Memento 2014

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Preface

Information and Communication Technology (ICT) and Consumer Electronics (CE) are key factors in today's economic and social environment. Effective interchange of commercial, technical, and administrative data, with text, images and, increasingly, audiovisual information is vital for the growth of economy in the world markets. Through the increasing digitalization of media, automation of processes, and pervasive use of lightweight communicating devices (from notebooks to tablets to smart phones), information technology, telecommunications and consumer electronics are getting more and more integrated.

Standardization provides the means for economical solutions to complex technologies, and is required for data interchange and interoperability. Moreover, it is most effective when performed in a pre-competitive mode during product development and with all interested parties involved.

The Association - one of the oldest worldwide standard bodies active in the area of ICT and CE standardization - was founded more than 50 years ago, in May 1961, and was registered in Switzerland as a not-for-profit organization.

From 1961 until 1994, ECMA (European Computer Manufacturers Association), then Ecma International (Ecma, for short) has actively contributed to worldwide standardization of ICT. So far 406 high quality Ecma Standards and 106 Technical Reports (and their updates) have been published.

Standardization is a never ending story especially in the area of ICT and CE, bursting with innovation and new usages. There are always new technologies waiting for urgent standardization. Therefore, we are optimistic about the next decades of standardization in Ecma.

Ecma standardization work has always been recognized as far-sighted and reflecting technological trends at an early stage. As a consequence many Ecma Standards have been accepted as a basis for International and European Standards. To ensure close co-operation Ecma has established formal liaisons with European and international standardization bodies.

The liaison with ISO and in particular the A-liaison with ISO/IEC JTC 1 (and its predecessor TC97), goes back to 1961. This fruitful co-operation led in 1987 to the acceptance of the Fast-Track procedure by ISO (and IEC) on a proposal by Ecma. Ecma combines the agility of consortia with the quality of the de jure standardization organizations. By combining its efficient infrastructure and proven yet adaptive working methods with the well-established formal liaisons at International and European level, Ecma has established a strong position in the area of ICT and CE standardization.

Ecma Standards are developed by its members, which are highly qualified experts from information technology, consumer electronics and telecommunication industrial firms, from smaller companies, or from the academic or research community, with the commitment to provide, in a consensus mode, technical solutions ready for implementation in product development and testing.

The benefit of Ecma membership is the following:

- It provides early knowledge of technological trends and better understanding of technology standards requirements, especially in emerging technology areas.
- It provides a platform where technical contributions of member companies are evaluated by experts who via an effective process develop high quality Ecma Standards and Technical Reports in a very short time. In Ecma small working structures dominate (15 companies or less), working is fast, consensus is usually easy to achieve.
- Also public reviews are made possible: the process is defined, but its use is not systematic (Technical Committees have a choice to use it for a given topic). In this way, it is possible to obtain input to and review of intermediate drafts either from the general public or from targeted organizations in liaison.
- Ecma adheres to WTO principles for standardization. For a given topic there needs to be a middle ground between speed and wider consensus. Ecma can do both. Ecma experience, like elsewhere, is that the wider the consensus, the more time it takes.
- Ecma is part of the larger standardization landscape. There is a choice to have an Ecma standard as final step or to propose it to another SDOs, e.g. to JTC 1 for fast-track.

The participation in Ecma of many worldwide leading companies ensures not only the acceptance of Ecma Standards in European and International standardization but also their worldwide implementation.

Our goal for the next decade is to continue to play a key role in the extraordinary development in IT, telecommunications and Consumer Electronics, via dissemination of new technologies, and by the delivery of first class standards to our members, partners and the standard user community. We aim to continue to bring in major contributions, to move technology from our members to mature standards and to collaborate with the world’s major SDOs.

The President, Geneva, January 2014.

Purpose and Membership

The Purpose of Ecma International is:

- To develop, in co-operation with the appropriate national, European and international organizations as a scientific endeavour and in the general interest standards and technical reports in the fields of information and communications technologies.
- To encourage the correct use of standards by influencing the environment in which they are applied.
- To publish the Ecma Standards and Technical Reports - after their approval by at least two-thirds of all Ordinary Members - free of charge and freely copyable to all interested parties.

The Association shall consist of Company members (i.e., ordinary, associate, SME and SPC members), and not-for-profit (NFP) members.

Ordinary membership may be applied for by a company which has interest and experience in matters related to one or more Technical Committees of the Association, and which wishes to exert the right to vote at the Technical Committees and at the General Assembly and to exert other exclusive rights defined in the By-laws and Rules.to vote at the General Assembly and to exert other exclusive rights defined in the By-laws and Rules.

All other membership classes have the right to vote on the Technical Committee level only.

Associate membership may be applied for by a company which has interest and experience in matters related to one or more of the Technical Committees of the Association but without the right to vote in the General Assembly.

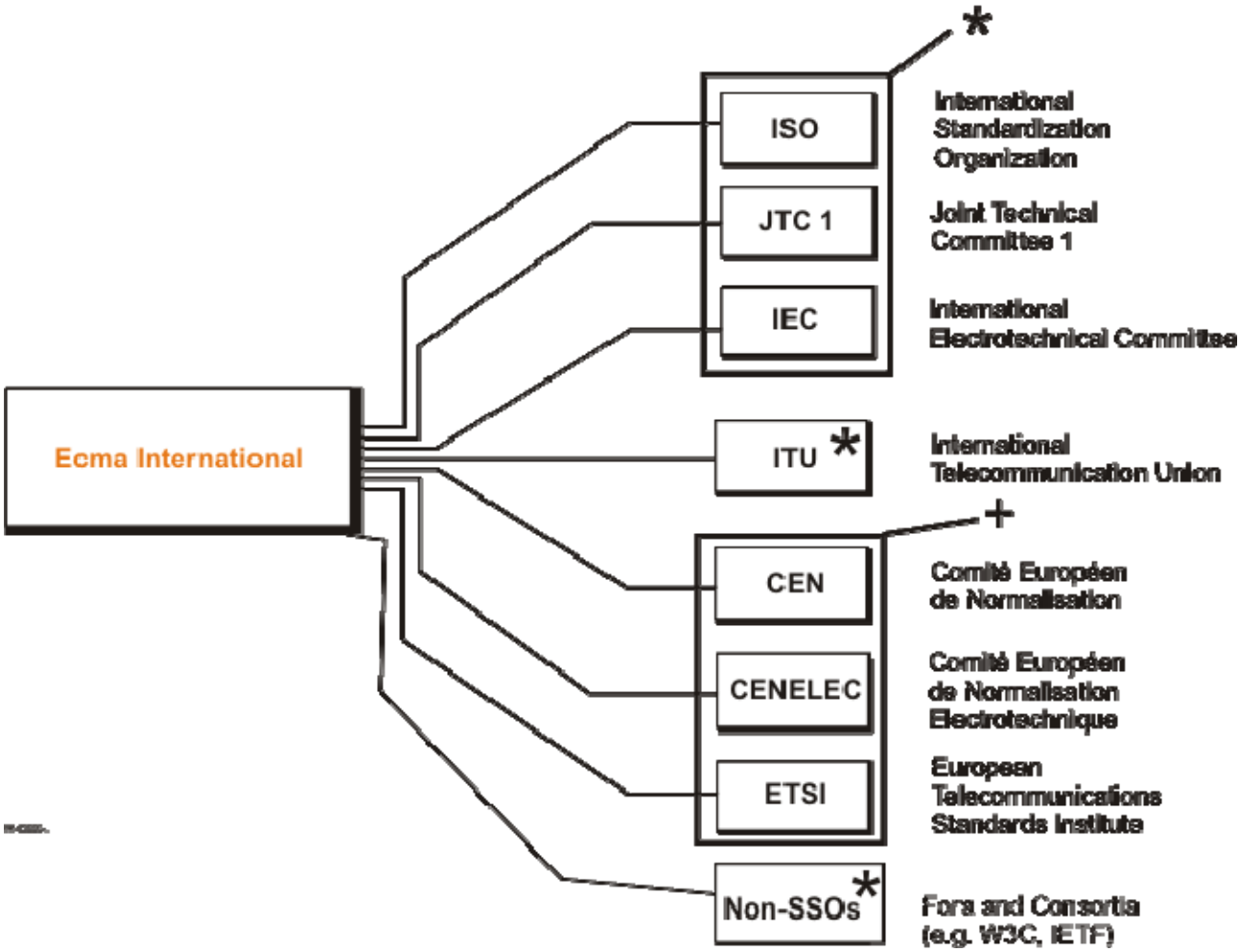
A company which has similar interests as an associate member and an annual, global turnover of less than one hundred million Swiss Francs, may be admitted as SME member (Small and Medium-sized Enterprise).

An organization - a company or other legal for-profit organization - which has similar interests as an associate member, an annual global turnover of less than five million Swiss Francs and no more than five employees, may be admitted as SPC member (Small Private Company).

NFP membership may be applied for by a non-profit-making organization. If an NFP is an organization with several organizations as members, then normally it can only become an NFP member in Ecma if its members do not qualify for Company membership in Ecma. NFPs may only participate in the work of no more than one Ecma Technical Committee.

The Association is a non-profit-making organization and does not devote itself in any commercial activity.

Ecma's role in International Standardization

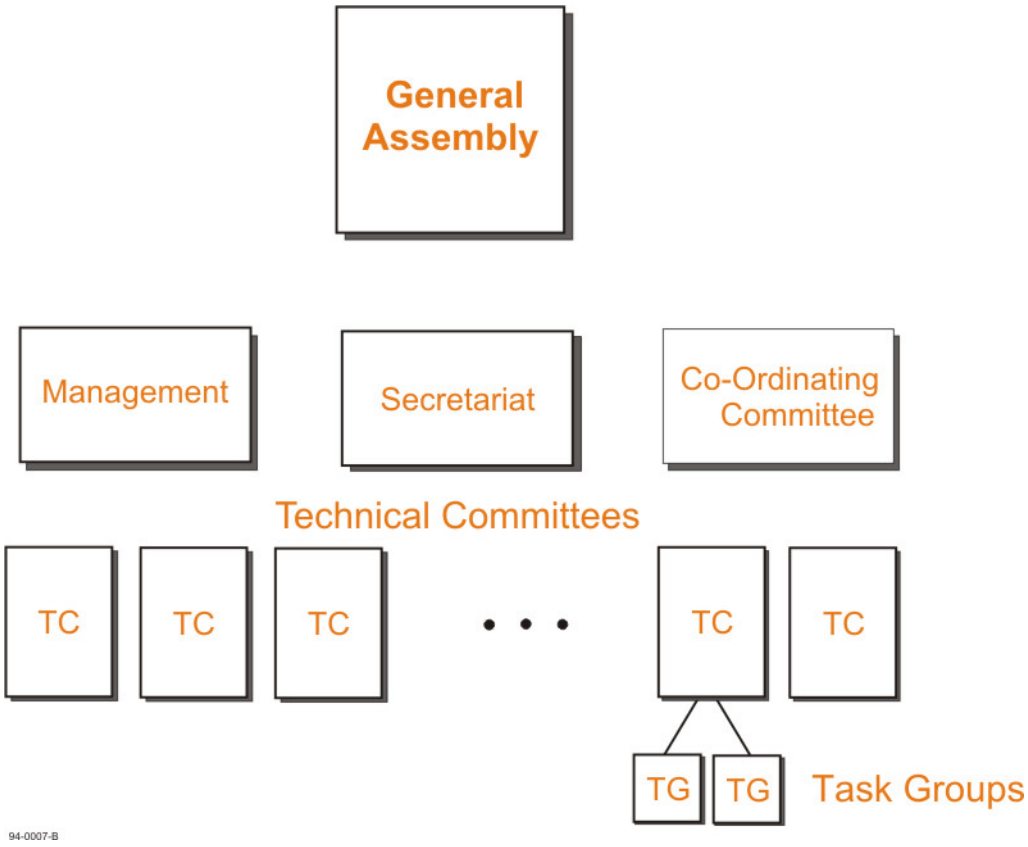


* SSO – Standard Setting Organization

+ ESOs – European Standardization Organizations

Ecma International has close working relations - such as liaisons, co-operation agreements, and memberships - with European and international standardization bodies as well as to some Fora and Consortia.

Organization of Ecma International*



* Often called Ecma short for Ecma International.

Management

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Ms I. Valet-Harper
(Microsoft)

Vice-President	**Treasurer**
Mr. K. Yamashita (Hitachi)	Mr. D. McAllister (Adobe)

Secretariat

Secretary General
Dr. I. Sebestyen

Deputy Secretary General
Mr. O. Elzinga

Mr. P. Charollais

Mrs. I. Walch

Co-ordinating Committee

Chair
Ms J. Auber (HP)

Members

Dr. J. Friedrich (IBM)

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Adobe Mr. D. McAllister
alternate: Mr. D. Smith

AMD Mr. W. Fry

Apple Mr. E. Vangala
alternate: Mr. D. Singer

Broadcom Mr. K. Lamacraft

Canon Mr. D. Murata
alternate: Mr. H. van Heiningen

eBay Mr. D. Crockford

Facebook Mr. J. Morrison

Fujitsu Mr. S. Matsumura
alternate: Mr. T. Igarashi

Google Mr. W. Horwat

Hitachi Mr. K. Yamashita
alternate: Mr. S. Nomura

HP Ms J. Auber
alternate: Mrs. K. Higginbottom

IBM Dr. J. Friedrich

Intel Mrs. R. Porath
alternate: Mr. P. Wennblom

JR East Mechatronics Mr. T. Minakata

Konica Minolta Mr. T. Nohnishi
alternate: Mr. K. Tsutsumi

Microsoft Ms I. Valet-Harper
alternate: Mr. D. Welsh

Netflix Mr. J. Husain

NXP Mr. H. Dollee

OMRON Mr. S. Mitamura

Pioneer Mr. S. Taniguchi

Ricoh Mr. N. Yazaki

Sony Mr. Y. Takayama
alternate: Mr. K. Brookes

Swissaudec Mr. C. Par

The Nippon Signal Mr. Y. Kusakabe

Toshiba Mr. K. Hasebe

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The Library of Congress
101 Independence Avenue SE
WASHINGTON DC 20540-1300
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Technical Committees

Active Committees

Product Safety	TC12
Electromagnetic Compatibility and Electromagnetic Fields (EMC & EMF)	TC20
Acoustics	TC26
Optical Disks and Disk Cartridges	TC31
Multimedia Coding and Communications	TC32
Product-related Environmental Attributes	TC38
ECMAScript	TC39
Universal 3D (U3D)	TC43
Office Open XML Formats	TC45
Open XML Paper Specification (OpenXPS)	TC46
Near Field Communications	TC47
High Rate Wireless Communications	TC48
Programming Languages	TC49
Close Proximity Electric Induction Data Transfer	TC50
Access Systems	TC51
Dart	TC52

Committees having accomplished their task

Codes (Coded Character Sets)	TC1
General Programming Languages	TC2
Problem Analysis and Flow Charting	TC3
Optical Character Recognition	TC4
ALGOL	TC5
COBOL	TC6
Magnetic Ink Character Recognition	TC7
FORTRAN	TC8
Data Transmission	TC9
PL/1	TC10
Numerical Control	TC11
Keyboards	TC13
Paper Sizes	TC14
Volume and File Structure	TC15
Rigid Magnetic Disks	TC16
Magnetic Tapes and Tape Cartridges	TC17
I/O Interface	TC18
Flexible Disk Cartridges	TC19
BASIC	TC21
Database	TC22
Open Systems Interconnection	TC23
Communications Protocols	TC24
Data Networks	TC25
Ada	TC27
Ergonomics of Work Stations	TC28
Document Architecture and Interchange	TC29
SCSI Small Computer Systems Interface	TC30
Portable Common Tool Environment (PCTE)	TC33
Office Devices	TC34
User System Interface	TC35
IT Security	TC36
Application Programming Interface for Windows (APIW)	TC37
Object Data Interfaces	TC40
Platform Independent Computing Environment	TC41
Interconnects	TC42
Holographic Information Storage Systems (HISS)	TC44

TC12 – Product Safety

Scope:

To consider national and international safety regulations to establish appropriate safety standards for information technology equipment so that they are intrinsically safe and safe for operating and maintenance personnel.

Programme of work:

1. To survey existing national and international standards and recommendations concerned with safety requirements.

2. To study the safety requirements associated with power control and distribution and establish recommendations where appropriate.

3. To consider short circuit and overcurrent protection, earthing, voltage exposure limits, mechanical design, etc., and establish recommendations where appropriate.

4. To develop principles and guidance to identify safeguards.

5. To investigate functional safety aspects.

6. TC20 handles EMF, which is a safety subject, because of their electromagnetic expertise.

7. To assume responsibility for the maintenance of Ecma Standards prepared by TC12.

8. To establish and maintain liaison with other standards organizations in order to present Ecma proposals to them and to make comments on their proposals.

Officers:

Chairman pro term
Vacant

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Mr. J. Junkkarinen (Intel)

Mr. A. Kripahle (Fujitsu)

Mr. D. Luginsland (IBM)

Mr. A. Satoh (HP)

Mr. S. Seng (HP)

TC20 – Electromagnetic Compatibility and Electromagnetic Fields (EMC and EMF)

Scope:

Electromagnetic Compatibility and Electromagnetic Fields related to ICT and CE equipment.

Programme of work:

1. To survey Electromagnetic Compatibility (EMC) and Electromagnetic Field (EMF) standards of ICT & CE equipment.

2. To establish measurement methods and limits for the electromagnetic emission and immunity of Information Communication Technology (ICT) & Consumer Electronics (CE) equipment.

3. To establish assessment methods and limits for electromagnetic fields from ICT & CE equipment to prevent excessive human exposure.

4. To maintain Ecma Standards and Technical Reports prepared by TC20.

5. To maintain liaison with other standards organizations dealing with EMC and EMF, to comment on their proposals and to present Ecma proposals.

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TC26 – Acoustics

Scope:

To recommend standards for determining the noise outputs of different categories of individual items of information technology equipment intended for use in defined working environments; standards for determining total noise levels in the said working environments, these standards to include corresponding methods of measurement; preferred methods of predicting total levels if units of known noise output are installed together.

Programme of work:

1. To categorize the acoustical environments in which information technology equipment is required to work.

2. To survey the various recommendations and requirements for the acoustical environments of these areas.

3. To make recommendations for standard methods of measuring and specifying the noise output of equipment, taking into account the work of ISO/TC43.

