

Memento 2009

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Memento

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* Often called Ecma, or ECMA (in the past), short for Ecma International.

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 of information technology, telecommunications and consumer electronics are getting more and more integrated.

Open Systems and Distributed Networks based on worldwide 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.

From 1961 until 1994, ECMA (European Computer Manufacturers Association), then Ecma International (Ecma, for short) has actively contributed to worldwide standardization in information technology, communications and consumer electronics (ICT and CE). More than 380 Ecma Standards and 90 Technical Reports of high quality have been published.

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

- XML Paper Specification
- Universal 3D (U3D)
- Holographic Information Storage Systems (HISS)
- Office Open XML Formats
- High Capacity Storage Media
- Platform Independent Programming and Scripting Languages
- Computer Telephony Integration
- IP-based Services for Corporate Networks and Web Services
- Near Field Communication (NFC)
- Multimedia
- Environmental Conscious Design
- Hazard-based product Safety
- Acoustics, EMC and EMF
- UWB and 60 GHz Wireless Communication

Standardization provides the means for economical solutions for complex technologies. Moreover, it is most effective if it is performed in a pre-competitive 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 has established formal liaisons with European and international standardization bodies.

The liaison with ISO, and in particular the A-liaison with ISO/IEC JTC 1 (and its predecessor TC97) goes back to 1961. This fruitful co-operation led in 1987 to the acceptance of the Fast-Track procedure by ISO (and IEC) on a proposal by Ecma. Since then, Ecma submitted over 36 % of all 530 Fast-Track proposals, only three of which failed to become an international de jure standard. Currently 445 Ecma Standards are valid ISO (and IEC) standards.

Ecma also allies the agility of consortia with the quality of the de jure standardization organizations. By combining its efficient infrastructure and proven flexible working methods with the well-established formal liaisons on International and European level, Ecma thus ensures its strong position in the area of ICT and CE standardization.

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 worldwide implementation.

The President, Geneva, January 2009.

Purpose and Membership

The Purpose of Ecma International is:

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

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

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

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

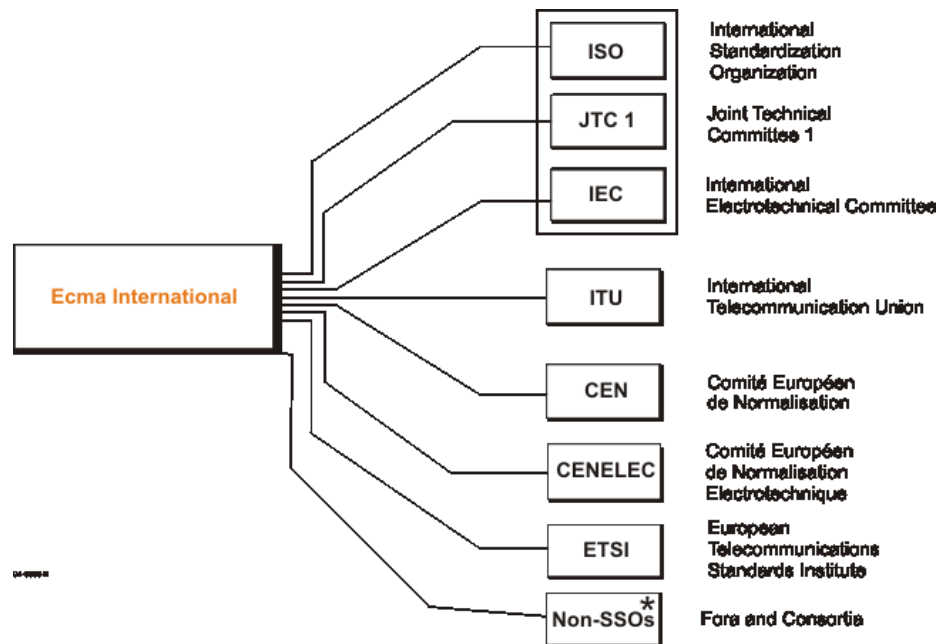
A company which has similar interests as an associate member and an annual, global turnover of less than one hundred million Swiss Francs, may be admitted as SME member (Small and Medium-sized Enterprise).

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

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

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

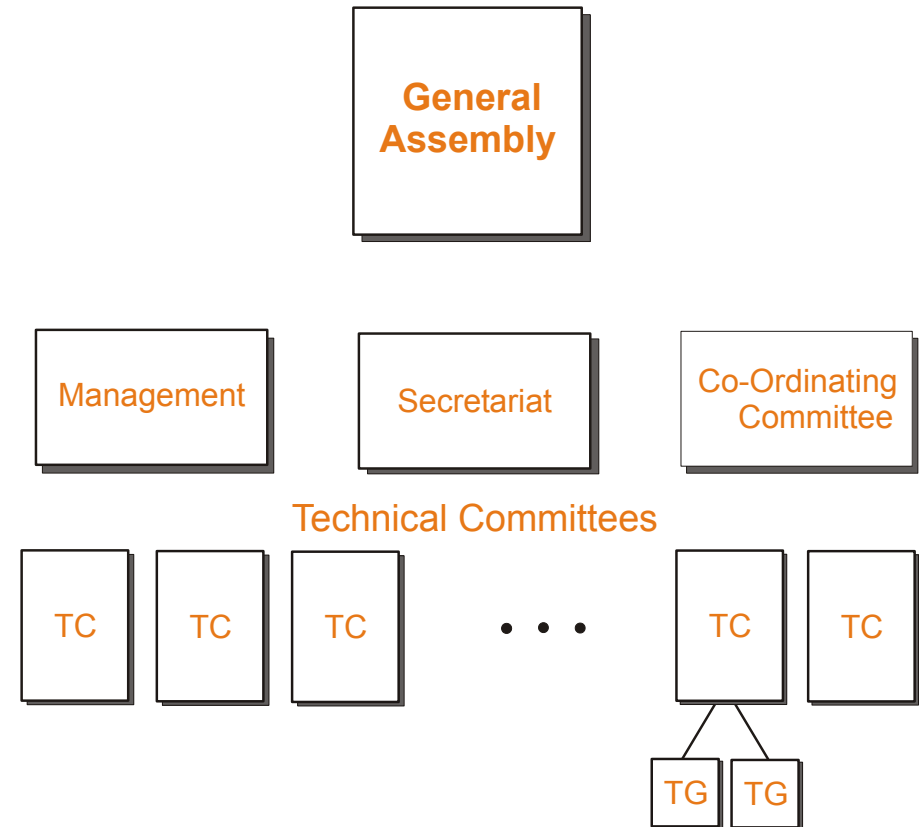
Ecma's role in International Standardization



* SSO – Standard Setting Organizations

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

Organization of Ecma International*



94-0007-A

* Often called Ecma short for Ecma International.

Management

President

Dr. P. Weijenbergh
(Philips)

Vice-President Mr. J. Neumann (Toshiba)	Treasurer Mr. H. Theis (Avaya)
--	---

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Dr. I. Sebestyen

Deputy Secretary General

Mr. O. Elzinga

Mrs. D. Chiamonte

Mr. P. Charollais

Mrs. I. Walch

Co-Ordinating Committee

Chair

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Mr. K. Brookes (Sony)

Mr. K. Fisher (Intel)

Mr. D. McAllister (Adobe)

Mrs. I. Valet-Harper (Microsoft)

Mr. K. Yamashita (Hitachi)

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alternate: Mr. D. Smith

Apple Mr. E. Vangala
alternate: Mr. K. Lau

Autodesk Mr. S. Gupta

Avaya Mr. H. Theis

Axa Rosenberg Mr. T.D. Mead

Boeing Mr. S.A. Galt

Brother Industries Mr. H. Mori

Canon Mr. K. Niwano

Ericsson Mr. T. Thyni

Fujitsu Mr. T. Igarashi
alternate: Mr. M. Sekiguchi

Fuji Xerox Mr. T. Tsuchiya

Global Graphics Mr. M. Bailey

Google Mr. W. Horwat
alternate: Ms Z. Bhorat

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

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

IBM Mr. M. Breidhardt

Ilink Mr. C. Gericke

Innovision Mr. K. Lamacraft

Intel Mr. K. Fisher
alternate: Mr. J.-L. Detrez

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

Lexmark Mr. D. Wright
alternate: Mr. D. Lewis

mental images Mr. R. Herken

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

Mitsubishi Electric Mr. K. Nakane

Monotype Imaging Mr. B. Silva

NEC Mr. H. Manabe

Novell Mr. M. de Icaza

NXP Mr. H. Dollee

Océ-Technologies Mr. H. van Heiningen

Opera Software Mr. C. Pine

Pagemark Mr. R.D. Porter

Panasonic Dr. H. Amir-Alikhani
alternate: Mr. N. Akahira

Philips Dr. P. Weijenbergh

Pioneer Mr. S. Taniguchi
alternate: Dr. O. Yamada

Plasmon Mr. R.J. Longman

QualityLogic Mr. J. Mater

Realtek Mr. L. Huang
alternate: Mr. A. Lee

Ricoh Mr. M. Takahashi

Right Hemisphere Mr. M. Pursey

Samsung Mr. C. Chaplin
alternate: Dr. E. Won

Siemens Dr. B. Hammer

Software Imaging Mr. J. Williams

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

Toshiba Mr. H. Satoh
alternate: Mr. J. Neumann

Xerox Dr. A. Rahgozar

Yahoo Mr. D. Crockford

Zoran Corporation Mr. M. Goldwater

Ordinary members

Adobe Systems Incorporated
345 Park Avenue
SAN JOSE, CA 95110-2704
USA

Avaya Inc.
211 Mount Airy Road
BASKING RIDGE, NJ 097920
USA

Canon Europa N.V.
Bovenkerkerweg 59-61
NL-1185 XB AMSTELVEEN
The Netherlands

Ericsson
Telefonplan
S-126 25 STOCKHOLM
Sweden

Fujitsu Ltd
Nikko Fudousan Bldg.
2-15-16, Shinyokohama
Kouhoku-ku
YOKOHAMA 222-0033
Japan

