EUROPEAN COMPUTER MANUFACTURERS ASSOCIATION

ECMA

MEMENTO 1986

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Introduction

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 used on a computer made by another with the minimum of alteration. Also it would avoid duplication of work in the preparation of, for example, programming languages by several manufacturers.

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

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

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

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.

Purpose

The aims of the Association will be clear from the following extract from the By-Laws:

To study and develop, in co-operation with the appropriate national and international organizations, as a scientific endeavour and in the general interest, methods and procedures in order to facilitate and standardize the use of data processing systems.

To promulgate various standards applicable to the functional design and use of data processing equipment.

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

Membership

The Association shall consist of ordinary and associate members and such other classes of members as may be created by the ordinary members at a General Assembly.

Ordinary members shall be companies which in Europe develop, manufacture and market data processing machines or groups of machines used to process digital information for business, scientific, control or other similar purposes. Data processing machines used exclusively for military purposes shall not be considered to be included in the above machines.

Promulgation of Standards

Promulgation of standards by the Association shall require approval by at least two-thirds of all the ordinary members.

It is not obligatory for members to follow any standard.

ECMA Standards (see page 109) are made available without restriction to all interested parties. Indeed, the proposals are also intended to be drafts to be considered by other organizations, e.g. ISO, IEC, CCITT and the National Standards Organizations.

Officers

Management

President
Mr. **C. Rossetti**
(STET)

Vice-President
Mr. **J. Dubos**
(BULL)

Treasurer
Mr. **J. van den Beld**
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Executives

Secretary General
Mr. **D. Hekimi**

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Past Presidents

1961-1962 Mr. **C. G. Holland-Martin**	(ICT)	1975 Mr. **J. van Eybergen**	(Philips)
1963-1964 Prof. Dr. **J. Engelfriet**	(EL)	1976-1977 Mr. **W. Heimann**	(Siemens)
1965-1966 Mr. **M. R. Pedretti**	(IBM)	1978-1979 Mr. **M. H. Johnson**	(Ferranti)
1967-1968 Dr. **J. M. M. Pinkerton**	(ICL)	1980-1981 Mr. **J. van Eybergen**	(Philips)
1969-1970 Mr. **P. J. Davous**	(Bull)	1982-1983 Mr. **H. Feissel**	(Cii HB)
1971-1972 Dr. **K. Scheidhauer**	(AEG-Tfk)	1984-1985 Mr. **J. Scherpenhuizen**	(DEC)
1973-1974 Dr. **J. M. M. Pinkerton**	(ICL)		

Ordinary Members

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Other Organizations

Participation in the technical work of ECMA is open to experts from organizations not qualifying for membership, e.g. national institutes or user organizations (Art. 7.2 of the Rules). Such experts are considered as full members of the Technical Committees and as such, will be excercising voting rights.

Presently the following experts are participating in the work of ECMA.

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General Assembly

SCOPE:

The General Assembly is the highest authority of the Association. It controls the Association and appoints and controls its Management.

Apple	Mr. S. A. Roberts	NCR	Mr. S. Statt
AT&T	Mr. V. H. Bertine	Nixdorf	Dr. H. H. Hohmann
BASF	Dr. K. Uhl	Northern Telecom	Mr. J. Bhatt
BT	Dr. P.A. Trudgett		
BULL	Mr. J. Dubos alt. Mr. T. Holka	Océ-Nederland	Mr. M. C. Koning
		Olivetti	Mr. R. Sajeva
Burroughs	Mr. W. A. Borysiewicz	Philips	Mr. J. C. Balder alt. Mr. J. W. van den Beld
CASE	Mr. J. Salter		
CIT-ALCATEL	Mr. J. Ernest	Plessey	Mr. W. G. Harris alt. Mr. A. K. Oakley
Data General	Mrs. N. K. Araway		
DEC	Mr. J. Scherpenhuizen alt. Mr. G. Robinson	Prime	Mr. T. Wallace
		Rank Xerox	Mr. R. F. G. Linford
Ericsson	Mr. B. O. Malmberg	RPS	Mr. J. L. Jobart
Ferranti	Mr. M. H. Johnson alt. Mr. W. L. Robinson	Sagem	Mr. J. Racine
		Secoinsa	Mr. J. M. Moreno
Fujitsu	Mr. Y. Tajiri	Siemens	Mr. G. Haberzettl
GEC	Mr. C. W. H. Ellis	Sony	Mr. K. Imai
HP	Mr. D. Gann	Sperry	Mr. R. S. Ferguson
IBM	Mr. W. Brodbeck	STET	Dr. A. Gnetti alt. Mr. C. Rossetti
ICL	Mr. B. G. Millis alt. Mr. A. J. Raphael		
		Tandem	Mr. R. J. S. Smith
ITT	Mr. G. Robin	TeleNova	Mr. K. Katzeff
Kendall	Mr. J. V. Grignard	Thomson-CSF	Mr. D. Royer
Kodak	Mr. A. Huguenard		
Maxell	Mr. T. Inoue	3M	Dr. C. Bruschini
Mitsubishi	Mr. T. Goto	Wang	Mr. J. B. Fenn
		Xidex	Mr. J. Boivin

Co-Ordinating Committee

SCOPE:

To draw up Terms of Reference for the Technical Committees and to co-ordinate their activities. To make recommendations regarding the formation of new committees or the dissolution of old ones.

Chairman:	Mr. A. J. Raphael	(ICL)
MEMBERS:	Mr. W. Brodbeck	(IBM)
	Mr. G. Haberzettl	(Siemens)
	Dr. H. H. Hohmann	(Nixdorf)
	Mr. B. O. Malmberg	(Ericsson)
	Mr. J. Scherpenhuizen	(DEC)

Protection Rights Committee (PRC)

SCOPE:

To watch the legal situation as it affects the protection of computer programs, as it develops and to report and comment on the facts to the General Assembly.

