MEMENTO 2003

ECMA

INTERNATIONAL

Standardizing Information and Communication Systems

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PREFACE

Information Technology, Telecommunications and Consumer Electronics are key factors in today's economic and social environment. Effective interchange both of commercial, technical, and administrative data, text and images and of audiovisual information is essential for the growth of economy in the world markets. Through the increasing digitalization both information technology, telecommunications and consumer electronics are getting more and more integrated.

Open Systems and Distributed Networks based on world-wide recognized standards will not only provide effective interchange of information but also help to remove technical barriers to trade. In particular harmonized standards are recognized as a prerequisite for the establishment of the European economic area.

Since 1961, ECMA has actively contributed to world-wide standardization in information technology, telecommunications and consumer electronics. About 345 ECMA Standards and 85 Technical Reports of high quality have been published.

In the coming years ECMA sees important challenges for information technology, telecommunication and consumer electronics standardization, especially in the following areas:

- Multimedia
- High Speed Telecommunications
- Interconnects
- Environmental Product Attributes
- IP-based Services for Corporate Networks
- High Capacity Storage Media
- Programming and Scripting Languages
- Computer Telephony Integration
- Product Safety
- Web Services

Standardization provides the means for economical solutions for complex technologies. Moreover, it is most effective if it is performed in a precompetitive mode and parallel with product development with all interested parties involved.

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 base for international and European Standards. To ensure close co-operation ECMA, an international association since 1994, has established formal liaisons with European and international standardization bodies.

ECMA Standards are developed by highly qualified experts from information technology, consumer electronics and telecommunication industry with the commitment to provide in a consensus mode technical solutions ready for implementation in product development and conformity testing.

The benefit of ECMA membership is twofold:

- Early knowledge of technological trends and better understanding of high technology standards requirements.
- A platform where technical contributions of member companies are evaluated by experts who through a most effective mode of operation develop ECMA Standards and Technical Reports of high quality in a very short time.

The participation of the majority of leading companies in ECMA ensures not only the acceptance of ECMA Standards in European and International standardization but also their world-wide implementation.

The President, Geneva, March 2003.

PURPOSE AND MEMBERSHIP

The Purpose of ECMA 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 copiable to all interested parties.

The Association shall consist of Company members, (i.e., ordinary, associate, and SME 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 General Assembly and to exert other exclusive rights defined in the By-Laws and Rules.

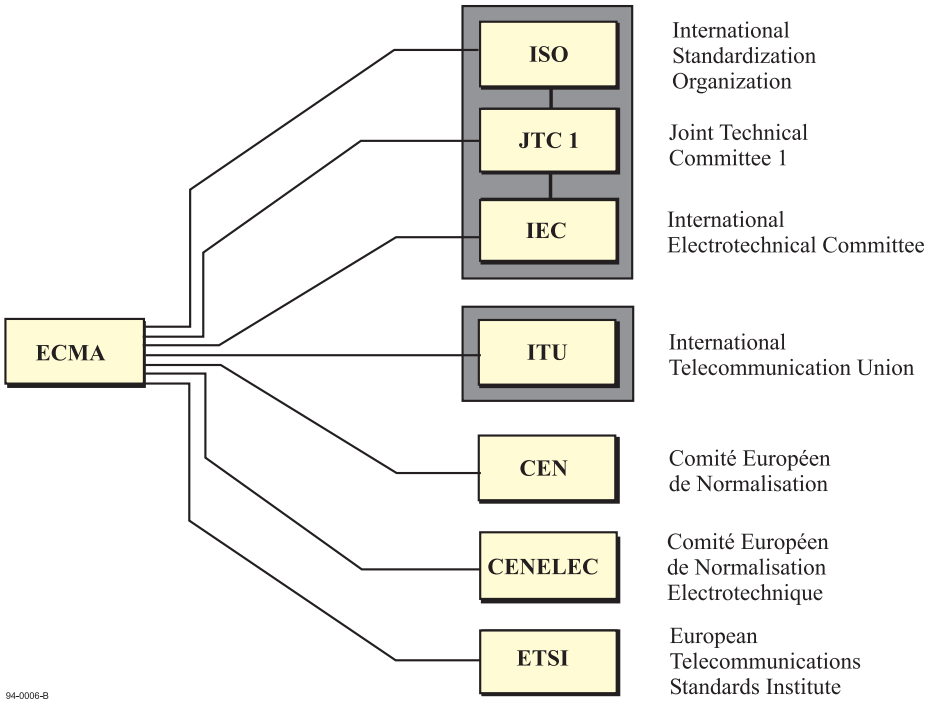
Associate membership may be applied for by a company which has interest and experience in matters related to one or more of the Technical Committees of the Association but without the right to vote in the General Assembly.

