Working in Partnership

Recent Developments in European Telecommunications Standardisation

The world economy is moving from a predominantly industrial society to a new Information Society. The changes, the most significant since the Industrial Revolution, are far-reaching and global. They will affect everyone, everywhere, and have huge potential to enrich everyone's lives.

Achieving this Information Society will involve practical action by a wide range of players. As technology becomes increasingly complex, the boundaries between different areas become blurred, and there is a growing

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recognition of the need to work together to make the most of the potential available. Data exchange around the world,

using different platforms, with different practices, different languages and character sets, requires a neutral tool for all parties to communicate. In this situation, standardisation acquires a particularly important role.

ETSI plays a major Role
Within Europe, standardisation in telecommunications, broadcasting and certain aspects of information technology is the responsibility of ETSI, the European Telecommunications Standards Institute. Based in Sophia Antipolis in the

south of France, in the heart of Europe's own "Silicon Valley", ETSI is officially recognised by the European Union and the European Economic Area (represented by the European Free Trade Association, EFTA) as the region's competent body for standardisation of these domains.

However, regional boundaries are blurring too, and ETSI plays a major role in the development of a wide range of standards and other technical documentation as Europe's contribution to global standardisation. The Institute currently boasts over 900 members from 54 countries around the world; it brings together manufacturers, network operators, administrations, service providers, research bodies and users, and is therefore well equipped to fulfil its prime objective – to

support global harmonisation by providing a forum in which all the key players can contribute.

Progress across a Broad Front

The diversity in ETSI's work is enormous. For example, recent achievements include developments in Digital Enhanced Cordless Telecommunication (DECT™), and the first release of a complete set of specifications for a mobile satellite radio interface, known as Geostationary Earth Orbit (GEO) Mobile Radio Interface (GMR).

ETSI approved the first standards for Release 2 for Terrestrial Trunked Radio (TETRA) in 2001. TETRA is the most advanced utilisation of the radio spectrum, offering the parallel traffic of four full voices on just one single 25 kHz ordinary land mobile radio channel. The system is particularly designed to meet the needs of professionals in the public safety and military peacekeeping sectors, and approval of Release 2 therefore represents a timely and significant contribution to the fight against terrorism.

Release 3 of standards for Telecommunications and Internet Protocol Harmonisation Over Networks (TIPHON™) was also approved at the end of 2001; an ETSI Technical Report on how its high-performance wireless Local Area Network technology (HiperLAN2) can interwork with 3rd Generation (3G) mobile systems was published, forming the basis for specifications due during 2002; and new work was initiated on Next Generation Networks (NGN). In addition, there was also significant progress on the standardisation of Dynamic synchronous Transfer Mode (DTM), a new transport network technology specifically designed for the anticipated explosion of real-time media content within NGN.

A Key Player in the Modernisation of Europe

Although ETSI's work has global implications, the Institute has a core role nearer to home, and is committed to supporting European legislation (e. g. New Approach Directives) and a number of different European initiatives – especially eEurope.

The success of the Information Society will depend on the ability of consumers and small and medium-sized enterprises in particular to take full advantage of the opportunities on offer. For this, they need to acquire the skills that will enable

them to access the information they seek and interact successfully on the Internet. To ensure that every citizen, every school and every company in Europe reaps the benefits of the Information Society, the European Commission has launched a new initiative – eEurope 2002 – an Information Society For All. It is a crucial element in the European Union's strategy for modernising the European economy. Although the European Standardisation Organisations (the ESOs – the European Committee for Standardisation (CEN), the European Committee for Electrotechnical Standardisation (CENELEC) and ETSI) have co-operated in overlapping areas for many years, eEurope has provided a new driving force for collaboration.

The ESOs are ideally suited to play a major part in the realisation of eEurope. They are entirely open and thus free from the pressures of competing commercial interests. They represent almost the entire spectrum of economic activity, and they operate through the voluntary consensus of participants, taking full account of the views of all interested parties.

The eEurope Initiative identifies key areas – or action lines – where effort should be concentrated, and ETSI is active in a number of these, including cheaper, faster and secure Internet, e-Security, e-Accessibility and e-Commerce.

Cheaper Internet

Cheaper access leads directly to wider access. ETSI is working on different aspects of enhancing access to the Internet, looking at Quality of Service issues and radio aspects such as electromagnetic compatibility and spectrum management.

Interest in the use of cable as a telecommunications medium is growing globally. ETSI is developing standards to enable these new means of access, which include IPCablecom, an alternative access technology which provides all types of telecommunications services over Cable TV networks, and powerline telecommunication, which offers the ability to provide Internet access via electrical networks in the home and at work.