Chairman:		
MEMBERS:	Miss M. Carlsson	(Ericsson)
	Mr. M. Colombe	(Bull)
	Mr. A. R. Cooper	(Ferranti)
	Mr. D. Double	(DEC)
	Mr. P. N. Evans	(IBM)
	Mr. J. E. M. Galama	(Philips)
	Mr. G. Kretzschmar	(Siemens)
	Dr. S. Ravera	(Olivetti)
	Mr. T. C. Siekman	(DEC)
	Mr. B. G. Suurmond	(Philips)

Technical Committees

Committees having accomplished their task

General Programming Languages	TC 2
Problem Analysis and Flow Charting	TC 3
Optical Character Recognition	TC 4
ALGOL	TC 5
COBOL	TC 6
Magnetic Ink Character Recognition	TC 7
FORTRAN	TC 8
Data Transmission	TC 9
PL/1	TC 10
Numerical Control	TC 11
Keyboards	TC 13
Paper Sizes	TC 14
Rigid Magnetic Disks	TC 16
I/O Interface	TC 18
Open Systems Interconnection	TC 23
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Technical Committees

Active committees

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TC 1 - Codes

SCOPE:

Definition of common character sets (including alphabets, digits, punctuation marks, special symbols and control functions) and their coded representation suitable for input/output media, data transmission and text communication in order to facilitate interchange of information between DP equipment. To define the implementation of codes on media.

PROGRAMME OF WORK:

1. Determination of common sets which shall take into account the European requirements for character, symbol and control function representations in data handling and programming, in accordance with computer and auxiliary equipment characteristics.
2. Consideration shall be given in defining the coded character sets to permit possible expansion and contraction.
3. To participate in the work of CCITT and ISO/TC 97 to develop a standard character set and coding for text communication.
4. To assume responsibility for the maintenance of the ECMA standards prepared by TC1.
5. To maintain liaison with TC29.
6. To maintain liaison with other standards organizations in order to present ECMA proposals to them and to make comments on their proposals.

OFFICERS:

Chairman:	Mr. **J. Dubos**	(Bull)
Vice-Chairman:	Mr. **J. Friemelt**	(Siemens)
MEMBERS:	Mrs. **P. Binder**	(HP)
	Mr. **W. F. Bohn**	(IBM)
	Mr. **A. Goodman**	(Tandem)
	Mr. **H. Khalil**	(Nixdorf)
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	Mr. **M. Musso**	(Olivetti)
	Mr. **J. B. Paterson**	(ICL)
	Mr. **D. Pearce**	(Burroughs)
	Mr. **B. Trocherie**	(Bull)
	Mr. **L. J. Zeckendorf**	(Philips)

TC 12 - Product Safety

SCOPE:

To consider national and international safety regulations with a view to establishing appropriate safety recommendations for Data Processing machines or units so that they are intrinsically safe and safe for operating and maintenance personnel.

PROGRAMME OF WORK:

1. To survey existing national and international standards and recommendations concerned with safety requirements.
2. To study the safety requirements associated with power control and distribution and establish recommendations where appropriate.
3. To consider short circuit and overcurrent protection, earthing, voltage exposure limits, mechanical design, etc., and establish recommendations where appropriate.
4. To assume responsibility for the maintenance of ECMA standards prepared by TC12.
5. To establish and maintain liaison with other standards organizations in order to present ECMA proposals to them and to make comments on their proposals.

OFFICERS:

Chairman:	Mr. T. Wentholt	(Rank Xerox)
Vice-Chairman:	Mr. R. S. Ferguson	(Sperry)

MEMBERS:

Mrs. N. K. Araway	(Data General)	Mr. L. Olsson	(Ericsson)
Mr. K. B. Barrett	(IBM)	Mr. D. Petrin	(Prime)
Mr. A. S. Fucci	(Data General)	Mr. S. A. Roberts	(Apple)
Mr. V. Galaske	(ITT)	Mr. R. Rummler	(3M)
Mr. M. Giesler	(Sperry)	Mr. J. Scherpenhuizen	(DEC)
Mr. C. Hagenbach	(Bull)	Mr. E. Smith	(ICL)
Mr. K. M. Harvey	(Ferranti)	Mr. R. J. Trigg	(ICL)
Mr. N. Hunter	(Burroughs)	Mr. P. S. Unruh	(VDE)
Mr. A. Johnson	(CASE)	Mr. E. Vanzetti	(Olivetti)
Mr. G. Knorr	(NCR)	Mr. U. Voigt	(Siemens)
Mr. O. Krämer	(Philips)	Mr. J. Walker	(Rank Xerox)
Mr. H. Kummer	(IBM)		

TC 15 - Labelling and File Structure

SCOPE:

To facilitate the interchange of data between computer systems by defining standards for labels, data formats and file structures.

PROGRAMME OF WORK:

1. To lay down specific standards for labels, data formats and file structures applicable to the media commonly used for data interchange.
2. To assume responsibility for the maintenance of ECMA standards prepared by TC15.
3. 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:	Mr. A. Escherle	(Philips)
Vice-Chairman:	Mr. J. B. Paterson	(ICL)
MEMBERS:	Mr. C. Bathe	(Nixdorf)
	Mr. A. Bence	(BT)
	Mr. J. C. Camus	(Bull)
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	Mr. C. G. Kaselli	(Ericsson)
	Mr. C. Madrisotti	(Olivetti)
	Mr. A. Morris	(Burroughs)
	Mr. H. Rachel	(IBM)

TC 17 - Magnetic Tapes

SCOPE:

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

PROGRAMME OF WORK:

1. To assume responsibility for the maintenance of ECMA standards prepared by TC17.
2. To maintain liaison with other standards organizations in order to present ECMA proposals to them and to make comments on their proposals.

OFFICERS:

Chairman:	Mr. P. W. Watts	(ICL)
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	Mr. D. Faber	(Nixdorf)
	Mr. Ph. Huet	(RPS)
	Mr. A. Huguenard	(Kodak)
	Mr. L. J. Kvasz	(Burroughs)
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	Mr. R. Müller	(Siemens)
	Mr. R. Roux	(RPS)
	Mr. L. Royaux	(IBM)
	Mr. A. De Vita	(3M)

TC 19 - Magnetic Tape Cassettes and Cartridges, and Flexible Disks

SCOPE:

To identify and standardize the physical properties and the relevant data format of magnetic tape cassettes and cartridges, and of flexible disks for digital applications–below the performance range of existing magnetic tape standards–in order to ensure interchangeability.

PROGRAMME OF WORK:

1. To identify the requirements of low-cost and compact digital data recording for data collection and data entry systems as well as for easy mailing and to review the extent to which existing designs possibly derived from existing standards in other areas, fulfil these requirements.
2. To specify, based on their preliminary investigations, the physical properties, recording method and track location of magnetic flexible disks and envelopes in order to ensure interchangeability.
3. To specify the relevant track format and code representation for these disks to ensure interchangeability.
4. To assist TC15 on labelling problems.
5. To assume responsibility for the maintenance of ECMA standards prepared by TC19.
6. To maintain liaison with other standards organizations in order to present ECMA proposals to them and to make comments to their proposals.

