

annual report  
& activity report  
**1999**



EUROPEAN TELECOMMUNICATIONS STANDARDS INSTITUTE

# ETSI today

## the future is built through partnership

ETSI is a non-profit organization whose mission is to produce telecommunications standards for today and for the future. It is an open forum that unites over 720 members from 51 countries, representing manufacturers, network operators, administrations, service providers, research bodies and users.

standards which are used throughout the world - indeed ETSI standards have already been hugely successful in the global arena, with the Global System for Mobile communications (GSM), the Digital Enhanced Cordless Telecommunications system (DECT) and the Universal Mobile Telecommunications System (UMTS), to name just three.

In a world governed by convergence, ETSI recognizes that, to deliver standards that truly meet market need, individuals and organizations must co-operate - the key is partnership. So Membership of ETSI includes all the players involved in telecommunications.

Its working methods bring

In the 11 years since the establishment of the Institute, the telecommunications industry has undergone change at an unprecedented rate. ETSI is now in a business environment dominated by convergence in many forms - convergence between telecommunications, information technology and broadcasting, convergence between fixed, mobile and Internet communications, with seemingly limitless possibilities, and convergence brought about by the globalization and deregulation of the communications marketplace.

The market in which ETSI Members now operate is one of open global competition, with dramatically decreased state intervention due to widespread privatization and industry self-regulation. ETSI's goal is therefore to produce

together the relevant experts, there is wide consultation and, wherever possible, its deliverables are agreed by a process of consensus. Its Work Programme is based on, and co-ordinated with, the activities of European and international standardization bodies and, outside Europe, ETSI co-operates closely with partner organizations, for example, in the USA, Canada, Australia, China, Japan and Korea.

In this way - by working together - the Institute is playing a major part in the creation of the world's future telecommunications.

ETSI is helping to build a future through partnership.

# business review

1999 was a busy year - a year of action and renewal. A number of important decisions were taken that will influence ETSI's standardization for the years to come. Listed here are some of the highlights of 1999 that make the year a turning point for the Institute.

## renewal

The ETSI Future Role group examined today's world of telecommunications and offered an analysis of its characteristics and of the driving forces for change that exist within the industry. Its recommendations for achieving progress within a strategic vision of ETSI's future were submitted to and approved by the General Assembly. The main features include a recognition of the importance of:

- **Globalization** - ETSI shall remain a European institution but shall look for increased global impact of its deliverables and promote this.
- **Innovation** - ETSI shall on request and with the help of its Members accept new work areas and items in the range of Information and Communications Technologies and actively support them.
- **Speed** - ETSI shall adopt new working methods, procedures and structures in order to be able to react to the new requirements as appropriate. ETSI shall always work on improving efficiency and effectiveness in meeting the requirements of the markets and of its Members.
- **Competition** - ETSI shall allow and support new working procedures and methods, shall allow and support new ways of co-operation with other Standards Developing Organizations, fora and consortia; and, with particular constraints, shall allow and support new approaches for standards for competing technical solutions.

This strategy for ETSI's future role should ensure that it maintains its position as an influential player in global telecommunications standardization.

1999 also saw a renewal of the ETSI Board. Under the leadership of Dieter Kaiser, the new Board has established a working structure with 'issue managers' appointed to oversee the major strategic orientations of the Institute. In November 1999, Gerry Lawrence was appointed Chairman of the Operational Co-ordination Group (OCG).

Interest in Membership of ETSI is still growing, rising again in 1999 to a total of 728 Members from 51 countries across five continents (up more than 12% compared with 1998). Nigeria joined ETSI and Associate Membership increased by 44%, from 72 to 104, representing 16 non-European countries and reflecting ETSI's growing influence on the global scene.



Francisco da Silva  
Chairman of the General Assembly



Dieter Kaiser  
Chairman of the ETSI Board



Karl Heinz Rosenbrock  
Director-General

## action

1999 was another record year for the production of standards. 897 deliverables were published (compared with a previous all time high of 869 in 1998). Since 1988, ETSI has published over 4.400 deliverables and the predicted total for 2000 alone is another 4.000.

The Mobile Competence Centre (MCC) was created in March 1999 to provide support to the Third Generation Partnership Project (3GPP), ETSI Technical Committee Special Mobile Group (TC SMG) and ETSI Project Universal Mobile Telecommunications System (EP UMTS). The MCC is now an integrated, international team of 27 persons.

As one of the founding partners in 3GPP, ETSI has been delighted to share in the process which has approved the first set of specifications, known as 3GPP Release 99. The meetings where Release 99 was approved were hosted by ETSI in Nice, France, and attracted 400 of the world's leading experts in mobile communications.

The 3GPP specifications have been evolved mainly from the highly successful Global System for Mobile communications (GSM) standard, which was developed by ETSI, and includes an innovative radio interface technology known as UTRA (Universal Terrestrial Radio Access). The specifications define the set of basic services that will provide compatibility between the existing GSM system and UMTS. ETSI's next task is to transpose the approved specifications into a formal standard. UMTS is a member of the IMT-2000 family of 3rd Generation Systems established by the International Telecommunication Union (ITU).

The PEX and Testing Competence Centre (PTCC) was created and has been significantly involved in methodologies and testing in a number of technical areas such as 3GPP, GSM Phase 2, the General Packet Radio Service (GPRS), HIPERLAN/2 and much more. PEX is also collaborating with the development of version 3 of Tree and Tabular Combined Notation (TTCN-3) and the use of Unified Modelling Languages (UML) in ETSI deliverables. Work with other specification bodies includes important contributions to the ITU, Bluetooth, the WAP Forum and the ATM Forum.

ETSI Project Powerline Telecommunications (EP PLT) was created in 1999, to develop high quality standards and specifications to provide end-users with access to voice and data services via the existing electricity mains power network. In addition, the EP PLT 'home networking' systems are aimed at delivering broadband services over the in-building electricity cables to each power socket. The Project will work closely with the International Powerline Communications Forum (IPCF) which has been set up to develop an industry view on strategic, political, regulatory and technical matters.

Electronic working is increasing the efficiency of ETSI's standards production and is now the preferred method for meetings in the ETSI building, where rooms have been cabled for delegates' computers. Statistics for 1999 reveal a 47% growth in the meetings held at ETSI, with 40% more delegates attending than in 1998. This has led to a 30% increase in the number of meeting documents issued - but, thanks to electronic working, a 90% decrease in the number of paper copies produced.

The ETSI e-mail exploder currently processes around 3.500 messages per hour, and the 400 lists have a total of 35.000 recipients. The web server contains over 1.000 pages of information and the FTP (DocBox) server holds over 100.000 documents. In the last year, approximately 30.000 people have downloaded 400.000 publications. Altogether, ETSI's web and FTP servers are receiving in excess of 6 million hits per month - more than double the 2,5 million hits recorded in 1998.

Since the launch of the download of ETSI deliverables, free of charge, web usage has grown steadily to reach 1.500 downloads each day. Files have been downloaded from over 178 countries around the world, with information about Digital Video Broadcasting (DVB), GSM, UMTS, ISDN, Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON) and terminal equipment the most popular subjects. Direct sales of the ETSI documentation service have declined slightly, but royalty payments from distributors have grown.

Finally, at the administrative level, a new law came into force in France, reducing the weekly working time of staff from 39 hours to 35; an agreement was signed in application of the law. With increasing workloads and the consequent pressure on space, 1999 also saw the staff and Specialist Task Force experts located in the Espace Beethoven building move to the new building (named Einstein) rented by ETSI beside its main building.

Francisco da Silva  
Dieter Kaiser  
Karl Heinz Rosenbrock



# standardization strategy

ETSI's mission is to disseminate standards covering Internet, fixed, mobile and satellite equipment and services. ETSI ensures its leading role as a recognized European Standards Organization by producing and maintaining globally applicable deliverables to meet the needs of the European as well as of the global market, to the benefit of its Members.

To shape its activities over the year, ETSI draws up an annual standardization policy, focusing on specific strategic initiatives. During 2000, ETSI will concentrate on the following five core themes, each of which includes a number of objectives:

## **To shape the future of mobile and radio communications**

- Internet Protocols (IPs) in Third Generation Partnership Project (3GPP) deliverables for the year 2000
- Approach fora including Bluetooth, Wireless Application Protocol (WAP), Association of Public-Safety Communications Officials (APCO)
- Satellite - partner with VSAT Forum
- Spectrum management ETSI/European Radiocommunications Office (ERO)/ European Radiocommunications Committee (ERC)
- Universal Mobile Telecommunications System (UMTS) frequency extension - support at the World Administration Radio Conference (WARC)

## **To be a driver in fixed networks**

- Asynchronous Transfer Mode (ATM)/Digital Subscriber Line (DSL)
- Quality of Services (QoS)/Interconnection of networks
- Pervasive Computing - hybrid switch/router
- ETSI Project Powerline Telecommunications
- Terabit networks

## **To target its Internet contribution**

- Access - xDSL, Broadband Radio Access Networks (BRAN), 3GPP, Community Antenna Television (CATV) etc
- Voice over IP (VoIP)/Messaging over IP/Fax over IP/Broadcast over IP
- IP over existing networks
- Internet Governance - the Internet Corporation for Assigned Names and Numbers (ICANN)
- Systems Definition Languages (SDLs) for Internet Engineering Task Force (IETF) Requests for Comments
- Global peering arrangements for Internet Service Providers (ISPs)
- IP naming and addressing

## **To bridge fixed/mobile/Internet/broadcasting convergence**

- Innovative architectures for interconnection and convergence
- Exploit Digital Video Broadcasting (DVB) interactivity
- Wireless E-commerce
- Electronic Signature

## **To become partners for global success**

- Optimize member resource in fora and standards developing organizations
- Open dialogues with all IP initiatives
- International Telecommunication Union Memorandum of Understanding (MoU) finalization
- ETSI Partnership Projects - use the tool more
- Simplify Publicly Available Specification (PAS) procedures
- Focused MoUs and external relations

# membership

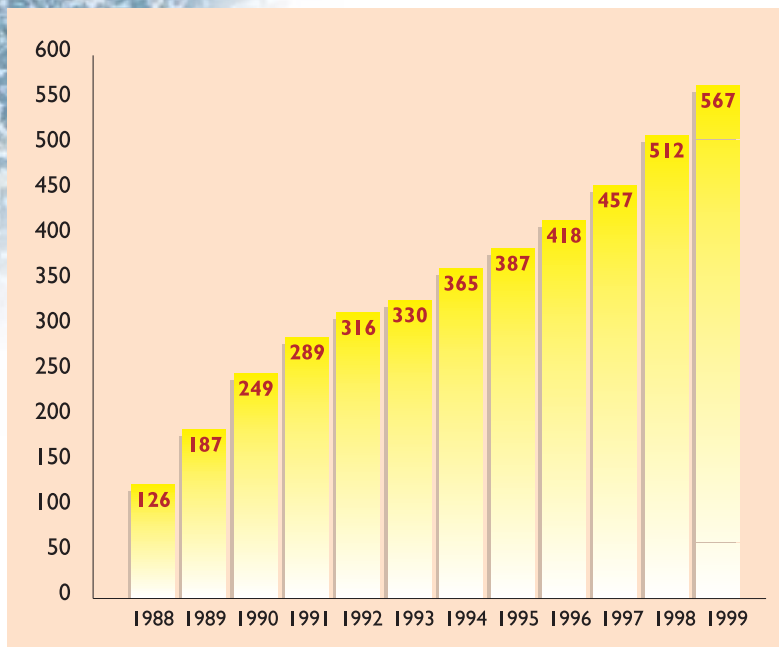
## membership by type

|                   | 01-01-1999 | 31-12-1999 |
|-------------------|------------|------------|
| Full Members      | 512        | 567        |
| Associate Members | 72         | 104        |
| Observers         | 64         | 57         |