Mobile communications represent another way of providing access to the Internet and the existing specifications for the Global System for Mobile communications (GSM), developed by ETSI, are being enhanced. Recent developments

include the General Packet Radio Service (GPRS), which provides the means for the Internet to become truly mobile. But the next generation of mobile communications – the 3rd Generation technology using Wideband Code Division Multiple Access (W-CDMA), which is often known as the Universal Mobile Telecommunications System (UMTS™), is fast becoming a reality and will offer even greater capabilities.

e-Security – Electronic Signatures

The development of Electronic Signatures, the electronic equivalent of written signatures to validate transactions, is essential to the success of e-Commerce. The European Electronic Signature Standardisation Initiative (EESSI) was set up by CEN and ETSI to identify the standardisation activities necessary to enable electronic signatures and to monitor the implementation of a work programme to meet this need. This initiative brings industry and the ESOs together under the auspices of the Information and Communication Technologies Standards Board (ICTSB), with the shared aim of providing a set of standards and of harmonising specifications at the international level to maximise market take up. Digital signature verified by public key cryptography is a major element of the work and considerable progress has already been made. ETSI Technical Specification TS 101 733 on Electronic Signature Formats, plus other supporting specifications, has been published, and the work has been input to the Internet Engineering Task Force (IETF). The Time Stamping Profile was also published recently, and the third phase of work to enable electronic signatures is now under way.

e-Accessibility

It is widely accepted that access to the benefits of the Information Society for all citizens in Europe will only happen if there is legislation, with standards to support that legislation. The ESOs, especially ETSI, are working hard to ensure access for everyone, including the young, the elderly and the disabled, following the principles of Design for All. In ETSI, a number of Technical Committees are looking into speech recognition and terminal access, but the main focus of activity on accessibility is ETSI Technical Committee Human Factors (TC HF). Among other things, TC HF is responsi-

ble for considering the ease of use and accessibility of telecommunication equipment and services for all users, including disadvantaged groups such as the elderly and disabled. Several guides have been produced, with recommendations which will particularly affect the next generation of mobile telecommunications and could also lead to alternatives to the use of long telephone numbers by the introduction of more meaningful methods. TC HF is also drawing up European guidelines on relay services for the deaf. The Initiative has fully funded eleven ETSI Specialist Task Forces to assist the work of TC HF on accessibility – recognition that the Technical Committee is one of the most eminent organisations in the field of human factors research.

e-Commerce – Smart Cards

Smart cards and security have been the subject of intense standardisation activity for many years. The importance of smart cards is unquestioned. They offer a secure method to access services, authenticate devices and applications, and identify users and their preferences, as well as to store applications for local use. They ensure an interoperable set of standard parameters that can be used with confidence, not only by consumers but also by the business community. The most widely deployed application of smart cards world-wide is the Subscriber Identity Module (SIM) card, specified by ETSI and which is being used in more than 670 million GSM handsets. Building on this huge success, ETSI Project Smart Card Platform (EP SCP) has the task of producing platform specifications for a multi-application framework, and a core toolkit specification to enhance security to support mobile commerce. The Project draws upon a wealth of experience from its industry members and has broken new ground both technologically and commercially. ETSI also participates in the European Smart Card Charter Initiative, which is setting industry-driven requirements for standardisation and other activities.

Mobile Commerce

Mobile commerce is expected to be one of the key drivers for the development of the global Information Society within the next few years. Applications will emerge in numerous areas including banking, financial services, security services, shopping, advertising, entertainment, cus-

tomer care and information provisioning. ETSI Project Mobile Commerce (EP M-Comm) has responsibility within ETSI for defining the requirements and recommendations for electronic signature and electronic payment for m-Commerce. Its scope includes the support of m-Commerce services in telecommunications networks, terminals and devices such as smart cards, but it is not concerned solely with technical matters; it is also addressing legal aspects, such as the ownership of data and system components.

Working in Partnership – 3GPP™ and MESA

To ensure the widest possible application of its specifications and reports, ETSI works in partnership with other organisations around the world. Nowhere has this partnership concept been more successful than in 3GPP, of which ETSI is a founding partner. Established to co-ordinate standardisation in the third generation mobile telecommunications area (IMT-2000), 3GPP brings together market players with six standardisation organisations (one being ETSI) from around the globe. Among other things, its work is crucial to the future of mobile commerce.

In its short life to date, 3GPP has achieved remarkable results; it has already published three Releases (each providing a complete set of specifications for an entire 3G mobile system, each with an increased functionality), and up to 1000 more specifications are expected over the next 18 months or so. The latest release includes High Speed Download Packet Access specifications, which will bring high-speed data delivery to 3G terminals, and the Internet Protocol Multimedia System (IMS), which will offer flexible telecommunications with multimedia and Internet access and exploit the substantial benefits of Internet Protocols. The concept of Partnership Project, the effectiveness of which is clearly evident in 3GPP, is now being adopted for other technologies. A second partnership project – MESA (Mobility for Emergency and Safety Applications) – has been created between ETSI and the Telecommunications Industry Association (TIA) of the United States. Project MESA will develop a Mobile Broadband standard aimed primarily at serving the needs of the public protection and disaster relief sector – needs so tragically demonstrated by the

terrorist attacks in the United States on September 11th 2001. MESA complements other ongoing activities in this area and is helping to meet the need for global communications for the emergency services and disaster relief, both in urban areas and in parts of the world where local networks and resources are not well established. The project was conceived as a global initiative, and interest in its work is already apparent outside Europe and America, as far afield as Canada, South Korea and Japan (the Telecommunications Technology Association (TTA) of Korea and the Telecommunications Standards Advisory Council of Canada (TSACC) currently have Observer status in the Project).