OFFICERS:

Chairman:	Mr. G. Baumeister	(Xidex)
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Mr. E. Hanskens	(Kodak)	Mr. B. Stetson	(DEC)
Mr. T. Kobayashi	(Sony)		

TC 20 - Electromagnetic Compatibility

SCOPE:

To study the conditions necessary to guarantee reciprocal electromagnetic compatibility between data processing equipment and the outside environment; to prepare corresponding standards.

PROGRAMME OF WORK:

1. To survey existing national and international standards concerned with electromagnetic compatibility.
2. To establish measuring methods and limits for electromagnetic interference generated by data processing equipment.
3. To establish methods of assessment of the susceptibility of data processing equipment to electromagnetic interference.
4. To assume responsibility for the maintenance of ECMA standards prepared by TC20.
5. To maintain liaison with other standards organizations in order to present ECMA proposals to them and to make comments on their proposals.

OFFICERS:

Chairman:	Mr. **J. R. Trigg**	(ICL)
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MEMBERS:

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Mr. **O. Krämer**	(Philips)	Mr. **T. Wentholt**	(Rank Xerox)

TC 21 - BASIC

SCOPE:

To study the language BASIC and to proceed with its standardization.

PROGRAMME OF WORK:

1. To examine the available reports with a view to eliminating any ambiguous interpretation.
2. To issue recommendations to the committees working on standardization of BASIC on the specific European requirements.
3. To assume responsibility for the maintenance of ECMA standards prepared by TC21.
4. 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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	Mr. **R. D'Amato Cantorio**	(Olivetti)
	Mr. **A. Paillet**	(Philips)

TC 22 - Data Base

SCOPE:

To promote standardization of database management systems by contributing to national and international standardization or development organizations.

PROGRAMME OF WORK:

1. To maintain a view of the requirements and priorities for standards in the database area.
2. To submit proposals on specifications and draft standard for database control languages and programming languages interfaces.
3. To cooperate with standardization bodies with a view to ensuring that European requirements are taken into account in the database field.
4. To study the requirements for access to remote and distributed databases.
5. To maintain TR/30, Remote Database Access Services and Protocol.
6. To maintain liaison with other ECMA programming language committees and committees defining or using data descriptions.
7. To monitor the work of, and to contribute to, the database working groups of ISO/TC97/SC21.
8. To maintain liaison with other standards organizations in order to present ECMA proposals to them and to make comments on their proposals.

OFFICERS:

Chairman:	Mr. **A. P. G. Brown**	(ICL)
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MEMBERS:	Mr. **E. Appiani**	(STET)
	Mr. **A. Bence**	(BT)
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TC 26 - Acoustics

SCOPE:

To recommend standards for determining the noise outputs of different categories of individual items of computer 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 acoustic environments in which DP equipments are required to work.
2. To survey the various recommendations and requirements for the acoustic 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 acoustic environment in places of work.
7. To assume responsibility for the maintenance of ECMA standards prepared by TC26.
8. To maintain liaison with other standards organizations in order to present ECMA proposals to them and to make comments on their proposals.

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Mr. **O. Krämer**	(Philips)	Mr. **J. Walker**	(Rank Xerox)
Mr. **G. Leroi**	(Bull)		

TC 28 - Ergonomics of Work Stations

SCOPE:

To review existing and proposed legal requirements and standards, together with recommendations and/or requirements stated by interested parties that may be relevant. To develop guidelines for ergonomics of work stations which manufacturers can underwrite and recommend to users.

PROGRAMME OF WORK:

1. To categorize broadly the conditions under which work stations are used in terms of the tasks and the human attitudes involved.
2. To survey and evaluate:
   - reports of reactions and complaints arising from use of work stations;
   - reports of relevant studies of the social, medical and technical aspects;
   - published and draft standards and legislation.
3. To draft sets of guidelines applying to the design, installation and use of work stations.
4. To maintain liaison with TC12 and TC26.
5. To establish and maintain liaison with other standards organizations in order to present ECMA proposals to them and to make comments on their proposals.

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TC 29 - Document Architecture and Interchange

SCOPE:

To develop standards in the field of preparation, processing, and interchange of documents.

PROGRAMME OF WORK:

1. To develop standards for the structure of documents in formatted and processible forms, containing character-coded text, facsimile-coded images, data, tables, graphics and audio information.
2. To maintain and enhance Standard ECMA-101, Office Document Architecture.
3. To monitor and contribute to the work of ISO/TC97/SC18 in the fields of user requirements, terminology, text description and processing languages, and character font description and registration.
4. To maintain liaison with TC1 and TC32.
5. To maintain liaison with the appropriate committees within ISO/TC97 and CCITT.
6. 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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Vice-Chairman: Mr. **P. Kaijser** (Siemens)

MEMBERS:

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Mr. **A. Giovagnetti**	(Olivetti)	Mr. **J. G. Williams**	(Rank Xerox)
Mr. **W. Horak**	(Siemens)	Mr. **L. J. Zeckendorf**	(Philips)

TC 30 - SCSI Small Computer Systems Interface

SCOPE:

To develop one or more standards for a device-independent interface for interconnecting small computers with each other and with peripherals, such as disk and tape drives, or printers.

PROGRAMME OF WORK:

1. To consider the work under progress in ANSI X3T9.2 in order to ensure compatibility of the future ECMA standard(s) with this work.
2. To develop one or more standards specifying the physical characteristics and the operation of the interface.
3. To maintain liaison with ANSI X3T9.
4. To maintain liaison with TC32 with a view to ensuring coherence of the interface standard(s) with the OSI model and with the ECMA Standards on LAN.
5. To assume responsibility for the maintenance of ECMA standards prepared by the TC.
6. To maintain liaison with other standards organizations in order to present ECMA proposals to them and to make comments on their proposals.

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	Mr. B. H. R. Welsh	(Northern Telecom)

TC 31 - Optical Digital Data Disks

SCOPE:

To identify and develop the minimum number of standards necessary for data interchange by means of optical digital data disks (OD3).

PROGRAMME OF WORK:

1. To identify and develop the sets of standards needed to cover grooved and non-grooved disks.
2. To develop a standard for a cartridge common to both types of disks.
3. To develop, in liaison with TC15, a standard for file structure and labelling applicable to both types of disks.
4. To develop a standard for selected configurations for data interchange.
5. To monitor technological developments in the field of OD3.
6. To maintain liaison with other standards organizations in order to present ECMA proposals to them and to make comments to their proposals.