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).

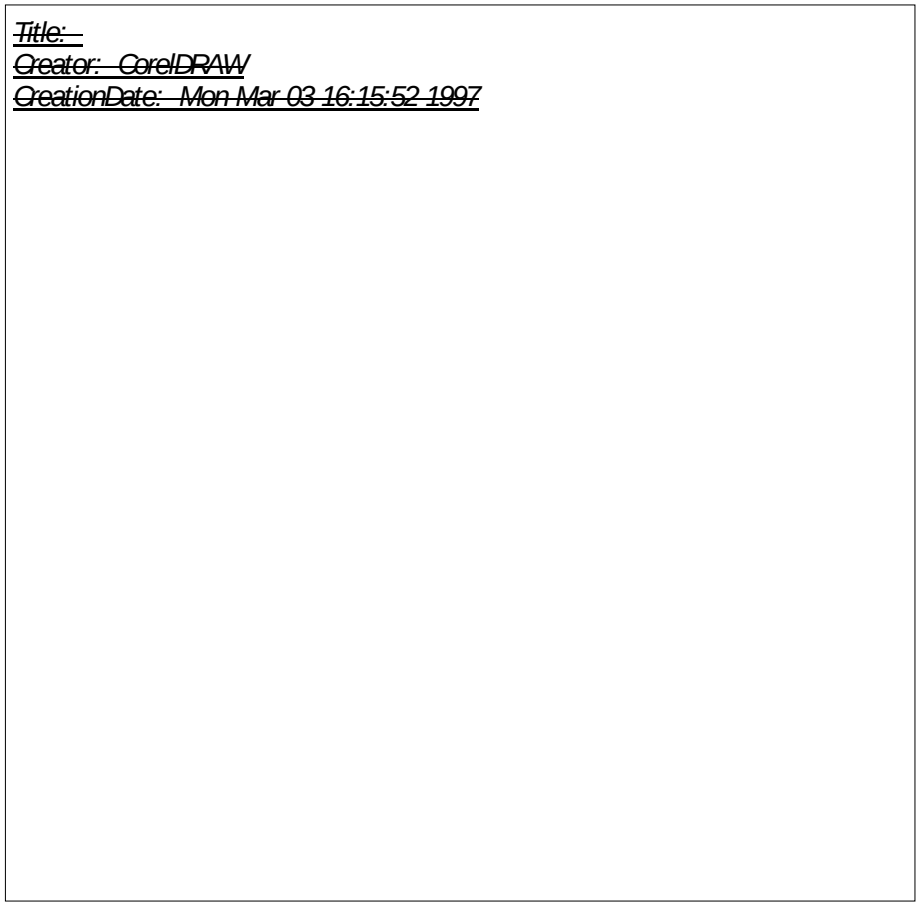
NFP membership may be applied for by a non-profit-making organization. If an NFP is an organization with several organizations as members, then normally it can only become an NFP member in ECMA if its members do not qualify for Company membership in ECMA.

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

ECMA'S ROLE IN INTERNATIONAL STANDARDIZATION



ECMA has close working relations - such as liaisons, co-operation agreements, memberships - with European and international standardization bodies.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Active Committees

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TC12 - PRODUCT SAFETY

Scope:

To consider national and international safety regulations with a view to establishing 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 assume responsibility for the maintenance of ECMA Standards prepared by TC12.