## membership by country - full and associate members

|                          |     |
|--------------------------|-----|
| Andorra                  | 1   |
| Australia                | 9   |
| Austria                  | 10  |
| Belgium                  | 32  |
| Bosnia Herzegovina       | 2   |
| Bulgaria                 | 3   |
| Canada                   | 5   |
| China                    | 2   |
| Croatia                  | 2   |
| Cyprus                   | 2   |
| Czech Republic           | 3   |
| Denmark                  | 21  |
| Estonia                  | 1   |
| Finland                  | 12  |
| France                   | 72  |
| Germany                  | 92  |
| Greece                   | 5   |
| Hong Kong                | 1   |
| Hungary                  | 5   |
| Iceland                  | 1   |
| India                    | 6   |
| Ireland                  | 12  |
| Israel                   | 6   |
| Italy                    | 29  |
| Japan                    | 2   |
| Korea                    | 2   |
| Latvia                   | 3   |
| Lithuania                | 1   |
| Luxembourg               | 4   |
| Macao                    | 1   |
| Malaysia                 | 1   |
| Malta                    | 1   |
| Netherlands              | 29  |
| Nigeria                  | 1   |
| Norway                   | 7   |
| Poland                   | 7   |
| Portugal                 | 4   |
| Romania                  | 2   |
| Russia                   | 5   |
| Slovak Republic          | 2   |
| Slovenia                 | 2   |
| South Africa             | 2   |
| Spain                    | 13  |
| Sweden                   | 21  |
| Switzerland              | 10  |
| Taiwan                   | 4   |
| Turkey                   | 9   |
| Ukraine                  | 1   |
| United Arab Emirates     | 2   |
| United Kingdom           | 143 |
| United States of America | 58  |

## evolution of ETSI full membership - totals of full members

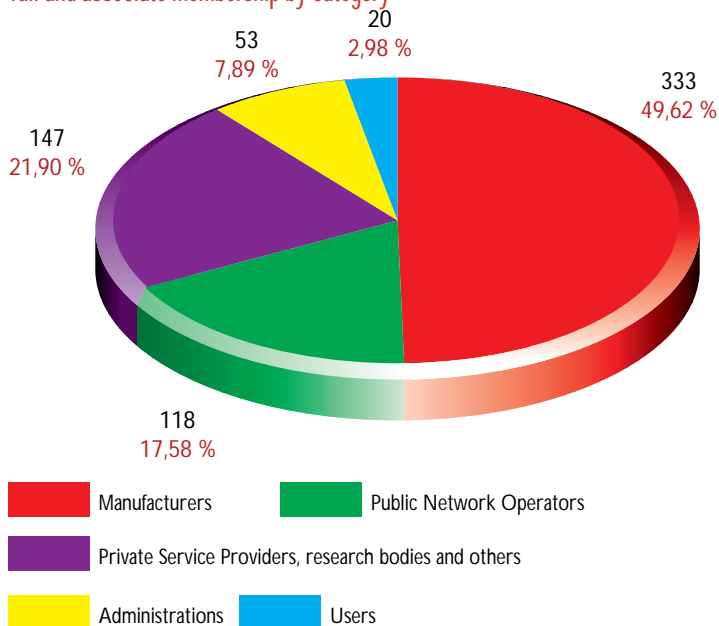


Interest in Membership of ETSI is still growing; during 1999 more than 300 companies requested information packs, which resulted in 80 new applications for Membership. Membership rose again, to a total of 728 Members from 51 countries across five continents (up more than 12% compared with 1998). Full Membership increased by over 10% on 1998 figures, to 567, drawn from 35 European countries. Nigeria joined ETSI and Associate Membership increased by 44%, from 72 to

104, representing 16 non-European countries and reflecting ETSI's growing influence on the global scene. By the end of 1999, there were also 57 Observers from 17 different countries.

The European Commission and the European Free Trade Association Secretariat, which hold special roles as Counsellors, attend the General Assembly and the ETSI Board and continue to play an active part in ETSI's work.

## full and associate membership by category



# standards production

1999 was another record year for the production of standards. 897 deliverables, representing 94.821 pages, were published (compared with previous

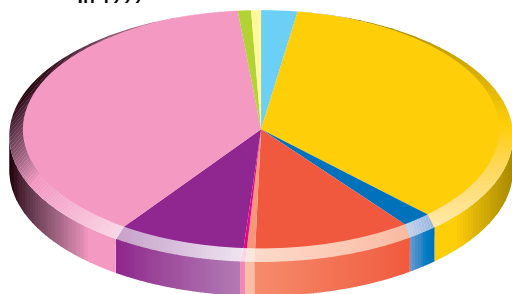
records of 869 published deliverables in 1998 and 91.837 pages). Since 1988, ETSI has published 4.413 deliverables.

the number of deliverables sent for Public Enquiry (PE), Unified Approval Procedure (UAP)/One-Step Approval Procedure (OP) and Vote, and published, for each of the years 1990 - 1999 and the prediction for 2000

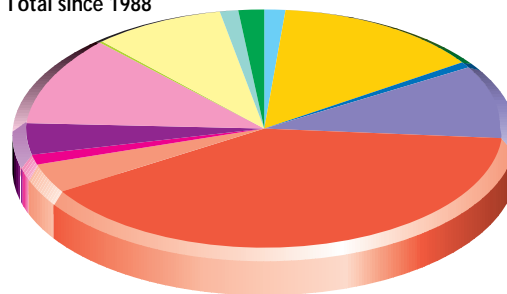
|               | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|
| PE            | 116  | 79   | 112  | 227  | 167  | 269  | 294  | 201  | 185  | 236  |      |
| Vote          | 21   | 104  | 103  | 81   | 248  | 186  | 267  | 256  | 202  | 196  |      |
| UAP/OP        | 0    | 11   | 3    | 22   | 51   | 131  | 192  | 181  | 260  | 265  |      |
| Members' vote | -    | -    | -    | -    | -    | -    | -    | 36   | 36   | 46   |      |
| Publication   | 18   | 49   | 185  | 176  | 274  | 557  | 762  | 637  | 869  | 897  |      |
| Prediction    |      |      |      |      |      |      |      |      |      |      | 4000 |

## distribution by type of published deliverable

In 1999



Total since 1988



|                                                         | In 1999 | Total since 1988 |
|---------------------------------------------------------|---------|------------------|
| ETSI Guide (EG)                                         | 22      | 63               |
| European Standard (telecommunications series) (EN)      | 316     | 626              |
| ETSI Standard (ES)                                      | 18      | 35               |
| ETSI Technical Report (ETR)*                            | 0       | 436              |
| European Telecommunication Standard (ETS)*              | 96      | 1759             |
| Interim ETS (I-ETS)*                                    | 5       | 175              |
| Technical Basis for Regulation (TBR)*                   | 2       | 60               |
| Technical Report (TR)                                   | 77      | 188              |
| Technical Specification (TS)                            | 347     | 535              |
| Special Report (SR)                                     | 8       | 10               |
| GSM Technical Specification (GTS)                       | 6       | 394              |
| Technical Committee Reference Technical Report (TCRTR)* | 0       | 55               |
| Technical Committee Technical Report (TCTR)*            | 0       | 77               |

\* Old deliverable regime

As previously, a small number of Technical Bodies, particularly in 1999 ETSI Technical Committees Special Mobile Group (SMG) (721 deliverables) and Signalling Protocols and Switching (SPS) (294 deliverables) and ETSI Project TETRA (109 deliverables), were the major contributors to standards production.

# Specialist Task Forces (STFs) and funded projects

The objective of an STF is to speed up the production of ETSI deliverables by providing expert resource to the Technical Organization. The STFs are funded by ETSI's Members and/or the European Commission (EC) and the European Free Trade Association (EFTA) Secretariat, and enable highly-skilled experts to work together either full-time or part-time to accomplish particular pieces of work rapidly and under optimum working conditions.

Specifically, in 1999 the STFs worked in the following areas:

- Telephony over the Internet (TIPHON)
- Terrestrial Trunked Radio (TETRA)
- Digital Enhanced Cordless Telecommunications (DECT)
- Electronic signature
- Support to the implementation of the Radio and Telecommunication Terminal Equipment (R&TTE) Directive
- Standardization of formal methodologies
- Aeronautical VHF Digital Link (VDL) Mode 2
- Testing for Broadband Radio Access Networks (BRAN), DECT, Integrated Services Digital Networks (ISDN), Broadband ISDN (B-ISDN), Access Networks
- Euro-Railways interoperability (R-GSM)

Sub-contracts were used for study and investigation into:

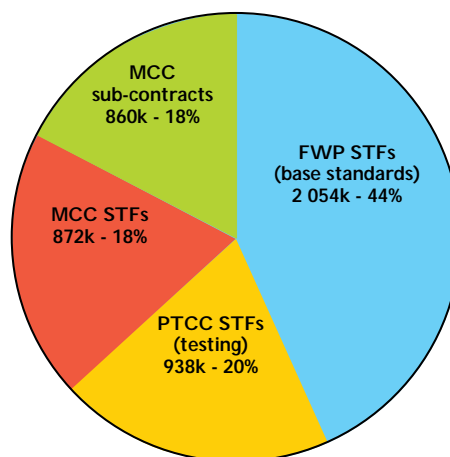
- Ciphering algorithms for the Third Generation Partnership Project (3GPP)
- Global System for Mobile communications (GSM) Adaptive Multi Rate (AMR) codec characterization and noise suppression algorithms.

In the new budget structure approved by the General Assembly, the resources for ETSI Funded Projects are distributed between three budget lines, for three competence centres: the Mobile Competence Centre (MCC) (for GSM, Universal Mobile Telecommunications System (UMTS) and 3GPP

support), the PEX and Testing Competence Centre (PTCC) (for methodologies and testing suites) and the Funded Work Programme (FWP) for the remaining activities. The resource is used for contracting experts, in particular in STFs, and for sub-contracts for technical studies and experiments.

In 1999, most of the investment was in STFs, established under the technical responsibility of the relevant Technical Body (TB). During 1999, a total of 4 724 KEUROs was spent for the Funded Projects in the competence centres.

## Funded Projects - Resources spent in 1999 (KEURO) (Total 4 724 KEURO)



## EC/EFTA funding

The system of funding by the European Commission and EFTA was in a transitional phase in 1999, until the full implementation of the new system in 2000. In 1999, the EC and EFTA contributed 1,05 MEURO towards funded project activity. However, an element of this contribution was given to supporting the Mobile Competence Centre rather than the traditional STF funding. As per the Memoranda of Understanding between the EC/EFTA and ETSI, a further 2,1 MEUR was provided to support the ETSI standardization infrastructure.



# the ETSI Board

The Board is the executive arm of the General Assembly (GA). Its duties include bringing matters of policy and strategic importance to the attention of the GA and offering advice and decisions on financial, technical and administrative issues.

Within this overall remit, the Board makes recommendations on applications for membership. It also advises on broad standardization policies, reviews performance and considers co-operation agreements with external bodies. It oversees the preparation of deliverables by Technical Committees, Projects and Partnership Projects, defines the ETSI Work Programme and administers the Funded activities. The Board considers recommendations for new areas of standardization, takes decisions on the creation and cessation of Technical Committees, Projects and Special Committees, sets their terms of reference and appoints their chairmen.

Membership of the Board comprises 25 elected members (plus representatives from the user community and the Central and Eastern European Countries (CEEC), if not already included in the initial 25), together with the ETSI Elected Officials and representatives of the European Commission's Directorates Enterprises and Information Society and of the European Free Trade Association.

During 1999, a large number of elected Board members completed their terms of office. Grateful thanks for their work are due to all of them, but especially to the retiring Chairman, David Hendon, whose new responsibilities at work mean the end of his long association with ETSI. David Hendon had been Chairman of the Board since its creation in 1996 and Vice-Chairman of the former Technical Assembly.