4. To consider any special requirements that may arise during non-standard operation, e.g. servicing.

5. To consider what information should be supplied by the manufacturer to facilitate optimum installation and to make recommendations.

6. To follow developments affecting acoustical environment in places of work.

7. To assume responsibility for the maintenance of Ecma Standards prepared by TC26.

8. To maintain liaison with other standards organizations in order to present Ecma proposals to them and to make comments on their proposals.

Officers:

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Prof. G. Minorikawa (Hosei University)
Mr. Y. Noritake (Ricoh)
Mr. M. O'Connell (IBM)
Mr. Junichi Shima (Sony)
Mr. T. Shishido (Canon)
Mr. N. Watanabe (Konica Minolta)
Mr. A. Yamaguchi (Fujitsu)
Mr. T. Yamauchi (Sony)

TC26-TG1 – Noise and Vibration Measurement of Small Air-Moving Devices

Scope:

- To develop and maintain standard(s) and technical report(s) for the noise and vibration measurement and analysis of small air-moving devices (AMDs) used for cooling information technology and telecommunications equipment (ITTE);
- To investigate noise and vibration issues of small AMDs used in the cooling of ITTE, and to propose recommended technical solutions.

Programme of work:

1. To maintain ECMA-275 (including investigation of ISO counterparts, ISO 10302 Parts 1 and 2).

2. To monitor technological developments and issues of noise and vibration from small AMDs and other related technologies for efficient cooling of ITTE.

3. To develop recommendations, e.g. standards, for small AMD noise and vibration issues.

Officers:

Convenor
Prof. G. Minorikawa (Hosei University)

Vice-Convenor
Mr. R. Hellweg (Ecma International)

Members

Mr. S. Bard (IBM)

Mr. E. Baugh (Intel)

Mr. I. Kimizuka (IBM)

Mr. T. Yamauchi (Sony)

TC31 – Information Storage

Scope:

To identify and develop the minimum number of standards necessary for data interchange and/or storage by means of digitally recorded systems, e.g. optical, magnetic and holographic systems (such as disks, cartridges,...) , and standards necessary for determining the life expectancy of such media.

To study existing Ecma and ISO/IEC labeling / volume and file structure standards and, where necessary, initiate and pursue the development of volume and file structure standards.

Programme of work:

1. To develop standards for optical disks and disk cartridges of 60 mm, 80 mm, 90 mm, 120 mm , 130 mm, 300 mm and 356 mm.

2. To develop standards on methods for determining the life expectancy of optical storage media.

3. To assume responsibility for the maintenance of Ecma Standards prepared by TC31.

4. To monitor technological developments in the field of optical disks and disk cartridges.

5. To maintain liaison with other standards organizations in order to present Ecma proposals to them and to make comments to their proposals.

Officers:

Chairman
Mr. K. Yamashita (Hitachi)

Members

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Mr. T. Ihashi (Archive Disc Test Center)
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Mr. Y. Takayama (Sony)
Mr. R. Tamura (Hitachi)
Mr. K. Tanaka (Teikyo Heisei University)
Mr. S. Taniguchi (Pioneer)
Prof. A. Watanabe (Hitachi)
Mr. H. Wilhelm (The Center for the Image)
Mr. F. Yokogawa (Pioneer)

TC31-TG2 – Holographic Information Storage

Scope:

To maintain an overall view and strategy for standardization in the field of holographic information storage systems, and to identify and develop Standards, Technical Reports and Guidelines in this field. To monitor and pursue standardization at a global level with regard to ISO/IEC JTC 1 and the international standardization community in general, including but not limited to the AV/IT and computer interfaces community.

Programme of work:

1. To develop standards for media recorded by holographic means.

This includes but is not limited to:

- the recording format;
- the minimum number of parameters, test methods and reference materials necessary to ensure interchangeability of recorded media;
- protective cases/cartridges/coverings with recording/reproduction devices and equipment.

2. To develop standards on methods for determining the life expectancy of holographic storage media.

3. To assume responsibility for the maintenance of Ecma Standards prepared by TC31-TG2.

4. To monitor technological developments in the field of holographic media.

5. To maintain liaison with other standards organizations in order to present Ecma proposals to them and to make comments to their proposals.

Officer:

Chairman
Mr. W. Glinka

Members

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Mr. H. Miyamoto (Hitachi)
Mr. K. Tezuka (Fujitsu)
Mr. K. Yamashita (Hitachi)
Mr. F. Yokogawa (Pioneer)

TC32 – Multimedia Coding and Communications

Scope:

To maintain an overall view and strategy for standardization and to prepare and maintain Ecma Standards and Technical Reports required in the field of multimedia coding and communications, including transmission.

To monitor, coordinate and pursue standardization at a global level with regard to ISO/IEC JTC 1, including its SC06 and SC29, and the international standardization world in general.

To work together with ETSI within the framework for standardization under the terms of the Co-operation Agreement between ETSI and Ecma, for publication of European standards and technical reports.

To promote unified international standards.

General items addressed by standards and technical reports are architecture, service, protocol, interface, compatibility, management and applications aspects.

The field of communications includes:

- Computer Supported Telecommunications Applications (CSTA).
- Architecture, service and protocol aspects of narrowband and broadband Private Integrated Services Networks (PISNs).
- IP-based multimedia communications in a business environment, including interoperability of narrowband and broadband PISNs with IP networks.
- Personal Networks and their federations.

In scope are also energy efficient solutions for coding and transmission of 3D audio content, including, but not limited to:

- Spatial Audio.

Further subjects for standardization are:

- Test sequences and methods for quality assessment of multimedia output.

Programme of work:

1. To address requirements and strategic plans for standardization in the scope, and to align, harmonize and as far as possible remain compatible with standards for multimedia coding and communications as well as standards in related fields.

2. To be responsible for and co-ordinate the planning and work of the Task Groups within TC32. In particular, to review and approve work items of the task groups.

3. To review and approve draft Standards and Technical Reports prepared by the task groups for submission to the Ecma General Assembly and onwards submission to ISO/IEC JTC 1, ETSI and other standardization organizations as appropriate.

4. To maintain liaisons with other Ecma TCs working in related fields

5. To maintain liaison with, monitor and contribute to the work of ISO/IEC JTC 1, ITU-T, ETSI, IETF, and other international, regional and national standards organizations and consortia, to present Ecma proposals and to comment on their proposals.

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TC32-TG11 – Computer Supported Telecommunications Applications (CSTA)

Scope:

Develop and refine the Computer Supported Telecommunications (CSTA) standard.

CSTA specifies an Applications Interface and Protocols for monitoring and controlling calls and devices in a communications network.

These calls and devices may support various media and can reside in various network environments such as IP, Switched Circuit Networks and mobile networks. CSTA however, abstracts various details of underlying signalling protocols (e.g. SIP/H.323) and networks for the applications.

Programme of work:

1. To study aspects of CSTA, with special focus to:

- improve CSTA and SIP interoperability;
- improve CSTA and Web interoperability (leverage CSTA XML usage with e.g. WSDL/UDDI);
- provide conferencing enhancements for collaboration applications;
- provide finer grained media control;
- improve support for non-voice media.

2. To produce Technical Reports illustrating how CSTA fits into various environments such as in call/contact centres, voice-browser and Internet environments.

3. To produce Standards specifying the services, functional entities and protocols required enabling CSTA operation in a variety of environments.

4. To liaise with organizations studying similar topics including groups working within ITU-T and ISO/IEC JTC 1/SC 6, IETF, W3C and ETSI, to promote unified international standards.

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TC32-TG14 – Private Integrated Services / Corporate Networks - Services and Signalling

Scope:

To develop Standards and Technical Reports for services and signalling in Private Integrated Services / Corporate Networks (PISNs/CNs).

Programme of work:

1. To develop service Standards and interface protocol signalling Standards for the connection of terminal equipment to a PISN/CN, utilising, and remaining compatible with, existing Standards and recommendations, as far as possible.

2. To develop Standards for intra-PISN/CN services and signalling protocols (i.e. QSIG/PSS1), thereby supporting harmonized telecommunications services on multi-vendor PISNs/CNs, and to align these services as far as possible with the public ISDN telecommunications services.

3. To co-operate with other standardization bodies in the development of Standards for the services and signalling of PISNs/CNs in relation to:

- interconnection of PISN exchanges;
- connection of terminal equipment (TE).

4. To develop Standards for the service description, information flows and signalling protocols of PISN/CN services.

5. To co-ordinate liaison with ITU-T, ISO/IEC JTC 1 and ETSI in the field of ISDN services and protocol standards.

6. To monitor and to contribute to the work of other international and European bodies studying matters related to PISN/CN services (e.g. ISDN developments).

7. To maintain existing standards for broadband private networks (B-PISN).

8. To maintain existing standards for architectural, naming numbering and addressing aspects of narrowband and broadband PISNs/CNs.

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TC32-TG17 – IP-based Multimedia Business Communications

Scope:

To develop Standards and Technical Reports for IP-based multimedia communications in a business environment.

Programme of work:

1. To identify requirements for IP-based multimedia communication in a corporate network environment, including architectural, addressing, mobility, service, protocol, interworking, QoS, security and management aspects.

2. To co-operate with the responsible Task Groups, Technical Committees and other standardization bodies in order to achieve where necessary Standards or Technical Reports in these areas.

3. To adapt, where necessary, existing standards for narrowband and broadband PISNs to the requirements of IP-based multimedia communication in a business environment.

4. To develop, where necessary, standards for IP-based interoperation of corporate networks with other networks.

5. To promote a worldwide unique set of standards for IP-related multimedia communication in a business environment.

6. To co-ordinate liaison on related matters with ITU-T, ETSI, TIA, IETF, IMTC and ISO/IEC JTC 1.

7. To monitor, and contribute to, related work in other bodies.

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TC32-TG22 – Scalable Sparse Spatial Sound System (S5)

Scope:

To develop Standards and Technical Reports for a digital spatial audio system which uses Inverse Coding to achieve highly efficient coding of localization and ambiance information.

Programme of work:

1. To develop and maintain Standards/Technical Reports for an Inverse Coding based audio system covering:
- Requirements on data formats and preprocessing of the audio source
- Overall S5 architecture
- Coding format of Inverse Coding parameter data
- Recommendations/References regarding Base audio encoders
- Multiplexing of base audio stream and Inverse Coding parameter data
  a) External multiplexing
  b) Internal multiplexing by embedding Inverse Coding parameter data in audio stream

2. To develop and maintain Standards/Technical Reports on binaural rendering with Head Related Transfer Functions (HRTF).

3. To develop and maintain Standards/Technical Reports on highly efficient/low power binaural rendering with Head Related Transfer Functions (HRTF).

4. To develop and maintain Standards/Technical Reports on conformance testing tools for implementations.

5. To develop and maintain Standards/Technical Reports on quality testing tools for implementations.

6. To cooperate and liaise with Ecma TCs and external organizations and standardization bodies working in related technical fields (e.g. ISO/IEC JTC 1/SC 29/WG 11 (MPEG)).

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TC38 – Product-Related Environmental Attributes

Scope:

To identify and describe the environmental attributes related to ICT (Information and Communication Technology) and CE (Consumer Electronics) products, during their entire life cycle, from conception to end-of-life treatment.

Programme of work:

1. To develop recommendations, e.g. Standards, on environmental attributes and the presentation thereof for ICT and CE products.

2. To monitor the development of environmental standards, regulations, conformity schemes and other requirements related to ICT and CE products.

3. To promote and maintain Ecma Standards covering product-related environmental attributes. To comment on standards and regulations from outside organizations.

4. To establish and maintain close liaison with other organizations and other fora working in the same or similar fields of activity.

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TC38-TG1 – Chemical Emissions

Scope:

Chemical Emissions.

Programme of work:

1. To survey existing national and international standards and recommendations.
2. To monitor regulatory developments.
3. To standardize and harmonise methods to determine the chemical emissions.
4. To maintain its published work.
5. To liaise with relevant standards organizations.

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TC38-TG2 – Energy Efficiency

Scope:

Energy Consumption.

Programme of work:

1. To survey national and international standards, specifications and recommendations.
2. To survey energy consumption drivers (regulatory, NGO, industry, eco label etc).
3. To determine a definition of "energy consumption".
4. To determine how to measure energy consumption in a manner that allows comparisons of like products.
5. To maintain its published work.
6. To liaise with organizations dealing with energy efficiency / consumption.

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TC38-TG3 – Environmental Declarations

Scope:

Environmental Declarations

Programme of work:

1. To survey existing national and international standards and recommendations.
2. To monitor regulatory developments.
3. To standardize and harmonise environmental declarations.
4. To maintain its published work.
5. To liaise with relevant standards organizations.

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TC38-TG4 – Proxying Support for Sleep Modes

Scope:

Network proxying of ICT devices to reduce energy consumption

Programme of work:

1. To develop Standards and Technical Reports for network proxying; a proxy is an entity that maintains network presence for a sleeping higher-power ICT device.

2. To specify:

- the protocols that network proxies must handle to maintain connectivity while hosts are asleep;
- the proxy behaviour including ignoring packets, generating packets and waking up host systems; and
- the definition of messages exchanged between *hosts* and *proxies.*

3. To maintain their published work; and

4. To liaise and co-operate with other standards organizations.

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TC38-TG5 – Environmental Conscious Design

Scope:

Environmental Conscious Design (ECD) for ICT & CE products and systems

Programme of work:

1. To survey existing national and international standards e.g. IEC 62430 and 62075.
2. To monitor regulatory developments.
3. To standardize procedures for ECD.
4. To maintain its published work, e.g. ECMA-341.
5. To liaise with relevant standards organizations including IEC TC 100, 108 and 111.

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TC38-TG7 – Business Video Conferencing

Scope:

Business Video Conferencing (BVC) is a video conference with multi-locations, by interconnecting multi-vendor's and multi-system-range (from legacy to latest) video conference systems efficiently to promote use of video conferencing on business.

This BVC aims to promote use of video conference systems, and eventually to contribute reduction of CO2 emitted by transport systems.

Programme of work:

The goal of this TC38-TG7 is to develop specifications for the BVC. The TG7 will discuss to:

1. determine end-user's requirements for promoting video conferencing;

2. determine BVC architecture to realize the end-user's requirements;

3. determine specifications for implementing the BVC architecture;

4. and report items to be standardized (International Standards).

NOTE: Specifications produced by the TG7 will be reviewed from the point of view of (a) qualifying and quantifying the environmental impacts and effects and (b) harmonizing with relevant SDO's standards.

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TC39 – ECMAScript

Scope:

Standardization of the general purpose, cross platform, vendor-neutral programing language ECMAScript. This includes the language syntax, semantics, and libraries and complementary technologies that support the language.

Programme of work:

1. To maintain and update the standard for the ECMAScript programming language.
2. To identify, develop and maintain standards for libraries that extend the capabilities of ECMAScript.
3. To develop test suites that may be used to verify correct implementation of these standards.
4. To contribute selected standards to ISO/IEC JTC 1.
5. To evaluate and consider proposals for complementary or additional technologies.

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TC43 – Universal 3D (U3D)

Scope:

To facilitate the reuse of 3D CAD data by developing global 3D standards intended for downstream 3D visualization applications.

Programme of work:

1. To standardize a Universal 3D extensible file format and infrastructure focused on the repurposing of 3D CAD data for non-engineering and non-design applications, e.g. training and visualization applications. Notable U3D features include binary encoding, domain-specific compression, continuous level of detail, progressive data representation, animation support, and extensibility to address evolving market needs.

2. To develop a usage and implementation strategy guide for users of U3D to be published as an Ecma Technical Report (TR).

3. To contribute the Ecma U3D standards to ISO/IEC JTC 1 for approval and adoption by ISO and IEC.

4. To establish and maintain liaison with other standards organizations in order to present Ecma U3D proposals to them and to make comments on their proposals.

5. Upon completion of items 1 - 3, to investigate the future direction of 3D standards, and to evaluate and consider proposals for complementary or additional technology, e.g. support for advanced physics based lighting and rendering applications.

6. To assume responsibility for the maintenance of Ecma Standards prepared by TC43.

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TC45 – Office Open XML Formats

Scope:

The goal of the Technical Committee is to produce a formal standard for office productivity applications within the Ecma International standards process which is fully compatible with the Office Open XML Formats. The aim is to enable the implementation of the Office Open XML Formats by a wide set of tools and platforms in order to foster interoperability across office productivity applications and with line-of-business systems. The Technical Committee will also be responsible for the ongoing maintenance and evolution of the standard.

Programme of work:

1. To produce a formal Standard for office productivity documents which is fully compatible with the Office Open XML Formats.

This includes:

a) Produce a standard which is fully compatible with the Office Open XML Formats, including full and comprehensive documentation of those formats in the style of an international standard, with particular attention given to enabling the implementation of the Office Open XML Formats by a wide set of tools and platforms in order to foster interoperability across office productivity applications and with line-of-business systems.

b) Produce a comprehensive set of W3C XML Schemas for the Office Open XML Formats, with particular attention given to self documentation of the schemas and testing of the XSDs for validation using a wide variety of XSD tools of the market and cross platform.

2. To contribute the Ecma Office Open XML Formats standards to ISO/IEC JTC 1 for approval and adoption by ISO and IEC.

Upon completion of the Previous Items, the role of the Technical Committee will be:

3. To assume responsibility for maintaining the Ecma Office Open XML standard.

4. To evaluate and consider proposals for complementary or additional technology.

5. To assume responsibility for the evolution of the Ecma standard while ensuring backward compatibility with the previous versions to guarantee continuity in the use of the current and future formats.

6. To establish and maintain liaison with other Ecma TCs and with other Standards Development Organizations (SDOs) as appropriate to facilitate and promulgate the work of the TC.

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TC46 – Open XML Paper Specification (OpenXPS)

Scope:

The goal of the Technical Committee is to produce a formal standard for an XML-based electronic paper format and XML-based page description language which is consistent with existing implementations of the format called the Open XML Paper Specification (OpenXPS). The Technical Committee will use the format called the Open XML Paper Specification (OpenXPS) as a starting point with the aim to provide a standard, secure, and highly trustworthy format that enables a wide set of applications, devices, tools and platforms to implement compatible paginated-document workflows. An additional goal will be to enable the interoperability of independently created software and hardware systems that produce, consume or otherwise process XPS content. The Technical Committee will be responsible for the ongoing maintenance and evolution of the standard.