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

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TC15 - VOLUME AND FILE STRUCTURE

Scope:

To facilitate the interchange of information on media by specifying the format on the recorded structures that contain descriptive information about volumes and the files/directories recorded on the media.

Programme of work:

1. To specify volume and file structure standards for media used in interchange.

2. To specify such standards so that they are independent, where possible, of the standards for the underlying medium.

3. To constitute a coherent family of standards where possible.

4. To assume responsibility for the maintenance of ECMA Standards prepared by TC15.

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

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TC17 - MAGNETIC TAPES AND TAPE CARTRIDGES

Scope:

To identify and standardize the minimum number of parameters necessary to ensure interchangeability of magnetic tapes and tape cartridges using appropriate methods of recording and taking account of existing standards.

Programme of work:

1. To develop standards for 3,81 mm, 6,30 mm, 8 mm and 12,65/12,7 mm wide magnetic tape cartridges.

2. To monitor the revision of International Standards for magnetic tapes and tape cartridges.

3. To develop standards for algorithms for the lossless compression of data.

4. To assume responsibility for the maintenance of ECMA Standards prepared by TC17.

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

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TC20 - ELECTROMAGNETIC COMPATIBILITY

Scope:

To study the conditions necessary to guarantee reciprocal electromagnetic compatibility between information technology equipment and the external environment, to prepare corresponding standards and to contribute to international standardization.

Programme of work:

1. To survey existing international and national standards concerned with electromagnetic compatibility.

2. To establish measuring methods and limits for electromagnetic interference generated by information technology equipment.

3. To establish standards for methods of assessment and suitable levels for the immunity of information technology equipment to electromagnetic interference.

4. To assume responsibility for the maintenance of ECMA Standards and Technical Reports prepared by TC20.

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

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TC31 - OPTICAL DISKS AND DISK CARTRIDGES

Scope:

To identify and develop the minimum number of standards necessary for data interchange by means of optical data disks and disk cartridges.

Programme of work:

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

2. To assume responsibility for the maintenance of ECMA Standards (both CD and DVD)prepared by TC31.

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

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

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TC31-TG1 – UDO PROJECT

Scope:

To prepare a standard for UDO (130 mm Phase Change Rewritable and Write-once Optical Disk Cartridges - Capacity: 30 Gbytes per Cartridge).

Programme of work:

1. To develop successive drafts of the UDO standard.

2. To submit the final draft to TC31 for approval.

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TC32 - COMMUNICATION, NETWORKS AND SYSTEMS INTERCONNECTION

Scope:

To maintain an overall view and strategy for standardization in the field of private/corporate telecommunications, and to prepare ECMA Standards and Technical Reports required in this field.

To monitor and pursue standardization at a global level with regard to ISO/IEC JTC 1 and the international standardization world in general.

To work together with ETSI within the framework for standardization under the terms of the Cooperation Agreement between ETSI and ECMA, for publication of European standards and technical reports.

To promote unified international standards.

The field of private/corporate telecommunications includes architecture, service, protocol, interoperability, management and application aspects of Corporate Telecommunication Networks (CNs). CNs include narrowband and broadband Private Integrated Services Networks (PISNs) and private networks based on the Internet Protocol (IP). In particular the field includes the following:

- Computer Supported Telecommunications Applications (CSTA) (see TC32-TG11);
- architecture, service and protocol aspects of narrowband and broadband Private Integrated Services Networks (PISNs) (see TC32-TG14);
- IP-based multimedia communications in a business environment , including interoperability of narrowband and broadband PISNs with IP networks (see TC32-TG17);
- Near Field Communications (see TC32-TG19).

Programme of work:

1. To address requirements and strategic plans for standardization in the field of private/corporate telecommunications, and to align, harmonize, and as far as possible remain compatible with standards for public telecommunications as well as standards in related fields.

2. To address and resolve high-level strategic issues affecting the future direction and scope of standardization in the field of private telecommunications.

3. 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.