Google Inc.
1600 Amphitheatre Parkway
MOUNTAIN VIEW, CA 94043
USA

Hewlett-Packard S.A.
150 Route du Nant-d'Avril
CH-1217 MEYRIN 2
Switzerland

Hitachi Ltd
Hitachi Ohmori 2nd Bldg.
6-27 18 Minami-Oi, Shinagawa-ku
TOKYO 140
Japan

IBM Europe
Tour Pascal, Cedex 40
F-92075 PARIS LA DEFENSE
France

Intel, Europe, Middle East & Africa
Pipers Way
SWINDON SN3 1RJ
United Kingdom

Konica Minolta Holdings, Inc.
1-6-1 Marunouchi
Chiyoda-ku
TOKYO 100-0005
Japan

Lexmark International, Inc.
C14/082-3
740 New Circle Road
LEXINGTON, KY 40550
USA

Microsoft Corporation
One Microsoft Way
REDMOND, WA 98052
USA

Nederlandse Philips Bedrijven B.V.
P.O. Box 218
NL-5600 MD EINDHOVEN
The Netherlands

Pioneer Electronic Corp.
1-4-1, Meguro, Meguro-ku
TOKYO 153-8654
Japan

Samsung Electronics Co., Ltd
416 Maetan-3Dong, Paldal Gu
SUWON CITY
Kyungki-Do
Republic of Korea

Sony Europe GmbH
Kemperplatz 1
D-10785 BERLIN
Germany

Toshiba Europe (I.E.) GmbH
Hammfelddamm 8
D-4040 NEUSS 1
Germany

Xerox Corporation
800 Long Ridge Road
STAMFORD, CT 06904
USA

Yahoo, Inc.
701 First Avenue
SUNNYVALE, CA 94089
USA

Associate members

Apple Computer, Inc.
1 Infinite Loop
CUPERTINO, CA 95014
USA

Autodesk, Inc.
111 McInnis Parkway
SAN RAFAEL, CA 94903
USA

The Boeing Company
P.O. Box 3707
SEATTLE, WA 98124-2207
USA

Brother Industries, Ltd.
Printing & Solutions Company
1-1-1 Kawagishi, Mizuho-ku
NAGOYA, Aichi 467-8562
Japan

Fuji Xerox Co., Ltd.
9-7-3 Akasaka, Minato-ku
TOKYO 107-0052
Japan

Mitsubishi Electric Corp.
2-2-3, Marunouchi
Chiyoda-Ku
TOKYO 100-8310
Japan

Monotype Imaging, Inc.
500 Unicorn Park Drive
WOBURN, MA 01801
USA

NEC Europe Ltd.
NEC House, 1 Victoria Road
LONDON W3 6BL
United Kingdom

Novell Inc.
404 Wyman street
Suite 500
WALTHAM, MA 02451
USA

NXP B.V.
High Tech Campus 46
NL-5656 AG EINDHOVEN
The Netherlands

Océ-Technologies B.V.
P.O. Box 101
NL-5900 MA VENLO
The Netherlands

Panasonic Europe (Headquarters) Ltd.
West Forest Gate
Wellington Road
Wokingham
Berkshire RG40 2AQ
United Kingdom

Realtek Semiconductor Corp.
No. 2, Innovation Road II
Hsinchu Science Park
HSINCHU 300
Taiwan

Ricoh Company Ltd
3-2-3, Shin-yokohama
Kohoku-ku
YOKOHAMA 222-8530
Japan

Siemens Enterprise Communications GmbH
& Co. KG
Otto-Hahn-Ring 6
D-81730 MUNICH
Germany

Zoran Corporation
10, Presidential Way
WOBURN, MA 01801
USA

SME members

Axa Rosenberg
Barr Rosenberg Research Center LLC
4 Orinda Way, Building E
ORINDA, CA 94563
USA

Global Graphics Software Ltd
Building 2030
Cambourne Business Park
CAMBOURNE, CB23 6DW
United Kingdom

ilink Kommunikationssysteme GmbH
Münzstrasse 13
D-10178 BERLIN
Germany

Innovision Research and Technology PLC
Ash Court
23 Rose Street
WOKINGHAM, Berks RG40 1XS
United Kingdom

mental images GmbH
Fasanenstr. 81
D-10623 BERLIN
Germany

Opera Software ASA
Waldemar Thranes gate 98
NO-0175 OSLO
Norway

Pagemark Technology, Inc.
17317 NE 129 St
REDMOND, WA 98052
USA

Plasmon Plc
Melbourn
Whiting Way
Nr. ROYSTON SG8 6EN
United Kingdom

QualityLogic Inc.
5401 Tech Circle
MOORPARK, CA 93021
USA

Right Hemisphere Inc.
Level 3, Building C
The Millenium Centre
602 Gread South Road
Greenlane
AUCKLAND
New Zealand

Software Imaging Limited
9400 Garsington Road
Oxford Business Park
OXFORD OX4 2HN
United Kingdom

SPC members

NewLANS, Inc.
43 Nagog Park, Suite 200
ACTON, MA 01886
USA

Terra Novum, LLC
665 Lowell St.
LYNNFIELD, MA 01940
USA

Not-for-Profit members

Data Storage Institute, A *STAR, Singapore
5, Engineering Drive 1
SINGAPORE 117608
Singapore

Delft University of Technology
Faculty EEMCS
Dept Telecommunications / IRCTR
Mekelweg 4
NL-2628 CD DELFT
Netherlands

Dojo Foundation
530 Lytton Avenue
Second Floor, Suite 5301
PALO ALTO, CA 94301
USA

ETH Zürich
ETH Zentrum
Clausiusstr. 59
CH-8092 ZÜRICH
Switzerland

ETRI
161 Gajeong-Dong
Yuseong-gu
DAEJEON 305-700
Republic of Korea

Fraunhofer-Gesellschaft
Postfach 20 07 33
D-8007 MUNICH
Germany

Georgia Tech Research Corporation
505 10th Street
ATLANTA, GA 30332-0415
USA

IBBT
Gaston Crommenlaan 8 (bus 102)
B-9050 GENT
Belgium

Interuniversitair Micro-Electronica Centrum
vzw (IMEC)
Kapeldreef 75
B-3001 LEUVEN
Belgium

Indian Institute of Technology
Hauz Khas
NEW DELHI 110016
India

Ingénieurs du Monde
CP 510
CH-1219 CHATELAINE
Switzerland

Institute for Infocomm Research
21 Heng Mui Keng Terrace
SINGAPORE 119613
Singapore

IT&Telekomföretagen
Box 55545
SE-102 04 STOCKHOLM
Sweden

Kahu Research
15, Henridge Place
CHRISTCHURCH 8042
New Zealand

Korea University
Industry & Academy Collaboration
Foundation
Anam-dong
Seongbuk-gu
SEOUL 136-713
Republic of Korea

Lawrence Berkeley National Laboratory
(LBNL)
1 Cyclotron Road
Mail Stop 90R4000
BERKELEY, CA 94720
USA

Mozilla Foundation
543 Howard Street, 5th Floor
SAN FRANCISCO, CA 94105
USA

NICTA
Victoria Research Laboratory
Building 193
Grattan Street
The University of Melbourne
PARKVILLE, VIC 3010
Australia

Northeastern University
College of Computer and Information
Science
360 Huntington Avenue
MS: WVH 202
BOSTON, MA 02115
USA

Stanford University
Computer Science Department
476 Gates Building, Wing 4B
STANFORD, CA 94305-9045
USA

Stichting NLnet
Kruislaan 419
NL-1098 VA AMSTERDAM
The Netherlands

The British Library
96 Euston Road
LONDON NW1 2DB
United Kingdom

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

The Software Engineering Institute
Carnegie Mellon University
4500 Fifth Avenue
PITTSBURGH, PA 15213
United States

TNO Information and Communication
Technology
Brassenplein 2
P.O. Box 5050
NL-2600 OS DELFT
The Netherlands

UC Santa Cruz
Baskin School of Engineering
1156 High Street
SANTA CRUZ, CA 95064
USA