Programme of work:

1. Produce a formal standard for an XML-based electronic paper format and XML-based page description language which is consistent with existing implementations of the format called the Open XML Paper Specification, including:

- Produce a fully documented and unambiguous standard for an XML-based electronic paper format and page description language;
- Produce appropriate W3C XML Schemas to enable automatic verification of files written to the standard;
- Enable interoperability between existing industry implementations of applications, devices, tools and platforms.

2. Assume responsibility for the ongoing maintenance and evolution of this Ecma International standard.

3. Support backwards compatibility with implementations targeted to prior versions of the standard.

4. Evaluate and consider proposal for complementary or related additional technologies.

5. Establish and maintain liaison with other Ecma TCs and with other Standards Setting Organizations (SSOs) as appropriate to facilitate and promulgate the work of the TC.

6. Evaluate and consider contributing the Ecma standard to an ISO and/or IEC TC for approval and adoption.

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TC47 – Near Field Communications

Scope:

To develop Standards and Technical Reports for Near Field Communication Systems, for the realization of simple wireless communication between close coupled devices for network products and consumer equipment.

Programme of work:

1. To develop and maintain Standards and Technical Reports for Near Field Communication.

2. To cooperate and liaise with other organizations and standardization bodies, where appropriate, in particular with ISO/IEC JTC 1, to achieve and promote a unique worldwide set of standards in the area of Near Field Communication Systems.

3. To monitor NFC technology developments and to promote and support its use in suitable application areas.

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TC48 – High Rate Wireless Communications

Scope:

To develop Standards and Technical Reports for high rate wireless communications.

Programme of work:

1. To develop and maintain Standards and Technical Reports for high rate wireless communication systems, for the following subjects:

- Physical Layer (RF and Baseband);
- MAC layer (Media Access Control);
- PHY-MAC interface;
- protocol and rules for coexistence with other wireless technologies.

2. To cooperate and liaise with other organizations and standardization bodies.

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TC48-TG1 – TV White Spaces

Scope:

Wireless communications using Television White Spaces (TVWS).

Programme of work:

1. To develop and maintain Standards and Technical Reports for TVWS wireless communication systems, including:

- Physical Layer (RF and Baseband);
- MAC layer (Media Access Control);
- Protocol and mechanisms for coexistence.

2. To cooperate and liaise with other organizations and standardization bodies.

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TC49 – Programming Languages

Scope:

To standardize:

- the programming language C# (C "sharp");
- the programming language Eiffel;
- a Common Language Infrastructure (CLI);
- a CLI binding for C++;
- additional programming languages with cross-language bindings;
- additional vendor-neutral, cross-language programming platforms.

Programme of work:

1. To develop a standard for the programming language C# (pronounced C "sharp").
2. To develop a standard for the Common Language Infrastructure (CLI).
3. To develop a standard for the programming language Eiffel.
4. To develop a standard set of language extensions to provide a CLI binding for C++.
5. To contribute the standards to ISO/IEC JTC 1.
6. To investigate the further direction of standards developed by TC49.
7. To evaluate and consider proposals for complementary or additional technology.
8. To maintain liaison with appropriate other Ecma TCs and TGs and with ISO/IEC JTC 1/SC 22.

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TC49-TG2 – C#

Scope:

To standardize the syntax and semantics of a modern, component-based, general purpose, object oriented, and type-safe programming language called C# (pronounced C sharp).

Programme of work:

1. Develop C# language standards.

2. Upon completion of item 1, to investigate the future direction of C# standards, and to evaluate and consider proposals for complementary or additional technology.

3. To establish and maintain liaison with other Ecma TCs and with other Standards Development Organizations (SDOs) as appropriate to facilitate and promulgate the work of the TG.

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TC49-TG3 – Common Language Infrastructure

Scope:

To standardize a common language infrastructure (CLI) to support C#, ECMAScript and other modern languages.

Programme of work:

1. Develop CLI standards including:

- A common type system used across all supported programming languages;
- Execution Engine Architecture;
- A system architecture and type system;
- Metadata syntax and semantic;
- File format including validation rules;
- Program verification rules that ensure type safety;
- A common intermediate language format for code download and execution, along with metadata that describes the requirements and capabilities of the code;
- A small set of base classes that provide language support and basic application portability.

2. Upon completion of item 1, to investigate the future direction of CLI standards, and to evaluate and consider proposals for complementary or additional technology.

3. To establish and maintain liaison with other Ecma TCs and with other Standards Development Organizations (SDOs) as appropriate to facilitate and promulgate the work of the TG.

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TC49-TG4 – EIFFEL Language

Scope:

To standardize the syntax and semantics of a modern, component-based, general purpose, object oriented, and type-safe programming language called Eiffel.

Programme of work:

1. Develop Eiffel language standards.

2. Upon completion of item 1, to investigate the future direction of Eiffel language standards, and to evaluate and consider proposals for complementary or additional technology.

3. To establish and maintain liaison with other Ecma TCs and with other Standards Development Organizations (SDOs) as appropriate to facilitate and promulgate the work of the TG.

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TC50 – Close Proximity Electric Induction Data Transfer

Scope:

High-Speed Close Proximity Wireless Communications using Longitudinal Electric Induction Coupling.

Programme of work:

1. To develop and maintain Standards and Technical Reports for the wireless data interface between devices, including physical and link layers using the unique properties of the electric induction coupling principle. Basic technology will be optimized for one-to-one, point-to-point topology for close proximity bi-directional data transfer between two active devices.

2. To cooperate and liaise with other organizations and standardization bodies.

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TC51 – Access Systems

Scope:

- Access System specifies a common language, modular architecture template, interfaces and protocols for the interoperability between (distributed) modules and sub-systems for access to assets.
- Such assets may be physical such as buildings, transport means, care centres, computers or digitized assets and services e.g. health care.
- The Access System specification is a generic template for existing and new systems that provide access to specific assets.

Programme of work:

1. To develop and maintain Technical Reports and standards for interoperability between modules and sub-systems for access systems.

2. To monitor related standardization activities to avoid duplication, to promote synergies and to promote complementary efforts via internal and external liaisons with - and contribute to - the work of international SDOs.

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TC52 – Dart

Scope:

To standardize the syntax and semantics of a modern, object oriented programming language called Dart as well as standardizing core libraries and complementary technologies that support the language. This work should not use patents or if so then only royalty free patents. To aid in achieving that objective, this TC will use an experimental TC52 RF patent policy similar that has been developed for use by TC39.

Programme of work:

1. To Develop Dart language standards and standards for libraries that extend the capabilities of Dart.

2. Upon completion of item 1, to investigate the future direction of Dart language standards, and to evaluate and consider proposals for complementary or additional technology.

3. To develop test suites that may be used to verify the correct implementation of these standards.

4. To establish and maintain liaison with other Ecma TCs and with other Standards Development Organizations (SDOs) as appropriate to facilitate and promulgate the work of the TG.

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Index of Ecma Standards

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Ecma Standards and corresponding International and European Standards

In the third column of the table below you can find:

- the ISO/IEC equivalent to the Ecma Standard which can be downloaded as freely available standard from ISO/IEC
- the ETSI equivalent to the Ecma Standard which can be downloaded as limitedly freely available publication from ETSI

Legend:

ISO	International Standard published by ISO
IEC	International Standard published by IEC
ISO/IEC	International Standard published by ISO and IEC
DIS	Draft International Standard
ETSI ETS	ETSI European Telecommunications Standard (previous nomenclature)
ETSI EN	European Standard (telecommunications series)
ETSI ES	ETSI Standard
ETSI TS	ETSI Technical Specification
ETSI EG	ETSI Guide
ETSI ETR	ETSI European Telecommunications Technical Report (previous nomenclature)
ETSI TR	ETSI Technical Report

The ETSI TS and TR are approved by the parent technical committee. The others deliverables are approved by the ETSI community. For more detailed information on ETSI deliverables, see the ETSI directives.

Ecma Standards in force (electronically available here)

ECMA-6	7-Bit Coded Character Set, 6th edition (December 1991)	ISO/IEC 646
ECMA-13	File Structure and Labelling of Magnetic Tapes for Information Interchange, 4th edition (December 1985)	ISO 1001
ECMA-35	Character Code Structure and Extension Techniques, 6th edition (December 1994)	ISO/IEC 2022
ECMA-43	8-Bit Coded Character Set Structure and Rules 3rd edition (December 1991)	ISO/IEC 4873
ECMA-48	Control Functions for Coded Character Sets 5th edition (June 1991)	ISO/IEC 6429
ECMA-74	Measurement of Airborne Noise Emitted by Information Technology and Telecommunications Equipment, 12th edition (December 2012)	ISO 7779
ECMA-94	8-Bit Single-Byte Coded Graphic Character Sets - Latin Alphabets No. 1 to No. 4, 2nd edition (June 1986)	ISO 8859-1, -2, -3 and -4
ECMA-99	Data Interchange on 130 mm Flexible Disk Cartridges using MFM Recording at 13 262 ftprad on Both Sides 3,8 Tracks per mm (September 1985)	ISO 8630
ECMA-100	Data Interchange on 90 mm Flexible Disk Cartridges using MFM Recording at 7 958 ftprad on 80 Tracks on Each Side - ISO Type 301, 2nd edition (December 1988)	ISO 8860
ECMA-106	Private Telecommunication Networks (PTN) - Signalling Protocol at the S Reference Point - Circuit Mode Basic Services (SSIG-BC), 3rd edition (December 1993)	ETS 300 192
ECMA-107	Volume and File Structure of Disk Cartridges for Information Interchange, 2nd edition (June 1995)	ISO/IEC 9293
ECMA-108	Measurement of High Frequency Noise emitted by Information Technology and Telecommunications Equipment, 5th edition (December 2010)	ISO 9295
ECMA-109	Declared Noise Emission Values of Information Technology and Telecommunications Equipment, 6th edition (December 2012)	ISO 9296
ECMA-113	8-Bit Single-Byte Coded Graphic Character Sets - Latin/Cyrillic Alphabet, 3rd edition (December 1999)	ISO 8859-5
ECMA-114	8-Bit Single-Byte Coded Graphic Character Sets - Latin/Arabic Alphabet, 2nd edition (December 2000)	ISO 8859-6
ECMA-118	8-Bit Single-Byte Coded Graphic Character Sets - Latin/Greek Alphabet (December 1986)	ISO 8859-7
ECMA-119	Volume and File Structure of CDROM for Information Interchange, 2nd edition (December 1987)	ISO 9660
ECMA-120	Data Interchange on 12,7 mm 18-Track Magnetic Tape Cartridges, 3rd edition (December 1993)	ISO 9661
ECMA-121	8-Bit Single-Byte Coded Graphic Character Sets - Latin/Hebrew Alphabet, 2nd edition (December 2000)	ISO 8859-8
ECMA-125	Data Interchange on 90 mm Flexible Disk Cartridges using MFM Recording at 15 916 ftprad on 80 Tracks on Each Side - ISO Type 302 (December 1987)	ISO 9529
ECMA-128	8-Bit Single-Byte Coded Graphic Character Sets - Latin Alphabet No. 5, 2nd edition (December 1999)	ISO 8859-9
ECMA-130	Data Interchange on Read-only 120 mm Optical Data Disks (CD-ROM), 2nd edition (June 1996)	ISO/IEC 10149
ECMA-133	Private Integrated Services Network (PISN) - Reference Configuration for PISN Exchanges (PINX), 2nd edition (December 1998)	ISO/IEC 11579-1

		ETS 300 475-1
ECMA-139	3,81 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - DDS Format (June 1990)	ISO/IEC 10777
ECMA-142	Private Integrated Services Network (PISN) - Circuit Mode 64kbit/s Bearer Services - Service Description, Functional Capabilities and Information Flows (BCSD), 3rd edition (December 2001)	ISO/IEC 11574 EN 300 171
ECMA-143	Private Integrated Services Network (PISN) - Circuit Mode Bearer Services - Inter-Exchange Signalling Procedures and Protocol (QSIG-BC), 4th edition (December 2001)	ISO/IEC 11572 EN 300 172
ECMA-144	8-Bit Single-Byte Coded Character Sets - Latin Alphabet No. 6, 3rd edition (December 2000)	ISO/IEC 8859-10
ECMA-145	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording (December 1990)	ISO/IEC 11319
ECMA-146	3,81 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - DATA/DAT Format (December 1990)	ISO/IEC 11321
ECMA-147	Data Interchange on 90 mm Flexible Disk Cartridges using MFM Recording at 31 831 ftprad on 80 Tracks on Each Side - ISO Type 303 (December 1990)	ISO/IEC 10994
ECMA-148	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Identification Supplementary Services (ISSD), 3rd edition (June 1997)	ISO/IEC 14136 ETS 300 173
ECMA-149	Portable Common Tool Environment (PCTE) - Abstract Specification, 4th edition (December 1997)	ISO/IEC 13719-1
ECMA-150	3,81 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - DDS-DC Format using 60 m and 90 m Length Tapes, 2nd edition (June 1992)	ISO/IEC 11557
ECMA-151	Data Compression for Information Interchange - Adaptive Coding with Embedded Dictionary - DCLZ Algorithm (June 1991)	ISO/IEC 11558
ECMA-152	Data Interchange on 12,7 mm 18-Track Magnetic Tape Cartridges - Extended Format, 2nd edition (December 1993)	ISO/IEC 11559
ECMA-153	Information Interchange on 130 mm Optical Disk Cartridges of the Write Once, Read Multiple (WORM) Type, using the Magneto-Optical Effect, 2nd edition (June 1994)	ISO/IEC 11560
ECMA-154	Data Interchange on 90 mm Optical Disk Cartridges, Read Only and Rewritable, M.O., 2nd edition (June 1994)	ISO/IEC 10090
ECMA-155	Private Integrated Services Networks - Addressing, 2nd edition (June 1997)	ISO/IEC 11571 EN 300 189
ECMA-156	Private Telecommunication Networks (PTN) - Signalling at the S Reference Point - Generic Keypad Protocol for the Support of Supplementary Services (SSIG-KP), 2nd edition (June 1993)	ETS 300 190
ECMA-157	Private Telecommunication Networks (PTN) - Signalling Protocol at the S Reference Point - Identification Supplementary Services (SSIG-ID), 2nd edition (June 1993)	ETS 300 191
ECMA-158	Portable Common Tool Environment (PCTE) - C Programming Language Binding, 4th edition (December 1997)	ISO/IEC 13719-2

ECMA-159	Data Compression for Information Interchange - Binary Arithmetic Coding Algorithm (December 1991)	ISO/IEC 12042
ECMA-160	Determination of Sound Power Levels of Computer and Business Equipment using Sound Intensity Measurements; Scanning Method in Controlled Rooms, 2nd edition (December 1992)	ISO 9614-2
ECMA-161	Private Telecommunication Networks (PTN) - Signalling at the S Reference Point - Generic Feature Key Management Protocol for the Control of Supplementary Services (SSIG-FK), 2nd edition (June 1993)	ETS 300 240
ECMA-162	Portable Common Tool Environment (PCTE) - Ada Programming Language Binding, 4th edition (December 1997)	ISO/IEC 13719-3
ECMA-163	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Name Identification Supplementary Services (NISD), 3rd edition (September 1997)	ISO/IEC 13864 ETS 300 237
ECMA-164	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Name Identification Supplementary Services (QSIG-NA), 4th edition (December 2001)	ISO/IEC 13868 ETS 300 238
ECMA-165	Private Integrated Services Network (PISN) - Generic Functional Protocol for the Support of Supplementary Services - Inter-Exchange Signalling Procedures and Protocol (QSIG-GF), 4th edition (June 2001)	ISO/IEC 11582 ETS 300 239
ECMA-167	Volume and File Structure for Write-Once and Rewritable Media using Non-Sequential Recording for Information Interchange, 3rd edition (June 1997)	ISO/IEC 13346
ECMA-168	Volume and File Structure of Read-Only and Write-Once Compact Disk Media for Information Interchange, 2nd edition (December 1994)	ISO/IEC 13490
ECMA-169	8 mm Wide Magnetic Tape Cartridge Dual Azimuth Format for Information Interchange - Helical Scan Recording (June 1992)	ISO/IEC 12246
ECMA-170	3,81 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - DDS Format using 60 m and 90 m Length Tapes (June 1992)	ISO/IEC 12247
ECMA-171	3,81 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - DATA/DAT-DC Format using 60 m and 90 m Length Tapes (June 1992)	ISO/IEC 12248
ECMA-173	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Call Diversion Supplementary Services (CFSD), 3rd edition (December 2001)	ISO/IEC 13872 ETS 300 256
ECMA-174	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Call Diversion Supplementary Services (QSIG-CF), 3rd edition (December 2001)	ISO/IEC 13873 ETS 300 257
ECMA-175	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Path Replacement Additional Network Feature (ANF-PRSD), 3rd edition (December 1998)	ISO/IEC 13863 ETS 300 258
ECMA-176	Private Integrated Services Network (PISN) - Inter-exchange Signalling Protocol - Path Replacement Additional Network Feature (QSIG-PR), 4th edition (December 2001)	ISO/IEC 13874 ETS 300 259
ECMA-177	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Call Transfer Supplementary Service (CTSD), 3rd edition (December 2001)	ISO/IEC 13865 ETS 300 260

