functioning of the Institute and other legal materials.

Jeanne Lancry-Gulino, Erik Jansen, Maïssa Bahsoun

In addition, the ETSI legal team plays an active role in representing the Institute in consultations, negotiations, conferences, as well as in various external bodies.

Supervision of the administration of IPR declarations made to ETSI and the management of the ETSI IPR Online Database are other important aspects of the Legal team's daily work. The legal team has been deeply involved in the ongoing DARE Project (IPR DAtabase REstructuring), which will result in a new ETSI IPR Online Database, planned to go live in March 2011.

IPRs belonging to ETSI -particularly the Institute's copyrights- are likewise managed/administered by the ETSI Legal team as is the ETSI Trade Mark Portfolio, which is composed of the following trademarks:

3GPP™, DECT™, IMS™, INTEROPOLIS™, FORAPOLIS™, LTE™, PLUGTESTS™, TIPHON™, UMTS™, as well as the TIPHON Logo and the ETSI Logo.

In the case of any legal questions related to ETSI, its Directives, copyrights or trademarks, feel free to contact the ETSI legal team at Legal@etsi.org

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‘Internet of Things’ event in China

ETSI, alongside the European Commission, was one of the key association sponsors of the ‘Global Internet of Things Technology Conference’ (GIOTC), held in Beijing on 23 and 24 November 2010. The event attracted over 250 participants and speakers from China, EU, USA and India - from both industry and administrations, including policy makers, ministries and the European Commission. ETSI is very active in the areas of Internet of Things (IoT) and machine-to-machine communications (M2M) and was therefore pleased to endorse this highly topical event.

During the event, the Internet of Things was described as a concept encompassing various application domains (including health, transport, energy, and supply chain) with a number of underlying enabling technologies such as sensors, RFID tags and the typical horizontal issues such as governance and security/privacy. In addition to recognizing the role of global standards, many of the speakers emphasized the importance of international cooperation.

Key initiatives in China focus on Smart Grids, as underlined in the presentation from the national power provider State Grid, and also on the developments in RFID with information relating to the impressive progress of the Chinese RFID Alliance.

Florent Frederix from the European Commission explained the EU perspective on Internet of Things with the trends of RFID miniaturization, mobility, pervasiveness and sensors. He presented the EU IoT action plan which defines governance, privacy, ‘silence of the chips’, security, standards, public private partnerships, smart cities, informed consumers and IT waste as key issues.

David Boswarthick presented the work of ETSI’s M2M Technical Committee and the possible evolution path to the Internet of Things. The feedback was encouraging, and several Chinese companies requested further information on ETSI’s work on M2M, Smart Grids and IoT, expressing a desire to work with ETSI.

David Boswarthick presenting at the Global Internet of Things Conference at the China National Convention Centre in Beijing on 23 November 2010

ETSI supports EC regulations for secure electronic signatures

A new European Commission (EC) Decision came into effect on 1 December 2010 which is intended to help the European Member States meet their obligations for ensuring secure electronic signatures in accordance with the EC Directive 1999/93/EC, the Community framework for electronic signatures. The new Decision (2010/425/EU) amends an existing one concerning "the establishment, maintenance and publication of trusted lists of certification service provides supervised/accredited by Member States." In practice this means ensuring effective and secure electronic signatures within Member States and across borders.

The new Directive is a result of tests carried out by ETSI that were designed to allow Member States to check the conformity of their "trusted lists" with the specifications referenced in the earlier Decision. Those tests took place at the end of 2009, with ETSI and the EC working together to set up and conduct interoperability tests on the Trust-service Status List (TSL) signatures. These enabled EU Member States to check the interoperability of their TSL implementations using a portal infrastructure provided by ETSI's Centre for Testing and Interoperability (CTI). This portal proposed different test cases and tools for conformance and interoperability testing, and also on-line Public Key Infrastructure (PKI)-related services. Using this facility, each Member State was able to check that their published TSL conformed to the relevant specification, and also to verify that the different Member States were able to validate signatures by using each other’s TSL lists in cross-border use.

The ETSI TSL Interoperability event revealed that some technical changes were needed in the technical specifications cited in the earlier Decision (2009/767/EC). The new EC Decision makes the necessary changes to the earlier document.

ETSI and the EC will continue to maintain a "TSL Conformance Checker" on the portal which will allow Member States to modify their Trusted Lists to make them compliant with the amended Decision and to check their conformity to the new Trusted List Technical Specifications.