**Dieter Kaiser**  
Chairman



**Gerald Lawrence**  
Vice-Chairman



**Phil Davidson**  
Vice-Chairman

## elected members of the Board (from November 1999)

| Name                                                             | Country     | Nominating Organization(s)                                                               |
|------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------|
| <b>August Blunsch</b>                                            | Switzerland | Ascom AG                                                                                 |
| <b>Didier Chauveau</b>                                           | France      | ART                                                                                      |
| <b>Alan Cox</b>                                                  | UK          | Vodafone AirTouch                                                                        |
| <b>Phil Davidson</b><br>(Vice-Chairman)                          | UK          | BT                                                                                       |
| <b>Aad Doordu</b>                                                | Netherlands | Lucent Technologies EMEA BV                                                              |
| <b>Giorgio Fioretto</b>                                          | Italy       | Telecom Italia                                                                           |
| <b>Wolf Haas</b>                                                 | Germany     | Mannesmann Mobilfunk GmbH                                                                |
| <b>Wolfgang Heidrich</b>                                         | Germany     | Bundesministerium für Wirtschaft und Technologie (BMWi)                                  |
| <b>Azucena Hernández</b>                                         | Spain       | Telefonica de España SA                                                                  |
| <b>Christopher Holmes</b>                                        | UK          | DTI                                                                                      |
| <b>Tapio Kaijanen</b>                                            | Finland     | Sonera Corporation                                                                       |
| <b>Dieter Kaiser</b><br>(Chairman)                               | Germany     | Siemens AG                                                                               |
| <b>Peter Kesselyak</b><br>(CEEC Representative)                  | Hungary     | Communication Authority Hungary                                                          |
| <b>Hans Kraaijenbrink</b>                                        | Netherlands | Royal KPN NV                                                                             |
| <b>Kari Lang</b>                                                 | Finland     | Nokia Corporation                                                                        |
| <b>Gordon Langmann</b><br>(User Representative, from April 2000) | Belgium     | European Association for the Co-ordination of Consumer Representation in Standardization |
| <b>Gerald Lawrence</b><br>(Vice-Chairman)                        | UK          | Marconi Communications Ltd                                                               |
| <b>Lars-Göran Larsson</b>                                        | Sweden      | Ericsson LM                                                                              |
| <b>Eric Ljungberg</b>                                            | Sweden      | Telia AB                                                                                 |
| <b>Vincenzo Lobianco</b>                                         | Italy       | Ministero delle Comunicazioni                                                            |
| <b>William Morrow</b>                                            | Belgium     | AirTouch Belgium AS                                                                      |
| <b>John Phillips</b>                                             | UK          | Nortel Networks                                                                          |
| <b>Rudolf Rüggeberg</b>                                          | Germany     | Deutsche Telekom AG                                                                      |
| <b>Jean-Marc Salles</b>                                          | Denmark     | Tele Danmark A/S                                                                         |
| <b>Jean-Claude Sapanel</b>                                       | France      | France Télécom                                                                           |
| <b>Alistair Urie</b>                                             | France      | Compagnie Financière Alcatel                                                             |
| <b>Andy Wilton</b>                                               | UK          | Motorola Ltd                                                                             |

**December**

- ETSI EP Broadband Radio Access Networks (BRAN) approves four new Technical Specifications for the HIPERLAN/2 system
- ETSI TC Satellite Earth Stations and Systems (TC SES) approves nine European Standards (ENs) for One-Step Approval Procedure (OAP), which are Harmonized Standards under the R&TTE Directive
- TETRA standard for private mobile radio approved for use by Project 25 in the US
- 3GPP approves Release 99 specifications during their meeting in Nice

**November**

- ETSI participates in Terrestrial Trunked Radio (TETRA) World Congress in Amsterdam
- ETSI and the IPv6 (Internet Protocol version 6) Forum sign a co-operation agreement over the next generation of IPs
- ETSI EP TIPHON organizes the first Remote Interoperability Event
- ETSI is mandated by the European Commission to produce Harmonized Standards under the Radio and Telecommunications Terminal Equipment (R&TTE) Directive
- ETSI TC SPAN holds a workshop on IP Networks
- Two new standards for data transmission within Digital Enhanced Cordless Telecommunications (DECT) technology are released for national vote: DMAP and MRAP
- ETSI TC Security (SEC) and CEN/ISSS work in close co-operation to implement the European Electronic Signature Standardization Initiative (EESSI)
- First Bluetooth Unplug Fest (organized by Ericsson, Nokia and ETSI) in Sophia Antipolis

**October**

- ETSI participates in Telecom 99 in Geneva
- ETSI and the WAP Forum sign a co-operation agreement to drive the interoperability of standards for wireless mobile Internet
- 3GPP approves specifications for submission to IMT-2000
- Technical Specifications for the physical layer of HIPERLAN approved

**September**

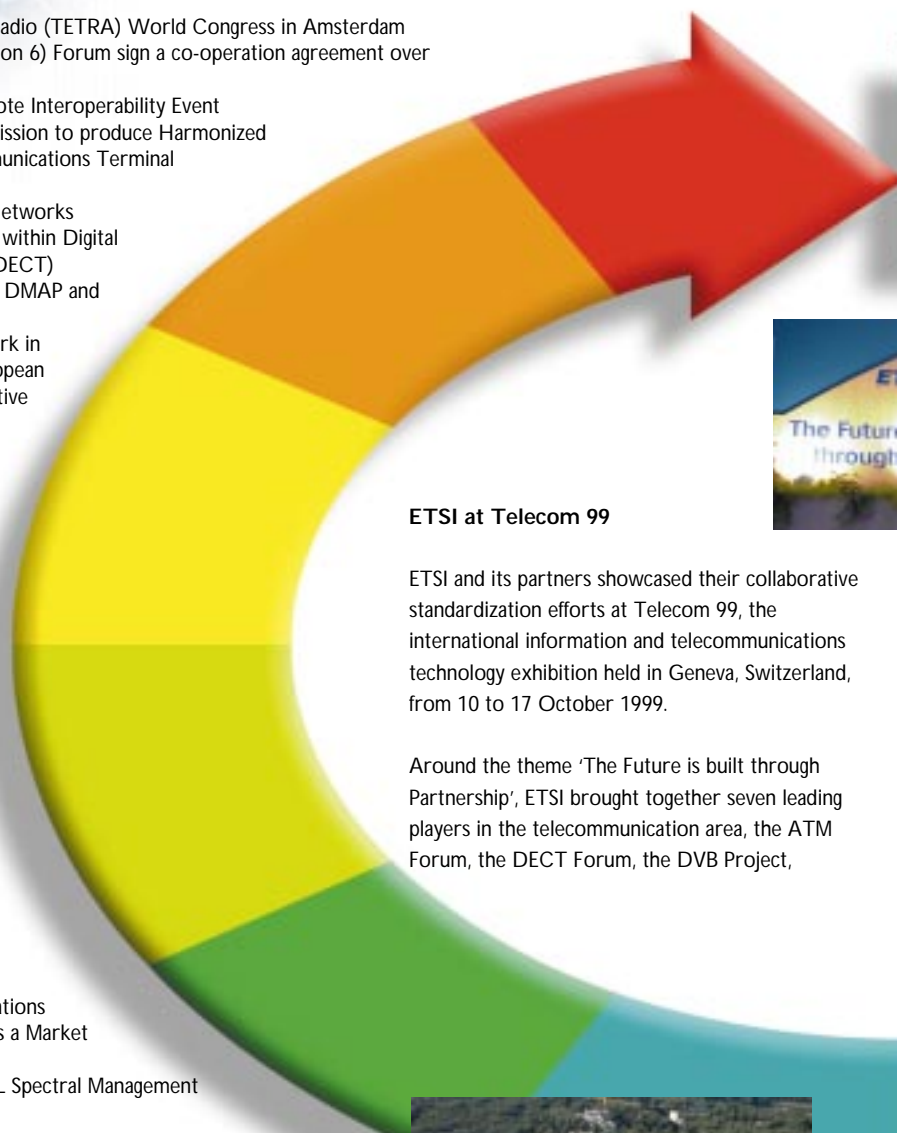
- Creation of ETSI Project Powerline Telecommunications (EP PLT)
- The Universal Wireless Communications Consortium (UWCC) joins 3GPP as a Market Representation Partner
- VDSL specification adopted and DSL Spectral Management investigation begins

**August**

- ETSI and CENELEC agree to co-operate in development of standards for safety of telecommunications and cable TV networks
- 3GPP Universal Terrestrial Radio Access (UTRA) workshop held in Nice

**July**

- ETSI signs ICANN Protocol Supporting Organization Memorandum of Understanding (MoU)
- ETSI issues guidelines on co-existence of standards



**ETSI at Telecom 99**

ETSI and its partners showcased their collaborative standardization efforts at Telecom 99, the international information and telecommunications technology exhibition held in Geneva, Switzerland, from 10 to 17 October 1999.

Around the theme 'The Future is built through Partnership', ETSI brought together seven leading players in the telecommunication area, the ATM Forum, the DECT Forum, the DVB Project,



# 1999 - a year in the life of ETSI

## January

- ETSI and the International Multimedia Teleconferencing Consortium (IMTC) sign a co-operation agreement on the interworking of Voice over the Internet with Switched Circuit Networks
- ETSI Project TIPHON agrees to sign TIPIA Agreement for the deployment of global Internet Protocol (IP) services based on TIPHON specifications
- ETSI EP TIPHON and the IMTC host Interoperability Event in Sophia Antipolis

## February

- ETSI TC Special Mobile Group (SMG) creates the GSM Cordless Telephony System (CTS) feature
  - The Global Mobile Suppliers Association (GSA) joins the Third Generation Partnership Project (3GPP) as a Market Representation Partner (MRP)
  - Launch of ETSI Project Universal Mobile Telecommunications System (UMTS)

## March

- 3GPP approves its first specifications
- ETSI EP TIPHON completes work on phase 1 'IP Telephony' Specifications
- First official joint meeting of HIPERLAN/2 and the Institute of Electrical and Electronics Engineers (IEEE) 802.11a group
- Responsibility for Cordless Terminal Mobility (CTM) transferred to the 3GPP and ETSI EP UMTS, closure of ETSI EP CTM.

## April

- Merger of ETSI Technical Committees Network Aspects (TC NA) and Signalling Protocols and Switching (TC SPS) to form a new ETSI Technical Committee, Services and Protocols for Advanced Networks (ETSI TC SPAN)
- HIPERLAN/2 to support both professional and consumer applications

## May

- The GSM Association joins 3GPP as an MRP and the China Wireless Telecommunication Standards (CWTS) group becomes an Organizational Partner

## June

- ETSI supports single 3-mode CDMA for submission for IMT-2000
- ETSI TC Transmission and Multiplexing (TC TM) revises Synchronous Digital Hierarchy (SDH) multi-part standard
- ETSI participates in the UMTS Exhibition in Monaco



the GSA, the GSM Association, the TETRA MoU and the UMTS Forum.

More than 160 ETSI Members also exhibited at Telecom 99, all demonstrating their latest products based on ETSI standards. Telecom 99 was an excellent opportunity for ETSI to represent the interests of its membership and to underline the importance of collaboration in the development of standards with a global impact.



# the financial situation

The management of the finances of ETSI is described by

- the budget report
- the financial statements (balance sheet and income & expenditure statement) which are established according to the French laws and regulations.

Mr Pierre Casagrande, nominated auditor by the 30th General Assembly, has audited the 1999 ETSI accounts and certified that the annual financial statements are true, sincere and give a fair view of the activities carried out during the past financial year.

## budget maintenance

ETSI's 1999 Budget shows a surplus of 4 MEUR reflecting 2.1 MEUR higher income and 1.9 MEUR reduced expenditure compared with the initial budget approved by the General Assembly. The key points of the budget management, compared with 1998, are the following:

**Expenditure** - In total expenditure increased by 13%. Secretariat costs decreased by 9% due to the creation of the two competence centres (Mobile Competence Centre (MCC) and PEX & Testing Competence Centre (PTCC)). 4.3 MEUR were spent for MCC and 1.5 MEUR for PTCC. The remaining Funded Work programme Budget amounted to 2 MEUR.

**Income** - Total Members contributions decreased by 12% due to a significant reduction in the unit cost of contribution. Sales income dropped by 33% further to the free availability of ETSI publications on the web. EC/EFTA contributions amounted to 5.9 MEUR (-12%).

## 1999 budget

| INCOME (KEUR)                               |               | EXPENDITURE (KEUR)              |               |
|---------------------------------------------|---------------|---------------------------------|---------------|
| Members' contributions and Observer fees    | 9 964         | Secretariat                     | 11 610        |
| EC/EFTA funding                             | 5 868         | Mobile Competence Centre (MCC)  | 3 999         |
| Members and 3GPP Partners voluntary funding | 1 100         | Pex & Testing Competence Centre | 966           |
| Sales                                       | 1 315         | Funded work programme           | 1 469         |
| Financial income                            | 577           | Carry-over from previous years  | 1 328         |
| 98 provisions                               | 2 324         | Taxes & other expenditure       | 1 105         |
| Contingencies                               | 3 380         | Retirement reserve              | 800           |
| Other income                                | 753           | Balance transferred to reserve  | 4 004         |
| <b>TOTAL INCOME</b>                         | <b>25 281</b> | <b>TOTAL EXPENDITURE</b>        | <b>25 281</b> |

# the financial situation

## financial statements for the year 1999

The final accounts and the balance sheet are summarized below. The amounts are in EUROS. Final account period 1 January 1999 - 31 December 1999.