U.S. Department of Defense (DoD)
701 S. Courthouse Road
ARLINGTON, VA 22204-2199
USA

VCCI
Azabudai, Minato-ku
TOKYO 106-0041
Japan

Technical Committees

Active Committees

Product Safety	TC12
Electromagnetic Compatibility and Electromagnetic Fields (EMC & EMF)	TC20
Acoustics	TC26
Optical Disks and Disk Cartridges	TC31
Business Communications	TC32
Product-related Environmental Attributes	TC38
ECMAScript	TC39
Universal 3D (U3D)	TC43
Holographic Information Storage Systems (HISS) (dormant)	TC44
Office Open XML Formats	TC45
XML Paper Specification (XPS)	TC46
Near Field Communications	TC47
High Rate Short Range Wireless Communications	TC48
Programming Languages	TC49

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TC12 – Product Safety

Scope:

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

Programme of work:

1. To survey existing national and international standards and recommendations concerned with safety requirements.
2. To study the safety requirements associated with power control and distribution and establish recommendations where appropriate.
3. To consider short circuit and overcurrent protection, earthing, voltage exposure limits, mechanical design, etc., and establish recommendations where appropriate.
4. To develop principles and guidance to identify safeguards.
5. To investigate functional safety aspects.
6. TC20 handles EMF, which is a safety subject, because of their electromagnetic expertise.

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

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

Officers:

Chairman pro term

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Mr. K. Sato (IBM)
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Mr. S. Seng (HP)

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

Scope:

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

Programme of work:

1. To survey Electromagnetic Compatibility (EMC) and Electromagnetic Field (EMF) standards of ICT & CE equipment.
2. To establish measurement methods and limits for the electromagnetic emission and immunity of Information Communication Technology (ICT) & Consumer Electronics (CE) equipment.
3. To establish assessment methods and limits for electromagnetic fields from ICT & CE equipment to prevent excessive human exposure.
4. To maintain Ecma Standards and Technical Reports prepared by TC20.
5. To maintain liaison with other standards organisations dealing with EMC and EMF, to comment on their proposals and to present Ecma proposals.

Officers:

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Mr. J.H.C. van der Sanden (Philips)
Mr. H. Yokota (Hitachi)

TC26 – Acoustics

Scope:

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

Programme of work:

1. To categorize the acoustical environments in which information technology equipment is required to work.
2. To survey the various recommendations and requirements for the acoustical environments of these areas.
3. To make recommendations for standard methods of measuring and specifying the noise output of equipment, taking into account the work of ISO/TC43.
4. To consider any special requirements that may arise during non-standard operation, e.g. servicing.
5. To consider what information should be supplied by the manufacturer to facilitate optimum installation and to make recommendations.
6. To follow developments affecting acoustical environment in places of work.

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

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

Officers:

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Dr. E.K. Dunens (HP)

Vice-Chairman

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Mr. N. Watanabe (Konica Minolta)
Mr. J. Wong (Xerox)

TC31 – Optical Disks and Disk Cartridges

Scope:

To identify and develop the minimum number of standards necessary for data interchange and/or storage by means of digitally recorded optical disks and disk cartridges, and standards necessary for determining the life expectancy of such media.

Programme of work:

1. To develop standards for optical disks and disk cartridges of 60 mm, 80 mm, 90 mm, 120 mm (both CD and DVD), 130 mm, 300 mm and 356 mm.
2. To develop standards on methods for determining the life expectancy of digital storage media.
3. To assume responsibility for the maintenance of Ecma Standards prepared by TC31.
4. To monitor technological developments in the field of optical disks and disk cartridges.
5. To maintain liaison with other standards organizations in order to present Ecma proposals to them and to make comments to their proposals.

Officers:

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Vice-Chairman

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Members

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Mr. T. Ezaki (Sony)

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Mr. A.J. Jasionowski (Panasonic)
Mr. Y. Kadokawa (Ricoh)
Mr. O. Kawakubo (Sony)
Dr. K. Kime (Mitsubishi)
Mr. Jungwan Ko (Samsung)
Mr. K. Kobayashi (Ricoh)
Mr. R.J. Longman (Plasmon)
Mr. M. Maeda (Fujitsu)
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Mr. H. Nakayama (Sony)
Dr. T.J. Nelson (Panasonic)
Mr. J.G. Nijboer (Philips)
Mr. H. Ohsawa (Toshiba)
Mr. K. Okada (Panasonic)
Mr. T. Okanishi (Sony)
Mr. S. Oshima (Pioneer)
Mr. S. Sakamoto (Sony)
Mr. J.R. Sims, III (Intel)
Mr. C. Smith (Sony)
Mr. T. Sugaya (Toshiba)
Mr. M. Takahashi (Ricoh)
Mr. Y. Takayama (Sony)
Mr. N. Takeshita (Mitsubishi)
Mr. R. Tamura (Hitachi)
Mr. S. Taniguchi (Pioneer)
Mr. Y. Usami (Fuji Xerox)
Prof. A. Watanabe (Hitachi)
Mr. N. Yamaoka (Pioneer)

Mr. K. Yamashita (Hitachi)
Mr. F. Yokogawa (Pioneer)

TC32 – Business Communications

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 Co-operation 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).

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

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

Scope:

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

Programme of work:

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

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

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

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

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

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

6. To monitor and to contribute to the work of other international and European bodies studying matters related to

PISN/CN services (e.g. ISDN developments).

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

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

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TC32-TG17 – IP-based Multimedia Business Communications

Scope:

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

Programme of work:

1. To identify requirements for IP-based multimedia communication in a corporate network environment, including architectural, addressing, mobility, service, protocol, interworking, QoS, security and management aspects.
2. To co-operate with the responsible Task Groups, Technical Committees and other standardization bodies in order to achieve where necessary Standards or Technical Reports in these areas.
3. To adapt, where necessary, existing standards for narrowband and broadband PISNs to the requirements of IP-based multimedia communication in a business environment.
4. To develop, where necessary, standards for IP-based interoperation of corporate networks with other networks.
5. To promote a worldwide unique set of standards for IP-related multimedia communication in a business environment.
6. To co-ordinate liaison on related matters with ITU-T, ETSI, TIA, IETF, IMTC and ISO/IEC JTC 1.
7. To monitor, and contribute to, related work in other bodies.

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TC32-TG21 – Proxying Support for Sleep Modes

Scope:

Network proxying of ICT devices to reduce energy consumption

Programme of work:

1. To develop Standards and Technical Reports on proxying of ICT devices to maintain full network connectivity while hosts are in sleep mode.

2. To specify:

- the Internet protocols that network connectivity proxies must handle to maintain full connectivity while hosts are asleep;
- the proxy behaviour including ignoring packets, generating response packets and waking up host systems;
- the definition of messages exchanged between *hosts* and *proxies*.
Note: the message syntax and exchange methods for the signalling messages are out of scope.

3. To maintain their published work

4. To liaise and co-operate with other standards organisations including those dealing with network connectivity.

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TC38 – Product-Related Environmental Attributes

Scope:

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

Programme of work:

1. To develop recommendations, e.g. Standards, on environmental attributes and the presentation thereof for ICT and CE products.
2. To monitor the development of environmental standards, regulations, conformity schemes and other requirements related to ICT and CE products.
3. To promote and maintain Ecma Standards covering product-related environmental attributes. To comment on standards and regulations from outside organizations.
4. To establish and maintain close liaison with other organizations and other fora working in the same or similar fields of activity.

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TC38-TG1 – Chemical Emissions

Scope:

Chemical Emissions.

Programme of work:

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

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TC38-TG2 – Energy Efficiency

Scope:

Energy Efficiency.

Programme of work:

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

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TC38-TG3 – Environmental Declarations

Scope:

Environmental Declarations

Programme of work:

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

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TC39 – ECMAScript

Scope:

To standardize:

- the syntax and semantics of the general purpose, cross platform, vendor-neutral scripting language ECMAScript;
- ECMAScript for XML.

Programme of work:

1. To develop a standard for the dynamic scripting language ECMAScript.
2. To develop a standard set of language extensions to provide native XML support in ECMAScript.
3. To contribute the standards to ISO/IEC JTC 1.
4. To investigate the further direction of standards developed by TC39.
5. To evaluate and consider proposals for complementary or additional technology.

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TC43 – Universal 3D (U3D)

Scope:

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

Programme of work:

1. To standardize a Universal 3D extensible file format and infrastructure focused on the repurposing of 3D CAD data for non-engineering and non-design applications, e.g. training and visualization applications. Notable U3D features include binary encoding, domain-specific compression, continuous level of detail, progressive data representation, animation support, and extensibility to address evolving market needs.
2. To develop a usage and implementation strategy guide for users of U3D to be published as an Ecma Technical Report (TR).
3. To contribute the Ecma U3D standards to ISO/IEC JTC 1 for approval and adoption by ISO and IEC.
4. To establish and maintain liaison with other standards organizations in order to present Ecma U3D proposals to them and to make comments on their proposals.
5. Upon completion of items 1 - 3, to investigate the future direction of 3D standards, and to evaluate and consider proposals for complementary or additional technology, e.g. support for advanced physics based lighting and rendering applications.