ECMA-178	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Call Transfer Supplementary Service (QSIG-CT), 3rd edition (December 2001)	ISO/IEC 13869 ETS 300 261
ECMA-179	Services for Computer Supported Telecommunications Applications (CSTA) Phase I (June 1992)	
ECMA-180	Protocol for Computer Supported Telecommunications Applications (CSTA) Phase I (June 1992)	
ECMA-182	Data Interchange on 12,7 mm 48 Track Magnetic Tape Cartridges - DLT1 Format (December 1992)	ISO/IEC 13421
ECMA-183	Data Interchange on 130 mm Optical Disk Cartridges - Capacity: 1 Gigabyte per Cartridge (December 1992)	ISO/IEC 13481
ECMA-184	Data Interchange on 130 mm Optical Disk Cartridges - Capacity: 1,3 Gigabytes per Cartridge (December 1992)	ISO/IEC 13549
ECMA-185	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Call Completion Supplementary Services (CCSD), 2nd edition (June 1997)	ISO/IEC 13866 ETS 300 365
ECMA-186	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Call Completion Supplementary Services (QSIG-CC), 4th edition (December 2001)	ISO/IEC 13870 ETS 300 366
ECMA-189	Information Interchange on 300 mm Optical Disk Cartridges of the Write Once, Read Multiple (WORM) Type using the SSF Method (June 1993)	ISO/IEC 13614
ECMA-190	Information Interchange on 300 mm Optical Disk Cartridges of the Write Once, Read Multiple (WORM) Type using the CCS Method (June 1993)	ISO/IEC 13403
ECMA-191	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Call Offer Supplementary Service (COSD), 2nd edition (June 1997)	ISO/IEC 14841 EN 300 361
ECMA-192	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Call Offer Supplementary Service (QSIG-CO), 4th edition (December 2001)	ISO/IEC 14843 EN 300 362
ECMA-193	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Do Not Disturb and Do Not Disturb Override Supplementary Services (DND(O)SD), 2nd edition (June 1997)	ISO/IEC 14842 EN 300 363
ECMA-194	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Do Not Disturb and Do Not Disturb Override Supplementary Services (QSIG-DND(O)), 4th edition (December 2001)	ISO/IEC 14844 EN 300 364
ECMA-195	Data Interchange on 130 mm Optical Disk Cartridges - Capacity: 2 Gigabytes per Cartridge, 2nd edition (June 1995)	ISO/IEC 13842
ECMA-196	Data Interchange on 12,7 mm 36-Track Magnetic Tape Cartridges (December 1993)	ISO/IEC 14251
ECMA-197	Data Interchange on 12,7 mm 112-Track Magnetic Tape Cartridges - DLT2 Format (December 1993)	ISO/IEC 13962
ECMA-198	3,81 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - DDS-2 Format using 120 m Length Tapes, 2nd edition (June 1995)	ISO/IEC 13923
ECMA-201	Data Interchange on 90 mm Optical Disk Cartridges - Capacity: 230 Megabytes per Cartridge, 2nd edition (December 1994)	ISO/IEC 13963

ECMA-202	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Call Intrusion Supplementary Service (CISD), 2nd edition (June 1997)	ISO/IEC 14845 EN 300 425
ECMA-203	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Call Intrusion Supplementary Service (QSIG-CI), 4th edition (December 2001)	ISO/IEC 14846 EN 300 426
ECMA-205	Commercially Oriented Functionality Class for Security Evaluation (COFC) (December 1993)	
ECMA-206	Association Context Management including Security Context Management (December 1993)	
ECMA-207	Data Interchange on 90 mm Flexible Disk Cartridges - 326 Data Tracks on each Side - Capacity: 21 Mbytes - ISO Type 305 (June 1994)	ISO/IEC 14169
ECMA-208	System-Independent Data Format - SIDF (December 1994)	ISO/IEC 14863
ECMA-209	Data Interchange on 12,7 mm 128-Track Magnetic Tape Cartridges - DLT3 Format (December 1994)	ISO/IEC 14833
ECMA-210	12,65 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - DATA-D3-1 Format, 2nd edition (December 1995)	ISO/IEC 14840
ECMA-211	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Advice of Charge Supplementary Services (AOCSD), 3rd edition (December 2001)	ISO/IEC 15049 EN 301 254
ECMA-212	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Advice of Charge Supplementary Services (QSIG-AOC), 3rd edition (December 2001)	ISO/IEC 15050 EN 301 264
ECMA-213	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Recall Supplementary Service (RESD), 3rd edition (December 2001)	ISO/IEC 15051 EN 301 257
ECMA-214	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Recall Supplementary Service (QSIG-RE), 3rd edition (December 2001)	ISO/IEC 15052 EN 301 258
ECMA-217	Services for Computer Supported Telecommunications Applications (CSTA) Phase II (December 1994)	
ECMA-218	Protocol for Computer Supported Telecommunications Applications (CSTA) Phase II (December 1994)	
ECMA-219	Authentication and Privilege Attribute Security Application with Related Key Distribution Functions - Part 1, 2 and 3, 2nd edition (March 1996)	
ECMA-220	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Call Interception Additional Network Feature (ANF-CINTSD), 3rd edition (December 2001)	ISO/IEC 15053 EN 301 256
ECMA-221	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Call Interception Additional Network Feature (QSIG-CINT), 3rd edition (December 2001)	ISO/IEC 15054 EN 301 265
ECMA-222	Adaptive Lossless Data Compression Algorithm (June 1995)	ISO/IEC 15200
ECMA-223	Data Interchange on 90 mm Optical Disk Cartridges - Capacity: 385 Megabytes per Cartridge (June 1995)	

ECMA-224	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Transit Counter Additional Network Feature (ANF-TCSD), 2nd edition (June 1997)	ISO/IEC 15055 EN 301 047
ECMA-225	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Transit Counter Additional Network Feature (QSIG-TC), 2nd edition (June 1997)	ISO/IEC 15056 EN 301 048
ECMA-226	Private Integrated Services Network (PISN) - Mapping Functions for the Employment of Dedicated Circuit Mode Connections as Inter-PTNX Connections (MAPPING-CM-STATIC) (June 1995)	EN 301 765
ECMA-230	Portable Common Tool Environment (PCTE) - IDL Binding (Interface Definition Language), 2nd edition (December 1997)	ISO/IEC 13719-4
ECMA-231	Data Interchange on 12,7 mm 128-Track Magnetic Tape Cartridges - DLT 4 Format (December 1995)	ISO/IEC 15307
ECMA-232	Private Integrated Services Network (PISN) - Profile Standard for the Connection of Radio Paging Equipment (RPE) to a PISN (December 1995)	ETS 300 739
ECMA-234	Application Programming Interface for Windows (APIW) (December 1995)	
ECMA-235	The ECMA GSS-API Mechanism (March 1996)	
ECMA-236	3,81 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - DDS-3 Format using 125 m Length Tapes (June 1996)	ISO/IEC 15521
ECMA-238	Data Interchange on 130 mm Optical Disk Cartridge of Type WORM (Write Once Read Many) using Irreversible Effects - Capacity: 2,6 Gbytes per Cartridge (June 1996)	ISO/IEC 15486
ECMA-239	Data Interchange on 90 mm Optical Disk Cartridges - HS-1 Format - Capacity: 650 Megabytes per Cartridge (June 1996)	ISO/IEC 15498
ECMA-240	Data Interchange on 120 mm Optical Disk Cartridges using Phase Change PD Format - Capacity: 650 Mbytes per Cartridge (June 1996)	ISO/IEC 15485
ECMA-241	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Message Waiting Indication Supplementary Service (MWISD), 4th edition (February 2002)	ISO/IEC 15505 EN 301 260
ECMA-242	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Message Waiting Indication Supplementary Service (QSIG-MWI), 4th edition (December 2001)	ISO/IEC 15506 EN 301 255
ECMA-244	Private Integrated Services Network (PISN) - Mapping Functions for the Employment of a Circuit Mode Basic Service and the Supplementary Service User-to-User Signalling as a pair of On-demand Inter-PINX Connections (Mapping-UUS), 2nd edition (September 2000)	ISO/IEC 17309 EN 301 102
ECMA-245	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - PINX Clock Synchronization (SYNC-SIG), 2nd edition (September 1997)	ISO/IEC 15507 EN 301 259
ECMA-246	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - AIT-1 Format, 2nd edition (June 1998)	ISO/IEC 15780
ECMA-247	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - HH-1 Format, 2nd edition (June 1998)	ISO/IEC 15718

ECMA-248	12,65 mm Wide Magnetic Tape Cassette for Information Interchange - Helical Scan Recording - DTF-1 Format, 2nd edition (June 1998)	ISO/IEC 15731
ECMA-249	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - DA-2 Format, 2nd edition (June 1998)	ISO/IEC 15757
ECMA-250	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Common Information Additional Network Feature (ANF-CMNSD), 2nd edition (December 1998)	ISO/IEC 15771 EN 301 819
ECMA-251	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Common Information Additional Network Feature (QSIG-CMN), 3rd edition (December 2001)	ISO/IEC 15772 EN 301 820
ECMA-252	Broadband Private Integrated Services Network (B-PISN) - Inter-Exchange Signalling Protocol - Transit Counter Additional Network Feature (B-QSIG-TC) (December 1996)	ISO/IEC 15773
ECMA-253	Private Integrated Services Network (PISN) - Mapping Functions for the Employment of 64 kbit/s Circuit Mode Connection with 16 kbit/s Sub-multiplexing (Mapping/16), 2nd edition (September 2000)	ISO/IEC 17310 EN 301 039
ECMA-254	Broadband Private Integrated Services Network (B-PISN) - Inter-Exchange Signalling Protocol - Generic Functional Protocol (B-QSIG-GF), 2nd edition (December 1999)	ISO/IEC 19058
ECMA-258	Data Interchange on 12,7 mm 128-Track Magnetic Tape Cartridges - DLT 3-XT Format (June 1997)	ISO/IEC 15895
ECMA-259	Data Interchange on 12,7 mm 208-Track Magnetic Tape Cartridges - DLT 5 Format (June 1997)	ISO/IEC 15896
ECMA-260	Data Interchange on 356 mm Optical Disk Cartridges - WORM, using Phase Change Technology Capacity: 14,8 and 25 Gbytes per Cartridge (June 1997)	ISO/IEC 15898
ECMA-261	Broadband Private Integrated Services Network (B-PISN) - Service Description - Broadband Connection Oriented Bearer Services (B-BCSD) (June 1997)	ISO/IEC 15899
ECMA-262	ECMAScript Language Specification, 5.1 edition (June 2011)	ISO/IEC 16262
ECMA-263	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Call Priority Interruption and Call Priority Interruption Protection Supplementary Services (CPI(P)SD), 3rd edition (December 2001)	ISO/IEC 15991 EN 301 655
ECMA-264	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Call Priority Interruption and Call Priority Interruption Protection Supplementary Services (QSIG-CPI(P)), 3rd edition (December 2001)	ISO/IEC 15992 EN 301 656
ECMA-265	Broadband Private Integrated Services Network (B-PISN) - Inter-Exchange Signalling Protocol - Signalling ATM Adaptation Layer (B-QSIG-SAAL) (September 1997)	ISO/IEC 13246
ECMA-266	Broadband Private Integrated Services Network (B-PISN) - Inter-Exchange Signalling Protocol - Basic Call/Connection Control (B-QSIG-BC) (September 1997)	ISO/IEC 13247
ECMA-267	120 mm DVD - Read-Only Disk, 3rd edition (April 2001)	ISO/IEC 16448
ECMA-268	80 mm DVD - Read-Only Disk, 3rd edition (April 2001)	ISO/IEC 16449
ECMA-269	Services for Computer Supported Telecommunications Applications (CSTA) Phase III, 9th edition (December	ISO/IEC 18051 TS 102 173

	2011)	
ECMA-270	Portable Common Tool Environment (PCTE) - Mapping from CASE Data Interchange Format (CDIF) to PCTE (December 1997)	
ECMA-271	Extended Commercially Oriented Functionality Class for Security Evaluation (E-COFC), 2nd edition (December 1999)	
ECMA-272	120 mm DVD Rewritable Disk (DVD-RAM), 2nd edition (June 1999)	ISO/IEC 16824
ECMA-273	Case for 120 mm DVD-RAM Disks (February 1998)	ISO/IEC 16825
ECMA-274	Data Interchange on 120 mm Optical Disk using +RW Format - Capacity: 3,0 Gbytes and 6,0 Gbytes, 2nd edition (June 1999)	ISO/IEC 16969
ECMA-275	Measurement of Structure-borne Vibration induced by Small Air Moving Devices (AMDs), 2nd edition (December 2002)	
ECMA-276	Private Integrated Services Network (PISN) - Reference Configuration for PINX Extension Lines (June 1998)	ISO/IEC 11579-3
ECMA-277	Private Integrated Services Network (PISN) - Circuit Emulation Specification - Emulation of Basic Access by ATM Networks (June 1998)	
ECMA-278	Data Interchange on 12,7 mm 128-Track Magnetic Tape Cartridge - Parallel Serpentine Format, 2nd edition (June 2000)	ISO/IEC 17913
ECMA-279	80 mm (1,23 Gbytes per side) and 120 mm (3,95 Gbytes per side) DVD-Recordable Disk (DVD-R) (December 1998)	ISO/IEC 20563
ECMA-280	Data Interchange on 130 mm Optical Disk Cartridges of Type WORM (Write Once Read Many) using Irreversible Effects - Capacity: 5,2 Gbytes per Cartridge (December 1998)	ISO/IEC 18093
ECMA-281	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Private User Mobility (PUM) - Registration Supplementary Service (PUMRSD), 3rd edition (December 2001)	ISO/IEC 17875 EN 301 822
ECMA-282	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Private User Mobility (PUM) - Registration Supplementary Service (QSIG-PUMR), 3rd edition (December 2001)	ISO/IEC 17876 EN 301 821
ECMA-283	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Private User Mobility (PUM) - Call Handling Additional Network Features (PUMCHSD), 2nd edition (June 2000)	ISO/IEC 17877 EN 301 657
ECMA-284	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Private User Mobility (PUM) - Call Handling Additional Network Features (QSIG-PUMCH), 3rd edition (December 2001)	ISO/IEC 17878 EN 301 810
ECMA-285	ASN.1 for Computer Supported Telecommunications Applications (CSTA) Phase III, 4th edition (December 2011)	ISO/IEC 18052
ECMA-286	Data Interchange on 12,7 mm 208-Track Magnetic Tape Cartridges - DLT 6 Format, 2nd edition (June 2000)	ISO/IEC 16382
ECMA-287	Safety of electronic equipment, 2nd edition (December 2002)	
ECMA-288	3,81 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - DDS-4 Format (June 1999)	ISO/IEC 17462

ECMA-289	Private Integrated Services Network (PISN) - Mapping Functions for the Employment of 64 kbit/s Circuit Mode Connections with 8 kbit/s Sub-Multiplexing (Mapping/8), 2nd edition (September 2000)	ISO/IEC 17311 EN 301 924
ECMA-291	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording AIT-1 with MIC Format (December 1999)	ISO/IEC 18809
ECMA-292	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording AIT-2 with MIC Format (December 1999)	ISO/IEC 18810
ECMA-293	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - MammothTape-2 Format (December 1999)	ISO/IEC 18836
ECMA-294	B-ISDN and B-PISN - Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7) - Call Control in a Separated Call and Bearer Control Environment - Part 1: Protocol Specification (December 1999)	EN 302 092-1
ECMA-295	B-ISDN and B-PISN - Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7) - Call Control in a Separated Call and Bearer Control Environment - Part 2: Protocol Implementation Conformance Statement (PICS) Proforma Specification (December 1999)	EN 302 092-2
ECMA-296	B-ISDN and B-PISN - Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7) - Prenegotiation - Part 1: Protocol Specification (December 1999)	EN 302 091-1
ECMA-297	B-ISDN and B-PISN - Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7) - Prenegotiation - Part 2: Protocol Implementation Conformance Statement (PICS) Proforma Specification (December 1999)	EN 302 091-2
ECMA-298	Broadband Private Integrated Services Network (B-PISN) - Inter-Exchange Signalling Protocol - Separated Bearer Control (SBC) (B-QSIG-SBC) (December 1999)	EN 301 776
ECMA-299	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Single Step Call Transfer Supplementary Service (SSCT-SD), 2nd edition (December 2001)	ISO/IEC 19459 EN 301 918
ECMA-300	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Single Step Call Transfer Supplementary Service (QSIG-SSCT), 2nd edition (December 2001)	ISO/IEC 19460 EN 301 919
ECMA-301	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Wireless Terminal Location Registration Supplementary Service and Wireless Terminal Information Exchange Additional Network Feature (WTMLR-SD) (June 2000)	ISO/IEC 15428 EN 301 824
ECMA-302	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Wireless Terminal Location Registration Supplementary Service and Wireless Terminal Information Exchange Additional Network Feature (QSIG-WTMLR), 2nd edition (December 2001)	ISO/IEC 15429 EN 301 825

ECMA-303	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Wireless Terminal Call Handling Additional Network Features (WTMCH-SD) (June 2000)	ISO/IEC 15430 EN 301 826
ECMA-304	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Wireless Terminal Call Handling Additional Network Features (QSIG-WTMCH), 2nd edition (December 2001)	ISO/IEC 15431 EN 301 827
ECMA-305	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Wireless Terminal Authentication Supplementary Services (WTMAU-SD) (June 2000)	ISO/IEC 15432 EN 301 828
ECMA-306	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Wireless Terminal Authentication Supplementary Services (QSIG-WTMAU), 2nd edition (December 2001)	ISO/IEC 15433 EN 301 829
ECMA-307	Corporate Telecommunication Networks - Signalling Interworking between QSIG and H.323 - Generic Functional Protocol for the Support of Supplementary Services (June 2000)	ISO/IEC 21409 TS 101 905
ECMA-308	Corporate Telecommunication Networks - Signalling Interworking between QSIG and H.323 - Call Transfer Supplementary Services, 2nd edition (June 2001)	ISO/IEC 21410 TS 101 907
ECMA-309	Corporate Telecommunication Networks - Signalling Interworking between QSIG and H.323 - Call Diversion Supplementary Services, 2nd edition (June 2001)	ISO/IEC 21411 TS 101 906
ECMA-310	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Simple Dialog Supplementary Service (SDSD) (June 2000)	ISO/IEC 21407 EN 301 920
ECMA-311	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Simple Dialog Supplementary Service (QSIG-SD), 2nd edition (December 2001)	ISO/IEC 21408 EN 301 921
ECMA-312	Private Integrated Services Network (in PISN) - Profile Standard for the Use of PSS1 (QSIG) Air Traffic Services Networks, 3rd edition (June 2003)	EN 301 846
ECMA-313	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Call Identification and Call Linkage Additional Network Feature (CIDLSD) (September 2000)	ISO/IEC 21888 EN 301 922
ECMA-314	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Call Identification and Call Linkage Additional Network Feature (QSIG-CIDL), 2nd edition (December 2001)	ISO/IEC 21889 EN 301 923
ECMA-315	12,65 mm Wide Magnetic Tape Cassette for Information Interchange - Helical Scan Recording - DTF-2 (December 2000)	ISO/IEC 20061
ECMA-316	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - VXA-1 Format, 2nd edition (December 2001)	ISO/IEC 20062
ECMA-317	Data Interchange on 300 mm Optical Disk Cartridges of Type WORM (Write Once Read Many) using Irreversible Effects - Capacity: 30 Gbytes per Cartridge (December 2000)	ISO/IEC 20162
ECMA-318	Private Integrated Services Network (PISN) - Use of QSIG at the C Reference Point between a PINX and an Interconnecting Network (December 2000)	ISO/IEC 20161 TS 101 914
ECMA-319	Data Interchange on 12,7 mm - 384-Track Magnetic Tape Cartridges - Ultrium-1 Format (June 2001)	ISO/IEC 22050