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	Mr. Y. Tsukamura	(Sony)
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	Mr. E. J. Wolkener	(Nixdorf)

TC 32 - Communication, Networks and Systems Interconnection

SCOPE:

To take the overall responsibility for the Reference Model for Open Systems Interconnection (OSI) within ECMA. To develop service and protocol standards for the seven layers of the Reference Model.

To study services and protocol standards in relation to CCITT or PTT-defined services. To prepare co-ordinated viewpoints of interest to ECMA and their users. To standardize selected facilities within these services for selected applications. To develop interface standards for the connection of Information Technology Equipment (ITE) to Private Circuit-Switched Networks (PCSN).

PROGRAMME OF WORK:

1. To be responsible for, and co-ordinate, the work of the Task Groups within TC32. To approve drafts prepared by the Task Groups for submission to the General Assembly and deal with all matters requiring voting within TC32.
2. To maintain an ECMA view of the ISO OSI Reference Model and to contribute to its maintenance and extension.
3. To develop service and protocol standards for all layers of the Reference Model.
4. To develop a set of OSI management standards.
5. To study the scope, definitions and standardization possibilities of local communication systems (e.g. LAN, PCSN); to develop standards where a need is identified.
6. To study the functional requirements of the upper four layers of the Reference Model for CCITT-defined Telematic services, with the exception of those considered by TC29, further to study the relationship between these services and the Reference Model.
7. To develop a set of standards for message interchange protocols in order to provide message interchange services defined in co-operation with TC29, taking into account the work in CCITT.
8. To study the emerging CCITT-defined Integrated Services Digital Networks (ISDN).
9. To maintain the family of HDLC standards.
10. To assume responsibility for the maintenance of ECMA Standards and Technical Reports prepared by TC23, TC24, TC25 and TC32.
11. To maintain liaison with ISO, IEC and CCITT.
12. To maintain liaison with other standards organizations in order to present ECMA proposals to them and to make comments on their proposals.

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Vice-Chairman:	Mr. P. von Studnitz	(Philips)
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	Mr. J. B. Brenner	(ICL)
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	Mr. J. Christ	(Bull)
	Mr. D. Cochrane	(CASE)
	Mr. N. Corsi	(STET)
	Mr. F. Deignan	(ICL)
	Mr. A. S. Dunn	(Tandem)
	Mr. G. Enrico	(Olivetti)
	Mr. J. B. Fenn	(Wang)
	Mr. R. S. Ferguson	(Sperry)
	Dr. A. V. Flatman	(ICL)
	Mr. F. Gross	(IBM)
	Mr. U. Hartmann	(Siemens)
	Mr. V. Hayes	(NCR)
	Mr. R. B. Hovey	(DEC)
	Mr. F. Irro	(IBM)
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	Mr. W. Koch	(IBM)
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	Mr. R. Rinaldi	(Olivetti)
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	Mr. G. Robin	(ITT)
	Mr. D. C. Robinson	(GEC)
	Mr. J. Salter	(CASE)
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	Dr. P. A. Trudgett	(BT)
	Mr. E. Völzke	(Siemens)
	Mr. T. Wallace	(Prime)
	Mr. B. H. R. Welsh	(Northern Telecom)
	Mr. C. S. W. Wood	(Sperry)

TC 32/TG 1 - Public Data Networks (PDN)

SCOPE:

To study interfaces and protocol standards in relation to CCITT or PTT-defined telecommunication services; arising therefrom, to prepare co-ordinated viewpoints that are of common interest to ECMA and their users. To standardize selected facilities within these services for specific applications.

PROGRAMME OF WORK:

1. To study and make contributions to the work on data communication interfaces currently in progress in ISO and CCITT in liaison with the other relevant TGs within TC32.
2. To study DTE-to-DTE direct connection.
3. To study CCITT-defined ISDN, and to liaise with TG6 regarding contributions to CCITT.
4. To co-ordinate liaison with CEPT.
5. To study the tariff principles of the PTT administrations and their impact on DTE design.
6. To study and make contributions to the work on harmonization of PTT- provided network services and "permission to connect" procedures, with the aim of mutual recognition of test results and certification.

CONVENOR:	Mr. A. Thoms	(ICL)
MEMBERS:	Mr. C. Alberts	(Prime)
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	Mr. F. Deignan	(ICL)
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	Mr. D. Fillet	(Burroughs)
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	Mr. J. Georges	(Philips)
	Mr. S. Glick	(CASE)
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TC 32/TG 2 - Distributed Interactive Processing (DIP)

SCOPE:

To identify the requirements for OSI standardization in the field of Distributed Interactive Processing. To develop any necessary new standards or extensions to existing standards.

PROGRAMME OF WORK:

1. To establish the requirements for OSI standardization in this field, with special consideration for providing distributed interactive processing environment to support performance-demanding applications. To clarify the relationship with other OSI usage and to establish opportunities for convergence.

2. To specify these requirements.

3. To recommend the development of extensions to existing standards, or the development of additional standards, as required.

4. To liaise with other ECMA TCs and within TC32 in order to identify issues and needs in this field, and to harmonize related work in ECMA.

5. To maintain an ECMA view of architecture above the transport service of the ISO OSI Reference Model, and to contribute to its maintenance and extensions. This includes, but is not limited to, CASE, CCR and ROS.

6. To maintain an ECMA view on Session Layer matters.

CONVENOR: Mr. J. Brenner (ICL)

MEMBERS:

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Mr. J. Bellec	(Bull)	Mr. M. Levilion	(IBM)
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33

TC 32/TG 3 - Local Area Network (LAN)

SCOPE:

To study and standardize Local Area Networks (LAN).

PROGRAMME OF WORK:

1. To study and classify LAN, starting with media of transmission, topography, signal transmission method and access method.
2. To identify LAN to be standardized and to produce LAN-related standards.
3. To maintain compatibility with the developments in IEEE 802, ISO and IEC.
4. To liaise within TC32 in order to identify and define LAN-specific architectural aspects and requirements.
5. To liaise with ECMA TC12 and TC20 on matters of safety and electromagnetic interference.
6. To liaise with ISO, IEEE 802 and IEC/TC83 on matters related to LAN.