### statement of income and expenditure

|                        | Income (EUR)      | Expenditure (EUR) |
|------------------------|-------------------|-------------------|
| Income                 | 24 626 152        |                   |
| Purchase               |                   | 10 424 955        |
| Expenses               |                   | 10 817 141        |
| Financial income       | 577 471           |                   |
| Financial expenses     |                   | 1 604             |
| Extraordinary income   | 77 688            |                   |
| Extraordinary expenses |                   | 32 960            |
| Transfer to reserves   |                   | 4 004 651         |
| <b>TOTAL</b>           | <b>25 281 311</b> | <b>25 281 311</b> |

### summary of the balance sheet

| ASSETS                 |                               |                               |
|------------------------|-------------------------------|-------------------------------|
| <b>Net amounts at:</b> | <b>31 December 1998 (EUR)</b> | <b>31 December 1999 (EUR)</b> |
| Fixed Assets           | 1 469 234                     | 1 922 395                     |
| Current Assets         | 2 760 501                     | 3 084 584                     |
| Securities/Cash        | 12 655 430                    | 11 656 423                    |
| Adjustment Accounts    | 17 750                        | 29 179                        |
| <b>TOTAL ASSETS</b>    | <b>16 902 915</b>             | <b>16 692 581</b>             |

| LIABILITIES              |                               |                               |
|--------------------------|-------------------------------|-------------------------------|
| <b>Net amounts at:</b>   | <b>31 December 1998 (EUR)</b> | <b>31 December 1999 (EUR)</b> |
| Equity                   | 2 963 994                     | 8 331 645                     |
| Provisions               | 5 704 482                     | 423 000                       |
| Creditors                | 8 234 439                     | 7 264 936                     |
| Adjustments              | 0                             | 673 000                       |
| <b>TOTAL LIABILITIES</b> | <b>16 902 915</b>             | <b>16 692 581</b>             |

# elected officials of ETSI



Francisco da Silva



Pierre-Yves Hébert



Karsten Meinhold



David Hendon



Dieter Kaiser



Gerald Lawrence



Phil Davidson



Karl Heinz Rosenbrock



Bridget Cosgrave

Chairman of the General Assembly

**Francisco da Silva**

Vice-Chairmen of the General Assembly

**Pierre-Yves Hébert**  
**Karsten Meinhold**

Chairman of the Board

**David Hendon** (until November 1999)  
**Dieter Kaiser** (from November 1999)

Vice-Chairmen of the Board

**Gerald Lawrence**  
**Dieter Kaiser** (until November 1999)  
**Phil Davidson** (from December 1999)

Director-General of ETSI

**Karl Heinz Rosenbrock**

Deputy Director-General of ETSI

**Bridget Cosgrave**

# activity report 1999



EUROPEAN TELECOMMUNICATIONS STANDARDS INSTITUTE

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- |                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                    |
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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## others

- |                                                                                                                                                                                                                                                                                                                                                          |                                                                                            |
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| <p>39 <b>3GPP</b><br/>Third Generation Partnership Project</p> <p>40 <b>ETSAG</b><br/>European Telecommunications Standards Awareness Group</p> <p>41 <b>JTC Broadcast</b><br/>Joint Technical Committee of the European Broadcasting Union, the European Committee for Electrotechnical Standardization and ETSI (EBU/CENELEC/ETSI) on Broadcasting</p> | <p>42 <b>SAGE</b><br/>Security Algorithms Group of Experts</p> <p>43 <b>User Group</b></p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|



# TC EE

## Environmental Engineering

[www.etsi.org/ee](http://www.etsi.org/ee)

Maurizio  
Grossoni

*Responsible for defining the infrastructure for all telecommunications equipment, including that installed at subscriber premises*

ETSI TC EE currently comprises two Working Groups: EE1 (Environmental Conditions) and EE2 (Power Supply).

During 1999, a formal co-operation agreement was reached between ETSI and the International Electrotechnical Commission (IEC), and EE1 now collaborates closely with its international counterpart, IEC TC 104.

Work within EE1 is continuing on a multi-part standard covering the classification of environmental conditions and the related equipment tests to verify mutual compatibility. Most parts of the standard were revised and published in the course of 1999; the remaining parts are expected to be published in 2000.

After finishing this revision exercise, EE1 will start working on new environmental classes for offices, as well as the inclusion of world-wide climatic conditions in existing standards. The group liaises closely with ANSI T1E1.8 and IEC TC 104 in this work.

New areas of interest for EE1 are the environmental conditions of 'mast mount equipment' and general conditions for outdoor enclosures. EE1 is also investigating the need to establish a support activity on ecological aspects in the telecommunication arena.

EE2's work on Power Supply included a new ETSI standard on the powering of equipment in access networks, and improvements to the existing standard on the earthing and bonding of telecommunications equipment in telecommunications centres. An ETSI Guide (ETSI EG) on this subject was also completed during the year.

Finally, work has begun on a new ETSI EG on 'power distribution to interface A' which will define the conditions for the distribution network to power the interface of telecommunication equipment.



# TC ERM

## EMC and Radio Spectrum Matters

[www.etsi.org/erm](http://www.etsi.org/erm)

Oliver  
Wheaton

*Responsible for a range of radio product and electromagnetic compatibility (EMC) standards and the overall co-ordination of radio spectrum matters*

The Radio and Telecommunication Terminal Equipment (R&TTE) Directive featured heavily in the work of ETSI TC ERM during 1999, and an ETSI Guide for the preparation of standards under the Directive was published. The TC's EMC Working Group was proactive in its revision of all radio EMC standards, work which was originally started in response to the Simplification of Legislation for the Internal Market (SLIM) initiative. As a result of this, a new, multi-part EMC radio standard will be completed by the end of 2000.

The EMC Working Group continues to work closely with the European Electrotechnical Standards Committee (CENELEC), and has formed a joint group to provide EMC standards for powerline technology.

Co-operation with the European Radiocommunications Committee of the European Conference of Postal and Telecommunications Administrations (CEPT-ERC) has continued, with ETSI Members involved in most of the CEPT Working Groups, and particularly the spectrum engineering group. The Technical Committee has also worked closely with CEPT-ERC Task Group 1, the Third Generation Partnership Project (3GPP) and ETSI Technical Committee Special Mobile Group on spectrum and harmonized standards issues for the Universal Mobile Telecommunications System (UMTS).

Work initiated in 1998 on the CEPT-ERC Detailed Spectrum Investigation (DSI) Phase III was finally completed in 1999 and ETSI's response was submitted to CEPT.

In the maritime sector, draft R&TTE Harmonized Standards were prepared for non-SOLAS (Safety of Life at Sea) equipment. Resources from the

R&TTE Specialist Task Force (STF 149) assisted in drafting 'part 2' harmonized standards. This is a strategy adopted by TC ERM which enables original type approval standards, widely used outside the European Union, to be retained as 'part 1' with the addition of an associated 'part 2' covering the essential requirements for the R&TTE Directive.

Similar activities have taken place in the land mobile sector, with Harmonized Standards being prepared, many of which follow this 'part 1, part 2' format. These have included standards for Citizen's Band (CB) radio and commercially available amateur equipment.

In the aeronautical sector, work on the VHF Data Link (VDL) Modes 2 and 4 is continuing with the assistance of ETSI Specialist Task Force 148. Sadly, commercial realities have grounded the Terrestrial Flight Telephone System (TFTS), although it is hoped that it may fly again in another guise, using GSM technology within the airframe.

The joint activity with the European Vehicle Constructors Association (ACEA) on the use of radio in vehicles has continued, and an International Organization for Standardization (ISO) Guide is being prepared. Progress has been limited; the vehicle industry has specific, understandable concerns about vehicle safety.

Finally, the Citizen's Band Task Group has nearly completed its work on the interference potential of CB radio at 27MHz with other radio equipment and broadcast receivers.

Overall it has been a busy year for ETSI TC ERM, with much of its work related to providing Harmonized Standards for the R&TTE Directive. Due to the close association between the role of TC ERM and the R&TTE Directive, TC ERM's chairman, Olly Wheaton, also chairs the Operational Co-ordination Group's R&TTE Steering Committee which has responsibility for the co-ordination of all ETSI's R&TTE activities.

# TC HF

## Human Factors

[www.etsi.org/hf](http://www.etsi.org/hf)

Knut  
Nordby



*Responsible for human factors issues in all areas of telecommunications, producing standards, guidelines and reports that set the criteria necessary to ensure the widest possible accessibility of converging information and communications technology. ETSI TC HF has a special responsibility to ensure that ETSI takes account of the needs of all users, including those who are older or disabled.*

Human Factors is the scientific application of knowledge about the capacities and limitations of users, with the aim of making products, systems, services and environments safe, efficient and easy to use. It is a key factor for the commercial success of any telecommunications product or service.

One of the most significant developments of the year for TC HF was the establishment in December 1999 of an ETSI Specialist Task Force (STF) to look into user identification solutions in converging networks, trying to simplify user identification with an alternative to long numbers. TC HF is collaborating with a number of other ETSI committees on this, particularly ETSI Technical Committee Services and Protocols for Advanced Networks (TC SPAN). The STF is expected to propose new solutions and a "road map" for their introduction by the Summer of 2000, which, it is hoped, will influence both ETSI committees and external bodies (such as the International Telecommunication Union Telecommunications Sector Study Group 2) and lead to new global standards.

During 1999, TC HF also completed its work on a new Technical Report (ETSI TR) defining symbols to identify telecommunications facilities for deaf and hard of hearing people. Work on the supplementary service code register was completed and published as an ETSI Technical Report (ETSI TR) in November 1999, and an ETSI Standard (ETSI ES) was completed on how to create and assign codes for new supplementary services.

ETSI TC HF finished an ETSI Guide (ETSI EG) setting out the ground rules for evaluating the usability of the design of telecommunications services, which will be used as the basis for a training course for manufacturers intending to develop special equipment for the disabled community.

In co-operation with the ETSI User Group, TC HF is examining ways of empowering users, allowing them greater input into how services are organized and terminals made. Other work for 2000 includes the use of mobile videotelephony by disabled people, requirements for assistive technology devices, the human factor requirements for telephony-voice interfaces, relay services for disabled users and revision of the ETR 029 recommendations for improving telecommunication terminals and services for impaired users.



# TC MTS

## Methods for Testing and Specification

[www.etsi.org/mts](http://www.etsi.org/mts)

Dieter  
Hogrefe

*Responsible for the identification and definition of advanced specification and conformance testing methods, which take advantage of formal approaches and innovative techniques to improve the efficiency and economics of both the standard description and associated conformance testing processes*

The most important achievement of 1999 was the development of version 3 of Tree and Tabular Combined Notation (TTCN), introducing new functionality and simplifying the language. This is a natural extension of the harmonization of TTCN and ASN.1. The first draft was completed in November. It will be published as a European Standard (EN) in 2000 and has been forwarded to the International Telecommunication Union (ITU) for world-wide application as an ITU Recommendation. The ITU plans to publish TTCN3 as Z.140 later in 2000. At ETSI the work will be extended with presentation formats for Message Sequence Charts (MSCs) and Unified Modelling Languages (UML) in 2000.

ETSI TC MTS's update of guidelines for using Systems Definition Language (SDL) in more user-friendly, illustrative ways was published as an ETSI Guide (ETSI EG) in 1999. These guidelines were also validated during the year, leading to further improvements.

Guidelines on the use of UML within the ETSI standardization process were developed and are expected to be published in 2000.

In addition, TC MTS developed a new version of ASN.1 for use in SDL, which was published as an ETSI Technical Report (ETSI TR) in November and forwarded to the ITU for publication as an ITU Recommendation. An update of this work is included in the TC's work programme for 2000.



# TC Safety

Telecommunications Equipment Safety

[www.etsi.org/safety](http://www.etsi.org/safety)

Richard  
Hughes

*Responsible for co-ordinating safety requirements between the European Electrotechnical Standards Committee (CENELEC) and ETSI, for monitoring the safety aspects of all ETSI deliverables and co-ordinating ETSI's position on telecommunications equipment safety*

Although the main responsibility for electrotechnical standards in Europe relating to safety rests with CENELEC, many ETSI standards include references to safety. CENELEC and ETSI have collaborated closely in the area of safety for many years but, during 1999, the two bodies drew up a formal agreement. As a result, ETSI Technical Committee Safety was established as an ETSI committee in April and given responsibility for the safety implications of all ETSI work.

The TC set up two Working Groups in 1999, one on Radio matters and, in co-operation with CENELEC TC74, a Joint Working Group on Safety.

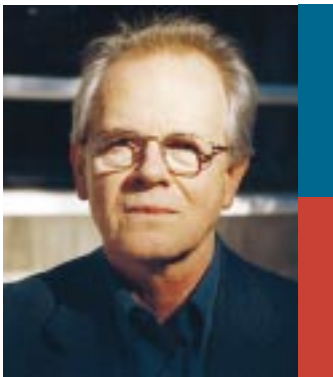
A major concern of the new TC during 1999 was the Radio and Telecommunications Terminal Equipment (R&TTE) Directive, and TC Safety

worked closely with the European Commission (EC) to develop a correct understanding of the implications of the Directive for health and safety.