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

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TC44 – Holographic Information Storage Systems (HISS) (dormant)

Scope:

To maintain an overall view and strategy for standardization in the field of holographic information storage systems, and to identify and develop Standards, Technical Reports and Guidelines in this field.

To monitor and pursue standardization at a global level with regard to ISO/IEC JTC 1 and the international standardization community in general, including but not limited to the AV/IT and computer interfaces community.

Programme of work:

1. To develop standards for media recorded by holographic means, based initially upon the Collinear Technologies for Holographic Versatile Disc - HVD, but not excluding other recording and multiplexing schemes for HVD.

This includes but is not limited to:

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

2. To study existing Ecma and ISO labelling / volume and file structure standards and, where necessary, initiate and pursue the development of volume and file structure standards for media recorded by holographic means and used in information interchange.

3. To develop guidelines for the archival life, testing, maintenance and handling of

media recorded by holographic means, and to specify end-of-life monitoring techniques, mechanisms and devices.

4. In the process of developing its standards, to facilitate collaboration between the holographic information storage development communities, including the SPIE and the broader IT community.

5. To contribute the standards to ISO/IEC JTC 1.

6. To monitor the revision of International Standards for Holographic Information Storage.

7. Upon completion of items under 1 and 2, to assume responsibility for the maintenance of the Ecma Standards.

8. Upon completion of item 5 and the publication of ISO/IEC Standards, to effectuate the maintenance of the ISO/IEC Standards.

9. To maintain liaison with appropriate other Ecma TCs and TGs and other holographic recording standards developing bodies, consortia, and fora.

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TC45 – Office Open XML Formats

Scope:

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

Programme of work:

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

This includes:

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

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

2. To contribute the Ecma Office Open XML Formats standards to ISO/IEC JTC 1

for approval and adoption by ISO and IEC.

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

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

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

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

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

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TC46 – XML Paper Specification (XPS)

Scope:

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

Programme of work:

1. Produce a formal standard for an XML-based electronic paper format and XML-based page description language which is consistent with existing implementations of the format called the XML Paper Specification, including:
 - produce a fully documented and unambiguous standard for an XML-based electronic paper format and page description language;
 - produce appropriate W3C XML Schemas to enable automatic verification of files written to the standard;
 - enable interoperability between existing industry implementations of applications, devices, tools and platforms.

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

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

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

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

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

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TC47 – Near Field Communications

Scope:

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

Programme of work:

1. To develop and maintain Standards and Technical Reports for Near Field Communication.
2. To cooperate and liaise with other organizations and standardization bodies, where appropriate, in particular with ISO/IEC JTC 1, to achieve and promote a unique worldwide set of standards in the area of Near Field Communication Systems.
3. To monitor NFC technology developments and to promote and support its use in suitable application areas.

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TC48 – High Rate Short Range Wireless Communications

Scope:

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

Programme of work:

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

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

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

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TC49 – Programming Languages

Scope:

To standardize:

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

Programme of work:

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

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TC49-TG2 – C#

Scope:

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

Programme of work:

1. Develop C# language standards.
2. Upon completion of item 1, to investigate the future direction of C# standards, and to evaluate and consider proposals for complementary or additional technology.
3. To establish and maintain liaison with other Ecma TCs and with other Standards Development Organizations (SDOs) as appropriate to facilitate and promulgate the work of the TG.

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TC49-TG3 – Common Language Infrastructure

Scope:

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

Programme of work:

1. Develop CLI standards including:

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

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

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

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TC49-TG4 – EIFFEL Language

Scope:

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

Programme of work:

1. Develop Eiffel language standards.
2. Upon completion of item 1, to investigate the future direction of Eiffel language standards, and to evaluate and consider proposals for complementary or additional technology.
3. To establish and maintain liaison with other Ecma TCs and with other Standards Development Organizations (SDOs) as

appropriate to facilitate and promulgate the work of the TG.

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Ecma Standards and corresponding International and European Standards

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- the ISO/IEC equivalent to the Ecma Standard which can be downloaded as freely available standard from ISO/IEC
http://isotc.iso.ch/livelink/livelink/fetch/2000/2489/Ittf_Home/PubliclyAvailableStandards.htm
- the ETSI equivalent to the Ecma Standard which can be downloaded as limitedly freely available publication from ETSI
<http://pda.etsi.org/pda/queryform.asp>

Legend:

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

The ETSI TS and TR are approved by the parent technical committee. The others deliverables are approved by the ETSI community. For more detailed information on ETSI deliverables, see the ETSI directives at: http://portal.etsi.org/Directives/directives_may_2008.pdf.

Ecma Standards in force (electronically available under <http://www.ecma-international.org/publications/standards/Standard.htm>)

ECMA-6	7-Bit Coded Character Set, 6 th edition (December 1991)	ISO/IEC 646
ECMA-13	File Structure and Labelling of Magnetic Tapes for Information Interchange, 4 th edition (December 1985)	ISO 1001
ECMA-35	Character Code Structure and Extension Techniques, 6 th edition (December 1994)	ISO/IEC 2022
ECMA-43	8-Bit Coded Character Set Structure and Rules 3 rd edition (December 1991)	ISO/IEC 4873
ECMA-48	Control Functions for Coded Character Sets 5 th edition (June 1991)	ISO/IEC 6429
ECMA-74	Measurement of Airborne Noise Emitted by Information Technology and Telecommunications Equipment, 10 th edition (December 2008)	ISO 7779
ECMA-94	8-Bit Single-Byte Coded Graphic Character Sets - Latin Alphabets No. 1 to No. 4, 2 nd 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 ftrpad 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 ftrpad on 80 Tracks on Each Side - ISO Type 301, 2 nd edition (December 1988)	ISO 8860
ECMA-106	Private Telecommunication Networks (PTN) - Signalling Protocol at the S Reference Point - Circuit Mode Basic Services (SSIG-BC), 3 rd edition (December 1993)	ETS 300 192
ECMA-107	Volume and File Structure of Disk Cartridges for Information Interchange, 2 nd edition (June 1995)	ISO/IEC 9293
ECMA-108	Measurement of High Frequency Noise emitted by Information Technology and Telecommunications Equipment, 4 th edition (December 2008)	ISO 9295
ECMA-109	Declared Noise Emission Values of Information Technology and Telecommunications Equipment, 4 th edition (December 1996)	ISO 9296
ECMA-113	8-Bit Single-Byte Coded Graphic Character Sets - Latin/Cyrillic Alphabet, 3 rd edition (December 1999)	ISO 8859-5

ECMA-114	8-Bit Single-Byte Coded Graphic Character Sets - Latin/Arabic Alphabet, 2 nd 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, 2 nd edition (December 1987)	ISO 9660
ECMA-120	Data Interchange on 12,7 mm 18-Track Magnetic Tape Cartridges, 3 rd edition (December 1993)	ISO 9661
ECMA-121	8-Bit Single-Byte Coded Graphic Character Sets - Latin/Hebrew Alphabet, 2 nd 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, 2 nd edition (December 1999)	ISO 8859-9
ECMA-130	Data Interchange on Read-only 120 mm Optical Data Disks (CD-ROM), 2 nd edition (June 1996)	ISO/IEC 10149
ECMA-133	Private Integrated Services Network (PISN) - Reference Configuration for PISN Exchanges (PINX), 2 nd 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), 3 rd 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), 4 th edition (December 2001)	ISO/IEC 11572 EN 300 172
ECMA-144	8-Bit Single-Byte Coded Character Sets - Latin Alphabet No. 6, 3 rd 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 ftrpad 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), 3 rd edition (June 1997)	ISO/IEC 14136 ETS 300 173
ECMA-149	Portable Common Tool Environment (PCTE) - Abstract Specification, 4 th 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, 2 nd 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, 2 nd 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, 2 nd edition (June 1994)	ISO/IEC 11560
ECMA-154	Data Interchange on 90 mm Optical Disk Cartridges, Read Only and Rewritable, M.O., 2 nd edition (June 1994)	ISO/IEC 10090
ECMA-155	Private Integrated Services Networks - Addressing, 2 nd 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), 2 nd edition (June 1993)	ETS 300 190
ECMA-157	Private Telecommunication Networks (PTN) - Signalling Protocol at the S Reference Point - Identification Supplementary Services (SSIG-ID), 2 nd edition (June 1993)	ETS 300 191
ECMA-158	Portable Common Tool Environment (PCTE) - C Programming Language Binding, 4 th 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, 2 nd 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), 2 nd edition (June 1993)	ETS 300 240
ECMA-162	Portable Common Tool Environment (PCTE) - Ada Programming Language Binding, 4 th 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), 3 rd 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), 4 th 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), 4 th 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, 3 rd edition (June 1997)	ISO/IEC 13346
ECMA-168	Volume and File Structure of Read-Only and Write-Once Compact Disk Media for Information Interchange, 2 nd 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), 3 rd 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), 3 rd 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), 3 rd 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), 4 th 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), 3 rd 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), 3 rd 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), 2 nd 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), 4 th 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), 2 nd 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), 4 th 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), 2 nd 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)), 4 th edition (December 2001)	ISO/IEC 14844 EN 300 364
ECMA-195	Data Interchange on 130 mm Optical Disk Cartridges - Capacity: 2 Gigabytes per Cartridge, 2 nd 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, 2 nd edition (June 1995)	ISO/IEC 13923
ECMA-201	Data Interchange on 90 mm Optical Disk Cartridges - Capacity: 230 Megabytes per Cartridge, 2 nd edition (December 1994)	ISO/IEC 13963
ECMA-202	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Call Intrusion Supplementary Service (CISD), 2 nd 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), 4 th 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, 2 nd 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), 3 rd 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), 3 rd 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), 3 rd 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), 3 rd 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, 2 nd edition (March 1996)	
ECMA-220	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Call Interception Additional Network Feature (ANF-CINTSD), 3 rd 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), 3 rd 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), 2 nd 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), 2 nd 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), 2 nd 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), 4 th 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), 4 th 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), 2 nd 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), 2 nd 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, 2 nd edition (June 1998)	ISO/IEC 15780
ECMA-247	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - HH-1 Format, 2 nd edition (June 1998)	ISO/IEC 15718
ECMA-248	12,65 mm Wide Magnetic Tape Cassette for Information Interchange - Helical Scan Recording - DTF-1 Format, 2 nd edition (June 1998)	ISO/IEC 15731
ECMA-249	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - DA-2 Format, 2 nd 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), 2 nd 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), 3 rd 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), 2 nd 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), 2 nd 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, 3 rd 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), 3 rd 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)), 3 rd 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, 3 rd edition (April 2001)	ISO/IEC 16448
ECMA-268	80 mm DVD - Read-Only Disk, 3 rd edition (April 2001)	ISO/IEC 16449