CONVENOR: Mr. **G. Enrico** (Olivetti)

MEMBERS:

Mr. **H. Abramowicz**	(Ericsson)
Mr. **J. P. Astorg**	(Philips)
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Dr. **W. Bux**	(IBM)
Mr. **J. Christ**	(Bull)
Mr. **N. Corsi**	(STET)
Mr. **P. J. Dawe**	(ICL)
Mr. **A. S. Dunn**	(Tandem)
Mr. **J. Dunphy**	(Case)
Dr. **A. V. Flatman**	(ICL)
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Mr. **V. Hayes**	(NCR)
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Mr. **A. Sarsby**	(BT)
Mr. **R. Ulivastro**	(IBM)
Mr. **B. H. R. Welsh**	(Northern Telecom)
Mr. **P. J. Wilkinson**	(GEC)

TC 32/TG 4 - OSI Management (MGT)

SCOPE:

To proceed with the definition and the standardization of the basic management functions, services and protocols needed to establish and maintain the OSI environment.

PROGRAMME OF WORK:

1. To study and eventually prepare draft standards on the following first priority items:
   - Address Management
   - Management of Routes
   - Authentication Parameters
   - Accounting Information Transfer.
2. To study and present to TC32 suggestions on other areas of OSI Management that might be candidates for ECMA standardization.
3. To give special priority to the management aspects directly related to the existing ECMA standards and to the ones currently under development in ECMA.
4. To maintain an ECMA view on the OSI management work in ISO by participating and presenting proposals to ISO/TC97/SC21.
5. To liaise with ISO/TC97/SC21 in those areas which relate specifically to OSI Management, such as Naming and Addressing.

CONVENOR: Mr. **F. Gross** (IBM)

MEMBERS:

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Mr. **G. Barberis**	(STET)	Mr. **C. U. Manros**	(Siemens)
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Mr. **F. Dolan**	(Sperry)	Mr. **H. Petit**	(IBM)
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Mr. **S. T. F. Goss**	(ICL)	Dr. **R. P. J. Winsborrow**	(HP)
Mr. **M. C. Koning**	(Océ-Nederland)	Mr. **M. Winter**	(Siemens)
Mr. **W. Kruse**	(Tandem)	Mrs. **A. Zamboni**	(Olivetti)

TC 32/TG 5 - Distributed Services

SCOPE:

To specify an architectural framework and to specify the principal services and protocols required for Distributed Applications and Services. Priority should be given to specifications relevant to Distributed Office Automation systems providing shared resources for the offive.

PROGRAMME OF WORK:

1. To produce a Technical Report defining the distributed office Service framework, including: definition, model, functional requirements on the various services and including security and management, design guidelines, interactions between different services, generic concepts, use of underlying services such as ROS and CASE.
2. To develop a mailbox access protocol (P7) for access to a MIDA system.
3. To develop standards for supportive services, if not covered elsewhere, such as TIME.
4. To develop standards for productive services, as identified in the framework, such as document storage/retrieval service.
5. To propose to TC32 a suitable division of work between TC32-TG5 and TC29 regarding Print Server Standards.
6. To liaise with ISO/TC97/SC18 WG4, ISO/TC97/SC21 and CCITT SG VII.
7. To liaise with other TGs in TC32 as appropriate.

CONVENOR: Mr. C. U. Manros (Siemens)

MEMBERS:

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Mr. P. J. Bourne	(Ferranti)	Mr. D. J. Milham	(BT)
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Mr. P. J. E. Dyce	(IBM)	Mr. R. Stiefel	(ITT)
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Mr. J. Gish	(Prime)	Mr. H. Widlewski	(Nixdorf)
Mr. C. Harding	(CASE)	Dr. R. P. J. Winsborrow	(HP)
Mr. T. Harding	(DEC)	Mr. F. Wonka	(Tandem)

TC 32/TG 6 - Interfaces to Private Switching Networks (PSN)

SCOPE:

To develop interface standards for the connection of Data Processing Equipment (DPE) to Private Switching Networks (PSN).

PROGRAMME OF WORK:

1. To develop interface standards for the connection of terminals, computers, LAN and Wide Area Networks (WAN) to a PSN, utilising, and remaining compatible with, existing standards and recommendations as far as possible.
2. To study in liaison with TG7 (TN) the architecture of a PSN in relation to:
   - connection of computer systems
   - connection of terminal systems
   - interconnection with LAN
   - interconnection with private and public WAN.
3. To study the systems management aspects of the PSN in accordance with the principles laid down by the OSI Reference Model and in co-operation with TG4 (MGT).
4. To monitor and to contribute to the work of other international bodies studying matters related to PSN technology (e.g. ISDN and LAN developments) in liaison with TG1 (PDN) and TG3 (LAN) respectively.
5. In the field of ISDN User-Network interfaces to co-ordinate the liaison with CCITT, and to liaise with CEPT in collaboration with TG1.

CONVENOR: Mr. E. Völzke (Siemens)

MEMBERS:

Mr. L. Ampollini	(Olivetti)	Mr. H. Michaelis	(Nixdorf)
Mr. E. Bader	(Philips)	Mr. J. Moughton	(CASE)
Mr. G. Barnicoat	(Ericsson)	Mr. G. Murano	(Olivetti)
Mr. F. van Bruaene	(ITT)	Mr. J. L. Neigh	(AT&T)
Mr. J. Buisson	(Bull)	Mr. U. Padulosi	(STET)
Mr. J. Christ	(Bull)	Mr. A. M. Palka	(DEC)
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		Mr. A. Severini	(Olivetti)
Mr. J. Jamain	(IBM)	Mr. A. N. Slater	(GEC)
Mr. P. Jardin	(DEC)	Mr. D. A. Spencer	(AT&T)
Mr. O. Karlsson	(Ericsson)	Mr. D. A. Stanwyck	(AT&T)
Mr. C. M. Klik	(Philips)	Mr. Heng Te	(HP)
Dr. M. Kneidinger	(ITT)	Mr. T. Wallace	(Prime)
Mr. P. Kruchten	(CIT-ALCATEL)	Mr. B. H. R. Welsh	(Northern Telecom)
Mr. M. Lahti	(TeleNova)	Mr. P. Å. Wiberg	(Ericsson)
Mr. C. J. M. Lanting	(HP)	Mr. C. S. W. Wood	(Sperry)
Mr. V. Losacco	(Olivetti)	Mr. W. Zeitel	(ITT)
Mr. E. Luyten	(Ferranti)		

TC 32/TG 7 - Transport and Network Layers (TN)

SCOPE:

To study and develop matters related to the Transport and Network Layer of the OSI Reference Model, and to the architecture of the lower four layers of the OSI Reference Model.