Together with ETSI Project Digital Terminals and Access and ETSI TC Electromagnetic Compatibility and Radio Spectrum Matters (TC ERM), TC Safety is now working on an ETSI Guide (ETSI EG) for use with the R&TTE Directive, covering safety and EMC requirements. The finished Guide is expected to be published during 2000.

During the year, the TC also collaborated with CENELEC on the preparation of a joint reply to the EC on its draft mandate for the production of standards covering protection from electromagnetic fields. Much of the effort of 2000 will concentrate on their production.

Finally, TC Safety and TC ERM together undertook a review of existing ETSI deliverables, streamlining redundant and duplicated standards.



# TC SEC

## Security

[www.etsi.org/sec](http://www.etsi.org/sec)

György  
Endersz

*Responsible for meeting the global challenge of securing electronic transactions over mobile and fixed Internet*

The efforts of ETSI TC SEC are currently focussed on two major aspects of security standards in the world of electronic transactions: firstly, to ensure the authenticity of transactions and to provide for interoperability of the underlying Public Key Infrastructures (PKIs) and, secondly, to assist efforts aimed at the prevention of misuse of both the old and new communication infrastructures. These areas are covered respectively by two working groups, Electronic Signature and Infrastructure (ESI) and Lawful Interception (LI).

In December 1999, TC SEC approved the first of a series of standards to be developed in support of Electronic Signatures and PKIs. The draft ETSI Standard on Electronic Signature Formats (ES 201 733) provides interoperable formats to include time stamps and other validation data in electronic signatures, allowing the validation of signatures for a long time after they have been created. Another new feature of the ETSI signature standard is the introduction of the signing policy that will allow actors to establish on-line the context and validation requirements of the actual transaction. This Standard is expected to be approved by ETSI in the spring and has also been submitted to the Internet Engineering Task Force (IETF) to become an Informational Request for Comments (RFC).

During the summer of 1999, the work on ES 201 733 became part of the European Electronic Signature Standardization Initiative (EESSI) under the EC Electronic Signature Directive, and is being undertaken with close co-operation between ETSI and CEN/ISSS. In September 1999, the ESI Working Group (WG) embarked on a work programme consisting of four tasks:

- Policies for Certification Service Providers
- Promotion and further development of ES 201 733
- Profile of Qualified Certificate based on the IETF RFC
- Profile of time stamp format and protocol based on the IETF RFC.

In December 1999, ETSI Specialist Task Force (STF) 155 was created with funding from the European Commission, to complement the resources of the ESI WG.

The signature project also demonstrates the positive effects of the market-oriented approach TC SEC adopted during the last year. The use of the open EI-Sign Web-site and mailing list made it possible for a large group of interested parties to participate in the public comment activities on ES 201 733 in the autumn and to join the open meetings of the ESI WG.

It is expected that the rapid development of mobile electronic commerce and initiatives like eEurope will generate new normative tasks for ETSI TC SEC.

The Working Group on Lawful Interception (WG LI) published the hand-over interface between a circuit switched transport network and a law enforcement agency. 1999 saw the impact of the data wave as work started on the revision of the existing ETSI Technical Report on law enforcement agencies' requirements for the lawful interception of telecommunications, to include modern systems and services, including data networks. A new work item was started to define generic architectures for lawful interception, and the formal revision of the ETSI Standard on the hand-over interface for the lawful interception of telecommunications traffic began, to incorporate suitable mechanisms for Internet Protocol (IP) and similar networks.

WG LI has kept in close contact with ETSI Technical Committee (TC) Special Mobile Group Security Group (SMG10/WPD), with the corresponding Security Group of ETSI TC Services and Protocols for Advanced Networks (SPAN6/SG) and the newly formed WG8 of ETSI Project Telecommunications and IP Harmonization Over Networks (TIPHON). Advice was given to STF 126 on the lawful interception aspects of satellite systems.

In addition, ETSI TC SEC assisted other ETSI Technical Bodies in a number of areas including a review of the security architecture of Broadband Radio Access Networks (BRAN) and made contributions to the security analysis of TIPHON. TC SEC also liaises closely with a wide range of European and global organizations.

# TC SES

## Satellite Earth Stations and Systems

[www.etsi.org/ses](http://www.etsi.org/ses)

Alain  
Richard



*Responsible for all aspects relating to satellite communications*

1999 was a year of full activity for ETSI TC SES.

In particular, with the arrival of the new Radio & Telecommunications Terminal Equipment (R&TTE) Directive, which will have a very strong impact on the production of standards, a new Working Group was created to prepare the conversion of eight of the Technical Committee's Technical Bases for Regulation (TBRs) into Harmonized Standards, which are now undergoing the One-Step Approval Procedure. By early December 1999, TC SES had also completed its work on ten new Harmonized Standards.

Following a joint meeting between TC SES and the Global VSAT Forum, a Co-operation Agreement was drawn up and approved by the ETSI General Assembly, which was expected to be signed early in 2000. The Forum intends to promote the VSAT standards produced by TC SES all around the world.

The Working Group on the Satellite Component of the Universal Mobile Telecommunications System (UMTS)/IMT-2000 analysed the latest specifications produced by the Third Generation

Partnership Project (3GPP), Release 99, and is now working on Technical Reports on the satellite component in the development of third generation mobile communications.

The Working Group on the Geostationary Mobile Radio Interface for satellite handsets, using geostationary satellites to interface with the GSM core network, is co-operating closely with the Telecommunication Industry Association (TIA) of the USA.

TC SES's Technical Report on Multimedia using Satellite phase 2 (covering the Standardization Scenario for Broadband Satellite Multimedia and including 18 recommendations) was approved in January and published in March 2000.

During 2000, a new ETSI Specialist Task Force will prepare standards for the Command Liaison between the Satellite and the Ground within the framework of the European Co-operation for Space Standardization.





# TC SMG

Special Mobile Group

[www.etsi.org/smg](http://www.etsi.org/smg)

Friedhelm  
Hillebrand

*Responsible for ETSI's work on GSM (the Global System for Mobile communications) in the 900 and 1800 MHz bands, and UMTS (Universal Mobile Telecommunications System)*

By the end of 1999, the number of GSM customers had reached 250 million in 140 countries world-wide, almost doubling the figure for the end of 1998 (135 million users) and making GSM the leading digital mobile communication system in the world market.

'Release 98', a package of standards for GSM, which offered over 20 new features, was formally approved in January 1999, but the main achievement of the year came with the publication of 'Release 99'. Release 99 introduces a number of new features and technologies, and enhances some existing ones. It introduces Location Services, which will be further developed in Release 2000, and improves the General Packet Radio Service (GPRS) with the addition of point-to-multipoint services, real time services, advanced charging and billing, mobile Internet Protocol interworking, fraud information and enhanced quality of service.

Release 99 also specifies measures to ensure the compatibility of smart cards in both UMTS and GSM environments. It has also been agreed that,

since ETSI TC SMG's Working Group 9 (SMG9) has years of experience as the custodian of a widely used mobile telecommunications smart card (the GSM SIM), SMG9 should extend its role to become the focal point for all next generation telecommunications smart cards. SMG9 will manage the common aspects of mobile telecommunication smart cards, while the specification of the structure and content of the technology specific files, procedures and protocols will remain with the appropriate formulating standards committee.

Other improvements include changes to the GSM core specifications to enable GSM to use the 450 and 480 bands.

Good progress was made during the year on Enhanced Data rates for GSM Evolution (EDGE). Specification for the US band was completed, and work has begun on the radio interface. Responsibility for this work will be transferred to the Third Generation Partnership Project (3GPP) in the future.

Throughout the year, TC SMG has worked closely with 3GPP and third generation work has been gradually shifting from TC SMG to 3GPP. Discussions about the future role of TC SMG have been initiated.

# TC SPAN

Services and Protocols for Advanced Networks

[www.etsi.org/span](http://www.etsi.org/span)

Mike  
Briggs



*Responsible for fixed networks standardization, including Internet Protocol (IP) - based networks*

ETSI TC SPAN was established in April 1999 by merging two long standing ETSI Technical Committees, Network Aspects (NA) and Signalling Protocols and Switching (SPS), to create one of the biggest and most prolific technical bodies in ETSI.

Initially, existing working groups have been maintained, to ensure the continuation of on-going work, although restructuring of the TC will occur as required to meet the needs of developing subject areas. A more streamlined structure for the working groups has been introduced with a 'project' style approach and the appointment of 'Champions' (or project managers), dedicated to ensuring the success and speed of important areas of work that cross multiple working groups.

In conjunction with SPAN TC meetings, there have been very successful workshops on important new areas of study. The first was on Service Provider Access (SPAR) from which an ETSI Specialist Task Force has been launched to manage the project. The second, in November on Internet Protocol, was held to set the agenda for IP-related work in TC SPAN. As a result, a list of work items in this area is now being prepared.

Throughout 1999, TC SPAN contributed significantly to the work of the International Telecommunication Union Telecommunications Sector (ITU-T). Formal liaison between committee T1S1 of the American National Standards Institute (ANSI) and SPAN 1 on the development of Bearer Independent Call Control (BICC) capability greatly enhanced the input to ITU-T Study Group 11, which in turn contributed to the overall success of this work. With major contribution from ETSI, the complete set of standards for BICC Capability Set 1 (CS1) was completed in nine months.

Another major achievement of 1999 was the completion of the Generic Addressing and Transport (GAT) standards, which were produced

by the ITU-T with significant input from SPAN 1 and 5. SPAN 1 and 2 finished their work on Number Portability during 1999.

Significant work has been completed on conformance tests for protocols under the responsibility of TC SPAN. Most signalling protocols developed by TC SPAN now have a comprehensive set of conformance tests. In addition, the ITU-T approved a set of testing standards for ISDN User Part Version 3 (ISUP V3), which was developed by SPAN 1, and endorsed a number of Digital Signalling System number 2 (DSS2) conformance testing standards produced by SPAN 5.

The work of SPAN 3 and SPAN 6 on Intelligent Network (IN) capability enabled the ITU-T to develop the IN CS-3 recommendations. These include the scope, the management requirements, B-ISDN enhancements and IN Application Protocol (INAP) enhancements for IN CS-3.

TC SPAN also completed all the deliverables for the Cordless Terminal Mobility service and the remaining ISDN service descriptions.

Previously, the main thrust of ETSI's work on network services and protocols has focused on fixed network requirements and protocols, but this is gradually giving way to new work on mobility and the Internet. SPAN Working Groups have been actively co-operating with ETSI Project Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON) on numbering, architecture and intelligent network aspects. TC SPAN is also working closely with 3GPP, ANSI and the ITU-T to ensure that fixed networks are integrated with the emerging new network topologies and technologies.



# TC STQ

## Speech Transmission and Quality

[www.etsi.org/stq](http://www.etsi.org/stq)

John  
Horrocks

*Responsible for the standardization relating to quality, including end-to-end speech quality in existing and future fixed and mobile networks and their terminals*

The work of ETSI TC STQ diversified during 1999 to include more general quality matters as well as speech quality.

A significant part of the TC's work is the provision of expert support to ETSI Project Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON) on the definition of classes of end-to-end quality for Voice over Internet (VoIP) and the development of methods for exchanging information on quality as part of the establishment of a call. A well attended public workshop was held with EP TIPHON in June 1999 to bring together the 'higher layer' experts from the telecommunications community with the 'lower layer' experts from the Internet Engineering Task Force (IETF) on Resource Reservation Protocol (RSVP) and Diff Serv. The objective was to promote mutual understanding and to identify issues that need to be solved to ensure adequate quality of VoIP. Results of pilot trials

are showing that a minimum level of quality, especially end-to-end delay, is essential for customer acceptance.

TC STQ revised the Quality of Service (QoS) parameter definitions and measurements (previously ETR 138) that are required for use under the Open Network Provision (ONP) Voice Telephony Directive. The revision significantly improved the comparability of the parameters and made some of them more user-orientated. For example, supply time and fault repair time are now based on real time rather than working days.

The Aurora Project on feature extraction algorithms for distributed speech recognition for use with radio-based man-machine interfaces made good progress and completed its first deliverables. In the future this work may have widespread application in mobile systems.



# TC TM

## Transmission and Multiplexing

[www.etsi.org/tm](http://www.etsi.org/tm)

Günther  
Zedler

*Responsible for all aspects of the standardization of transport networks and their elements (including fixed radio relay, but excluding satellite systems) and for transmission aspects of transport network interfaces*

ETSI TC TM succeeded in publishing a total of 42 deliverables in 1999, with an additional 36 completed, subject to formal approval procedures.