Testing and Validation

Testing and validation are important elements to ensure the quality of ETSI's deliverables. A recent innovation, the ETSI Plugtests™ Service, is a professional service which specialises in running interoperability testing events for any telecommunications, Internet or Information Technology standard. The Plugtests Service has organised numerous such events, where engineers from competing companies get together to share experiences and pool information in a commercially secure environment. In this way, they are able to ensure the interoperability of their own company's implementations, while at the same time they help improve the quality of standards. Complementing the work of the Plugtests Service, the Protocol and Testing Competence Centre (PTCC) is a unique resource available to support ETSI committees and projects with world-leading expertise in the application of specification, validation and testing techniques to help the ETSI membership produce the very best standards and products possible. The Centre played a major role in the specification of the new version of Testing and Test Control Notation version 3 (TTCN-3), the test language developed by ETSI Technical Committee Methods for Testing and Specification. An informal global TTCN-3 community now exists, centred on ETSI and the PTCC.

A Record of Achievement

These are just some of ETSI's recent developments and achievements. Since it was established in 1988, ETSI has published more than 9300 deliverables and

the number produced annually continues to rise year by year; in 2001, over 2000 ETSI deliverables were published, which corresponds to one published standard about every 45 minutes of the working day. As ETSI continues to contribute to the needs of the global telecommunications industry, the number of deliverables produced during 2002 is expected to rise again substantially.

Broadening Participation in the Standardisation Process

To increase participation in the standardisation process – in particular from new market entrants such as professional users and consumers – ETSI has been encouraging new Members. In addition, a new class of participant is being wooed, the "Internet Player", as what was originally a discrete area of standardisation now impinges significantly on others. ETSI's efforts to broaden participation are proving successful; membership has grown year on year since 1988. In recognition of the increasingly global application of ETSI's deliverables, its developing involvement on the world stage and the growing number of participants from outside Europe, changes have been made to the ETSI Rules to provide for greater equalisation of the rights and obligations of Associate Members (ie Members from outside Europe).
The new electronic age will be born of collaboration and cooperation. Working in partnership with each other and with other organisations, consortia and fora, ETSI is playing an increasingly important role in standardisation and technological innovation on the European and the global scene. It is helping to position Europe as a leader in the development and use of Information and Communication Technologies (ICT), and is making a major contribution towards ushering in the Information Society and bringing its benefits to everyone in Europe. [9]

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Zusammenfassung

Partnerschaftliche Zusammenarbeit verhilft europäischen Normierungsanstrengungen zum Durchbruch

Das Weltwirtschaftssystem wandelt sich immer mehr von einer Industrie- zu einer Informationsgesellschaft. Tiefer greifende und weiter reichende Veränderungen als die, die uns heute bevorstehen, hat es seit Beginn des Industriezeitalters nicht gegeben. Sie werden uns alle erfassen, egal wer wir sind und wo auf der Welt wir leben, und sie werden unser Dasein, wenn wir das Potenzial der neuen Technologien zu nutzen verstehen, ungemein bereichern.

Auf dem Weg zum kompostierbaren PC

Bis 2004 soll er fertig sein. Er kommt von Fujitsu und hört auf den seltsamen Namen FMV-Biblo NB. Nach Angaben der Fujitsu-Laboratorien hat man jetzt die ersten Kunststoffbausteine fertig entwickelt. Sie gehen auf Milchsäure zurück, die aus pflanzlicher Stärke gewonnen wird und deren Zusammensetzung man schon länger gut erforscht hat. Der erzeugte Kunststoff ist mechanisch sehr stabil und mit dem gebräuchlichen Polykarbonat vergleichbar. Man kann ihn vergraben, wobei er dann über einen längeren Zeitraum hinweg zerfällt. Man kann ihn aber auch verbrennen, wobei neben Energie auch CO_2 freigesetzt wird, aber keine toxischen Stoffe. Angeblich wird für die Herstellung nur etwas die Hälfte der Energie benötigt wie für andere übliche Kunststoffe. Nach wie vor müssen aber die elektronischen Bauelemente wie Chips, Kondensatoren und Spulen vor der Entsorgung ausgebaut werden.

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China will Mobilfunk-Einstrahlung weiter senken

Die in der Volksrepublik China geplanten maximalen Abstrahlungen von Handys werden die Hersteller solcher Geräte zu millionenschweren Redesigns ihrer Geräte zwingen. Ein neuer Entwurf setzt Standards fest, die nur halb so hoch sind wie in den USA und der Mehrzahl der europäischen Staaten (ausgenommen in der Schweiz, wo die entsprechenden Werte bereits niedriger liegen als bei den Nachbarn). Das trifft die Hersteller gerade mit Blick auf i-Mode und UMTS hart, weil nun wohl auch der Weg über eine Verkleinerung der Netzzellen (und damit eine Erhöhung der Zahl der Sendestationen) noch rascher gegangen werden muss. Das alles geht erheblich ins Geld, selbst wenn man zunächst nur die Ballungszentren ausrüstet.