ECMA-320	Data Interchange on 12,7 mm - 448-Track Magnetic Tape Cartridges - SDLT1 Format (June 2001)	ISO/IEC 22051
ECMA-321	Streaming Lossless Data Compression Algorithm - (SLDC) (June 2001)	ISO/IEC 22091
ECMA-322	Data Interchange on 130 mm Magneto-Optical Disk Cartridges - Capacity: 9,1 Gbytes per Cartridge (June 2001)	ISO/IEC 22092
ECMA-323	XML Protocol for Computer Supported Telecommunications Applications (CSTA) Phase III, 6th edition (December 2011)	ISO/IEC 18056 TS 102 174
ECMA-324	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Short Message Service (SMSSD) (June 2001)	ISO/IEC 21989 TS 101 990
ECMA-325	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Short Message Service (QSIG-SMS) (June 2001)	ISO/IEC 21990 TS 101 991
ECMA-326	Corporate Telecommunication Networks - Signalling Interworking between QSIG and H.323 - Call Completion Supplementary Services (June 2001)	ISO/IEC 21991 TS 101 989
ECMA-327	ECMAScript 3rd edition Compact Profile (June 2001)	
ECMA-328	Determination of Chemical Emission Rates from Electronic Equipment, 6th edition (December 2013)	ISO/IEC 28360
ECMA-329	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - AIT-3 Format (December 2001)	ISO/IEC 23651
ECMA-330	120 mm (4,7 Gbytes per side) and 80 mm (1,46 Gbytes per side) DVD Rewritable Disk (DVD-RAM), 3rd edition (June 2005)	ISO/IEC 17592
ECMA-331	Cases for 120 mm and 80 mm DVD-RAM Disks, 2nd edition (June 2004)	ISO/IEC 17594
ECMA-332	Corporate Telecommunication Networks - Signalling Interworking between QSIG and H.323 - Basic Services (December 2001)	ISO/IEC 23289 TS 102 036
ECMA-333	Private Integrated Services Network (PISN) - Mapping Functions for the Tunnelling of QSIG through H.323 Networks, 2nd edition (December 2003)	ISO/IEC 23290 TS 102 037
ECMA-334	C# Language Specification, 4th edition (June 2006)	ISO/IEC 23270
ECMA-335	Common Language Infrastructure (CLI), 6th edition (June 2012)	ISO/IEC 23271
ECMA-336	Private Integrated Services Network (PISN) - Mapping Functions for the Tunnelling of QSIG through IP Networks (Mapping/IP-QSIG) (June 2002)	ISO/IEC 21992 TS 102 075
ECMA-337	Data Interchange on 120 mm and 80 mm Optical Disk using +RW Format - Capacity: 4,7 and 1,46 Gbytes per Side (Recording speed up to 4X), 4th edition (June 2008)	ISO/IEC 17341
ECMA-338	80 mm (1,46 Gbytes per side) and 120 mm (4,70 Gbytes per side) DVD Re-recordable Disk (DVD-RW) (December 2002)	ISO/IEC 17342
ECMA-339	Corporate Telecommunication Networks - Signalling Interworking between QSIG and SIP - Basic Services, 2nd edition (December 2006)	ISO/IEC 17343 TS 102 166
ECMA-340	Near Field Communication - Interface and Protocol (NFCIP-1), 3rd edition (June 2013)	ISO/IEC 18092 TS 102 190
ECMA-341	Environmental Design Considerations for ICT & CE Products, 4th edition (December 2010)	

ECMA-342	RapidIO™ Interconnect Specification (February 2003)	ISO/IEC 18372
ECMA-343	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Make Call Request Supplementary Service (MCRSD) (June 2003)	ISO/IEC 20113 TS 102 256
ECMA-344	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Make Call Request Supplementary Service (QSIG-MCR) (June 2003)	ISO/IEC 20114 TS 102 257
ECMA-345	Private Integrated Services Network (PISN) - Use of QSIG for Message Centre Access (MCA) Profile Standard (June 2003)	ISO/IEC 20115 TS 102 253
ECMA-346	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Message Centre Monitoring and Mailbox Identification Supplementary Services (MCM-SD / MID-SD) (June 2003)	ISO/IEC 20116 TS 102 254
ECMA-347	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Message Centre Monitoring and Mailbox Identification Supplementary Services (QSIG-MCM / QSIG-MID) (June 2003)	ISO/IEC 20117 TS 102 255
ECMA-348	Web Services Description Language (WSDL) for CSTA Phase III, 5th edition (June 2012)	ISO/IEC 18450
ECMA-349	Data Interchange on 120 mm and 80 mm Optical Disk using +R Format - Capacity: 4,7 and 1,46 Gbytes per Side (Recording speed up to 16X), 4th edition (June 2008)	ISO/IEC 17344
ECMA-350	Data Interchange on 130 mm Rewritable and Write Once Read Many Ultra Density Optical (UDO) Disk Cartridges - Capacity: 30 Gbytes per Cartridge - First Generation, 3rd edition (December 2006)	ISO/IEC 17345
ECMA-351	Data Interchange on 90 mm Optical Disk Cartridges - Capacity: 1,3 Gbytes per Cartridge (December 2003)	ISO/IEC 17346
ECMA-352	Near Field Communication Interface and Protocol -2 (NFCIP-2), 3rd edition (June 2013)	ISO/IEC 21481 TS 102 312
ECMA-353	Data Interchange on 90 mm Optical Disk Cartridges - Capacity: 2,3 Gbytes per Cartridge (June 2004)	ISO/IEC 22533
ECMA-354	Application Session Services (June 2004)	ISO/IEC 22534 TS 102 344
ECMA-355	Corporate Telecommunication Networks - Tunnelling of QSIG over SIP, 3rd edition (June 2008)	ISO/IEC 22535 TS 102 345
ECMA-356	NFCIP-1 - RF Interface Test Methods, 2nd edition (June 2013)	ISO/IEC 22536 TS 102 346
ECMA-357	ECMAScript for XML (E4X) Specification, 2nd edition (December 2005)	ISO/IEC 22537
ECMA-358	ICT Product Radiated Emissions: 1–6 GHz (December 2004)	
ECMA-359	80 mm (1,46 Gbytes per side) and 120 mm (4,70 Gbytes per side) DVD Recordable Disk (DVD-R) (December 2004)	ISO/IEC 23912
ECMA-360	Corporate Telecommunication Networks - Signalling Interworking between QSIG and SIP - Call Diversion (December 2004)	ISO/IEC 23915 TS 102 393
ECMA-361	Corporate Telecommunication Networks - Signalling Interworking between QSIG and SIP - Call Transfer (December 2004)	ISO/IEC 23916 TS 102 392

ECMA-362	NFCIP-1 - Protocol Test Methods, 2nd edition (December 2005)	ISO/IEC 23917 TS 102 394
ECMA-363	Universal 3D File Format, 4th edition (June 2007)	
ECMA-364	Data interchange on 120 mm and 80 mm Optical Disk using +R DL Format – Capacity: 8,55 and 2,66 Gbytes per Side (Recording speed up to 8X), 3rd edition (December 2007)	ISO/IEC 25434
ECMA-365	Data Interchange on 60 mm Read-Only ODC - Capacity: 1,8 Gbytes (UMD™) (June 2005)	ISO/IEC 25435
ECMA-366	WS-Session - Web Services for Application Session Services, 3rd edition (December 2011)	ISO/IEC 25437 TS 102 440
ECMA-367	Eiffel: Analysis, Design and Programming Language, 2nd edition (June 2006)	ISO/IEC 25436
ECMA-368	High Rate Ultra Wideband PHY and MAC Standard, 3rd edition (December 2008)	ISO/IEC 26907 TS 102 455
ECMA-369	MAC-PHY Interface for ECMA-368, 3rd edition (December 2008)	ISO/IEC 26908
ECMA-370	TED - THE ECO DECLARATION, 4th edition (June 2009)	
ECMA-371	Data Interchange on 120 mm and 80 mm Optical Disk using +RW HS Format - Capacity: 4,7 and 1,46 Gbytes per Side (Recording speed 8X), 2nd edition (June 2008)	ISO/IEC 26925
ECMA-372	C++/CLI (December 2005)	
ECMA-373	Near Field Communication Wired Interface (NFC-WI), 2nd edition (June 2012)	ISO/IEC 28361
ECMA-374	Data Interchange on 120 mm and 80 mm Optical Disk using +RW DL Format – Capacity: 8,55 and 2,66 Gbytes per Side (Recording speed 2,4X), 2nd edition (June 2008)	ISO/IEC 29642
ECMA-375	Case for 120 mm HVD-ROM disk (December 2006)	
ECMA-376	Office Open XML File Formats, 4th edition (December 2012)	ISO/IEC 29500
ECMA-377	Information Interchange on Holographic Versatile Disc (HVD) Recordable Cartridges – Capacity: 200 Gbytes per Cartridge (May 2007)	
ECMA-378	Information Interchange on Read-Only Memory Holographic Versatile Disc (HVD-ROM) – Capacity: 100 Gbytes per disk (May 2007)	
ECMA-379	Test Method for the Estimation of the Archival Lifetime of Optical Media, 3rd edition (June 2010)	ISO/IEC 10995
ECMA-380	Data Interchange on 130 mm Rewritable and Write Once Read Many Ultra Density Optical (UDO) Disk Cartridges – Capacity: 60 Gbytes per Cartridge – Second Generation (December 2007)	ISO/IEC 11976
ECMA-381	Procedure for the Registration of Assigned Numbers for ECMA-368 and ECMA-369 (December 2007)	ISO/IEC 13560
ECMA-382	120 mm (8,54 Gbytes per side) and 80 mm (2,66 Gbytes per side) DVD Recordable Disk for Dual Layer (DVD-R for DL), 2nd edition (June 2010)	ISO/IEC 12862
ECMA-383	Measuring the Energy Consumption of Personal Computing Products, 3rd edition (December 2010)	
ECMA-384	120 mm (8,54 Gbytes per side) and 80 mm (2,66 Gbytes per side) DVD Re-recordable Disk for Dual Layer (DVD-RW for DL) (December 2008)	ISO/IEC 13170

ECMA-385	NFC-SEC: NFCIP-1 Security Services and Protocol, 3rd edition (June 2013)	ISO/IEC 13157-1
ECMA-386	NFC-SEC-01: NFC-SEC Cryptography Standard using ECDH and AES, 2nd edition (June 2010)	ISO/IEC 13157-2
ECMA-387	High Rate 60 GHz PHY, MAC and PALS, 2nd edition (December 2010)	ISO/IEC 13156
ECMA-388	Open XML Paper Specification (June 2009)	
ECMA-389	Procedure for the Registration of Categories for ECMA-383, 2nd edition (December 2009)	
ECMA-390	Front-End Configuration Command for NFC-WI (NFC-FEC), 2nd edition (June 2012)	ISO/IEC 16353
ECMA-391	Memory-Spot Interface and Protocol (MSIP-1) (December 2009)	
ECMA-392	MAC and PHY for Operation in TV White Space, 2nd edition (June 2012)	ISO/IEC 16504
ECMA-393	ProxZzzy™ for sleeping hosts, 2nd edition (June 2012)	ISO/IEC 16317
ECMA-394	Recordable Compact Disc Systems CD-R Multi-Speed (December 2010)	
ECMA-395	Recordable Compact Disc Systems CD-RW Ultra-Speed (December 2010)	
ECMA-396	Test Method for the Estimation of Lifetime of Optical Media for Long-term Data Storage (December 2010)	ISO/IEC 16963
ECMA-397	Short Distance Visible Light Communication (SDVLC) (December 2010)	ISO/IEC 17417
ECMA-398	Close Proximity Electric Induction Wireless Communications (June 2011)	ISO/IEC 17568
ECMA-399	Procedure for the Registration of Assigned Numbers for ECMA-398 (June 2011)	
ECMA-400	Smart Data Centre Resource Monitoring and Control, 2nd edition (June 2013)	ISO/IEC DIS 19395
ECMA-401	Close Capacitive Coupling Communication Physical Layer (CCCC PHY) (December 2011)	ISO/IEC 17982
ECMA-402	ECMAScript Internationalization API Specification (December 2012)	
ECMA-403	NFCIP-2 Test Methods (June 2013)	ISO/IEC DIS 19369
ECMA-404	The JSON Data Interchange Format (October 2013)	
ECMA-405	Data Interchange on Parallel Write/Read Disk Format for 5 Optical Disks (December 2013)	
ECMA-406	Disk Cassette for 5 Disks with 120 mm Diameter (December 2013)	

Technical Reports in force (electronically available here)

ECMA TR/18	The Meaning of Conformance to Standards (September 1983)	
ECMA TR/27	Method for the Prediction of Installation Noise Levels, 2nd edition (June 1995)	
ECMA TR/36	Guidelines on Additional Parameters Recommended for Procurement Specifications for 12,7 mm Magnetic Tapes (December 1986)	
ECMA TR/46	Security in Open Systems - A Security Framework (July 1988)	
ECMA TR/53	Handling of Bi-directional Texts, 2nd edition (June 1992)	
ECMA TR/55	Reference Model for Frameworks of Software Engineering Environments, 3rd edition (June 1993)	
ECMA TR/57	Private Integrated Services Networks, 2nd edition (June 1999)	EG 201 463
ECMA TR/58	Databases and Networking (June 1992)	
ECMA TR/59	Object-Oriented Databases (June 1992)	
ECMA TR/61	User Interface Taxonomy (June 1992)	
ECMA TR/62	Product Noise Emission of Computer Business Equipment (June 1993)	
ECMA TR/64	Secure Information Processing versus the Context of Product Evaluation (December 1993)	
ECMA TR/66	Mapping of PCTE to the ECMA/NIST Frameworks Reference Model (June 1994)	
ECMA TR/67	Compendium of PTN Management Services (December 1994)	ETR 245
ECMA TR/68	Scenarios for Computer Supported Telecommunications Applications (CSTA) Phase II (December 1994)	
ECMA TR/69	Reference Model for Project Support Environments (December 1994)	
ECMA TR/70	Ecma Product-related Environmental Declaration, 3rd edition (June 2004)	
ECMA TR/71	DVD Read-Only Disk - File System Specifications (February 1998)	
ECMA TR/72	Glossary of Definitions and Terminology for Computer Supported Telecommunications Applications (CSTA) Phase III, 3rd edition (June 2000)	ISO/IEC TR 18053
ECMA TR/73	H.323 / B-ISDN Signalling Interoperability (December 1998)	
ECMA TR/74	A Guide to the Application of the EMC Directive to ITE (June 1999)	
ECMA TR/75	Corporate Telecommunication Networks (CN) - Standardization Plan, 2nd edition (June 2000)	EG 201 017
ECMA TR/76	Private Integrated Services Network (PISN) - Architecture and Scenarios for Private Integrated Services Networking (December 1999)	ISO/IEC TR 14475

ECMA TR/77	Telephony System with Integrated Internet Access - Overview (December 1999)	
ECMA TR/78	ECMA Protection Profile - E-COFC Public Business Class (December 1999)	
ECMA TR/79	Private Integrated Services Network (PISN) - Wireless Terminal Mobility (WTM) - WTM between networks - Requirements (February 2000)	
ECMA TR/80	Migrating to CSTA Phase III (June 2000)	
ECMA TR/81	Interoperation of PISNs with IP Networks (September 2000)	ISO/IEC TR 21890 TR 101 913
ECMA TR/82	Scenarios for Computer Supported Telecommunications Applications (CSTA) Phase III, 2nd edition (June 2009)	
ECMA TR/83	One Standard - One Test, Supplier's Declaration of Conformity (11SDoC) - Scorecard objectives and concept (June 2001)	
ECMA TR/84	Common Language Infrastructure (CLI) - Information Derived from Partition IV XML File, 6th edition (June 2012)	ISO/IEC TR 23272
ECMA TR/85	Using ECMA-323 (CSTA XML) in a Voice Browser Environment (December 2002)	ISO/IEC TR 18057 TR 102 171
ECMA TR/86	Corporate Telecommunication Networks - User Identification in a SIP/QSIG Environment (December 2003)	EG 202 303
ECMA TR/87	Using CSTA for SIP Phone User Agents (uaCSTA) (June 2004)	ISO/IEC TR 22767 TR 102 348
ECMA TR/88	Designing an Object Model for ECMA-269 (CSTA) (June 2004)	
ECMA TR/90	Session Management, Event Notification, and Computing Function Services - Amendments for ECMA-348 (December 2005)	
ECMA TR/91	Enterprise communication in next generation corporate networks (NGCN) involving public next generation networks (NGN) (December 2005)	ISO/IEC TR 26905 TR 102 478
ECMA TR/92	Corporate Telecommunication Networks – Mobility for Enterprise Communications, 2nd edition (December 2010)	ISO/IEC TR 26927 TR 102 477
ECMA TR/93	Measuring Emissions from Modules (December 2007)	
ECMA TR/94	Assessment of the Human Exposure to Electromagnetic Fields for Low Power Electronic and Electrical Apparatus according to EN 50371:2002 (December 2007)	
ECMA TR/95	Next Generation Corporate Networks (NGCN) - General (June 2008)	ISO/IEC TR 12860 TR 102 633
ECMA TR/96	Next Generation Corporate Networks (NGCN) - Identification and Routing (June 2008)	ISO/IEC TR 12861 TR 102 634
ECMA TR/97	Guide for Assessment of Human Exposure to Electromagnetic Fields from Multimedia Products in accordance with IEC/EN 62311 (June 2009)	
ECMA TR/98	JPEG File Interchange Format (JFIF) (June 2009)	

ECMA TR/99	Constant Sound Power Fan Curves for Small Air-moving Devices, 2nd edition (December 2010)	
ECMA TR/100	Next Generation Corporate Networks (NGCN) - Security of Session-based Communications (December 2009)	ISO/IEC TR 16166
ECMA TR/101	Next Generation Corporate Networks (NGCN) - Emergency Calls, 2nd edition (December 2010)	ISO/IEC TR 16167
ECMA TR/102	Personal Networks – Overview and Standardization Needs (December 2010)	
ECMA TR/103	Business Trunking - NGCN-NGN Interfaces Implementation Guide (June 2011)	TR 183 069
ECMA TR/104	ECMA-262 Test Suite (December 2011)	
ECMA TR/105	A Shaped Noise File Representative of Speech (December 2012)	
ECMA TR/106	Guidance and Comparison between 60950-1 and 62368-1 (February 2013)	

Ecma By-laws

Art. 1

Constitution and Head Office

1.1
Ecma International - further called Ecma - is an international industry association based in Europe, and has been constituted according to these By-laws and Articles 60 et seq. of the Swiss Civil Code.