PROGRAMME OF WORK:

1. To ensure compatibility by study and contributions with the developments in ISO and CCITT.
2. To develop an Internet protocol or protocols bearing in mind the networking scenarios of the future (LAN, advanced PDN, PSN, ISDN, private WAN).
3. To identify the requirements for management within layers 1-4, in accordance with the global management architecture to be agreed with TG4.
4. To study the architectural principles for the lower 4 layers with special emphasis on:
   - the avoidance of proliferation of options and protocol combinations,
   - the requirements related to the integration of LAN, WAN and PSN,
   - the relationship of Circuit Switching and ISDN to the Reference Model.
5. To liaise with TG1 for the matters related to PTT-defined services and protocols.

CONVENOR: Mr. V. Hayes (NCR)

MEMBERS:

Mr. D. J. Ackerman	(ICL)	Mr. P. A. Jenkins	(BT)
Mr. C. Adriani	(Olivetti)	Mr. C. J. M. Lanting	(HP)
Mr. I. Backlund	(Philips)	Mr. U. Linsbauer	(Siemens)
Mr. G. Barberis	(STET)	Mr. O. B. P. Rikkert	(Philips)
Miss B. Braun	(Siemens)	de Koe	
Mr. F. Burg	(AT&T)	Mr. B. R. Russell	(ICL)
Mr. C. K. Cheung	(Ferranti)	Mr. P. Secundo	(IBM)
Mr. F. Dolan	(Sperry)	Mr. M. Shand	(DEC)
Mr. M. Drisin	(Ericsson)	Mr. P. von Studnitz	(Philips)
Mr. A. Dumontier	(Bull)	Mr. J. N. Thomson	(Burroughs)
Mr. A. Englund	(Rank Xerox)	Mr. P. G. Turner	(ICL)
Mr. J. C. Faye	(CIT-ALCATEL)	Mr. B. H. R. Welsh	(Northern Telecom)
Mr. S. Glick	(CASE)	Mr. P. J. Wilkinson	(GEC)
Mr. J. O. Hedman	(Ericsson)	Mr. H. Wozny	(ITT)

TC 32/TG 8 - Virtual Terminal Protocols (VTP)

SCOPE:

To develop standards for Services and Protocols and for the OSI Specific Application Services concerned with Virtual Terminals.

To monitor and contribute to the development of OSI Services and Protocols for the Presentation Layer and for Common Application services, in term of requirements from the specific Virtual Terminal application point of view.

PROGRAMME OF WORK:

1. To determine the relationship between Standard ECMA-86 and the the current developments in ISO in Presentation and Common Application Service Elements (CASE). To recommend appropriate future action to be taken with respect to ECMA-86.
   To further develop the VT standards for Generic VT and VT Basic Class: ECMA-87 and ECMA-88.
2. To develop a Virtual Terminal standard for the Graphic Class providing graphics functionality consistent with that being defined by ISO/TC97/SC21/WG2.
3. To develop the concepts of, and a model for, "Terminal Management" and to understand its relationship to OSI in general and the rest of OSI VT services (generic and specific) in particular.
   Subsequently to develop OSI Services and Protocols as appropriate to support these "Terminal Management" functions.
4. To monitor, and assist wherever possible, ISO and CCITT work in the areas covered by items 1, 2 and 3, mainly by participating in ISO/TC97/SC21 and CCITT SG VIII.
   To maintain awareness of development, in TC29, ISO/TC97/SC16 and CCITT of text manipulation services. Understand the convergence of this work with VT (for example in remote text editing) and propose extensions to and/or alternate encodings for VT to provide functional and encoding equivalents.

CONVENOR: Mr. B. Roberts   (IBM)

MEMBERS:

Mr. M. G. Barratt	(Ferranti)	Mr. H. A. Lowe	(DEC)
Mr. A. Bence	(BT)	Mr. G. Reuter	(ITT)
Mrs. M. Bon	(Olivetti)	Mrs. E. Roux	(HP)
Mr. D. Cochrane	(CASE)	Mr. B. Sjöberg	(Ericsson)
Mr. N. Corsi	(STET)	Mr. R. J. S. Smith	(Tandem)
Mr. J. B. Fenn	(Wang)	Mr. L. M. J. Visser	(Philips)
Mr. D. V. Harvey	(ICL)	Mr. B. H. R. Welsh	(Northern Telecom)
Mr. M. C. Koning	(Océ-Nederland)	Dr. R. P. J. Winsborrow	(HP)

NOT FOR PUBLIC RELEASE

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

By-Laws and Rules
of the Association

By-Laws of the Association

Art. 1 CONSTITUTION AND HEAD OFFICE

1.1   An association to be known as "European Computer Manufacturers Association", abbreviated ECMA, has been constituted according to these By-Laws and Articles 60 et seq. of the Swiss Civil Code.

1.2   The Headquarters of the Association is in Geneva.

Art. 2 PURPOSE

2.1   The purpose of the Association is:

2.1.1   To study and develop, in cooperation with the appropriate national and international organizations, as a scientific endeavour and in the general interest, methods and procedures in order to facilitate and standardize the use of data processing systems.

2.1.2   To promulgate various standards applicable to the functional design and use of data processing equipment.

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 ordinary members and such other classes of members as may be created by the ordinary members at a General Assembly.

3.2   The ordinary members shall fulfil the qualifications set forth under Articles 3.3 and 3.4 of the present By-Laws, and be accepted according to Article 4.

3.3   Ordinary members shall be companies which develop, manufacture and market in Europe data processing machines or groups of machines used to process digital information for business, scientific, control or other similar purposes. Data processing machines used exclusively for military purposes shall not be considered to be included in the above machines.

3.4 These machines or groups of machines shall have all four of the following characteristics:

a. Means for automatic entry of input data.

b. Means for comparing and manipulating logically and arithmetically, data entered through such input means.

c. Means for automatically carrying out a program controlling all arithmetic, internal data transfer and data output functions of the various machine units comprising the system.

d. Means for automatically altering or modifying the program in accordance both with information received as input and from internal manipulation.

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

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

3.7 Applications for ordinary membership will not be accepted unless the proposed member develops, manufactures and markets some major data processing equipment which is not basically a copy of that of an existing ordinary member.

3.8 Additional classes of members which may be 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 at a General Assembly by a majority of two thirds of all the ordinary members.

3.9 Associate Members

3.9.1 A company may be admitted as associate member which has interest and experience in Europe in matters related to one or more of the TCs of the Association. No company qualifying for ordinary membership can be elected associate member.

3.9.2 A prospective associate member shall declare the TCs in whose work it proposes to take part.

3.9.3 The restrictions of Articles 3.5 and 3.6 of the By-Laws shall apply to associate members.

3.9.4 Associate members shall be admitted by a majority of all the ordinary members.

3.9.5 An associate member is entitled fully to participate in the work of the authorized committees and receive all relevant papers. In addition, it may be authorized to participate in the work of such other committees as may be decided in General Assembly.