4. To recommend the creation of new task groups as necessary to pursue new and evolving fields of work, and closure of task groups that have accomplished their missions.

5. 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.

6. To maintain liaisons with other ECMA TCs working in related fields.

7. 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.

8. To assist non-standards organizations in getting ECMA Standards developed and further processed, depending on TC members' agreement, and active participation from such organizations.

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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 liase with organisations studying similar topics including groups working within ITU-T and ISO/IEC JTC 1/SC6, 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 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 interoperation of IP-based networks and telecommunication 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-TG19 – NEAR FIELD COMMUNICATIONS

Scope:

To develop Standards and Technical Reports for Near Field Communication Systems, for the realisation 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 Interface and Protocol NFC-IP.

2. To co-operate 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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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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TC39 - PROGRAMMING AND SCRIPTING LANGUAGES

Scope:

To standardize the syntax and semantics of a general purpose, cross platform, vendor-neutral scripting language (ECMAScript), the programming languages C# (C "sharp") and Eiffel, and a Common Language Infrastructure (CLI).

Programme of work:

1. Develop a dynamic scripting language standard (ECMAScript).

2. Develop a standard for the programming language C# (pronounced C "sharp").

3. Develop a Common Language Infrastructure standard (CLI).

4. Develop a standard for the programming language Eiffel.

5. Contribute the standards to ISO/IEC JTC 1.

6. On completion of standards 1, 2 and 3 investigate the further direction of ECMAScript, C# and CLI.

7. Evaluate and consider proposals for complementary or additional technology.

8. To maintain liaison with appropriate other ECMA TCs and TGs.

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TC39-TG1 – DYNAMIC SCRIPTING LANGUAGE

Scope:

To standardize the syntax and semantics of a general purpose, cross platform, vendor-neutral dynamic scripting language called ECMAScript.

Programme of work:

1. Develop ECMAScript language standards.

2. Upon completion of item 1, to investigate the future direction of ECMAScript 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 Organisations (SDOs) as appropriate to facilitate and promulgate the work of the TG.

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TC39-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 Organisations (SDOs) as appropriate to facilitate and promulgate the work of the TG.

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TC39-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 Organisations (SDOs) as appropriate to facilitate and promulgate the work of the TG.

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TC39-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 Organisations (SDOs) as appropriate to facilitate and promulgate the work of the TG.

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TC42 - INTERCONNECTS

Scope:

To develop standards and technical reports for interoperable, scalable, and reliable I/O communications protocols for use in computer system level communications.

Programme of work:

1. To develop a packet-switched, system-level interconnect specification that addresses the needs of a broad range of networking, telecom, storage, signal processing, and high performance embedded applications, products, and technologies. Such interconnect is targeted toward but not limited to processor to processor, processor to I/O, I/O to I/O communications in distributed embedded computing systems. Originally this work is resulting from specifications developed by RapidIO™.

2. To develop supporting documentation and reports to enable easy adoption and interoperability.

3. To embark on studies, where appropriate, to further enhance and evolve the technology in the areas of protocol, electrical signalling, and mechanical packaging.

4. To contribute the standards and TRs to international standardization organizations, if appropriate.

5. To maintain liaisons with other ECMA TCs working in related fields.

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General	**Safety, EMC, Acoustics, Environmental Product Attributes**	ECMA-74 ECMA-108 ECMA-109 ECMA-160	ECMA-275 ECMA-287 ECMA-328 ECMA-341
Software Engineering and Interfaces			
	PCTE	ECMA-149 ECMA-158 ECMA-162 ECMA-230 ECMA-270	
	API for Windows	ECMA-234	
	ECMAScript	ECMA-262 ECMA-290 ECMA-327	
	C# and CLI	ECMA-334 ECMA-335	
Data Presentation			
	Character Sets and Coding	ECMA-6 ECMA-35 ECMA-43 ECMA-48 ECMA-94 ECMA-113	ECMA-114 ECMA-118 ECMA-121 ECMA-128 ECMA-144
	Labelling, Volume and File Structure	ECMA-13 ECMA-107 ECMA-119	ECMA-167 ECMA-168 ECMA-208
Data Communication			
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Data Interchange by Physical Media