ECMA-269	Services for Computer Supported Telecommunications Applications (CSTA) Phase III, 7 th edition (December 2006)	ISO/IEC 18051 TS 102 173
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), 2 nd edition (December 1999)	
ECMA-272	120 mm DVD Rewritable Disk (DVD-RAM), 2 nd 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, 2 nd edition (June 1999)	ISO/IEC 16969
ECMA-275	Measurement of Structure-borne Vibration induced by Small Air Moving Devices (AMDs), 2 nd edition (December 2002)	
ECMA-276	Private Integrated Services Network (PISN) - Reference Configuration for PINX Extension Lines (June 1998)	ISO/IEC 11579-3
ECMA-277	Private Integrated Services Network (PISN) - Circuit Emulation Specification - Emulation of Basic Access by ATM Networks (June 1998)	
ECMA-278	Data Interchange on 12,7 mm 128-Track Magnetic Tape Cartridge - Parallel Serpentine Format, 2 nd 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), 3 rd 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), 3 rd 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), 2 nd 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), 3 rd edition (December 2001)	ISO/IEC 17878 EN 301 810
ECMA-285	Protocol for Computer Supported Telecommunications Applications (CSTA) Phase III, 2 nd edition (June 2000)	ISO/IEC 18052
ECMA-286	Data Interchange on 12,7 mm 208-Track Magnetic Tape Cartridges - DLT 6 Format, 2 nd edition (June 2000)	ISO/IEC 16382
ECMA-287	Safety of electronic equipment, 2 nd 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), 2 nd 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), 2 nd edition (December 2001)	ISO/IEC 19459 EN 301 918
ECMA-300	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Single Step Call Transfer Supplementary Service (QSIG-SSCT), 2 nd edition (December 2001)	ISO/IEC 19460 EN 301 919
ECMA-301	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Wireless Terminal Location Registration Supplementary Service and Wireless Terminal Information Exchange Additional Network Feature (WTMLR-SD) (June 2000)	ISO/IEC 15428 EN 301 824
ECMA-302	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Wireless Terminal Location Registration Supplementary Service and Wireless Terminal Information Exchange Additional Network Feature (QSIG-WTMLR), 2 nd edition (December 2001)	ISO/IEC 15429 EN 301 825
ECMA-303	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Wireless Terminal Call Handling Additional Network Features (WTMCH-SD) (June 2000)	ISO/IEC 15430 EN 301 826

ECMA-304	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Wireless Terminal Call Handling Additional Network Features (QSIG-WTMCH), 2 nd edition (December 2001)	ISO/IEC 15431 EN 301 827
ECMA-305	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Wireless Terminal Authentication Supplementary Services (WTMAU-SD) (June 2000)	ISO/IEC 15432 EN 301 828
ECMA-306	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Wireless Terminal Authentication Supplementary Services (QSIG-WTMAU), 2 nd edition (December 2001)	ISO/IEC 15433 EN 301 829
ECMA-307	Corporate Telecommunication Networks - Signalling Interworking between QSIG and H.323 - Generic Functional Protocol for the Support of Supplementary Services (June 2000)	ISO/IEC 21409 TS 101 905
ECMA-308	Corporate Telecommunication Networks - Signalling Interworking between QSIG and H.323 - Call Transfer Supplementary Services, 2 nd 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, 2 nd edition (June 2001)	ISO/IEC 21411 TS 101 906
ECMA-310	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Simple Dialog Supplementary Service (SDSD) (June 2000)	ISO/IEC 21407 EN 301 920
ECMA-311	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Simple Dialog Supplementary Service (QSIG-SD), 2 nd edition (December 2001)	ISO/IEC 21408 EN 301 921
ECMA-312	Private Integrated Services Network (in PISN) - Profile Standard for the Use of PSS1 (QSIG) Air Traffic Services Networks, 3 rd edition (June 2003)	EN 301 846
ECMA-313	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Call Identification and Call Linkage Additional Network Feature (CIDLSD) (September 2000)	ISO/IEC 21888 EN 301 922
ECMA-314	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Call Identification and Call Linkage Additional Network Feature (QSIG-CIDL), 2 nd edition (December 2001)	ISO/IEC 21889 EN 301 923

ECMA-315	12,65 mm Wide Magnetic Tape Cassette for Information Interchange - Helical Scan Recording - DTF-2 (December 2000)	ISO/IEC 20061
ECMA-316	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - VXA-1 Format, 2 nd 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, 4 th edition (December 2006)	ISO/IEC 18056 TS 102 174
ECMA-324	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Short Message Service (SMSSD) (June 2001)	ISO/IEC 21989 TS 101 990
ECMA-325	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Short Message Service (QSIG-SMS) (June 2001)	ISO/IEC 21990 TS 101 991
ECMA-326	Corporate Telecommunication Networks - Signalling Interworking between QSIG and H.323 - Call Completion Supplementary Services (June 2001)	ISO/IEC 21991 TS 101 989
ECMA-327	ECMAScript 3 rd edition Compact Profile (June 2001)	
ECMA-328	Determination of Chemical Emission Rates from Electronic Equipment, 3 rd edition (June 2007)	ISO/IEC 28360
ECMA-329	8 mm Wide Magnetic Tape Cartridge for Information Interchange - Helical Scan Recording - AIT-3 Format (December 2001)	ISO/IEC 23651

ECMA-330	120 mm (4,7 Gbytes per side) and 80 mm (1,46 Gbytes per side) DVD Rewritable Disk (DVD-RAM), 3 rd edition (June 2005)	ISO/IEC 17592
ECMA-331	Cases for 120 mm and 80 mm DVD-RAM Disks, 2 nd edition (June 2004)	ISO/IEC 17594
ECMA-332	Corporate Telecommunication Networks - Signalling Interworking between QSIG and H.323 - Basic Services (December 2001)	ISO/IEC 23289 TS 102 036
ECMA-333	Private Integrated Services Network (PISN) - Mapping Functions for the Tunnelling of QSIG through H.323 Networks, 2 nd edition (December 2003)	ISO/IEC 23290 TS 102 037
ECMA-334	C# Language Specification, 4 th edition (June 2006)	ISO/IEC 23270
ECMA-335	Common Language Infrastructure (CLI), 4 th edition (June 2006)	ISO/IEC 23271
ECMA-336	Private Integrated Services Network (PISN) - Mapping Functions for the Tunnelling of QSIG through IP Networks (Mapping/IP-QSIG) (June 2002)	ISO/IEC 21992 TS 102 075
ECMA-337	Data Interchange on 120 mm and 80 mm Optical Disk using +RW Format - Capacity: 4,7 and 1,46 Gbytes per Side (Recording speed up to 4X), 4 th edition (June 2008)	ISO/IEC 17341
ECMA-338	80 mm (1,46 Gbytes per side) and 120 mm (4,70 Gbytes per side) DVD Re-recordable Disk (DVD-RW) (December 2002)	ISO/IEC 17342
ECMA-339	Corporate Telecommunication Networks - Signalling Interworking between QSIG and SIP - Basic Services, 2 nd edition (December 2006)	ISO/IEC 17343 TS 102 166
ECMA-340	Near Field Communication - Interface and Protocol (NFCIP-1), 2 nd edition (December 2004)	ISO/IEC 18092 TS 102 190
ECMA-341	Environmental Design Considerations for ICT & CE Products, 3 rd edition (June 2008)	
ECMA-342	RapidIO™ Interconnect Specification (February 2003)	ISO/IEC 18372
ECMA-343	Private Integrated Services Network (PISN) - Specification, Functional Model and Information Flows - Make Call Request Supplementary Service (MCRSD) (June 2003)	ISO/IEC 20113 TS 102 253
ECMA-344	Private Integrated Services Network (PISN) - Inter-Exchange Signalling Protocol - Make Call Request Supplementary Service (QSIG-MCR) (June 2003)	ISO/IEC 20114 TS 102 254