3.9.6 Art. 4.1 of the Rules applies to associate members. Representatives of the associate members shall have the right to take part in the discussions at the General Assembly relevant to the TCs in which they participate. However, they have no vote in the General Assembly.

3.9.7 Associate membership shall be terminated in the cases listed in Art. 5.1; Art. 5.2 to 5.5 also apply.

3.9.8 The membership fee for associate members is one half of the fee for ordinary members. Rule 8 applies to associate members.

Art. 4 ACCEPTANCE OF NEW MEMBERS

4.1 Application for membership shall be made to the Secretariat.

4.2 Decisions on compliance with conditions shall be made by a two-thirds majority of all the ordinary members.

4.3 When it has been decided that the conditions are complied with, the applicant shall be admitted to the relevant class of membership.

Art. 5 TERMINATION OF ORDINARY MEMBERSHIP

5.1 Ordinary membership shall be terminated in the following cases:

a. Withdrawal upon written notice given to the Secretary General, to take effect on receipt.

b. The company ceasing to exist.

c. The conditions for membership set forth in Articles 3.5 and 3.6 of the present By-Laws no longer being complied with.

d. In the opinion of two-thirds of all the ordinary members the conditions set forth in Articles 3.3, 3.4 and 3.7 no longer being complied with.

e. 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 member may be expelled for failure to adhere to one or several agreed standards.

5.3 Any proposal to expel a 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 a member. Such expulsion will become effective 15 days after notification by registered mail.

5.5 Notwithstanding Article 4.3 a member which has been expelled can only be re-admitted on a two-thirds majority of all ordinary members.

Art. 6 STRUCTURE

6.1 The Association shall consist of:
   a. The General Assembly.
   b. The Management.
   c. The Co-ordinating Committee.

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

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

6.4 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.

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

6.6 There shall be a Treasurer whose duty shall be determined by the General Assembly. The Rules set out in 6.4 shall apply to this office, except that there shall be no limit in the number of consecutive years in office.

6.7 The Co-ordinating Committee shall comprise 6 members and make recommendations to the General Assembly regarding the formation, activities, reorganization or dissolution of Technical Working Committees.

Art. 7 GENERAL ASSEMBLY

7.1 The President will each year call at least two ordinary General Assemblies of the ordinary members. Written notice of the time and place of the Assembly shall be given at least thirty days before the date of the Assembly. The Agenda and supporting documents for the Assembly shall be circulated at least fifteen days before the Assembly.

7.2 Unless otherwise restricted by these By-Laws or the Rules of the Association, any action required or permitted to be taken at an Assembly may be taken without a meeting, provided that no ordinary member opposes such a procedure within 20 days from the mailing date.

7.3 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 assembly. The business transacted at any special assembly shall be limited to the purposes stated in the notice.

7.4 Written 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 Assembly and shall include the agenda and supporting documents for the Assembly.

7.5 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.

7.6 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. 8 PROMULGATION OF STANDARDS

8.1 Promulgation of standards by the Association shall require approval by at least two-thirds of all the ordinary members.

8.2 Proposed draft standards shall be circulated by the Secretary General at least 4 months in advance of the General Assembly at which they will be voted upon.

8.3 It is not obligatory for members to follow any standard.

8.4 All standards when approved shall be made available to all interested parties without restriction.

Art. 9 AD HOC COMMITTEES

9.1 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.

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

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

Art. 10 SECRETARIAT

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

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

Art. 11 TECHNICAL WORKING COMMITTEES

11.1 Technical working committees will be formed by the Secretary General when so decided at a General Assembly.

11.2 Any ordinary member may participate in any technical working committee.

Art. 12 FISCAL YEAR

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

Art. 13 FINANCE

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

13.2 The Association shall be financed by an equal levy on all ordinary members and half this levy on all associate members. The fees are set by the ordinary members during an ordinary General Assembly and based on the current year budget. Such fees shall be used to finance the activity of the Association and its administrative expenses and shall not be returnable.

13.3 The Secretary General will be responsible for expenditures within the budget.

13.4 The President 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 ordinary members.

Art. 14 DISSOLUTION

14.1 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 members in proportion to their annual fees. Any surplus funds remaining after the liabilities have been discharged will be distributed to those which are members at the date of dissolution in proportion to their total contributions to the Association.

Art. 15 AMENDMENTS

15.1 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 must be included in the agenda and notified to the members according to the provisions of Articles 7.1 and 7.4.

15.2 Amendments shall require two-thirds approval of all the ordinary members.

Art. 16 LITIGATION

16.1 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.

Rules of the Association

1. LANGUAGE

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

2. SYSTEM OF MEASUREMENTS

2.1 The metric system of measurements will be used.

3. MINIMUM PERIOD OF MEMBERSHIP.

3.1 There is no minimum period of membership.

4. REPRESENTATION OF MEMBERS

4.1 Each member shall designate the name of one of its officers or executives who shall represent them in General Assemblies and who shall have full authority to commit the member on all matters concerning the Association. Members shall notify the Association of any changes in their representation.

5. GENERAL ASSEMBLIES

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

5.2 The members entitled to attend and vote 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.

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

6. CO-ORDINATING COMMITTEE

6.1 An ad hoc 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:

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

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

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

    6.1.4 To have every six month meetings with Chairmen of Technical Working Committees at which the progress of the TCs will be reviewed and co-ordinated.

6.2 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, they can be re-elected any number of times. Only representatives of ordinary members can be nominated.

7. TECHNICAL WORKING COMMITTEES

7.1 Formation of Technical Working Committees:

    7.1.1 Technical Working Committees (TC) will be formed by the Secretary General (SG) when so decided at a General Assembly.

    7.1.2 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.

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

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

7.2 Operating procedure of TC - Rules and recommendations for the Technical Committees:

    7.2.1 Members of TCs are:
        – representatives of ECMA member Companies,
        – other participants invited by the SG at the request of the TC or of the Management.

    7.2.2 Member Companies of ECMA are entitled to send one or more representatives to any TC. These representatives shall be employees of the member Companies.

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

    7.2.4 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.

    7.2.5 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.

    7.2.6 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.

7.2.7 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 member Company representatives.

7.2.8 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 consecutive term of office of 3 years.

7.2.9 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.

7.2.10 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 circulated to all members 3 weeks before each meeting; at the opening of the meeting it can be modified if wanted and must be approved.