Among the main achievements of the year was significant progress in the area of optical fibre cables, with the publication of ETSI Standards (ESs), with common requirements and conformance testing, for fibre optic mechanical splices for single-mode optical fibre communications systems and connector-type optical fixed attenuators for single-mode optical fibre communications systems. A new series of European Standards on the generic requirements of transport functionality of Synchronous Digital Hierarchy (SDH) equipment and the related Implementation Conformance Statement (ICS) proforma specifications was also completed. Good progress on the generic requirements of Asynchronous Transport Mode (ATM) transport functionality within equipment was achieved, and the first parts have been published. Work on optical networking continues.

In the field of Fixed Radio Systems, a number of new and revised standards was produced, covering point-to-point (P-P) applications as well as point-to-multipoint (P-MP) systems for fixed wireless access (FWA); various options for payload capacities, spectral efficiencies, access technologies and radio-frequency bands are offered. Candidate generic Harmonized Standards under the Radio

and Telecommunications Terminal Equipment (R&TTE) Directive are also in progress.

TC TM has been very successful in the area of xDSL systems, finalizing an ETSI Technical Specification for High bit rate Digital Subscriber Line (HDSL) systems with specific reference to applications for combined ISDN-BA and 2.048 kbit/s transmission. Europe has led the way in this work, and this document has been sent directly to the International Telecommunication Union (ITU) where it has been adopted as an ITU Recommendation. A further Recommendation for Asymmetric Digital Subscriber Line (ADSL) systems, which was adopted in 1999 and includes a section dealing with ADSL over European ISDN, was provided by TC TM. The TC's experts are now concentrating on finalizing the specifications for symmetrical systems for transmission of up to 2.048 kbit/s over single pairs (SDSL) and on completing the specification for Very High speed Digital Subscriber Lines (VDSL) in the year 2000, based on the results achieved in 1999.

In addition, a report on the SDH project was virtually completed, listing the bodies responsible for each of the various aspects of the operation of SDH. This report will be used to harmonize activities in different quarters, to ensure that all issues are covered and to avoid the duplication of effort.



# TC TMN

Telecommunications Management Network

[www.etsi.org/tmn](http://www.etsi.org/tmn)

Frank  
Peeters

*Responsible for the creation of network management standards for the telecommunication network, including Internet Protocol (IP) - based networks*

The most important event in 1999 was the shift to management of IP-based networks. Work on traditional networks is now tapering off and the TC is moving in new directions to take account of the emergence of protocols in computing and the need for IP management. There has been a proliferation of committees involved in network management, particularly in the growing IP-based sector. To streamline the organization of work, ETSI TC TMN will be looking to co-operate increasingly in the future with other bodies. During 1999, TC TMN entered into discussions with Committee T1M1 of the American National Standards Institute, Study Group 4 of the International Telecommunication Union Telecommunications Sector (ITU-T), the Telecommunication Technology Committee of Japan (TTC) as well as participants in the Internet Engineering Task Force (IETF).

As a result, a joint working group has been arranged, as an opportunity to bring together TC TMN and ETSI Project Telecommunications and IP Harmonization Over Networks with these other organizations. The first topic to be considered will be Voice over IP and the first meeting was scheduled for March 2000 in ETSI headquarters. By co-ordinating work through

this Joint Group on Network Management, the unnecessary duplication of effort should be avoided and limited resources will be maximized.

Discussions have also been initiated as to the most efficient method of organizing this area of work within ETSI.

TC TMN completed a number of specifications on the management of the Q3 interface between equipment and management. In response to growing demand, TC TMN has initiated new work on the interface between network operators. The Technical Committee also completed its specifications on Intelligent Networks and forwarded them to the ITU where they are now the basis of a number of ITU-T corresponding recommendations. Standardization of the Common Object Request Broker Architecture (CORBA) 'profile' has begun, to create a possible alternative to the Guidelines for the Definition of Managed Objects (GDMO) protocol.

Finally, TMN5's work on the management of the Universal Mobile Telecommunications System (UMTS), was transferred to the Third Generation Partnership Project (3GPP) during the course of the year.

# ECMA TC32



Communication, Networks and  
Systems Interconnection

[www.etsi.org/ecmatc32](http://www.etsi.org/ecmatc32)

John  
Elwell

*TC32 is a Technical Committee of the Europe-based Association for Standardizing Information and Communication Systems (ECMA). Under a co-operation agreement between ECMA and ETSI, by which the two organizations agree to share responsibility for standardization in the field of private/corporate telecommunications networks, TC32 acts as a Technical Committee of ETSI.*

Because corporate networks, unlike public networks, must operate homogeneously across national boundaries, standards should be applicable world-wide. Therefore standards created within TC32 are fed into the international standardization organizations (Joint Technical Committee 1 (JTC1) of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC)).

Major focus in the past has been on the conception and development of 'QSIG' standards for corporate networking between different switches serving the various sites of a corporation. During 1999, further services and features for Private Integrated Services Networks (PISNs) were developed, reflecting the continued importance of standards in this field. Standards for Wireless Terminal Mobility (WTM) within corporate networks (formerly Cordless Terminal Mobility) have been published by ISO/IEC. Standards for Personal User Mobility (PUM) have also been accepted by JTC1 and will be published in 2000. All these ISO/IEC standards are endorsed for European use through the publication of European Standards (ENs).

During 1999, TC32 completed work on a series of standards for Broadband QSIG (B-QSIG), for use in ATM-based corporate networks. Much of this

work was conducted in co-operation with Working Group 5 of ETSI Technical Committee Signalling Protocols and Switching (SPS 5, now WG5 of ETSI TC Services and Protocols for Advanced Networks (SPAN 5)).

To reflect the gradual shift in focus towards the use of the Internet Protocol (IP) as the basis for voice as well as data transport in corporate networks, a new Task Group (TC32-TG17) began work during 1999 on the interoperation of PISNs and IP networks. In September 1999 this work was brought under the umbrella of the ECMA/ETSI agreement. Initial work items include a Technical Report on the subject (targeted for completion during 2000), interworking between H.323/H.450 and QSIG (the first three deliverables are expected to be approved in June 2000) and solutions for the interconnection of PISNs via IP networks. The last of these topics involved successful contribution to Study Group 16 of the International Telecommunication Union Telecommunications Sector to obtain a tunnelling facility in H.323.

Although it currently does not fall within the ECMA/ETSI agreement, 1999 saw the adoption by JTC1 of two standards and a technical report on services and protocols for Computer Supported Telecommunications Applications (CSTA), based on work by TC32. TC32-TG11 will develop this work further and, in particular, is well advanced with a proposal for using CSTA with IP-based communications.



# EP ATA

## Analogue Terminals and Access

[www.etsi.org/ata](http://www.etsi.org/ata)

Nuno  
Encarnação

*Responsible for the standardization of terminals and terminal access to ensure the timely and economic development of equipment with an analogue interface*

1999 saw a major change in the telecommunications terminal equipment market with the publication of the new European legal framework document, the Radio and Telecommunications Terminal Equipment Directive (R&TTE, 1999/5/EC). This has brought about a significant reduction in technical and procedural barriers to trade and means an important shift of responsibility on to manufacturers, whose declaration of conformity to essential requirements will now form the basis for future market access.

ETSI EP ATA has supported ETSI activities in this area, especially the work of the Steering Committee on the R&TTE Directive. After the basic harmonization of terminals had been successfully finalized, EP ATA embarked on a study of the impact of the new R&TTE regime and developed a number of new deliverables, particularly for network interfaces.

Recognizing that the new regime advocates a major shift from regulatory-oriented standardization to market driven standardization, EP ATA also revisited certain areas where national-specific standards existed, and produced a number of new documents (eg for loop disconnect dialling and for register recall). Compatibility between conventional technologies and applications of xDSL with the terminal area was a particularly important

activity where EP ATA was given the role of promoting studies in co-operation with other ETSI Technical Bodies. In the area of enhanced services, EP ATA looked again at network analogue interfaces with services available in Integrated Services Digital Networks, and the publication of new deliverables is expected in 2000.

Throughout its work, EP ATA has noticed increasing interest from outside Europe.

2000 will be another year of intensive work for EP ATA. Both for conventional and enhanced technologies, development of the existing basic harmonization and standardization has been requested to support a wider single market. Compatibility studies with new technologies remain a central issue and maintenance will become increasingly important.

However, at the beginning of 2001, EP ATA will reach the end of its intended life span. Discussions are underway within ETSI, particularly with ETSI Project Digital Terminals and Access (DTA), concerning the most appropriate structure to deal with the standardization of telecommunications terminal equipment. A new Technical Body, taking over the responsibilities of both EP ATA and EP DTA, is likely to be established in 2000, with a growing emphasis on new technologies and globalization issues.



# EP BRAN

## Broadband Radio Access Networks

[www.etsi.org/bran](http://www.etsi.org/bran)

Jamshid  
Khun-Jush

*Responsible for the standardization of Broadband Radio Access Networks*

ETSI EP BRAN produces specifications for two major standard areas:

- High Performance Radio Local Area Networks type 2 (HIPERLAN/2), which is a mobile broadband short-range access network, and
- High Performance Radio Access (HIPERACCESS), which is a fixed wireless broadband access network.

In the HIPERLAN/2 standard area, the main achievement of 1999 was the completion of the core technical specifications. After publication in March 2000, this will give consumers in corporate, public and home environments wireless access to the Internet and future multimedia, as well as real time video services at speeds of 54 Mbits/sec. The system will be quick and easy to install and provide interworking with several core networks including the Ethernet and Asynchronous Transfer Mode (ATM).

This standard marks a significant milestone in the development of a combined technology for broadband cellular short-range communications and wireless Local Area Networks (LANs) which will provide performance comparable with that of wired LANs. Since the 5 GHz band to be exploited by the HIPERLAN/2 standard is allocated to wireless LANs world-wide, HIPERLAN/2 has the potential to enable the success of wireless LANs on a global basis.

The completion of the physical layer and data link control layer specifications form the basis primarily for business applications. Specifications for applications in the home will be finalized in 2000.

During 2000, in collaboration with ETSI Project Universal Mobile Telecommunications Systems

(UMTS), ETSI EP BRAN will draw up specifications for the access interface to UMTS. This interface could also serve as a basis for the definition of interfaces to the other members of the IMT-2000 family of 3rd generation mobile systems.

ETSI Project BRAN will also turn its attention to the development of conformance test specifications for the core HIPERLAN/2 standards, to assure the interoperability of devices and products produced by different vendors. The test specifications will include both radio and protocol testing.

EP BRAN has worked closely with the Institute of Electrical and Electronics Engineers (IEEE) and with the Multimedia Mobile Access Communications Promotion Council (MMAC) in Japan to harmonize the systems developed by these three fora.

HIPERACCESS will offer standards for broadband multimedia fixed wireless access, allowing a flexible and competitive alternative to wired access networks. HIPERACCESS will be an interoperable standard, to promote a mass market and thereby low cost products.

During 1999 significant progress was made in the standardization process and it was agreed that HIPERACCESS would be a point-to-multipoint system, targeting high frequency bands. In particular, it will be optimized for the 40.5-43.5 GHz band, though specifications for frequencies below 10 GHz will be produced at a later stage. Time Division Multiple Access (TDMA) will be used as a multiple access scheme and a single carrier modulation scheme will be employed.

The overall goal is to produce a specification for the physical layer by the end of 2000 and for the data link control layer early in 2001.





# EP DECT

Digital Enhanced Cordless Telecommunications

[www.etsi.org/dect](http://www.etsi.org/dect)

Günther  
Kleindl

*Responsible for the development and maintenance of standards for Digital Enhanced Cordless Telecommunications (DECT)*

DECT is proving to be one of the most successful wireless standards in the world. The system has been adopted in over 110 countries world-wide and there are already over 50 million DECT terminals on the market. 20 million terminals were sold in 1999 (up over 52% on 1998 figures), and sales reaching 28 million are predicted for 2000.

The main market for DECT is still voice communication, but there has been a steady increase in data products, especially for Internet access.

As DECT has spread around the globe, so too has the Project's influence on the international scene. ETSI EP DECT works closely with international bodies such as the International Organization for Standardization (ISO), the WAP Forum and the International Telecommunication Union (ITU). ISO standards on mobility for private networks support the DECT protocol, and in 1999 DECT was included within the WAP specification for the Internet to mobile connection as an official carrier of the Wireless Application Protocol (WAP) protocol.

Perhaps the most significant achievement of the year was in November, when the ITU accepted DECT as a member of the IMT-2000 family, one of the five terrestrial radio interface standards.