Flexible Disk Cartridges	ECMA-99	ECMA-147
	ECMA-100	ECMA-207
	ECMA-125	
Magnetic Tapes and Tape Cartridges	ECMA-120	ECMA-246
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	ECMA-238	ECMA-331
	ECMA-239	ECMA-337
	ECMA-240	ECMA-338
	ECMA-260	
Data Compression	ECMA-151	ECMA-222
	ECMA-159	ECMA-321

Systems Interconnection

RapidIO™ Interconnect Specification	ECMA-342

Wireless Proximity systems

Near Field Communication	ECMA-340

ECMA STANDARDS AND CORRESPONDING INTERNATIONAL AND EUROPEAN STANDARDS

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, 7th edition (December 2002)	**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, 3rd edition (December 1996)	**ISO 9295**
ECMA-109	Declared Noise Emission Values of Information Technology and Telecommunications Equipment, 4th edition (December 1996)	**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, 3rd edition (December 1999)	**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, 5th edition (December 2002)	**ISO/IEC 18051**
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)	
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	Protocol for Computer Supported Telecommunications Applications (CSTA) Phase III, 2nd edition (June 2000)	**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-290	ECMAScript Components Specification (June 1999)	

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** **prEN 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** **prEN 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** **prEN 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** **prEN 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** **prEN 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** **prEN 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** **prEN 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** **prEN 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** **prEN 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** **prEN 301 921**
ECMA-312	Private Integrated Services Network (PISN) - Profile Standard for the Use of PSS1 (QSIG) in Air Traffic Services Networks, 2nd edition (June 2001)	**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** **prEN 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** **prEN 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, 2nd edition (December 2002)	**ISO/IEC DIS 18056**
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	Detection and Measurement of Chemical Emissions from Electronic Equipment (June 2001)	
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), 2nd edition (June 2002)	**ISO/IEC DIS 17592**
ECMA-331	Case for 120 mm and 80 mm DVD-RAM Disks (December 2001)	**ISO/IEC DIS 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 (December 2001)	**ISO/IEC 23290** **TS 102 037**
ECMA-334	C# Language Specification, 2nd edition (December 2002)	**ISO/IEC 23270**
ECMA-335	Common Language Infrastructure (CLI), 2nd edition (December 2002)	**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 DIS 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 (December 2002)	**ISO/IEC DIS 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 DIS 17342**
ECMA-339	Corporate Telecommunication Networks – Signalling Interworking between QSIG and SIP – Basic Services (December 2002)	**ISO/IEC DIS 17343**
ECMA-340	Near Field Communication - Interface and Protocol (NFCIP-1) (December 2002)	**ISO/IEC DIS 18092**
ECMA-341	Environmental design considerations for electronic products (December 2002)	
ECMA-342	RapidIO™ Interconnect Specification (February 2003)	**ISO/IEC DIS 18372**

TECHNICAL REPORTS

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)

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)

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 Product-related Environmental Attributes, 2nd edition (June 1999)

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)

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)

ECMA TR/76 Private Integrated Services Network (PISN) - Architecture and Scenarios for Private Integrated Services Networking (December 1999)

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)

ECMA TR/82 Scenarios for Computer Supported Telecommunications Applications (CSTA) Phase III (December 2000)

ECMA TR/83 One Standard - One Test, Supplier's Declaration of Conformity (11SDoC) - Scorecard objectives and concept (June 2001)

ECMA TR/84 Technical Report on CLI, 2nd edition (December 2002)

ECMA TR/85 Using ECMA-323 (CSTA XML) in a Voice Browser Environment (December 2002)

LIST OF REPRESENTATIVES

NOT FOR PUBLIC RELEASE

Kindly note that the Ecma memento pages containing the contact details of the representatives have been intentionally removed.

Art. 1

CONSTITUTION AND HEAD OFFICE

1.1
ECMA, an international industry association based in Europe, 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)

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 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.