7.2.11 The SG shall be responsible for the preparation of minutes of the meetings.

7.2.12 The minutes shall be distributed by the SG within 3 weeks to all members of the TC, to the Chairmen of all TCs, to the official representatives of the member companies, and to the members of the CC.

7.2.13 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.

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

7.2.15 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.

7.2.16 This report will be circulated to all members of the TC for approval.

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

7.2.18 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 report will be presented.

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

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

7.2.21 In the interest of economy and efficiency, alternate meetings will be held in Geneva.

7.3 Task Groups

7.3.1 Technical committees may form Task Groups for the accomplishment of specific tasks within the scope of the committee.

7.3.2 At least two members of the committee should agree to take an active part in the work of the Task Groups.

7.3.3 Terms of reference of the Task Group shall be included in the minutes of the meeting of the Technical Committee at which the Task Group has been formed.

7.3.4 Task Groups shall report at each meeting to the committee on their activities; these reports shall appear in the minutes of the committee.

8. MEMBERSHIP FEES

8.1. The membership fees shall be based on an estimate for the current year's operating expenses with adjustments for any deviation between the estimated and actual for the preceding years. Although the Association shall be non-profit-making, reserves may be accumulated if so decided by the General Assembly.

8.2 Any new member shall pay the full annual fee for the fiscal year in which it is admitted as member.

8.3 Every member on the date of the General Assembly which decides on the budget for the following fiscal year shall pay the full annual fee for that year.

8.4 Any withdrawing member shall pay a fee for the fiscal year following the year of withdrawal (Art. 5.1.a of the By-Laws). This fee shall be equal to the annual fee for the year of withdrawal. Representatives of a withdrawing member may continue to attend TC meetings and to receive all technical papers during the full fiscal year following the year of withdrawal.

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 members including those connected with ad hoc and Technical Working Committees 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 With each draft standard submitted four months ahead of a General Assembly, the Secretary General shall ask, by registered mail, all members to state within two months 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.

Adopted at the General Assemblies of March 29, 1963 and June 2, 1966.

The Meaning of Conformance to Standards

The General Assembly of ECMA on June 16, 1983 approved Technical Report TR/18, setting out the Association's views on the meaning of conformance to computer standards. By clarifying what is meant by conformance and what can and cannot be expected to follow from it, ECMA hopes that suppliers, users and the public alike will benefit. In view of the importance of this subject, its technical committees will in future seek to follow the broad recommendations of the report.

However, Member Companies of the Association reserve for themselves individually expression of views on the complex legal and commercial issues arising in many countries relating to certification of conformance.

Publications

Subject Index of ECMA Standards

MEDIA

Disk Packs and Rigid Disks
ECMA-38	ECMA-65
ECMA-39	ECMA-73
ECMA-45	ECMA-76
ECMA-64	ECMA-77

Punched Tape
ECMA-10

Flexible Disk Cartridges
ECMA-54	ECMA-78
ECMA-59	ECMA-91
ECMA-66	ECMA-99
ECMA-69	ECMA-100
ECMA-70	ECMA-107

Magnetic Tape
ECMA-13
ECMA-56
ECMA-62
ECMA-68

Cassettes and Cartridges
ECMA-34
ECMA-41
ECMA-46
ECMA-79
ECMA-98

PROGRAMMING LANGUAGES
ECMA-50
ECMA-53
ECMA-55

SYSTEM INTERFACE
ECMA-111

CHARACTER RECOGNITION
ECMA-3	ECMA-18
ECMA-8	ECMA-21
ECMA-11	ECMA-30
ECMA-15	ECMA-51

DATA COMMUNICATION

Basic Mode	Safety	HDLC	Protocols	Interfaces	LAN
ECMA-16	ECMA-83	ECMA-40	ECMA-72	ECMA-102	ECMA-80
ECMA-24	ECMA-97	ECMA-49	ECMA-75	ECMA-103	ECMA-81
ECMA-26		ECMA-60	ECMA-84	ECMA-104	ECMA-82
ECMA-27		ECMA-61	ECMA-85	ECMA-105	ECMA-89
ECMA-28		ECMA-71	ECMA-92	ECMA-106	ECMA-90
ECMA-29			ECMA-112		ECMA-97
ECMA-37					

DATA PRESENTATION

Coding		Graphics	ODA	Protocols	Labelling
ECMA-6	ECMA-44	ECMA-96	ECMA-101	ECMA-84	ECMA-13
ECMA-14	ECMA-48			ECMA-86	ECMA-41
ECMA-17	ECMA-53			ECMA-87	ECMA-91
ECMA-35	ECMA-94			ECMA-88	ECMA-107
ECMA-43				ECMA-93	

FLOW CHARTS
ECMA-4

MATRIX PRINTERS
ECMA-42   ECMA-51

ERGONOMICS
ECMA-110

SAFETY, EMC AND NOISE MEASUREMENT
ECMA-57	ECMA-83	ECMA-97	ECMA-109
ECMA-74	ECMA-95	ECMA-108	

Free copies of all documents listed below are available upon request.

ECMA Standards (Blue cover)

ECMA-3 – CMC7 Printed Image Specification, 2nd Edition (Sept. 1966)

ECMA-4 – Flow Charts, 2nd Edition (Sept. 1966)

ECMA-5 – Data Interchange on 7-Track Magnetic Tape, 3rd Edition (June 1970)

ECMA-6 – 7-Bit Coded Character Set, 5th Edition (March 1985)

ECMA-8 – Nominal Character Dimensions of the Numeric OCR-A Font, 2nd Edition (Jan. 1977)

ECMA-10 – Data Interchange on Punched Tape, 2nd Edition (July 1970)

ECMA-11 – Alphanumeric Character Set OCR-B for Optical Recognition, 3rd Edition (March 1976)

ECMA-13 – File Structure and Labelling of Magnetic Tapes for Information Interchange, 4th Edition (Dec. 1985)

ECMA-14 – Rules for the Definition of 4-Bit Sets Derived from the ECMA 7-Bit Coded Character Set (Nov. 1967)

ECMA-15 – Printing Specifications for Optical Character Recognition, 2nd Edition (Aug. 1975)

ECMA-16 – Basic Mode Control Procedures for Data Communication Systems using the ECMA 7-Bit Code, 2nd Edition (June 1973)

ECMA-17 – Graphic Representation of the Control Characters of the ECMA 7-Bit Coded Character Set for Information Interchange (Nov. 1968)

ECMA-18 – Printing Line Position on Single Line Documents, 2nd Edition (Jan. 1977)

ECMA-21 – Character Positioning on OCR Journal Tape (June 1969)

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