During 1999 the DECT Packet Radio Service (DPRS) standard was developed, which supports four types of frame relay service (the Ethernet, Token Ring, Internet Protocol and Point-to-Point Protocol) and the serial interface V.24. Work on the Universal Serial Bus (USB) interface will be completed in 2000.

Work in 2000 will concentrate on the development of the higher bit rate mode (2 Mbit/s) within the DPRS standard, interworking with the Universal Mobile Telecommunications System (UMTS) and further co-operation with the ITU over IMT-2000. There is also ongoing work regarding the operation of DECT in the 'Industrial, Scientific and Medical' (ISM) frequency bands.

ETSI EP DECT continues to collaborate with a number of ETSI committees, specifically ETSI Project TIPHON (Telecommunications and Internet Protocol Harmonization Over Networks), ETSI TC SMG (Special Mobile Group) and ETSI Project UMTS.



# EP DTA

## Digital Terminals and Access

[www.etsi.org/dta](http://www.etsi.org/dta)

David  
Maxey

*Responsible for the standardization of digital terminals and access to digital networks, thus ensuring the timely and economic development of terminal equipment for use with existing and future telecommunications services offered by Public Network Operators*

ETSI EP DTA began 1999 with an examination of existing DTA deliverables with a view to amending them, where necessary, to bring them into line with the new Radio and Telecommunication Terminal Equipment (R&TTE) Directive. The Project decided not to revise each individual deliverable, but to produce one new deliverable applicable to all its existing standards. Preparation of this document, an ETSI Guide on the identification of Harmonized Standards, was almost finished by the end of the year; final completion was expected by April 2000.

Linked with this Guide is an ETSI Technical Report on digital access to the public telephone networks under the R&TTE Directive, which is also due for completion in April 2000.

By then, DTA will have completed most of its work, and discussions have therefore begun concerning the Project's closure.

During 1999, EP DTA also completed work begun by the former ETSI Project Multimedia Terminals and Applications (MTA) on ISDN and the file transfer profile and an ETSI Standard (ETSI ES) on the subject was published in August.

In October, EP DTA finalized a European Standard (EN) on the attachment of data terminal equipment to public networks which have physical or electrical presentations based on the International Telecommunication Union 'V' series of recommendations. This was the last document produced in accordance with the old Directive and rationalizes the type approval of data terminals, allowing greater interoperability of products for both manufacturers and operators.



# EP EASI

## ETSI Project ATM Services Interoperability

[www.etsi.org/easi](http://www.etsi.org/easi)

Mike  
Bexon

*Responsible for the standardization of Asynchronous Transfer Mode (ATM) network to network interfaces*

During 1999, ETSI EP EASI published an ETSI Technical Report offering an overview to the series of specifications on the provision of interoperable ATM services, and an ETSI Technical Specification covering the initial (Phase 1) User & Control Plane Specification. In addition, three final drafts were completed for publication in 2000: the technical framework for network management (X-interface) (Phase 1), together with guidelines for usage, and Phase 2 of the User & Control Plane specifications.

By the end of 1999, EP EASI had either published specifications or produced stable drafts for most of the items in its original work plan, producing a set of standards for interoperable ATM networks and interoperable ATM services. The Project will therefore close in 2000. Minor work remains on the Network Interconnect Operator Handbook, the requirements for the management of ATM

Switched Virtual Connections (SVCs) and the requirements for Internet Protocol (IP) quality of service. These items will be completed by other ETSI bodies.

The importance of ATM technology lies in its ability to support future networks. The work of EP EASI has been to produce standards which will enable industry to provide a common level of functionality at network interfaces, allowing a standard level of interoperability between different operators' networks. The new thrust of development is in IP-based technology, but IP services require interoperability specifications, and EP EASI's work on ATM will therefore support this new technology for years to come.



# EP PLT

## Powerline Telecommunications

[www.etsi.org/plt](http://www.etsi.org/plt)

August  
Blunski

*Responsible for the standardization necessary to enable the provision of telecommunications services via the existing public and private mains power networks*

Recent deregulation in the telecommunications industry is allowing new market entrants to provide services along electricity networks. Proprietary technology is being developed which allows telecommunications services to be realized over the existing public and private mains power networks.

ETSI Project PLT was established in July 1999 to develop the necessary standards and specifications to cover the provision of voice and data services over the mains power transmission and distribution network and in-building electricity wiring. The EP will aim to create standards which allow interoperability between equipment from different manufacturers and the co-existence of multiple powerline systems within the same environment. Harmonized standards will also be developed in conformance with relevant European Union Directives. Particular attention will be paid to the phased roll out of powerline systems; field trials are currently being held and the need for relevant standards in the market place is pressing. This is a new type of work area for ETSI and the Institute has demonstrated its responsiveness to market need by establishing the Project.

The Project's work programme will include:

- Telecommunications services (voice and data, the Internet, ISDN etc), including service requirements to the transport layer
- Interfaces to other networks, inside powerline networks and to terminal equipment
- Functional reference configurations
- Protocol stacks
- Medium access mechanism
- Physical layer aspects, in co-operation with CENELEC

- Management of the PLT system
- Encryption and privacy issues and
- Testing and conformity.

The Project will work closely with ETSI Technical Committee Electromagnetic Compatibility (EMC) and Radio Spectrum Matters (TC ERM), SC205A WG10 of the European Committee for Electrotechnical Standardization (CENELEC), ERC SE35 of the European Conference of Postal and Telecommunications Administrations (CEPT) and the PLCforum. The following table describes the division of work which has been agreed between the different standardization bodies:

| Issue                 | Assigned to                                                                                                    |
|-----------------------|----------------------------------------------------------------------------------------------------------------|
| 1 Spectrum Management | • CEPT ERC (through ETSI TC ERM)                                                                               |
| 2 EMC                 | • Joint Work Group CENELEC/ETSI, involving experts from ETSI TC ERM, CENELEC SC205A, TC209, TC 210 and TC 215. |
| 3 System Aspects      | • CENELEC SC205A: Lower Layers (physical layer)<br>• ETSI EP PLT: Higher Layers                                |

The first two meetings of the Project were held in 1999, in October and December, with the first topics under discussion the establishment of terms of reference, the definition of a work programme and the architecture reference model.



# EP PTS

## Pay Terminals and Systems

[www.etsi.org/pts](http://www.etsi.org/pts)

Gerhard  
Raimann

*Responsible for the standardization of equipment and systems for use with IC card systems for wired payment telecommunications terminals. This includes aspects such as applications, system architecture, security and conformance testing.*

ETSI EP PTS's main task of producing a coherent 'toolbox' for smart card applications was finished in 1999. The draft standards were revised in the light of comments received from the European Standards Committee (CEN) and at Public Enquiry and were formally approved. They were published by ETSI as Technical Specifications (ETSI TSs) and forwarded to CEN for publication in due course as European Standards (ENs).

This work has established a set of European Standards to be used mainly in pay phones, but also to be taken as a basis for other applications outside the telecommunications area, such as in electronic purse schemes.

In addition, the conformance testing standard which makes the toolbox standard a complete package was approved as an EN during 1999.

By the end of the year, EP PTS had virtually completed its work, with a few remaining work items to be finalized by correspondence. Outstanding work on data over voice will be transferred elsewhere within ETSI and discussions have been initiated concerning the closure of the Project during 2000.

EP PTS leaves a lasting legacy in the form of the application independent toolbox of standards, which has been widely accepted and which represents a solid foundation for ETSI's future work on generic standards. These standards may also be useful in the development of eEurope.

# EP TETRA

## Terrestrial Trunked Radio

[www.etsi.org/tetra](http://www.etsi.org/tetra)

Brian  
Oliver



*Responsible for the design and standardization of Terrestrial Trunked Radio (TETRA).*

ETSI Project TETRA is now nearing the completion of the current definition of the standard; about 100 work items are still in progress, but drafting is expected to be completed in 2000.

During 1999, a number of standards were completed, and the associated Common Technical Regulation (CTR) for edition 1 of Technical Basis for Regulation (TBR) 35 (Emergency Access) was published by the European Commission.

A European Standard (EN) in two parts (to cover Civil Access and Emergency Access) with two editions to each part, was finished in 1999, completing the suite of standards required for type approval under the old Terminal Directive. This will be used until new Harmonized Standards are created for use under the new Radio and Telecommunication Terminal Equipment (R&TTE) Directive. Two candidate Harmonized Standards for TETRA, on Trunk Mode and Direct Mode, for use under the R&TTE Directive, are in the drafting phase.

TETRA's international success continues to grow. In China, the committee charged with choosing its country's mobile digital trunking standard indicated that, subject to a satisfactory demonstration and resolution of Intellectual Property Rights issues, they could select TETRA. Additional TETRA networks have also been ordered in the Middle and Far East.

In the United States, Project 25 (P25) of the Association of Public Safety Communications Officials (APCO) has selected TETRA as one of its narrow-band options. Arrangements are now being made for the establishment of a TETRA/P25 standards committee within the Telecommunications Industry Association (TIA).

In support of this, ETSI has given free licence to the TIA to use TETRA standards in this work. EP TETRA is also working with APCO Project 34 to make the Digital Advanced Wireless Service (DAWS) derivative of TETRA a global public safety standard, via a proposed Public Safety Partnership Project .

A Working Group has been established to oversee the maintenance of standards, and a strategy drawn up to record modifications to standards and identify the necessary resources to implement change.

In Amsterdam in November, the Second TETRA World Congress, endorsed by the TETRA MoU Association and ETSI, exceeded all expectations, attracting more than 550 delegates from all over the world. Also in November, EP TETRA took part in a NATO Workshop, hosted by ETSI, on Defence Markets for Telecommunication Standards and Technologies.

To ensure that TETRA networks fit into European numbering systems, the Project is now working in close co-operation with Working Group 2 of ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN 2).

Finally, the European Conference of Postal and Telecommunications Administrations (CEPT) is looking for pan-European harmonized frequencies for use in both the civil and emergency services Direct Mode operation of TETRA. EP TETRA involvement in this work will be undertaken in co-operation with ETSI Technical Committee Electromagnetic Compatibility and Radio Spectrum Matters (TC ERM) during the course of 2000.



# EP TIPHON

Telecommunications and Internet Protocol

Harmonization Over Networks

[www.etsi.org/tiphon](http://www.etsi.org/tiphon)

Helmut  
Schink

*Responsible for the standardization of Internet Protocol (IP) telephony including communication between IP-based networks and PSTN, ISDN and GSM*

In March 1999, ETSI Project TIPHON completed its Phase 1 IP telephony specifications, defining the requirements, architecture and protocol profiles for interoperable IP telephony services. Phase 1 concentrated on communication from IP telephony devices to the Switched Circuit Network (SCN); work continues on Phase 2, SCN to IP, and SCN to SCN using the IP network as a trunk connection.

EP TIPHON finalized its second release on numbering, including the basic assumptions for the implementation architecture, and a preliminary draft of the quality of service architecture was developed. In the area of mobility, the EP started work on wireless access and published its first analysis of existing protocols and their suitability for IP telephony. Security profiles appropriate to IP telephony were updated and EP TIPHON began work on lawful interception.

In January 1999 at ETSI headquarters, in collaboration with the International Multimedia Teleconferencing Consortium (IMTC), EP TIPHON held a highly successful interoperability event, testing the interworking of IP networks and SCNs. The concept of remote interoperability events using the Internet was introduced as a cheaper, quicker way for engineers to test their protocols - an innovative ETSI service. A series of interoperability events has been held and

finally led to the establishment of the ETSI bake-off facility as an ETSI-wide offering.

Also in January, a new initiative was launched as a spin-off from EP TIPHON, the Ten Telecom TIPHON-Net (TTT-Net) to provide a framework for the concerted deployment of global IP telephony services based on TIPHON technical specifications.

Two new projects have grown out of EP TIPHON's work, outside the EP: Ten Telecom TIPHON Services aims to deploy services based on TIPHON specifications and succeeds TTT-Net, and aHit! will supply ETSI EP TIPHON with the requirements to make the technology attract more network operators, especially in the United States, as an activity group of IMTC.

For the future, the business environment is changing. IP telephony is becoming a mainstream technology for incumbent network operators and the basic technical problems have now been solved. In 2000, the challenge will be to ensure the reliability of services offered. As a result, the emphasis of EP TIPHON's work will change, with greater concentration on service descriptions, network architecture using Message Sequence Flows and the formal description of protocols.

New work in 2000 will also include work on Session Initiation Protocol (SIP), with the aim of harmonizing this protocol with the International Telecommunication Union developed H.323 to create a service which can run on both, and discussions about the potential benefits of Internet Protocol version 6 (IPv6) to IP telephony have been initiated.