The reference for Electronic Signature testing

ETSI's testing experience and innovative approach has led to the Institute becoming the testing reference for Electronic Signatures. A series of ETSI Plugtests™ interoperability testing events focusing on Electronic Signatures has responded to growing demands - from just six companies for the first event in 2003 to 27 companies (from 18 countries) for the latest event, which spanned four weeks in October and November 2010. This event was originally planned for two weeks but had to be extended because of demand. It was a combined event, providing testing for two Electronic Signature technologies, XAdES (XML Advanced Electronic Signatures) and CAdES (Cryptographic Message Syntax Advanced Electronic Signatures). Unlike most other ETSI Plugtests™ events, this one allowed remote participation and the portal was one of the principal means of facilitating this. The portal has been evolved to be adaptable to the various technologies, originally for XAdES, then CAdES, and now TSL.

ETSI believes that the combination of portal and remote Plugtests™ events has no equivalent anywhere in the world.

ETSI's testing experience and innovative approach has led to the Institute becoming the testing reference for Electronic Signatures

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Supporting the Digital Agenda

A recent meeting between ETSI's Director General, Walter Weigel, and European Commission Vice-President Neelie Kroes confirmed ETSI's commitment to the European Digital Agenda and to improving the links between research and standardization. The meeting, which took place on 31 January, also involved Keith Jeffrey, Vice-President of ERCIM, the European Research Consortium for Informatics and Mathematics, and members of Mrs Kroes' cabinet.

Dr Weigel reminded Mrs Kroes, who is also the European Digital Agenda Commissioner, of the global success of GSM, standardized by ETSI, and of the related international collaborative project, 3GPP. He stressed the efforts that ETSI had taken, notably since 2006, to bring new work into ETSI – including the concept of Industry Specification Groups (ISG) that have become the focal point of many of ETSI's new activities. He also emphasized the ETSI policy of direct participation, which has been successful in attracting large numbers of SMEs (around 30% of ETSI's membership) to the institute. Incentives were discussed for further encouraging the participation of SMEs, including reducing the already attractive entry level and examining the possibility of crediting contributors to standards.

A key issue of the meeting was how to ensure that European research results can be turned into market successes. Mrs Kroes was pleased to note that ETSI is directly involved in several European Union Framework 7 research projects. The discussions also highlighted a need to overcome obstacles caused by the traditional segmentation of standards and by differences in approaches to standards-making. After the meeting, Dr Weigel remarked that it had been very open and positive, and that he expected further discussions with Mrs Kroes.

An invitation to meet ETSI and 3GPP at MWC 2011

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Success Stories
in validation and testing

Solving the challenge of interoperability...
success stories in validation and testing

One of the main aims of global standardization is to enable interoperability in a multi-vendor, multi-network, multi-service environment. With converging technologies, ICT systems are becoming more and more complex. In many cases the multiple standards that specify these technologies are often delivered by different standard bodies. These factors can lead to potential cases of non-interoperability.

ETSI believes that validation and testing are key tools to deliver interoperable standards and products. With over 20 years of experience, the ETSI Centre for Testing and Interoperability (CTI) provides support to the ETSI Technical Committees on all aspects of protocol specification, standards validation, interoperability events and testing.

At ETSI the development of standards and standardized test specifications typically follows well established methodologies. On a regular basis, 'The Standard' will introduce success stories featuring examples of successful validation and testing projects which demonstrate the benefits of a systematic test approach.

In this issue, Jean-Yves Monfort, of JYM.C.I.S (France), Chairman of ETSI's Speech and Multimedia Transmission Quality Technical Committee (TC STQ), and Hans Gierlich of HEAD Acoustics (Germany), TC STQ Vice-Chairman, outline ETSI's approach to testing the quality of terminal equipment with the aim of enhancing end-to-end speech performance.

Testing terminal quality to enhance end-to-end speech quality

ETSI has been organising speech quality test events as part of its Plugtests™ activities since the year 2000. The main goals of the events have always been to:

- Test different VoIP (or DECT or mobile) implementations, terminals and gateways under identical conditions for all participating manufacturers. This offers significant benefits to manufacturers because it enables them to enhance the quality of their equipment and to optimise the entire performance of the terminal device (including acoustic devices and speech processing software).
- Use and improve existing ETSI standards by providing appropriate feedback to the ETSI standards committees and partners (eg TC STQ, TC DECT, 3GPP SA4). The terminal requirements are defined to ensure the best possible quality for the users, thus the tests provide valuable feedback on the capabilities of manufacturers to improve quality. Testing provides a global picture of the current and future market and ensures that the requirements are relevant for best usage and are reachable without significant additional cost.
- Give feedback to the manufacturers of the performance of speech terminal equipment in comparison to that of other vendors. This benchmark (which is anonymous) helps the manufacturer to reach the expected quality and to properly design his equipment in order to increase market share.