1.2
The Headquarters of the Association is in Geneva.

Art. 2

Purpose

2.1
The purpose of the Association is to develop, in co-operation with the appropriate national, European and international organizations as a scientific endeavour and in the general interest standards and technical reports in the fields of information and communications technologies and to publish them free of charge in printed and electronic form.

2.2
The Association shall be a non-profit-making organization and shall devote itself to no commercial activity whatsoever.

Art. 3

Membership

3.1
The Association shall consist of the following classes of Ecma members:

a) Companies
   - ordinary members
   - associate members
   - SME members (Small and Medium sized Enterprises)
   - SPC members (Small Private Companies)

b) NFPs (Not-For-Profit organizations)

Any other class of members shall be determined by the General Assembly with a two thirds majority of all ordinary members.

3.2
a) For non-SPC members:
A proposed company member shall not be accepted if it holds at least 50 per cent of the capital of an existing company member nor if at least 50 per cent of its capital is held by an existing company member.

b) For SPC members:
A proposed SPC member shall not be accepted if it holds at least 50 per cent of the capital of an existing company member nor if at least 35 per cent of its capital is held by an existing company member.

3.3
a) For non-SPC members:
No two or more companies where at least 50 per cent of whose capital is held by the same company, which is not a company member itself, may be company members but shall be represented by one of these companies only.

b) For SPC members:
No two or more SPCs where at least 35 per cent of whose capital is held by the same company, which is not a company member itself, may be SPC members but shall be represented by one of these SPCs only.

3.4
Additional classes of Ecma members established according to Article 3.1 shall have such qualifications and be entitled to such rights and privileges and have such obligations as shall be determined by the General Assembly with a two thirds majority of all the ordinary members.

3.5
Companies shall be admitted to any class of company membership in accordance with Art. 4.

3.6
Membership fees for all classes of company membership are decided by the General Assembly with a two thirds majority of all ordinary members.

3.7
Ecma membership shall be terminated in the cases set out in Art. 5.

3.8
Ordinary members

3.8.1
Ordinary membership may be applied for by a company which has interest and experience in matters related to one or more Technical Committees of the Association, and which wishes to exert the right to vote at the General Assembly and to exert other exclusive rights defined in the By-laws and Rules.

3.8.2
The representative of each ordinary member will have one vote in the General Assembly.

Voting rights may be exerted with effect from the first full month upon admission as Ecma member.

3.9
Associate members

3.9.1
Associate membership may be applied for by a company which has interest and experience in matters related to one or more of the Technical Committees of the Association but without the right to vote in the General Assembly.

3.9.2
An associate member is fully entitled to participate in the work of the Technical Committees and obtain all relevant papers.

3.9.3
Representatives of the associate members shall have the right to take part in the discussions at the General Assembly.

3.10
SME Members

3.10.1
SME membership may be applied for by a company the annual turnover of which is less than Swiss Francs 100'000'000.-

3.10.2
The rights of SME members are identical with those of associate members as specified in Art. 3.9.

3.11
SPC members

3.11.1
SPC membership may be applied for by an organization - a company or other legal for-profit organization - with no more than five employees and a global annual turnover of less than Swiss Francs 5'000'000.-.

3.11.2
The rights of SPC members are identical with those of associate members as specified in Art. 3.9, with the following exceptions:

1. An SPC member is only entitled to participate in one TC.
2. An SPC has no right to take part in the discussions at the General Assembly.

3.12
NFP members

3.12.1
Annual NFP membership may be applied for by a non-profit-making organization. Further yearly extensions of an NFP membership are possible, via application to the Secretary General by November of each year for the following year.

3.12.2
The rights of NFP members are identical with those of SPC members as specified in Art. 3.11.

Art. 4

Acceptance of a new Ecma member

4.1
Application for membership and membership class shall be made to the Secretary General.

The application shall specify that the applicant has received the By-laws, the Rules and the Code of Conduct in Patent Matters, and declare that it adheres to them without restriction. The applicant shall indicate the Technical Committees in the work of which it intends to take part.

4.2
Decisions on acceptance shall be made by the General Assembly with a two thirds majority of all the ordinary members.

Art. 5

Termination of Ecma membership

5.1
a) Membership of a company shall be terminated in the following cases:

- Withdrawal by the company member:

  Withdrawal by a company can only occur at the end of a calendar year and requires a written 3-month notice to the Secretary General.

- The company ceasing to exist.
- The conditions for membership set forth in Articles 3.2 and 3.3 of the present By-laws no longer being complied with.
- By expulsion for violation of By-laws and Rules or for any other conduct prejudicial to the interest and correct functioning of the Association.
- By expulsion after failure to pay the membership fee during the year in which it becomes due. This will happen automatically on December 31st and shall not relieve the member of the obligation to pay such fees that are due or past due according to the terms of the invoice. In justified hardship cases the Ecma management may extend - on a case by case basis - the membership payment deadline.

b) Membership of an NFP shall be terminated in the following cases:

- At the end of the year, unless extension of NFP membership has been granted by the Ecma GA.
- Withdrawal upon written notice to the Secretary General, to take effect upon receipt.
- The NFP ceasing to exist.
- By expulsion for violation of By-laws and Rules or for any other conduct prejudicial to the interest and correct functioning of the Association.

5.2
No company member may be expelled for failure to adhere to one or several agreed standards.

5.3
Any proposal to expel an Ecma member must be backed by at least one-fifth of all the ordinary members. The proposal to expel must be on the agenda for the General Assembly at which it is to be discussed so as to give the member the opportunity to present its case.

5.4
A two-thirds majority of all the ordinary members is necessary to expel an Ecma member. Such expulsion will become effective 15 days after notification by registered mail.

5.5
An Ecma member which has been expelled can only be re-admitted by the General Assembly with a two-thirds majority of all ordinary members.

Art. 6

Change of class of company membership

6.1
If a company member wishes to change its membership class it shall apply for one of the other classes of membership according to the conditions set out in these By-laws.

6.2
An application for a change to a higher class of membership (more rights, higher fee) shall be notified in writing to the Secretary General before October 1st. Decisions on acceptance shall be made by the General Assembly with a two thirds majority of all the ordinary members.

6.3
An application for a change to a lower class of membership (less rights, lower fee) shall be notified in writing to the Secretary General before October 1st. Decisions on acceptance shall be made by the General Assembly with a two thirds majority of all the ordinary members.

6.4
If a company member does not fulfil the conditions of its current membership class due to modifications of the By-laws the company member is not obliged to change its current class of membership. However, the conditions of the modified By-laws shall apply.

Art. 7

Structure

7.1
The Association shall consist of:

The General Assembly.

The Management.

The Co-ordinating Committee.

7.2
The General Assembly shall consist of the ordinary members and shall be the highest authority of the Association. It shall control the Association and appoint and control its Management.

7.3
The Management shall consist of a President, a Vice-President and a Treasurer. The Management shall be discharged by the President or, if circumstances require, by the Vice President.

7.4
The President and the Vice-President shall be individuals elected for one year by the ordinary members at a General Assembly.

After a call for nominations by the Secretary General, the Co-ordinating Committee and all Ecma Members may nominate candidates for election no later than 1,5 months before the General Assembly. Only representatives of ordinary members can be nominated. Candidates should have previously served on the Co-ordinating Committee for a reasonable amount of time.

The Secretary General shall post the names of nominees no later than 1 month before the General Assembly.

The President and the Vice-President can be re-elected any number of times provided that neither serves more than two consecutive years.

7.5
The President shall, through his signature, commit the Association in any business or transaction directly connected with the purpose of the Association.

7.6
There shall be a Treasurer whose duty shall be determined by the General Assembly. The Rules set out in 7.4 shall apply to his office, except that there shall be no limit in the number of consecutive years in office.

7.7
The Co-ordinating Committee shall comprise no more than 8 members and make recommendations to the General Assembly regarding the formation, activities, reorganization or dissolution of Technical Committees.

The members and the Chairman of the Co-ordinating Committee shall be individuals elected by simple majority for one year at a General Assembly by the Ordinary Members.

After a call for nominations by the Secretary General, the Ecma Management and all Ecma Members may nominate candidates for election no later than 1.5 months before the General Assembly. Only representatives of ordinary members can be nominated.

The Secretary General shall post the names of nominees no later than 1 month before the General Assembly.

The Chairman shall be eligible for re-election, subject to a maximum term of office of 3 consecutive years. The other members can be re-elected any number of times. Only one representative per Ordinary Member can be elected.

Art. 8

General Assembly

8.1
The President shall each year call at least two ordinary General Assemblies. Notice of the time and place of the General Assembly shall be given at least thirty days before the date of the General Assembly. The agenda and supporting documents for the General Assembly shall be made available at least fifteen days before the General Assembly.

8.2
Unless otherwise restricted by these By-laws or the Rules of the Association, any action required or permitted to be taken at a General Assembly may be taken without a meeting by a postal ballot, if it has been announced in advance and has been approved by the General Assembly.

8.3
Special General Assemblies for any purpose or purposes unless otherwise prescribed by these By-laws or the Rules of the Association may be called by the President, and shall be called by him at the request in writing of at least one-fifth of all the ordinary members. Such request shall state the purpose or purposes of the proposed General Assembly. The business transacted at any special General Assembly shall be limited to the purposes stated in the notice.

8.4
Notice of Special General Assemblies stating the time, place and object thereof, shall be given to each ordinary member at least twenty days before the date of the General Assembly and shall include the agenda and supporting documents for the General Assembly.

8.5
A majority of all the ordinary members must be present or represented by proxy at any General Assembly, or respond to a postal ballot, in order to constitute a quorum for transaction of the business except as otherwise provided by these By-laws or the Rules of the Association.

8.6
Unless otherwise prescribed by these By-laws or the Rules of the Association, the vote of the majority of all the ordinary members shall decide any question.

Art. 9

Publication of Standards and Technical Reports

9.1
The adoption of such documents for publication by the Association shall require approval by at least two thirds of all the ordinary members.

9.2
Proposed drafts shall be made available by the Secretary General at least two months in advance of the date at which they will be voted upon.

9.3
It is not mandatory for Ecma members to implement any Ecma standard.

9.4
All documents when approved shall be made available to all interested parties without restriction.

Art. 10

Ad Hoc Committees

10.1
The General Assembly may delegate authority for specific purposes to ad hoc committees. The tasks, terms of reference and membership of these committees will be adopted if a majority of all the ordinary members assent.

10.2
Unless otherwise decided at the time of its appointment each ad hoc committee may co-opt additional members should it so desire.

10.3
No ad hoc committee may meet for more than one year without being reappointed.

Art. 11

Secretariat

11.1
There shall be a permanent Secretariat of the Association responsible to the General Assembly.

11.2
A Secretary General shall be appointed by the General Assembly and shall be responsible for the operation of the Secretariat.

Art. 12

Technical Committees

12.1
Technical Committees (TCs) will be formed by the Secretary General when so decided at a General Assembly.

12.2
Any Ecma member may participate in any TC.

Art. 13

Fiscal year

The fiscal year shall commence on January 1 and end on December 31.

Art. 14

Finance

14.1
The annual budget of the Association shall be approved by at least two thirds of the ordinary members represented at an ordinary General Assembly.

14.2
The Association shall be financed by its company members. The fees for each membership class are set in advance by the ordinary members during an ordinary General Assembly and are based on the budget for the following fiscal year. Such fees shall be used to finance the activity of the Association and its administrative expenses. Any surplus of income over the expenses shall be carried over to the next budget.

14.3
The Secretary General shall be responsible for expenditures within the budget.

14.4
The Management may authorize expenditures outside the budget to an amount not exceeding 10 per cent of the corresponding item in the current year budget. Any expense above this must be approved by the majority of all ordinary members.

Art. 15

Dissolution

In the event of the dissolution of the Association, its assets are first used to discharge its liabilities. Any balance of liability shall be borne by the company members in proportion to their annual fees. Any surplus funds remaining after the liabilities have been discharged will be distributed to those which are company members at the date of dissolution in proportion to their total contributions to the Association.

Art. 16

Amendments

16.1
The By-laws and any Rules that may be adopted by the General Assembly can only be modified at an ordinary or special General Assembly. The proposed amendments shall be presented with the rationales for the change enclosed with the agenda and notified to the company members according to the provisions of Articles 8.1 and 8.4.

16.2
Amendments shall require approval by two thirds of all the ordinary members.

Art. 17

Litigation

Any dispute arising during the life of the Association or during its dissolution either between the members of the Association and its Management or between the members and the Association or between the members themselves as a consequence of the Association's activity shall be decided upon by the Courts of the Canton of Geneva. Swiss law is applicable in all cases.

Ecma Rules

1.

Language

The English language, as written in the United Kingdom, will be the official language of the Association.

2.

System of measurement

The metric system of measurement according to ISO 1000 and the International System of Units (SI) according to ISO 31 shall be used.

3.

Representation of company members

Each company member shall appoint one of its officers or executives who shall represent this member in General Assemblies and who shall have full authority to commit the member on all matters listed in the agenda of the General Assembly. Company members shall notify the Association of any changes in their representation. Each company member may appoint one alternate representative.

4.

General Assemblies

4.1
Representatives may invite additional individuals from their respective member company to participate in an advisory capacity at a General Assembly.

4.2
The ordinary members at a General Assembly may be represented by a proxy. A written proxy shall be established indicating the item or items of the agenda to which it is restricted.

4.3
The President or in his absence the Vice-President shall preside at all General Assemblies. In absence of both, the ordinary members present or represented by proxy shall elect a Chairman for that particular meeting.

5.

Co-ordinating Committee

5.1
A Committee consisting of individuals elected by the General Assembly will be set up under the name of Co-ordinating Committee (CC), whose terms of reference will be as follows:

5.1.1
To prepare terms of reference for new Technical Committees in accordance with the rules for the formation of a Technical Committee.

5.1.2
To nominate a provisional Chairman and Vice-Chairman for each new Technical Committee.

5.1.3
To review from time to time the terms of reference given to Technical Committees.

5.1.4
To have every six month a meeting at which the progress of the TCs will be reviewed and co-ordinated. Where required, Chairmen of TCs shall attend the meeting.

5.1.5
To make recommendations to the disbandment of Technical Committees.

5.1.6
To provide assistance to the Management as and when required.

5.1.7
To propose nominations for the election of the Management at the General Assembly.

5.2
The Co-ordinating Committee may hold its meeting separately or jointly with the Ecma Management.

6.

Technical Committees

6.1
Formation of Technical Committees (TCs):

6.1.1
TCs will be formed by the Secretary General (SG) when so decided at a General Assembly.

6.1.2
a) Any proposal for the setting up of a TC must give the suggested terms of reference, including the scope, and be sent to the SG.

b) Any new work item proposal in a TC or TG shall be supported by at least three members of which there is at most one NFP.

6.1.3
The CC shall nominate a provisional Chairman and Vice-Chairman.

6.1.4
The SG shall then convene the first meeting of the TC.

6.2
Operating procedures - Rules and recommendations for the TCs:

6.2.1
Members of TCs are:

- representatives of Ecma members,
- other participants invited by the SG at the request of the TC or of the Management.

6.2.2
Members of Ecma are entitled to send one or more representatives to any TC.

6.2.3
Voting on any matter shall be by simple majority of TC members present at the meeting. Each Ecma member has only one vote. Several invited participants belonging to one Ecma member have only one vote between them.

6.2.4
One-time visitors can attend a meeting only at the special invitation of the SG at the request of the TC. They have no voting rights.

6.2.5
It is recommended that in the course of its ordinary work the TC should not use voting unless it is impossible to make progress without a vote.

6.2.6
The provisional Chairman and Vice-Chairman nominated by the CC shall act for an initial period which shall be not less than 6 months from the date of the first meeting and which shall include the first 3 meetings.

6.2.7
At the first meeting of the TC which takes place after the end of the initial period, a Chairman and Vice-Chairman shall be elected from among the ordinary member representatives.

6.2.8
The Chairman and Vice-Chairman, having been elected from among the member company representatives, shall hold office for a term of 12 months. They shall be eligible for re-election, subject to a maximum term of office of 3 consecutive years.

6.2.9
Meetings of the TCs shall be conducted by the Chairman, according to the By-laws and Rules of Ecma. An officer of the Secretariat shall act as Secretary at all TC meetings. The Vice-Chairman shall assist the Secretary and shall act for the Secretary if the latter is unable to attend.

6.2.10
Agenda for meetings of the TCs shall be prepared by the Chairman and an officer of the Secretariat taking into account suggestions made by members of the Committee. The agenda shall be made available to all members 3 weeks before each meeting; at the opening of the meeting it can be modified, if wanted, and it must be approved.

6.2.11
The secretary of a TC shall be responsible for the preparation of minutes of the meetings.

6.2.12
The minutes shall be made available by the secretary within 3 weeks after a meeting to all members of the TC, the General Assembly, and the CC.

6.2.13
The first item on the agenda of each TC shall be the amendment and approval of the minutes of the preceding meeting. The minutes, after approval, shall constitute the official record of the meeting of a TC.

6.2.14
Any suggestions for the amendment of terms of reference of TCs shall be addressed to the SG for discussion between the TC Chairman and the CC.