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

ECMA-359	80 mm (1,46 Gbytes per side) and 120 mm (4,70 Gbytes per side) DVD Recordable Disk (DVD-R) (December 2004)	ISO/IEC 23912
ECMA-360	Corporate Telecommunication Networks - Signalling Interworking between QSIG and SIP - Call Diversion (December 2004)	ISO/IEC 23915 TS 102 393
ECMA-361	Corporate Telecommunication Networks - Signalling Interworking between QSIG and SIP - Call Transfer (December 2004)	ISO/IEC 23916 TS 102 392
ECMA-362	NFCIP-1 - Protocol Test Methods, 2 nd edition (December 2005)	ISO/IEC 23917 TS 102 394
ECMA-363	Universal 3D File Format, 4 th edition (June 2007)	
ECMA-364	Data interchange on 120 mm and 80 mm Optical Disk using +R DL Format – Capacity: 8,55 and 2,66 Gbytes per Side (Recording speed up to 8X), 3 rd edition (December 2007)	ISO/IEC 25434
ECMA-365	Data Interchange on 60 mm Read-Only ODC - Capacity: 1,8 Gbytes (UMD™) (June 2005)	ISO/IEC 25435
ECMA-366	WS-Session - Web Services for Application Session Services, 2 nd edition (June 2008)	ISO/IEC 25437 TS 102 440
ECMA-367	Eiffel: Analysis, Design and Programming Language, 2 nd edition (June 2006)	ISO/IEC 25436
ECMA-368	High Rate Ultra Wideband PHY and MAC Standard, 3 rd edition (December 2008)	ISO/IEC 26907 TS 102 455
ECMA-369	MAC-PHY Interface for ECMA-368, 3 rd edition (December 2008)	ISO/IEC 26908 TS 102 456
ECMA-370	TED -  THE ECO DECLARATION , 3 rd edition (December 2008)	
ECMA-371	Data Interchange on 120 mm and 80 mm Optical Disk using +RW HS Format - Capacity: 4,7 and 1,46 Gbytes per Side (Recording speed 8X), 2 nd edition (June 2008)	ISO/IEC 26925
ECMA-372	C++/CLI (December 2005)	
ECMA-373	Near Field Communication Wired Interface (NFC-WI) (June 2006)	ISO/IEC 28361 TS 102 541

ECMA-374	Data Interchange on 120 mm and 80 mm Optical Disk using +RW DL Format – Capacity: 8,55 and 2,66 Gbytes per Side (Recording speed 2,4X), 2 nd edition (June 2008)	ISO/IEC 29642
ECMA-375	Case for 120 mm HVD-ROM disk (December 2006)	
ECMA-376	Office Open XML File Formats, 2 nd edition (December 2008)	ISO/IEC 29500
ECMA-377	Information Interchange on Holographic Versatile Disc (HVD) Recordable Cartridges – Capacity: 200 Gbytes per Cartridge (May 2007)	
ECMA-378	Information Interchange on Read-Only Memory Holographic Versatile Disc (HVD-ROM) – Capacity: 100 Gbytes per disk (May 2007)	
ECMA-379	Test Method for the Estimation of the Archival Lifetime of Optical Media, 2 nd edition (December 2008)	ISO/IEC 10995
ECMA-380	Data Interchange on 130 mm Rewritable and Write Once Read Many Ultra Density Optical (UDO) Disk Cartridges – Capacity: 60 Gbytes per Cartridge – Second Generation (December 2007)	ISO/IEC 11976
ECMA-381	Procedure for the Registration of Assigned Numbers for ECMA-368 and ECMA-369 (December 2007)	
ECMA-382	120 mm (8,54 Gbytes per side) and 80 mm (2,66 Gbytes per side) DVD Recordable Disk for Dual Layer (DVD-R for DL) (June 2008)	ISO/IEC 12862
ECMA-383	Measuring Energy Consumption, Performance and Capabilities of ICT and CE Products (June 2008)	
ECMA-384	120 mm (8,54 Gbytes per side) and 80 mm (2,66 Gbytes per side) DVD Re-recordable Disk for Dual Layer (DVD-RW for DL) (December 2008)	ISO/IEC DIS 13170
ECMA-385	NFC-SEC: NFCIP-1 Security Services and Protocol (December 2008)	ISO/IEC DIS 13157
ECMA-386	NFC-SEC-01: NFC-SEC Cryptography Standard using ECDH and AES (December 2008)	ISO/IEC DIS 13158
ECMA-387	High Rate 60 GHz PHY, MAC and HDMI PAL (December 2008)	ISO/IEC DIS 13156

Technical Reports in force (electronically available under <http://www.ecma->

international.org/publications/techreports/techrep.htm)

ECMA TR/18	The Meaning of Conformance to Standards (September 1983)	
ECMA TR/27	Method for the Prediction of Installation Noise Levels, 2 nd 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, 2 nd edition (June 1992)	
ECMA TR/55	Reference Model for Frameworks of Software Engineering Environments, 3 rd edition (June 1993)	
ECMA TR/57	Private Integrated Services Networks, 2 nd edition (June 1999)	EG 201 463
ECMA TR/58	Databases and Networking (June 1992)	
ECMA TR/59	Object-Oriented Databases (June 1992)	
ECMA TR/61	User Interface Taxonomy (June 1992)	
ECMA TR/62	Product Noise Emission of Computer Business Equipment (June 1993)	
ECMA TR/64	Secure Information Processing versus the Context of Product Evaluation (December 1993)	
ECMA TR/66	Mapping of PCTE to the ECMA/NIST Frameworks Reference Model (June 1994)	
ECMA TR/67	Compendium of PTN Management Services (December 1994)	ETR 245
ECMA TR/68	Scenarios for Computer Supported Telecommunications Applications (CSTA) Phase II (December 1994)	
ECMA TR/69	Reference Model for Project Support Environments (December 1994)	

ECMA TR/70	Ecma Product-related Environmental Declaration, 3 rd edition (June 2004)	
ECMA TR/71	DVD Read-Only Disk - File System Specifications (February 1998)	
ECMA TR/72	Glossary of Definitions and Terminology for Computer Supported Telecommunications Applications (CSTA) Phase III, 3 rd edition (June 2000)	ISO/IEC TR 18053
ECMA TR/73	H.323 / B-ISDN Signalling Interoperability (December 1998)	
ECMA TR/74	A Guide to the Application of the EMC Directive to ITE (June 1999)	
ECMA TR/75	Corporate Telecommunication Networks (CN) - Standardization Plan, 2 nd edition (June 2000)	EG 201 017
ECMA TR/76	Private Integrated Services Network (PISN) - Architecture and Scenarios for Private Integrated Services Networking (December 1999)	ISO/IEC TR 14475
ECMA TR/77	Telephony System with Integrated Internet Access - Overview (December 1999)	
ECMA TR/78	ECMA Protection Profile - E-COFC Public Business Class (December 1999)	
ECMA TR/79	Private Integrated Services Network (PISN) - Wireless Terminal Mobility (WTM) - WTM between networks - Requirements (February 2000)	
ECMA TR/80	Migrating to CSTA Phase III (June 2000)	
ECMA TR/81	Interoperation of PISNs with IP Networks (September 2000)	ISO/IEC TR 21890 TR 101 913
ECMA TR/82	Scenarios for Computer Supported Telecommunications Applications (CSTA) Phase III (December 2000)	
ECMA TR/83	One Standard - One Test, Supplier's Declaration of Conformity (1SDoC) - Scorecard objectives and concept (June 2001)	
ECMA TR/84	Technical Report on CLI, 4 th edition (June 2006)	ISO/IEC TR 23272
ECMA TR/85	Using ECMA-323 (CSTA XML) in a Voice Browser Environment (December 2002)	ISO/IEC TR 18057 TR 102 171

ECMA TR/86	Corporate Telecommunication Networks - User Identification in a SIP/QSIG Environment (December 2003)	EG 202 303
ECMA TR/87	Using CSTA for SIP Phone User Agents (uaCSTA) (June 2004)	ISO/IEC TR 22767 TR 102 348
ECMA TR/88	Designing an Object Model for ECMA-269 (CSTA) (June 2004)	
ECMA TR/89	Common Language Infrastructure (CLI) - Common Generics, 2 nd edition (June 2006)	ISO/IEC TR 25438
ECMA TR/90	Session Management, Event Notification, and Computing Function Services - Amendments for ECMA-348 (December 2005)	
ECMA TR/91	Enterprise communication in next generation corporate networks (NGCN) involving public next generation networks (NGN) (December 2005)	ISO/IEC TR 26905 TR 102 478
ECMA TR/92	Corporate Telecommunication Networks – Mobility for Enterprise Communications (December 2005)	ISO/IEC TR 26927 TR 102 477
ECMA TR/93	Measuring Emissions from Modules (December 2007)	
ECMA TR/94	Assessment of the Human Exposure to Electromagnetic Fields for Low Power Electronic and Electrical Apparatus according to EN 50371:2002 (December 2007)	
ECMA TR/95	Next Generation Corporate Networks (NGCN) - General (June 2008)	ISO/IEC TR 12860
ECMA TR/96	Next Generation Corporate Networks (NGCN) - Identification and Routing (June 2008)	ISO/IEC TR 12861

Ecma By-laws

Art. 1

Constitution and Head Office

1.1

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

1.2

The Headquarters of the Association is in Geneva.