3.3
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.

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
NFP members

3.11.1
NFP membership may be applied for by a non-profit-making organization.

3.11.2
The rights of NFP members are identical with those of associate members as specified in Art. 3.9.

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 fiscal 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.

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

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. 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. 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. Only representatives of ordinary members can be nominated. 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. Only representatives of ordinary members can be nominated.

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, 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.

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.

5.2
The members and the Chairman of the Co-ordinating Committee shall be individuals elected for one year at a General Assembly by the ordinary members. 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.

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
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.

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.

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.

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

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

1.

POLICY

General Declaration:
The General Assembly of ECMA shall not approve recommendations of Standards which are covered by patents when such patents will not be licensed by their owners on a reasonable and non-discriminatory basis.

1.1
In case the proposed Standard is covered by issued patents of ECMA members only:
Members of the General Assembly are asked to state the Company licensing policy with respect to these patents.

1.2
In case the proposed Standard is covered by issued patents by non ECMA members: A written statement from the patentee is required, according to which he is prepared to grant licences on a reasonable, non-discriminatory basis.
The General Assembly and/or the Management shall decide in this case which steps must be undertaken in order to obtain such a statement.

1.3
In case the proposed Standard is covered by patent applications of ECMA members (which is not known, neither during the work of the TC nor at the time of the vote in the General Assembly):

1.3.1
Each member of the TCs and/or of the General Assembly of ECMA will determine whether any proposed standard may be covered by any patent for which his company has a pending application; if such a patent application exists, his continued participation to the relevant committee will imply that such a patent, when obtained later, will be made available from his company for licensing on a reasonable, non-discriminatory basis.

1.3.2
Each member of the TCs and/or of the General Assembly of ECMA will determine whether any proposed standard may be covered by any patent for which his company has a pending application; if such a patent application exists, the favourable vote of the Company to the General Assembly will imply that such a patent, when obtained later, will be made available from his company for licensing on a reasonable, non-discriminatory basis.

1.4
In case the proposed Standard is covered by patent applications of third parties (which is not known during the work of the TC nor at the time of the vote in the General Assembly):
In this case practically nothing can be done at the time of the vote. When afterwards said patents are issued, it should be tried to obtain reasonable, non-discriminatory licences. If this proves to be impossible, the standard will have to be cancelled.

2.
PROCEDURE

2.1
The questions related to protective rights are in the competence of the General Assembly of ECMA and should not be discussed at the TC level.

2.2
Each draft standard shall be submitted two months ahead of a General Assembly. All members are required to state no less than 2 weeks before the GA or the end of the postal voting period whether they claim any issued protective rights covering the subject matter of the proposed standard and/or have knowledge of such rights of third parties.

2.3
Replies to this request will be circulated in due time before the General Assembly.

2.4
When an answer is not received from a Company, the General Assembly may proceed to a vote on the assumption that this Company will act in accordance with the General Declaration, that is to license possible relevant issued patents on a reasonable and non-discriminatory basis.

Withdrawn ECMA Standards (Blue cover)

(no longer available)

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)	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)	
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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 (August 1979)	
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
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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
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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
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ECMA-86	Generic Data Presentation - Services Description and Protocol Definition (March 1983)	ISO/IEC 8822
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ECMA-89	Local Area Networks - Token Ring Technique, 2nd edition (March 1985)	ISO/IEC 8802-5
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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
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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)	

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Withdrawn ECMA Technical Reports (White cover)

(no longer available)

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)
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ECMA TR/19	Local Area Networks - Safety Requirements (March 1984)
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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/24	Interface between Data Processing Equipment and Private Automatic Branch Exchange (March 1985)
ECMA TR/23	Electrostatic Discharge Susceptibility (September 1984)
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)

ECMA TR/34	Maintenance at the Interface Between Data Processing Equipment and Private Switching Network (June 1986)
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)
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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)

HISTORY OF ECMA

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, 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. In 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 international activities of the ECMA organization the name was changed in 1994 to: ECMA International – An industrial association for the standardization of information and communication systems.

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