6.2.15
The Chairman is responsible for the preparation of a semi-annual report for each TC: He will be assisted by the Vice-Chairman and an officer of the Secretariat in this task and the report will be submitted to the General Assembly. The report will contain a description of the results achieved to date and an outline of the work to be carried out during the next year.

6.2.16
This report will be made available to all members of the TC for approval.

6.2.17
Any member of a TC has the right to ask for a minority report to be submitted if he so desires.

6.2.18
The work of all TCs will be discussed every 6 months at a meeting of the CC and the SG at which meetings the semi-annual reports will be presented.

6.2.19
First priority in discussion at the meetings of the TCs must be given to items on the agenda.

6.2.20
Under no circumstances should any technical contribution be decided upon at a TC meeting unless it has been made available to all Committee members at least 3 weeks before the meeting.

6.2.21
Meetings may be held in Geneva or at any other place. Economy and efficiency shall be a factor in choosing the meeting place.

7.

Task Groups (TGs)

7.1
A Technical Committee may form TGs for the accomplishment of specific tasks within the scope of the TC.

7.2
At least two members of the TC shall agree to take an active part in the work of a TG.

7.3
Terms of reference of the TG shall be included in the minutes of the meeting of the Technical Committee at which the TG has been formed.

7.4
TGs shall report at each meeting to the TC on their activities; these reports shall appear in the minutes of the TC.

7.5
The Convenor of a TG shall be appointed by the TC upon nomination by the TG. He shall be eligible for re-election, subject to a maximum term of office of 3 consecutive years.

7.6
Meetings may be held in Geneva or at any other place. Economy and efficiency shall be a factor in choosing the meeting place.

8.

Membership and fees

8.1
The General Assembly shall set the annual membership fee for the following fiscal year based on the budget for that year.

Although the Association shall be non-profit making, reserves may be accumulated if so decided by the General Assembly.

For each class of company membership the annual fee shall be:

Ordinary members: The full nominal fee

Associate members: One half of the full nominal fee

SME members: One quarter of the full nominal fee

SPC members: Five percent of the full nominal fee.

There is no fee for NFPs (Not-For-Profit organizations).

8.2
Annual membership begins on the first day of the fiscal year and continues throughout this year.

Existing members as of the last day of the current fiscal year continue as members of the same class as of the first day of and throughout the following fiscal year, unless a change of the membership category has been approved (see 8.5).

The company membership fee is due within 60 days upon receipt of an invoice.

If the membership fee is not paid within four months upon receipt of the invoice the access right of the member to all Ecma members' privileged resources and its participation in the Ecma standardization work will be automatically suspended without any further notice by Ecma.

8.3
The Secretary General shall indicate at the first ordinary General Assembly of the fiscal year the name(s) of the company member(s) having not paid the annual fee. The General Assembly shall decide on the sanctions to be taken, up to and including temporary suspension of all voting privileges.

8.4
Any withdrawing company member shall pay the full annual fee for the appropriate membership class for the fiscal year at the end of which the withdrawal becomes effective.

8.5
Any new company member admitted at the General Assembly held in the first half of a fiscal year shall pay one half of the full annual fee for its membership class in that fiscal year.

Any new company member admitted at the General Assembly held in the second half of a fiscal year shall not pay a fee for that fiscal year, but shall pay the full annual fee for its membership class in the following fiscal year.

Any upgraded (see By-laws Art.6.2) company member admitted at the General Assembly held in the first half of a fiscal year shall pay one half of the full annual fee for its new membership class for the second half of that fiscal year.

Any upgraded company member admitted at the General Assembly held in the second half of a fiscal year shall not pay an additional fee for its new membership class for that fiscal year, but shall pay the full annual fee for its new membership class in the following fiscal year.

Downgraded membership (see By-laws Art. 6.3) becomes effective at the beginning of the fiscal year following the fiscal year when the downgrading was approved.

9.
Operating expenses

9.1
Operating expenses of the Association shall consist of salaries, travel and office expenses of the Secretariat and publication costs.

9.2
Expenses of Ecma members including those connected with ad hoc committees, TCs and TGs are not part of the operating expenses of the Association.

9.3
The Secretary General of Ecma is responsible to the Treasurer for the operating expenses of the Association.

9.4
The general accounting of the Secretariat will be reviewed once a year by an Auditor appointed by the Treasurer and approved by the General Assembly.

Code of Conduct in Patent Matters*

Version 1 (approved by the Ecma GA in December 2009)

1.

Ecma considers it is desirable that fullest available information should be disclosed to those selecting technology for Ecma International Standards[1] and those interested in adopting Ecma International Standards. Ecma desires to develop standards for which licenses for any essential patents are available on a non-discriminatory basis and on reasonable terms and conditions. Therefore, Ecma desires that any party participating in a technical committee of Ecma International promptly disclose any patent or pending patent application that it believes contain claims that may be required to implement an Ecma International Standard, in accordance with the following provisions.

2.

If an Ecma International Standard is developed and a party may own or control a patent or application with claims that are required to implement such Ecma International Standard, three different situations may arise:

2.1
The patent holder is prepared to grant licenses free of charge to other parties on a non-discriminatory basis on reasonable terms and conditions. Negotiations are left to the parties concerned and are performed outside of Ecma International.

2.2
The patent holder is prepared to grant licenses to other parties on a non-discriminatory basis on reasonable terms and conditions. Negotiations are left to the parties concerned and are performed outside of Ecma International.

For patented technology contributed to and incorporated into a Final Draft Ecma International Standard by a patent holder member, the patent holder member may select 2.1 or 2.2. If such patent holder member does not make a selection, 2.2 shall apply.

2.3
For patented technology contributed by a party other than the patent holder, the patent holder is not prepared to comply with the provisions of either Paragraph 2.1 or Paragraph 2.2.

3.

Whatever case applies (2.1, 2.2 or 2.3), the patent holder shall, for patents and pending applications it owns or controls that it believes contains claims that may be required to implement the identified Draft Ecma International Standard, provide a timely written statement to be filed with the Ecma Secretary General at the Ecma International Secretariat, using the attached "Patent Statement and Licensing Declaration Form for an Ecma International Standard" (the "Form" available here in WORD format and here in PDF format). Any licensing commitment selected will only apply to those claims that end up being required to implement the Final Ecma International Standard.

3.1
In the event the patent holder selects per Paragraph 2.1 and 2.2, the patent holder may identify specific patents associated with box 1 or box 2 of the Form. If an Ecma member does not identify specific patents on the list, the designated licensing commitment will apply to all of the Ecma member's claims in patents and pending applications it owns or controls that end up being required to implement the finalized Standard. The patent holder may submit multiple Forms to document additional patents, each Form applying to patents associated with one of the boxes. A patent holder may re-designate as follows: Box selections cannot be changed, except that identified patents may be re-designated from box 3 to box 1 or 2, or from box 2 to box 1. For licenses executed before a re-designation, the licensees may continue under the existing license or may request terms in accordance with the re-designation.

3.2
In the event a patent holder selects per Paragraph 2.3, the patent holder must identify the specific patents it owns or controls and believes are required to implement the Ecma Standard in a Form under box 3.

3.3
The Form must not include additional provisions, conditions, or any other clauses that may interpret, restrict or vary the terms of the selected box on the Form.

4.

Pursuant to Article 9 of the Ecma International by-laws, each Final Draft Ecma International Standard to be approved shall be submitted two months ahead of a General Assembly (GA).

4.1
Each Ecma member participating in the development of the proposed standard shall, and other Ecma members may, submit a Form at the latest two weeks before the GA (if the vote occurs at the GA) or the end of the postal voting period (if the vote is by mail), if they own or control any patents or patent applications that they believe are required to implement such standard. For so long as such Standard remains an approved Ecma International Standard, the member will be prepared to grant licenses for its essential claims in patents and patent applications in accordance with Paragraph 2 above. In the event Paragraph 2.3 is selected, a patent license may not be available and the technical committee should explore other options.

[1] Ecma International Standards hereafter means Ecma International Standards as well as Ecma Technical Reports.

4.2
This Policy creates no duty for Ecma members to search for any patents or patent applications at any time. A Member's general licensing commitment shall apply to the claims in any patents or patent applications that are required to implement the Standard even if such patents are acquired by the Member after the Standard is finalized. If Paragraph 2.1 or 2.2 is selected, a commitment attaches to a Standard, then the same commitment would automatically apply to future versions of the Standard if the same implicated patent claims (i) are required for implementation of the revised Standard, and (ii) are used in a substantially similar manner, to a substantially similar extent, to achieve a substantially similar result as the same patent claims were used in the prior version for which the Member has made a licensing commitment.

4.3
An Ecma member that has not submitted a Form regarding a Final Draft Ecma International Standard within the period mentioned in Paragraph 4.1 is obliged to license any claims in patents or patent applications required to implement the Standard on a reasonable and non-discriminatory basis.

5.

Anybody may disclose, in written form identifying the title and patent information, another party's patents and applications that it reasonably believes may be required to implement an Ecma Standard. Such disclosure is not an assertion that such patents or applications are required for the Ecma Standard, but is provided for informational purposes. The Ecma Secretary General will, as feasible, send a Form to each such potential patent holder. A non-member may submit a Form to the Ecma Secretary General that lists the non-member's patents and applications that it believes may be essential to a draft or final Ecma Standard and select one of the options described above in Paragraph 2.

6.

Ecma International shall not provide legal opinions about evidence, validity or enforceability of patents, or whether a claim is required to implement a standard. Accordingly, in instances where a patent or pending patent application is disclosed to the Ecma Secretary General and it is not subject to a license commitment in accordance with boxes 1 or 2 of the Form, approval and publication of a proposed standard is authorized if 2/3 of the GA by vote in person or via letter ballot, support proceeding with the standard notwithstanding possible uncommitted patent(s) and patent application(s) of Ecma members or non-members. As a condition to proceeding, the Ecma Secretary General must provide notice of all identified and possibly uncommitted patents or patent applications and their disposal (if any) (i) to the voting members at least 10 days before the vote on the standard will be completed and (ii) to the public if and when the standard is published as final.

7.

If a patent or pending patent application, that is not subject to a license commitment in accordance with boxes 1 or 2 of the Form, is disclosed to the Ecma Secretary General after an Ecma International Standard has been approved, the process of Paragraph 6 shall be followed to determine if the standard shall be continued, withdrawn or modified.

The Ecma list of patent statements can be found here.

* The old Ecma Code of Conduct in Patent Matters that was valid until 3 December 2009 is to be found here.

Experimental Royalty Free Patent Policy for TC39

On June 10, 2013, the Ecma General Assembly approved an experimental Royalty Free Patent Policy for Ecma TC39.

Experimental Royalty Free Patent Policy for TC52

On December 10, 2013, the Ecma General Assembly approved an experimental Royalty Free Patent Policy for Ecma TC52.

Software Copyright Matters

On June 17, 2010 the Ecma General Assembly approved an experimental software copyright policy. This policy is being applied by Ecma TC39.

Text Copyright Matters

All Ecma Standards and Technical Reports are covered by the following Ecma copyright notice.

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Trademark Matters

Ecma International has trademarked some of its standardization related terms, such as:

- Ecma International
- Open XPS
- ECMAScript
- ProxZzzy

Withdrawn Ecma Standards and Technical Reports

Withdrawn Ecma Standards
(not in force, electronically available here)

ECMA-1	6 Bit Input/Output Character Code (March 1963)	
ECMA-2	Subset of ALGOL 60 - ECMALGOL	
ECMA-3	CMC7 Printed Image Specification, 2nd edition (September 1966)	ISO 1004
ECMA-4	Flow Charts, 2nd edition (September 1966)	ISO 1028
ECMA-5	Data Interchange on 7 Track Magnetic Tape, 3rd edition (June 1970)	
ECMA-7	7 Bit Code in Punched Cards (April 1965)	ISO 1113
ECMA-8	Nominal Character Dimensions of the Numeric OCR-A Font, 2nd edition (January 1977)	ISO 1973-1
ECMA-9	FORTRAN (April 1965)	ISO/IEC 1539
ECMA-10	Data Interchange on Punched Tape, 2nd edition (July 1970)	ISO 1113
ECMA-11	Alphanumeric Character Set OCR-B for Optical Recognition, 3rd edition (March 1976)	ISO 1073-2
ECMA-12	Data Interchange on 9-Track Magnetic Tape at 32 bits per mm (800 bpi), 2nd edition (June 1970)	ISO/IEC 1863
ECMA-14	Rules for the Definition of 4 Bit Sets Derived from the ECMA 7 Bit Coded Character Set (November 1967)	
ECMA-15	Printing Specifications for Optical Character Recognition, 2nd edition (August 1975)	ISO 1831
ECMA-16	Basic Mode Control Procedures for Data Communication Systems using the ECMA 7-Bit Code, 2nd edition (June 1973)	
ECMA-17	Graphic Representation of the Control Characters of the ECMA 7-Bit Coded Character Set for Information Interchange (November 1968)	ISO 2047
ECMA-18	Printing Line Position on OCR Single Line Documents, 2nd edition (January 1977)	ISO 1831
ECMA-19	Coding of Character Sets for MICR and OCR (June 1969)	ISO 2033
ECMA-20	Implementation of the ECMA 7 Bit Coded Character Set on Punched Cards (June 1969)	ISO 1113
ECMA-21	Character Positioning on OCR Journal Tape (June 1969)	
ECMA-22	Electrical Safety Requirements for Data Processing Machines (June 1969)	
ECMA-23	Keyboards Generating the Code Combinations of the Characters of the ECMA 7-Bit Coded Character Set, 2nd edition (January 1975)	ISO/IEC 9995
ECMA-24	Code Independent Information Transfer (An extension to the Basic Mode Transmission Control Procedures) (December 1969)	
ECMA-25	Representation of 8-Bit combinations on 12-Row Punched Cards (June 1970)	ISO 6586
ECMA-26	Recovery Procedures (An Extension to the Basic Mode Control Procedures for Data Communication Systems) (April 1971)	

ECMA-27	Abort and Interrupt Procedures (An Extension of the Basic Mode Control Procedures for Data Communication Systems) (April 1971)	
ECMA-28	Multiple Station Selection Procedures (An Extension of the Basic Mode Control Procedures for Data Communication Systems) (April 1971)	
ECMA-29	Conversational Information Transfer (An Extension of the Basic Mode Control Procedures for Data Communication Systems) (September 1971)	
ECMA-30	OCR B Subsets for Numeric Applications, 2nd edition (March 1976)	
ECMA-31	Mechanical Safety Requirements for DTA Processing Machines (September 1971)	
ECMA-32	Mechanical, Physical and Magnetic Characteristics of Interchangeable 6-Disk Packs (September 1971)	
ECMA-33	Track Format Characteristics of Interchangeable 6-Disk Packs (September 1971)	ISO 3561
ECMA-34	Data Interchange on 3,81 mm Magnetic Tape Cassette (63 ftpmm, Phase Encoded at 32 bpmm), 3rd edition (September 1976)	ISO 3407
ECMA-36	Data Interchange on 9-Track Magnetic Tape at 63 bpmm (1600 bpi) Phase-Encoded (December 1971)	ISO/IEC 3788
ECMA-37	Supplementary Transmission Control Functions (An Extension of the Basic Mode Control Procedures for Data Communication Systems) (June 1972)	
ECMA-38	Mechanical, Physical and Magnetic Characteristics of Interchangeable Single Disk Cartridges (Top Loaded) (September 1973)	ISO 3562
ECMA-39	Track Format Characteristics of Interchangeable Single Disk Cartridges (Top Loaded) (September 1973)	ISO 3563
ECMA-40	High-Level Data Link Control Procedures (HDLC) - Frame Structure, 3rd edition (January 1980)	ISO/IEC 3309
ECMA-41	Magnetic Tape Cassette Labelling and File Structure for Information Interchange (December 1973)	ISO 4341
ECMA-42	Alpha-numeric Character Set for 7x9 Matrix Printers (December 1973)	
ECMA-44	Implementation of the ECMA 7-Bit and 8-Bit Coded Character Sets on Punched Cards (September 1975)	ISO 6586
ECMA-45	Data Interchange on Magnetic 12-Disk Packs (100 Mbytes) (September 1975)	ISO 4337
ECMA-46	Data Interchange on 6,30 mm Magnetic Tape Cartridge (63 bpmm, Phase Encoded) (March 1976)	ISO 4057
ECMA-47	Limits and Measurements Methods for Radio Interference from EDP Units (March 1976)	
ECMA-49	HDLC-Elements of Procedure, 2nd edition (August 1979)	ISO/IEC 4335
ECMA-50	Programming Language PL/1 (December 1976)	ISO 6160
ECMA-51	Implementation of the Numeric OCR-A Font with 9x9 Matrix Printers (January 1977)	
ECMA-52	Magnetic 12-Disk Packs (200 Mbytes) (September 1977)	
ECMA-53	Representation of Source Programs for Program Interchange - APL, COBOL, FORTRAN, Minimal BASIC and PL/1 (January 1978)	ISO 5653