Art. 2

Purpose

2.1

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

2.2

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

Art. 3

Membership

3.1

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

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

- SPC members (Small Private Companies)

- b) NFPs (Not-For-Profit organizations)

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

3.2

- a) For non-SPC members:

A proposed company member shall not be accepted if it holds at least 50 per cent of the capital of an existing company member nor if at least 50 per cent of its capital is held by an existing company member.

- b) For SPC members:

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

3.3

- a) For non-SPC members:

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

- b) For SPC members:

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

3.4

Additional classes of Ecma members established according to Article 3.1 shall have such qualifications and be entitled to such rights and privileges and have such

obligations as shall be determined by the General Assembly with a two thirds majority of all the ordinary members.

3.5

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

3.6

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

3.7

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

3.8

Ordinary members

3.8.1

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

3.8.2

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

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

3.9

Associate members

3.9.1

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

3.9.2

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

3.9.3

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

3.10

SME Members

3.10.1

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

3.10.2

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

3.11

SPC members

3.11.1

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

3.11.2

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

1. An SPC member is only entitled to participate in one TC.
2. An SPC has no right to take part in the discussions at the General Assembly.
3. A project proposal made by SPC members shall be supported by at least three companies in other membership classes as well.

3.12 NFP members

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

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

Art. 4

Acceptance of a new Ecma member

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

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

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

Art. 5

Termination of Ecma membership

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

- Withdrawal by the company member:

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

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

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

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

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

5.3

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

5.4

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

5.5

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

Art. 6

Change of class of company membership

6.1

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

6.2

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

6.3

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

6.4

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

Art. 7

Structure

7.1

The Association shall consist of:

The General Assembly.

The Management.

The Co-ordinating Committee.

7.2

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

7.3

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

7.4

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

Ecma Rules

1.

Language

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

2.

System of measurement

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

3.

Representation of company members

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

4.

General Assemblies

4.1

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

4.2

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

4.3

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

5.

Co-ordinating Committee

5.1

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

5.1.1

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

5.1.2

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

5.1.3

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

5.1.4

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

5.1.5

To make recommendations to the disbandment of Technical Committees.

5.1.6

To provide assistance to the Management as and when required.

5.2

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

SPC members: Five percent of the full nominal fee

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

8.2

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

Existing members as of the last day of the current fiscal year continue as members of the same class as of the first day of and throughout the following fiscal year,

unless a change of the membership category has been approved (see 8.5).

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

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

8.3

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

8.4

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

8.5

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

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

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

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

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

9.

Operating expenses

9.1

Operating expenses of the Association shall consist of salaries, travel and office

expenses of the Secretariat and publication costs.

9.2

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

9.3

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

9.4

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

Code of Conduct in Patent Matters

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 and Technical Reports

Withdrawn Ecma Standards

(not in force, only electronically available <http://www.ecma-international.org/publications/standards/Standardwithdrawn.htm>)

ECMA-1	6 Bit Input/Output Character Code (March 1963)	
ECMA-2	Subset of ALGOL 60 - ECMALGOL	
ECMA-3	CMC7 Printed Image Specification, 2 nd edition (September 1966)	ISO 1004
ECMA-4	Flow Charts, 2 nd edition (September 1966)	ISO 1028
ECMA-5	Data Interchange on 7 Track Magnetic Tape, 3 rd edition (June 1970)	
ECMA-7	7 Bit Code in Punched Cards (April 1965)	ISO 1113
ECMA-8	Nominal Character Dimensions of the Numeric OCR-A Font, 2 nd edition (January 1977)	ISO 1973-1
ECMA-9	FORTTRAN (April 1965)	ISO/IEC 1539
ECMA-10	Data Interchange on Punched Tape, 2 nd edition (July 1970)	ISO 1113
ECMA-11	Alphanumeric Character Set OCR-B for Optical Recognition, 3 rd edition (March 1976)	ISO 1073-2
ECMA-12	Data Interchange on 9-Track Magnetic Tape at 32 bits per mm (800 bpi), 2 nd 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, 2 nd edition (August 1975)	ISO 1831
ECMA-16	Basic Mode Control Procedures for Data Communication Systems using the ECMA 7-Bit Code, 2 nd 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, 2 nd 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, 2 nd 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, 2 nd 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), 3 rd 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, 3 rd 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, 2 nd edition (August 1979)	ISO/IEC 4335
ECMA-50	Programming Language PL/1 (December 1976)	ISO 6160
ECMA-51	Implementation of the Numeric OCR-A Font with 9x9 Matrix Printers (January 1977)	
ECMA-52	Magnetic 12-Disk Packs (200 Mbytes) (September 1977)	
ECMA-53	Representation of Source Programs for Program Interchange - APL, COBOL, FORTRAN, Minimal BASIC and PL/1 (January 1978)	ISO 5653
ECMA-54	Data Interchange on 200 mm Flexible Disk Cartridges using Two-Frequency Recording at 13 262 ftprad on One Side, 2 nd 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, 2 nd edition (September 1981)	
ECMA-58	Flexible Disk Cartridge Labelling and File Structure for Information Interchange, 2 nd edition (January 1981)	
ECMA-59	Data Interchange on 200 mm Flexible Disk Cartridges using Two-Frequency Recording at 13 262 ftprad on Both Sides (August 1979)	ISO 5654-1
ECMA-60	HDLC-Unbalanced Class of Procedure (August 1979)	ISO/IEC 7809
ECMA-61	HDLC-Balanced Class of Procedure (August 1979)	ISO/IEC 7809
ECMA-62	Data Interchange on 12,7 mm 9-Track Magnetic Tape - 32 ftpmm, NRZ1, 32 cpmm - 126 ftpmm, Phase Encoding, 63 cpmm - 356 ftpmm, NRZ1, 246 cpmm GCR, 2 nd 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, 2 nd 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, 2 nd edition (June 1986)	ISO 7487
ECMA-71	HDLC Selected Procedures (January 1981)	ISO/IEC 3309 & 4335

ECMA-72	Transport Protocol, 3 rd edition (March 1985)	ISO/IEC 8073
ECMA-73	Magnetic Disk for Data Storage Devices 95 840 Flux Transitions per Track, 200 mm Outer Diameter, 63,5 mm Inner Diameter, 2 nd edition (September 1982)	ISO 7297
ECMA-75	Session Protocol (January 1982)	ISO 8327
ECMA-76	Magnetic Disk for Data Storage Devices, 158 000 Flux Transitions per Track, 210 mm Outer Diameter, 100 mm Inner Diameter (September 1982)	ISO 7298
ECMA-77	Magnetic Disk for Data Storage Devices, 83 000 Flux Transitions per Track, 130 mm Outer Diameter, 40 mm Inner Diameter (September 1982)	ISO 7929
ECMA-78	Data Interchange on 130 mm Flexible Disk Cartridges using MFM Recording at 7 958 ftprad on 80 Tracks on Each Side, 2 nd edition (June 1986)	ISO 8378
ECMA-79	Data Interchange on 6,30 mm Magnetic Tape Cartridge using IMFM Recording at 252 ftpmm, 2 nd edition (September 1985)	ISO 8063
ECMA-80	Local Area Networks (CSMA/CD Baseband) Coaxial Cable System, 2 nd edition (March 1984)	
ECMA-81	Local Area Networks (CSMA/CD Baseband) Physical Layer, 2 nd edition (March 1984)	ISO/IEC 8802-3
ECMA-82	Local Area Networks (CSMA/CD Baseband) Link Layer, 2 nd edition (March 1984)	ISO/IEC 8802-3
ECMA-83	Safety Requirements for DTE-to-DCE Interface in Public Data Networks, 2 nd edition (September 1985)	
ECMA-84	Data Presentation Protocol (September 1982)	ISO/IEC 8823-1
ECMA-85	Virtual File Protocol (September 1982)	
ECMA-86	Generic Data Presentation - Services Description and Protocol Definition (March 1983)	ISO/IEC 8822
ECMA-87	Generic Virtual Terminal - Service and Protocol Description (March 1983)	ISO 9040
ECMA-88	Basic Class Virtual Terminal - Service Description and Protocol Definition (March 1983)	ISO 9040 & 9041
ECMA-89	Local Area Networks - Token Ring Technique, 2 nd edition (March 1985)	ISO/IEC 8802-5
ECMA-90	Local Area Networks - Token Bus Technique (September 1983)	ISO/IEC 8802-4