The ETSI test events are designed to measure, analyze and compare speech quality parameters for speech terminal equipment, in narrowband (up to 3.4 kHz) and more recently wideband (up to 7 kHz). All conversational aspects, including speech sound quality, echo measurements, double talk performance and the transmission quality in the presence of background noise, are considered. Many manufacturers do not possess these kinds of innovative test equipment and may have no good experience of them. ETSI's speech quality Plugtests™ events, which commence with tutorial sessions, give them the opportunity to become acquainted with, and trained in, these new processes.

An important characteristic of these Plugtests™ events is that quality is considered from the user's point of view, including the acoustic interfaces. As traditional speech communication evolves into innovative services such as multimedia conferencing, and as new means of delivery are introduced (e.g. VoIP), verification of acceptable levels of quality is vital. The distinctive Plugtests™ approach implies specific environments and process; through a special "consulting part" of the event it also generates information that is useful for system optimization. The approach significantly reduces the time needed for manufacturers to develop and test their products, thus both speeding up their availability and improving their quality. Each participating manufacturer receives all his individual results, including detailed information about potential improvements, and is able to compare these results with those of all the other participants which are published in an anonymous test report at the end of the event.

The test methods and the anonymous test reports are made available as Technical Reports (TR).

ETSI believes that validation and testing are key tools to deliver interoperable standards and products

Jean-Yves Monfort

Hans Gierlich

Should you have a success story showcasing best practice in testing that you would like to see included in 'The Standard', please contact:

testing-success-stories@etsi.org

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ETSI EVENTS CALENDAR - What's on?

2011	
9 - 11 February	3rd ETSI TC ITS Workshop. Telecom Italia Future Centre Venice, IT
15 - 18 February	ETSI & 3GPP @ Mobile World Congress 2011. Hall 2, stand F41. Barcelona, ES
5 March	Cebit / M2M Zone. Hanover, DE
8 - 10 March	ETSI @ ATC Global 2011. # D130. RAI, Amsterdam, NL
23 - 25 March	CCBN. China International Exhibition Center (CIEC) in Beijing, CN
12 - 14 April	IMS World Forum 2011. Barcelona, ES
23 - 30 April	Femtocell Plugfest 3. Lannion, FR
5 - 6 April	ETSI Workshop on Standards: An Architecture for the Smart Grid. Sophia Antipolis, FR
19 - 20 April	ETSI General Assembly #57. Hotel Martinez, Cannes, FR
11 - 12 May	China LTE Summit. Beijing, CN
7 - 9 June	TTCN-3 User Conference. Bled, SI
15 - 24 June	Air Traffic Management VoIP Plugtests. Sophia Antipolis, FR

Please visit the events section of our website for further details.

Femtocell interoperability events in 2011

The publication of the world's first femtocell standard by 3GPP in April 2009 signalled a major step forward for the technology. This standard, which is undergoing continual evolution and improvement, ensures that potentially millions of femtocells can be efficiently integrated into mobile networks.

In March 2010, ETSI's Centre for Testing and Interoperability (CTI) and the Femto Forum co-organized the first ever femtocell interoperability event. This was the first step in the Femto Forum's comprehensive programme of interoperability testing to validate the new 3GPP Release 8 femtocell standard. The programme will demonstrate how effectively the new standard facilitates the interoperability of products from different vendors. In turn, this will provide operators and consumers with greater interoperable equipment choice from multiple vendors while also widening the market for vendors themselves.

The success of the first event has resulted in an ongoing co-operation between ETSI and the Femto Forum with confirmed dates for two follow-up events in 2011. The 2nd Femto Forum UMTS Femtocell Plugfest will take place on 24-28 January 2011 in Sophia Antipolis, France, and will continue where the first event left off by adding tests for the management interface. The 3rd Femto Forum UMTS Femtocell Plugfest is scheduled for 23-30 April 2011, in Lannion, France.

This continuing programme will involve interoperability tests between femtocell network gateways, security gateways, femtocell access points and chipsets from all key vendors to verify the 3GPP's Iuh interface as defined in Release 8. The programme will also test the IPsec/IKEv2 security protocols that allow femtocells to communicate over the public Internet to system operators' core networks in a highly secure manner.

For more details, please contact plugtests@etsi.org

Not yet subscribed to the ETSI Newsletter?

'The Standard' is specifically aimed at providing an information platform for ETSI members, to include updates on the latest developments, whether within our technical committees or the secretariat, and enabling ETSI members to communicate with each other.

Subscription is open to ETSI Members and interested non-members and free of charge. Subscribe at www.etsi.org/newsletter to receive future issues by email.

Hardcopies of the newsletter can be obtained from the ETSI Secretariat.

We are happy to consider contributions from ETSI Members, including 'Open letters to Members' (see p.2) to facilitate your communication with the ETSI community.

Please contact newsletter@etsi.org

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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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