ECMA-54	Data Interchange on 200 mm Flexible Disk Cartridges using Two-Frequency Recording at 13 262 ftprad on One Side, 2nd edition (January 1982)	ISO 5654
ECMA-55	Minimal BASIC (January 1978)	ISO 6373
ECMA-56	Self-Loading Cartridges for 12,7 mm Wide Magnetic Tapes (September 1978)	ISO 6098
ECMA-57	Safety Requirements for Data Processing Equipment, 2nd edition (September 1981)	
ECMA-58	Flexible Disk Cartridge Labelling and File Structure for Information Interchange, 2nd edition (January 1981)	
ECMA-59	Data Interchange on 200 mm Flexible Disk Cartridges using Two-Frequency Recording at 13 262 ftprad on Both Sides (August 1979)	ISO 5654-1
ECMA-60	HDLC-Unbalanced Class of Procedure (August 1979)	ISO/IEC 7809
ECMA-61	HDLC-Balanced Class of Procedure (August 1979)	ISO/IEC 7809
ECMA-62	Data Interchange on 12,7 mm 9-Track Magnetic Tape - 32 ftpmm, NRZ1, 32 cpmm - 126 ftpmm, Phase Encoding, 63 cpmm - 356 ftpmm, NRZ1, 246 cpmm GCR, 2nd edition (March 1985) (for reference see also ISO 1863, ISO 3788 and ISO 5652)	ISO 1864
ECMA-63	Representation of Numerical Values in Character Strings for Information Interchange (September 1980)	
ECMA-64	Magnetic Disk for Data Storage Devices, 160 000 Flux Transitions per Track, 356 mm Diameter, 2nd edition (September 1982)	ISO 6901
ECMA-65	Magnetic Disk for Data Storage Devices, 107 500 Flux Transitions per Track, 266 mm and 356 mm Diameter (September 1980)	ISO 6902
ECMA-66	Data Interchange on 130 mm Flexible Disk Cartridges using Two-Frequency Recording at 7 958 ftprad on One Side (September 1980)	ISO 6596
ECMA-67	130 mm Flexible Disk Cartridge Labelling and File Structure (January 1981)	
ECMA-68	Reels for 12,7 mm Wide Magnetic Tapes (Sizes 16, 18 and 22) (January 1981)	ISO 8064
ECMA-69	Data Interchange on 200 mm Flexible Disk Cartridges using MFM Recording at 13 262 ftprad on Both Sides (January 1981)	ISO 7065
ECMA-70	Data Interchange on 130 mm Flexible Disk Cartridges using MFM Recording at 7 958 ftprad on 40 Tracks on Each Side, 2nd edition (June 1986)	ISO 7487
ECMA-71	HDLC Selected Procedures (January 1981)	ISO/IEC 3309 & 4335
ECMA-72	Transport Protocol, 3rd edition (March 1985)	ISO/IEC 8073
ECMA-73	Magnetic Disk for Data Storage Devices 95 840 Flux Transitions per Track, 200 mm Outer Diameter, 63,5 mm Inner Diameter, 2nd edition (September 1982)	ISO 7297
ECMA-75	Session Protocol (January 1982)	ISO 8327
ECMA-76	Magnetic Disk for Data Storage Devices, 158 000 Flux Transitions per Track, 210 mm Outer Diameter, 100 mm Inner Diameter (September 1982)	ISO 7298
ECMA-77	Magnetic Disk for Data Storage Devices, 83 000 Flux Transitions per Track, 130 mm Outer Diameter, 40 mm Inner Diameter (September 1982)	ISO 7929

ECMA-78	Data Interchange on 130 mm Flexible Disk Cartridges using MFM Recording at 7 958 ftprad on 80 Tracks on Each Side, 2nd edition (June 1986)	ISO 8378
ECMA-79	Data Interchange on 6,30 mm Magnetic Tape Cartridge using IMFM Recording at 252 ftpmm, 2nd edition (September 1985)	ISO 8063
ECMA-80	Local Area Networks (CSMA/CD Baseband) Coaxial Cable System, 2nd edition (March 1984)	
ECMA-81	Local Area Networks (CSMA/CD Baseband) Physical Layer, 2nd edition (March 1984)	ISO/IEC 8802-3
ECMA-82	Local Area Networks (CSMA/CD Baseband) Link Layer, 2nd edition (March 1984)	ISO/IEC 8802-3
ECMA-83	Safety Requirements for DTE-to-DCE Interface in Public Data Networks, 2nd edition (September 1985)	
ECMA-84	Data Presentation Protocol (September 1982)	ISO/IEC 8823-1
ECMA-85	Virtual File Protocol (September 1982)	
ECMA-86	Generic Data Presentation - Services Description and Protocol Definition (March 1983)	ISO/IEC 8822
ECMA-87	Generic Virtual Terminal - Service and Protocol Description (March 1983)	ISO 9040
ECMA-88	Basic Class Virtual Terminal - Service Description and Protocol Definition (March 1983)	ISO 9040 & 9041
ECMA-89	Local Area Networks - Token Ring Technique, 2nd edition (March 1985)	ISO/IEC 8802-5
ECMA-90	Local Area Networks - Token Bus Technique (September 1983)	ISO/IEC 8802-4
ECMA-91	Flexible Disk Cartridges - File Structure and Labelling for Information Interchange (March 1984)	ISO 7665
ECMA-92	Connectionless Internetwork Protocol (March 1984)	
ECMA-93	Distributed Application for Message Interchange (MIDA) (September 1984)	
ECMA-95	Limits of Interference and Measurement Methods (March 1985)	
ECMA-96	Syntax of Graphical Data for Multiple-Workstation Interface (GDS) (September 1985)	
ECMA-97	Local Area Networks - Safety Requirements, 2nd edition (December 1992)	
ECMA-98	Data Interchange on 6,30 mm Magnetic Tape Cartridge using NRZ1 Recording at 394 ftpmm - Streaming Mode (September 1985)	ISO 8462
ECMA-101	Open Document Architecture (ODA) and Interchange Format, 2nd edition (December 1988)	ISO 8613
ECMA-102	Rate Adaptation for the Support of Synchronous and Asynchronous Equipment using the V. Series Type Interface on a PCSN, 2nd edition (July 1987)	
ECMA-103	Physical Layer at the Basic Access Interface between Data Processing Equipment and Private Switching Networks, 2nd edition (December 1987)	
ECMA-104	Physical Layer at the Primary Rate Access Interface between Data Processing Equipment and Private Switching Networks (September 1985)	

ECMA-105	Data Link Layer Protocol for the D-Channel of the Interfaces at the Reference Point between Terminal Equipment and Private Telecommunication Networks, 4th edition (June 1993)	I-ETS 300 169
ECMA-110	Ergonomics - Requirements for Monochromatic Visual Display Devices (December 1985)	
ECMA-111	Small Computer System Interface – SCSI (December 1985)	
ECMA-112	X.25 (1980) Subnetwork-Dependent Convergence Protocol (December 1985)	
ECMA-115	Common Secondary Keyboard Layout for Languages using a Latin Alphabet (June 1986)	
ECMA-116	BASIC (June 1986)	
ECMA-117	Domain Specific Part of Network Layer Addresses (June 1986)	
ECMA-122	MIDA, Mailbox Service Description and Mailbox Access Protocol Specification (July 1987)	
ECMA-123	In Band Parameter Exchange in Private Pre-ISDN Networks using Standard ECMA-102, 2nd edition (June 1990)	
ECMA-124	Designation of Unrecorded Flexible Disk Cartridges (December 1987)	
ECMA-126	Ergonomics - Requirements for Colour Visual Display Devices (December 1987)	
ECMA-127	Remote Procedure Call (RPC) using OSI, 2nd edition (June 1990)	
ECMA-129	Information Technology Equipment - Safety, 2nd edition (April 1994)	IEC 950
ECMA-131	Referenced Data Transfer (July 1988)	
ECMA-132	Method for Measuring Printer Throughput, 2nd edition (June 1991)	ISO 10561
ECMA-134	Method for the Specification of Basic and Supplementary Services of Private Telecommunication Networks (April 1989)	ETS 300 387
ECMA-135	Scenarios for Interconnections Between Exchanges of Private Telecommunication Networks (April 1989)	
ECMA-136	Ergonomics - Requirements for Non-CRT Visual Display Units (June 1989)	
ECMA-137	Document Filing and Retrieval Application (December 1989)	ISO 10166
ECMA-138	Security in Open Systems - Data Elements and Service Definitions (December 1989)	
ECMA-140	Document Printing Application (DPA) (June 1990)	ISO/IEC 10175
ECMA-141	Private Telecommunication Networks (PTN) - Inter-Exchange Signalling - Data Link Layer Protocol (PTN QSIG-L2), 2nd edition (June 1993)	I-ETS 300 170
ECMA-166	Information Technology Equipment - Routine Electrical Safety Testing in Production (June 1992)	EN 50116
ECMA-172	Procedure for Measurement of Emissions of Electric and Magnetic Fields from VDUs from 5 Hz to 400 kHz (June 1992)	
ECMA-181	Uncertainty of Measurement as Applied to Type Approval of Products (December 1992)	

ECMA-187	ODA-API - Application Profile Interface for Handling Compound Documents (June 1993)	
ECMA-199	Immunity of VDUs to Power Frequency Magnetic Fields (December 1993)	
ECMA-200	Immunity of Information Technology Equipment to Lightning Surges (December 1993)	
ECMA-204	Private Telecommunication Networks (PTN) - Inter-Exchange Signalling Protocol - Supplementary Service Interactions (QSIG-IA) (December 1993)	ETS 300 427
ECMA-215	Private Integrated Services Network (PISN) - Cordless Terminal Mobility (CTM) - Inter-Exchange Signalling Protocol - Cordless Terminal Incoming Call Additional Network Feature (QSIG-CTMI), 2nd edition (September 1997)	ETS 300 696
ECMA-216	Private Integrated Services Network (PISN) - Cordless Terminal Mobility (CTM) - Inter-Exchange Signalling Protocol - Cordless Terminal Location Registration Supplementary Service (QSIG-CTLR), 2nd edition (September 1997)	ETS 300 693
ECMA-227	Portable Common Tool Environment (PCTE) - Extensions for Support of Fine-Grain Objects - Abstract Specification (October 1995)	
ECMA-228	Portable Common Tool Environment (PCTE) - Extensions for support of Fine-Grain Objects - C Programming Language Binding (October 1995)	
ECMA-229	Portable Common Tool Environment (PCTE) - Extensions for Support of Fine-Grain Objects - Ada Programming Language Binding (October 1995)	
ECMA-233	Private Integrated Services Network (PISN) - Cordless Terminal Mobility (CTM) - Inter-Exchange Signalling Protocol - Cordless Terminal Outgoing Call Additional Network Feature (QSIG-CTMO), 2nd edition (September 1997)	I-ETS 300 808
ECMA-237	Limits and Methods of Measurement of Immunity Characteristics of Information Technology Equipment (June 1996)	
ECMA-243	Private Integrated Services Network (PISN) - Cordless Terminal Mobility (CTM) - Inter-Exchange Signalling Protocol - Cordless Terminal Authentication Supplementary Services (QSIG-CTAU), 2nd edition (September 1997)	I-ETS 300 809
ECMA-255	Portable Common Tool Environment (PCTE) - Object Orientation Extensions - Abstract Specification (December 1996)	
ECMA-256	Portable Common Tool Environment (PCTE) - Object Orientation Extensions - C Programming Language Binding (December 1996)	
ECMA-257	Portable Common Tool Environment (PCTE) - Object Orientation Extensions - Ada Programming Language Binding (December 1996)	
ECMA-290	ECMAScript Components Specification (June 1999)	

Withdrawn Ecma Technical Reports
(not in force, electronically available here)

ECMA TR/1	A Set of I/O Procedures for ECMALGOL (January 1967)
ECMA TR/2	Formal Definition of the Syntax of COBOL (September 1970)
ECMA TR/3	Continuous Sprocket Punched Stationery Part II (Physical Properties, Fastenings, Packaging and Storage) (March 1972)
ECMA TR/4	Continuous Stationery in Roll Form (June 1972)
ECMA TR/5	Suggestions for a Disk Labelling System (June 1972)
ECMA TR/6	Recommended Sizes of Forms for Optical Reading (June 1972)
ECMA TR/7	Continuous Sprocket-Punched Stationery Part I (Recommended Sizes) (December 1973)
ECMA TR/8	Recommended OCR Paper Specifications, 2nd edition (January 1977)
ECMA TR/9	Safety Requirements for Data Processing Equipment (January 1978)
ECMA TR/10	Listing of Software Names, 2nd edition (March 1982)
ECMA TR/11	Guidelines for Magnetic Tape Handling and Storage (January 1981)
ECMA TR/12	Radio Interference from DP/OE Limits and Measurement Methods (September 1982)
ECMA TR/13	Network Layer Principles (September 1982)
ECMA TR/14	Local Area Networks - Layers 1 to 4 Architecture and Protocols (September 1982)
ECMA TR/15	Analysis of European X.25 Networks (September 1983)
ECMA TR/16	Interface Characteristics for a DTE to Operate with European Rec.X.25 Networks (September 1983)
ECMA TR/17	Permission to Connect - PTT Requirements for Obtaining Approval to Connect Apparatus to the Network (September 1983)
ECMA TR/19	Local Area Networks - Safety Requirements (March 1984)
ECMA TR/20	Layer 4 to 1 Addressing (March 1984)
ECMA TR/21	Local Area Networks - Interworking Units for Distributed Systems (March 1984)
ECMA TR/22	Ergonomics - Recommendations for VDU Work Places (March 1984)
ECMA TR/23	Electrostatic Discharge Susceptibility (September 1984)
ECMA TR/24	Interface between Data Processing Equipment and Private Automatic Branch Exchange (March 1985)
ECMA TR/25	OSI Sub-Network Interconnection Scenarios Permitted within the Framework of the ISO-OSI Reference Model (March 1985)
ECMA TR/26	Planning and Installation Guide for CSMA/CD 10 MBit/s Baseband Local Area Networks, 2nd edition (June 1990)
ECMA TR/28	Safety Verification (Save) Report ECMA-57/IEC 435 (September 1985)
ECMA TR/29	Open Systems Interconnection Distributed Interactive Processing Environment (DIPE) (September 1985)
ECMA TR/30	Remote Database Access Service and Protocol (December 1985)
ECMA TR/31	Remote Operations - Concepts, Notation and Connection-Oriented Mappings (December 1985)
ECMA TR/32	OSI Directory Access Service and Protocol (December 1985)
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ECMA TR/35	Particular Safety Requirements for Equipment to be Connected to Telecommunication Networks (December 1986)

ECMA TR/37	Framework for OSI Management (December 1986)
ECMA TR/38	End System Routing (December 1986)
ECMA TR/39	Compliance Verification (COVER) Report, 3rd edition (December 1992)
ECMA TR/40	Electrostatic Discharge Immunity Testing of Information Technology Equipment (July 1987)
ECMA TR/41	ODA - Document Specification Language (July 1987)
ECMA TR/42	Framework for Distributed Office Application (July 1987)
ECMA TR/43	Packetized Data Transfer in Private Switching Networks (December 1987)
ECMA TR/44	An Architectural Framework for Private Networks, 2nd edition (December 1989)
ECMA TR/45	Information Interchange for Remote Maintenance at the DPE-to-PSN Interface (December 1987)
ECMA TR/47	Configuration Management Service Definition (July 1988)
ECMA TR/48	Study of the Translation of the ODA Formatted Form into Page Description Languages (December 1988)
ECMA TR/49	Support Environment for Open Distributed Processing (December 1989)
ECMA TR/50	Inter-Domain Intermediate System Routeing (December 1989)
ECMA TR/51	Requirements for Access to Integrated Voice and Data Local and Metropolitan Area Networks (June 1990)
ECMA TR/52	Computer Supported Telecommunications Applications (June 1990)
ECMA TR/54	A Management Framework for Private Telecommunication Networks (December 1990)
ECMA TR/56	Information Technology Equipment - Recommended Measuring Method for Ozone Emission (June 1991)
ECMA TR/60	Supplementary Services and Additional Network Features in Private Telecommunication Networks (June 1992)
ECMA TR/63	Alphabetical Reference Index to IEC 950, 3rd edition (December 1995)
ECMA TR/65	PTNX Functions for the Utilization of Intervening Networks in the Provision of Overlay Scenarios (Transparent Approach) - General Requirements (TR/Mapping) (June 1994)
ECMA TR/89	Common Language Infrastructure (CLI) - Common Generics, 2nd edition (June 2006)

History of Ecma International

By 1959 the growing use of computers, built by several different manufacturers, showed the necessity for standardization in operational techniques, such as programming, and also input and output codes. Such standards would make it possible to use data prepared for, or even by, a computer made by one manufacturer to be on a computer made by another with the minimum of alteration. Also it would avoid duplication of work in the preparation of, for example, programming languages by several manufacturers.

Though certain National Bodies had, before 1960, started work on standards in this field, e.g. paper tape and codes, there did not appear to be collaboration between them, nor between the manufacturers themselves. Different countries may have different requirements, so that it may not be necessary to have the same standards everywhere, but the standards should at least be compatible.

With the object of co-ordinating such work, the Heads of the Companies of longest standing in Europe in the data processing field (Compagnie des Machines Bull, IBM World Trade Europe Corporation and International Computers and Tabulators Limited) sent a joint letter to all the known computer manufacturers within Europe, inviting these companies to send representatives to a meeting. This meeting was held on April 27, 1960, in Brussels; it was decided that an association of manufacturers should be formed which would be called European Computer Manufacturers Association or for short ECMA, and a Committee was nominated to prepare the formation of the Association and to draw up By-laws and Rules.

By December 1960 the form that the Association would take was fairly well defined and it had been decided that the headquarters should be in Geneva to be near the headquarters of the International Organization for Standardization and the International Electrotechnical Commission. On 17th May 1961 the Association officially came into being and all those Companies which attended the original meeting became members. The constituent assembly was held on 17th June 1961.

Just prior to the official registration of Ecma, it was invited to be represented at a Round-Table Conference to be held in Geneva organized by ISO and IEC to discuss standardization in the general field of computers. This meeting resulted in the formation of TC97 and in the organization of its own Working Groups, and Ecma was asked to become a liaison member. In 1987, when TC97 became part of ISO/IEC JTC 1, Ecma became A-liaison member of JTC 1.

To reflect the global activities of the Europe-based Ecma organization the name was changed in 1994 to: Ecma International - European association for standardizing information and communication systems.

Though before 1994, ECMA was known as "European Computer Manufacturers Association", after 1994, when the organization became global, the trademark "Ecma" was kept for historical reasons.

About the Ecma Mementos

The Ecma Mementos are the Annual Report of Ecma International. They aim to provide comprehensive overview about the work of Ecma International, its working rules, its membership and so on.

The first Ecma Memento was published in 1962.

The current and old Ecma Mementos can be downloaded here.

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1963-1964
Prof. Dr. J. Engelfriet (EL)

1965-1966
Mr. M. R. Pedretti (IBM)

1967-1968
Dr. J. M. M. Pinkerton (ICL)

1969-1970
Mr. P. J. Davous (Bull)

1971-1972
Dr. K. Scheidhauer (AEG-Tfk)

1973-1974
Dr. J. M. M. Pinkerton (ICL)

1975
Mr. J. van Eijbergen (Philips)

1976-1977
Mr. W. Heimann (Siemens)

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2003-2004
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2007-2008
Mr. J. Neumann (Toshiba)

2009-2010
Dr. P. Weijenbergh (Philips)

2011-2012
Ms J. Auber (HP)

Past Secretaries General

1961-1991
Mr. Dara Hekimi († 2002-02-18)

1992-2007
Mr. Jan van den Beld