# EP UMTS

## Universal Mobile Telecommunications System

[www.etsi.org/umts](http://www.etsi.org/umts)

Pierre Perrichon

*chairman*

Peter Adams

*acting chairman*

### *Responsible for the development of UMTS standards*

The Project's terms of reference were approved by the ETSI Board in March 1999, giving the EP responsibility for the development of UMTS standards, delivering seamless, customized, multimedia services from a converged network of fixed, cellular, wireless and satellite components. The majority of the rest of the year was spent making the new Project fully operational and opening discussions with other bodies both within and outside ETSI.

In April 1999 a workshop was held in Ipswich, UK, when work began on a new ETSI Technical Report on the future direction of UMTS standardization within the IMT-2000 family. The draft was finalized in September and sent for comment to other ETSI Technical Bodies and to other interested parties such as the UMTS Forum.

The Project's two ad hoc groups, on Services Capabilities and Architecture, held their first meetings in May 1999. Subsequently these two groups became full ETSI EP UMTS Working Groups, and terms of reference were agreed and chairmen appointed in November 1999.

Discussions were initiated with other ETSI bodies including ETSI TC Satellite Earth Stations and Systems (SES) and ETSI Project Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON). Discussions were also held on the Virtual Home Environment (VHE), where the EP has a long term

vision for VHE in UMTS, taking into account cellular interests, fixed network mobility and satellite interests. ETSI EP UMTS also took up responsibility for fixed mobile convergence from the former Special Committee Global Mobile Multi-media Co-ordination Group (GMM CG).

A presentation was made to the Operational Co-ordination Group (OCG) in September 1999 on the co-ordination of third generation mobile work within ETSI, and the contents of this presentation were finalized by the EP in the light of these discussions in November 1999.

In September 1999, a joint meeting was held on fixed network services with Working Group 2 of ETSI TC Services and Protocols for Advanced Networks (SPAN 2), which helped establish common principles for the development of standards on seamless service capabilities.

Finally, perhaps the most significant event of the year was the establishment of links with the IPv6 Forum, the world-wide consortium of Internet industry players founded to promote Internet Protocol version 6 (IPv6). ETSI signed a co-operation agreement with the Forum in November 1999 to create synergies between the two organizations in the promotion of the next generation of Internet Protocols and their integration into the telecommunications standards arena. EP UMTS will develop these links further in the course of 2000.





# 3GPP

## Third Generation Partnership Project

[www.etsi.org/3gpp](http://www.etsi.org/3gpp)  
[www.3gpp.org](http://www.3gpp.org)

3GPP is a global standardization initiative which brings together the world's major standards development organizations, including ETSI, and industry groupings to co-operate in the production of globally applicable specifications for a 3rd Generation (3G) mobile system. The Project will provide users with global roaming and seamless communications - any time, anywhere. This co-ordination will also give manufacturers and service providers access to new markets, with expected additional benefits to users in the form of new services, high speed data, reduced costs and greater freedom of choice.

3GPP was only established at the end of 1998, but has made extraordinary progress during 1999. The importance of the Partnership Project has been reflected in the new Partners joining during the year. There were three new Market Representation Partners (MRPs): the Global Mobile Suppliers Association in February, the GSM Association in May and the Universal Wireless Communications Consortium (UWCC) in September. In addition, the China Wireless Telecommunication Standards Group (CWTS) became an Organizational Partner in May.

In March 1999, a Mobile Competence Centre (MCC) was created, based in ETSI headquarters, to provide support not only to 3GPP, but also to ETSI's Technical Committee Special Mobile Group (which produces the specifications for the Global System for Mobile communications (GSM)) and ETSI Project Universal Mobile Telecommunications System (UMTS) (which is studying longer term aspects of the 3G system). The MCC is now an integrated team of 27 persons, comprising ETSI Secretariat officers, assistants and contracted experts. The team is truly international, with members originating from more than a dozen countries across four continents. The MCC combines voluntary resources with funded resources. Full-time experts have been provided by individual members of 3GPP and others are paid for from the MCC's budget. ETSI agreed to underwrite

the initial cost of supporting 3GPP, and the Organizational Partners are now contributing to the costs.

3GPP Release 99 was approved in December. The new 3GPP specifications form part of the IMT-2000 family of standards, and are based in part on the highly successful GSM standard, which was developed by ETSI and is currently serving over 250 million subscribers in more than 140 countries. The most significant feature of Release 99 is the Universal Terrestrial Radio Access (UTRA), the W-CDMA radio access network proposed to the International Telecommunication Union for IMT-2000, which is the key to the higher data rates and dramatically improved performance foreseen for the resulting 3G system. The specifications also include more than 50 services including Multimedia Messaging, plus various other elements such as speech codecs, operation and maintenance, and test specifications. In accordance with 3GPP working procedures, these specifications will now be transposed into standards by the Standards Development Organizations which constitute the 3GPP Organizational Partners.

The ability for users to roam globally depends on interoperability with other IMT-2000 family members, and 3GPP has been co-operating closely with its North American equivalent, 3GPP2, which is specifying another family member, to ensure that interoperability is achieved.

A small number of specifications remained to be finalized early in 2000, but the release in December assured the stability required for the first roll out of 3G services in 2001, with progressive launches throughout the world thereafter. The ability of organizations and individuals around the world to co-operate and make available a full set of stable, agreed 3GPP specifications in just one year is a remarkable achievement, and one that the industry will continue to envy for years to come.

# ETSAG

European Telecommunications Standards

Awareness Group

[www.etsi.org/etsag](http://www.etsi.org/etsag)

Roland  
Strauss



*ETSAG is an interest group of ETSI members working to develop the world-wide market acceptance of ETSI standards.*

In addition to its regional approach, ETSAG had identified a number of 'high focus areas' for concentrated promotional effort: Asynchronous Transfer Mode (ATM), Broadband Radio Access Networks (BRAN), Digital Enhanced Cordless Telecommunications (DECT), Digital Video Broadcasting (DVB), the Global System for Mobile communications (GSM), Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON), Terrestrial Trunked Radio (TETRA) and the Universal Mobile Telecommunications System (UMTS). One of the highlights of 1999 was the particular success in promoting these areas, largely due to co-operation with relevant fora. Marketing activities were undertaken jointly with the ATM Forum, the DECT Forum, the DVB Project, the Global Suppliers Association, the GSM Association, the UMTS Forum and the TETRA MoU.

ETSAG is now considering extending the high focus areas; candidates are Digital Subscriber Loop (DSL), Direct Synchronous Transfer Mode (DTM), Electronic Signature, Telecommunications Management Networks (TMN) and mobile commerce.

Another notable example of marketing co-operation with partner organizations was Telecom 99, the international telecommunications exhibition held in Geneva in October. ETSI brought together some of the leading players in telecommunications around the theme 'The Future is built through Partnership'. A new series of brochures targeting each of the high focus areas was also launched at the exhibition.

During 1999, a number of seminars and other events were held in the Central and Eastern European Countries and the Commonwealth of Independent States, in Slovakia, Slovenia, Bosnia and Russia. Seminars were held and ETSI took part in conferences in India and in Latin America, in Brazil and Argentina. ETSI contributed to a DVB event in Beijing, China, in April.

In addition, a brochure about ETSI and its work was produced for distribution by European Commission (EC) delegates in over 100 countries and, in November, the Chairman made a presentation to potential new EC countries on telecommunications standardization.

In December, ETSAG delivered its final report to the EC on the use of the Visibility Fund for promoting the European Standardization System and ETSI activities around the world. The Fund will be renewed in 2000 and participation in short notice events can again be guaranteed.

Although ETSAG activities grew significantly in 1999, and the co-operation with partner organizations proved particularly productive in increasing ETSI's visibility, there is still a need for better member participation in ETSAG activities, and, in particular, for more Regional Co-ordinators willing to take responsibility for different geographical areas. Enhancing participation and improving the consultation mechanism with Members are two of ETSAG's priorities for 2000.

The Group will also redefine its regional plans, build on the successful partnerships which have been established and look to developing relationships with the International Telecommunication Union Development Sector.



# JTC Broadcast

Joint Technical Committee of the European Broadcasting Union, the European Committee for Electrotechnical Standardization and ETSI (EBU/CENELEC/ETSI)

Phil  
Laven

[www.etsi.org/broadcast](http://www.etsi.org/broadcast)

*Responsible for the standardization of broadcast systems for television, radio, data and other new services via satellite, cable, Satellite Master Antenna Television (SMATV) and terrestrial transmitters, and for the transmission of programmes*

During 1999, the Committee continued its work on a wide range of standards, mainly associated with digital broadcasting.

Although most of the basic work involved in the transition from analogue to digital broadcasting has been completed, new opportunities are arising all the time as a result of this transition. For example, the JTC has been occupied in defining specifications for the set-top box to interact through other networks including television networks, the Global System for

Mobile communications (GSM), the Public Switched Telephone Network (PSTN), ISDN, cable and satellite.

Attention has also turned to ways in which the broadcast signal can be made to carry new types of services, especially interactive services and those associated with the Internet.

In this way, audio and digital video broadcasting are being extended by adding to the basic specifications to allow users to do things that were not thought possible when the technology was first introduced.

# SAGE

## Security Algorithms Group of Experts

[www.etsi.org/sage](http://www.etsi.org/sage)

Gert  
Roelofsen



*Responsible for standardization in the area of cryptographic algorithms, products specific to fraud prevention and unauthorized access to public and private telecommunications networks, and in maintaining the privacy of user data*

Work on a second, improved General Packet Switched Radio Service (GPRS) algorithm was finalized in 1999. Named GEA2 (GPRS Encryption Algorithm 2), this will protect the transfer of information within the new Global System for Mobile communications (GSM) data service and is fully exportable according to the new rules laid down in the 'Wassenaar Arrangement'.

In the Spring, the Group completed a set of algorithms for authentication and key generation within the GSM Cordless Telephone Service (CTS). This will prevent third party misuse of a GSM handset used as a cordless telephone about the home.

SAGE finalized two new encryption algorithms for the Terrestrial Trunked Radio (TETRA) system, complementary to the two existing algorithms which were designed for general purposes and for

public safety organizations within Western Europe. The first of these new algorithms (TETRA Encryption Algorithm 3, TEA3) extends usage to public safety organizations outside Europe; the other (TEA4) is for general use, providing a good level of security while still meeting the criteria for exportability.

Finally, in August 1999, SAGE was commissioned by the Third Generation Partnership Project (3GPP) to design two algorithms to protect confidentiality and integrity in the future Universal Mobile Telecommunications System (UMTS). Market need in this area is particularly pressing, and the work was completed within just four months, before the end of the year.



# User Group

[www.etsi.org/user](http://www.etsi.org/user)

Pierre-Yves  
Hébert

*Responsible for formalizing users' views and requirements for other ETSI bodies, in order to improve standards and their relevancy*

One of the main issues of the year was the presentation of the results of the survey by the Ovum Consultancy. Information on users' needs and their views about standardization had been gathered together and was presented to ETSI at a workshop in April 1999, where it was accepted as a good starting point to extend wider user participation. Probably the most significant finding of the survey was that, although users retain an interest in standardization matters, they would prefer ETSI to approach them to ascertain their requirements than to participate in ETSI meetings.

In response, and as a means of attracting input from users across a wide geographical area, the User Group is preparing documents to be used as the basis for discussion in workshops run in different countries by local user organizations. The first topic to be covered in this way is user identification, and a presentation on the subject is being developed in co-operation with ETSI Technical Committee Human Factors and ETSI Specialist Task Force 157. The first workshop in this 'New User Approach' series is expected to be held in Italy in June 2000.

A document on security issues will also be compiled, with the help of a consultant. Quality of service, which was highlighted as a major

concern, will be tackled and, in the meantime, the User Group will continue to monitor the activities of the ETSI Technical Bodies in this area.

The level of co-operation between the Group and the rest of the Technical Organization of ETSI still remains a problem. Although the ETSI Board has agreed to fund attendance by user representatives and several users have been able to participate, it has proved difficult to synchronize progress in the Technical Bodies with activities in the User Group. To help the situation, it has since been agreed that the management reports produced by each Technical Committee and ETSI Project for the Operational Co-ordination Group will contain a section identifying where user input is required.

During 1999, the Group contributed to the Global Multimedia Companion Report, work in the Internet Engineering Task Force on User Requirements Language for telephone calls and to the ETSI Future Role discussions. The Group also collaborated with the European Commission on a number of points including the European Open Telecommunications Systems Interconnection Profile (EOTIP).

Finally, an ETSI Technical Report on network service management information provided by Public Network Operators was published in 1999.

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