ECMA-91	Flexible Disk Cartridges - File Structure and Labelling for Information Interchange (March 1984)	ISO 7665
ECMA-92	Connectionless Internetwork Protocol (March 1984)	
ECMA-93	Distributed Application for Message Interchange (MIDA) (September 1984)	
ECMA-95	Limits of Interference and Measurement Methods (March 1985)	
ECMA-96	Syntax of Graphical Data for Multiple-Workstation Interface (GDS) (September 1985)	
ECMA-97	Local Area Networks - Safety Requirements, 2 nd edition (December 1992)	
ECMA-98	Data Interchange on 6,30 mm Magnetic Tape Cartridge using NRZ1 Recording at 394 ftpmm - Streaming Mode (September 1985)	ISO 8462
ECMA-101	Open Document Architecture (ODA) and Interchange Format, 2 nd edition (December 1988)	ISO 8613
ECMA-102	Rate Adaptation for the Support of Synchronous and Asynchronous Equipment using the V. Series Type Interface on a PCSN, 2 nd edition (July 1987)	
ECMA-103	Physical Layer at the Basic Access Interface between Data Processing Equipment and Private Switching Networks, 2 nd edition (December 1987)	
ECMA-104	Physical Layer at the Primary Rate Access Interface between Data Processing Equipment and Private Switching Networks (September 1985)	
ECMA-105	Data Link Layer Protocol for the D-Channel of the Interfaces at the Reference Point between Terminal Equipment and Private Telecommunication Networks, 4 th edition (June 1993)	I-ETS 300 169
ECMA-110	Ergonomics - Requirements for Monochromatic Visual Display Devices (December 1985)	
ECMA-111	Small Computer System Interface – SCSI (December 1985)	
ECMA-112	X.25 (1980) Subnetwork-Dependent Convergence Protocol (December 1985)	
ECMA-115	Common Secondary Keyboard Layout for Languages using a Latin Alphabet (June 1986)	
ECMA-116	BASIC (June 1986)	

ECMA-117	Domain Specific Part of Network Layer Addresses (June 1986)	
ECMA-122	MIDA, Mailbox Service Description and Mailbox Access Protocol Specification (July 1987)	
ECMA-123	In Band Parameter Exchange in Private Pre-ISDN Networks using Standard ECMA-102, 2 nd edition (June 1990)	
ECMA-124	Designation of Unrecorded Flexible Disk Cartridges (December 1987)	
ECMA-126	Ergonomics - Requirements for Colour Visual Display Devices (December 1987)	
ECMA-127	Remote Procedure Call (RPC) using OSI, 2 nd edition (June 1990)	
ECMA-129	Information Technology Equipment - Safety, 2 nd edition (April 1994)	IEC 950
ECMA-131	Referenced Data Transfer (July 1988)	
ECMA-132	Method for Measuring Printer Throughput, 2 nd edition (June 1991)	ISO 10561
ECMA-134	Method for the Specification of Basic and Supplementary Services of Private Telecommunication Networks (April 1989)	ETS 300 387
ECMA-135	Scenarios for Interconnections Between Exchanges of Private Telecommunication Networks (April 1989)	
ECMA-136	Ergonomics - Requirements for Non-CRT Visual Display Units (June 1989)	
ECMA-137	Document Filing and Retrieval Application (December 1989)	ISO 10166
ECMA-138	Security in Open Systems - Data Elements and Service Definitions (December 1989)	
ECMA-140	Document Printing Application (DPA) (June 1990)	ISO/IEC 10175
ECMA-141	Private Telecommunication Networks (PTN) - Inter-Exchange Signalling - Data Link Layer Protocol (PTN QSIG-L2), 2 nd edition (June 1993)	I-ETS 300 170
ECMA-166	Information Technology Equipment - Routine Electrical Safety Testing in Production (June 1992)	EN 50116
ECMA-172	Procedure for Measurement of Emissions of Electric and Magnetic Fields from VDUs from 5 Hz to 400 kHz (June 1992)	

ECMA-181	Uncertainty of Measurement as Applied to Type Approval of Products (December 1992)	
ECMA-187	ODA-API - Application Profile Interface for Handling Compound Documents (June 1993)	
ECMA-199	Immunity of VDUs to Power Frequency Magnetic Fields (December 1993)	
ECMA-200	Immunity of Information Technology Equipment to Lightning Surges (December 1993)	
ECMA-204	Private Telecommunication Networks (PTN) - Inter-Exchange Signalling Protocol - Supplementary Service Interactions (QSIG-IA) (December 1993)	ETS 300 427
ECMA-215	Private Integrated Services Network (PISN) - Cordless Terminal Mobility (CTM) - Inter-Exchange Signalling Protocol - Cordless Terminal Incoming Call Additional Network Feature (QSIG-CTMI), 2 nd edition (September 1997)	ETS 300 696
ECMA-216	Private Integrated Services Network (PISN) - Cordless Terminal Mobility (CTM) - Inter-Exchange Signalling Protocol - Cordless Terminal Location Registration Supplementary Service (QSIG-CTLR), 2 nd edition (September 1997)	ETS 300 693
ECMA-227	Portable Common Tool Environment (PCTE) - Extensions for Support of Fine-Grain Objects - Abstract Specification (October 1995)	
ECMA-228	Portable Common Tool Environment (PCTE) - Extensions for support of Fine-Grain Objects - C Programming Language Binding (October 1995)	
ECMA-229	Portable Common Tool Environment (PCTE) - Extensions for Support of Fine-Grain Objects - Ada Programming Language Binding (October 1995)	
ECMA-233	Private Integrated Services Network (PISN) - Cordless Terminal Mobility (CTM) - Inter-Exchange Signalling Protocol - Cordless Terminal Outgoing Call Additional Network Feature (QSIG-CTMO), 2 nd edition (September 1997)	I-ETS 300 808
ECMA-237	Limits and Methods of Measurement of Immunity Characteristics of Information Technology Equipment (June 1996)	

ECMA-243	Private Integrated Services Network (PISN) - Cordless Terminal Mobility (CTM) - Inter-Exchange Signalling Protocol - Cordless Terminal Authentication Supplementary Services (QSIG-CTAU), 2 nd edition (September 1997)	I-ETS 300 809
ECMA-255	Portable Common Tool Environment (PCTE) - Object Orientation Extensions - Abstract Specification (December 1996)	
ECMA-256	Portable Common Tool Environment (PCTE) - Object Orientation Extensions - C Programming Language Binding (December 1996)	
ECMA-257	Portable Common Tool Environment (PCTE) - Object Orientation Extensions - Ada Programming Language Binding (December 1996)	

Withdrawn Ecma Technical Reports

((not in force, only electronically available <http://www.ecma-international.org/publications/techreports/TRwithdrawn.htm>)

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, 2 nd edition (January 1977)
ECMA TR/9	Safety Requirements for Data Processing Equipment (January 1978)
ECMA TR/10	Listing of Software Names, 2 nd 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)
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ECMA TR/15	Analysis of European X.25 Networks (September 1983)
ECMA TR/16	Interface Characteristics for a DTE to Operate with European Rec.X.25 Networks (September 1983)
ECMA TR/17	Permission to Connect - PTT Requirements for Obtaining Approval to Connect Apparatus to the Network (September 1983)
ECMA TR/19	Local Area Networks - Safety Requirements (March 1984)
ECMA TR/20	Layer 4 to 1 Addressing (March 1984)
ECMA TR/21	Local Area Networks - Interworking Units for Distributed Systems (March 1984)
ECMA TR/22	Ergonomics - Recommendations for VDU Work Places (March 1984)
ECMA TR/23	Electrostatic Discharge Susceptibility (September 1984)

ECMA TR/24	Interface between Data Processing Equipment and Private Automatic Branch Exchange (March 1985)
ECMA TR/25	OSI Sub-Network Interconnection Scenarios Permitted within the Framework of the ISO-OSI Reference Model (March 1985)
ECMA TR/26	Planning and Installation Guide for CSMA/CD 10 MBit/s Baseband Local Area Networks, 2 nd 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)
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ECMA TR/38	End System Routing (December 1986)
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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, 2 nd 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 Routing (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, 3 rd 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 International

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

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

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

Association and to draw up By-laws and Rules.

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

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

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

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

About the Ecma Mementos

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

The first Ecma Memento was published in 1962.

The current and old Ecma Mementos can be downloaded from http://www.ecma-international.org/publications/memento_index.htm.

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1963-1964

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1965-1966

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1969-1970

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1971-1972

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1992-2007
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