

ECMA

EUROPEAN COMPUTER MANUFACTURERS ASSOCIATION

MEMENTO 1964

Free copies of this document are available at ECMA,
European Computer Manufacturers Association
Rue d'Italie 11 — Geneva (Switzerland)

ECMA

TABLE OF CONTENTS

Introduction	3
Purpose	5
Membership	5
Promulgation of Standards	6
Officers	6
Office	7
Ordinary members	7
Associate members	9
Co-ordinating Committee	9
Technical Working Committees	11
TC 1	12
TC 2	13
TC 3	14
TC 4	15
TC 5	16
TC 6	17
TC 7	18
TC 8	19
Names and addresses of the representatives	20
By-Laws	25
Rules	32
Code of conduct in Patent matters	37

This issue supersedes the August 1962 issue.

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 27 April 1960, in Brussels, and was attended by the following Companies:

A.E.I. Ltd.
Aktiebolaget Addo
Bo Nyman A B N Aktiebolag
Compagnie des Machines Bull
E.M.I. Ltd.
N.V. Electrologica
Elliott Brothers (London) Ltd./National Cash Register Co. Ltd.
English Electric Co. Ltd.
Facit Electronics A B
Ferranti Ltd.
I B M - W T E C
I C T Ltd.
Leo Computers Ltd.
Ing. C. Olivetti & C. S.p.A.
S. E. A.
Siemens & Halske A G
Standard Elektrik Lorenz A G
Standard Telephones & Cables Ltd.
Telefunken G.m.b.H.
Zuse K G

It was decided that an association of manufacturers should be formed and 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 Standards Organization and the International Electrotechnical Commission. A meeting was held in Paris at which a draft of the By-laws and Rules was approved, subject to a few minor amendments and approval by a Swiss lawyer. Although the Association was not yet formed, it was evident that it would be formed and there was much work needing to be done. Therefore, three Technical Committees were set up to start work as soon as possible. These Committees were as follows:

- TC1—Input and Output Codes Committee;
- TC2—General Programming Languages Committee;
- TC3—Symbols for Flow Chart Committee.

In May 1961 the Association officially came into being and all those Companies who attended the original meeting became members except that I T T-Europe as the parent company represented Standard Elektrik Lorenz and Standard Telephones & Cables Ltd., and Aktiebolaget Addo represented Bo Nyman ABN Aktiebolag.

Just prior to the official registration of ECMA, it was invited to be represented at a Round-Table Conference to be held in Geneva organised 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 the meantime further Technical Committees have been formed:

- TC4—Characters for Optical Recognition;
- TC5—ALGOL;
- TC6—COBOL;
- TC7—Magnetic Ink Character Recognition;
- TC8—FORTRAN.

The three Committees, TC5, TC6, TC8 were formed as it appeared probable that these three programming languages would be used considerably by certain manufacturers and it was most desirable that as far as possible the use of them should be standardized, whether or not these languages were eventually adopted as standards. TC2 is now concerned with general research in the field of programming languages.

TC1 has made full report and presented a proposal for a 6 bit Input and Output Character Code which has been agreed upon by the General Assembly and adopted as the first ECMA Standard. Simultaneously a supporting document "ECMA Philosophy on

Codes" has been issued. Free copies of both publications are available at the Secretariat. It is expected that before the end of 1964 further full reports will be submitted by different committees.

ECMA proposed standards will be made available without restriction to all interested parties as soon as they have been approved by the General Assembly of ECMA: indeed, the proposals are intended to be drafts to be considered by ISO and the National Standards organizations, where the views of the users will be expressed and the final standards adopted. Members of ECMA are not in any way compelled to follow these proposed standards.

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. Such standards will cover:

1. Codes representing characters, including alphabets, numbers, punctuation marks and special symbols, for input and output.
2. Systems for identifying sequences of characters as data words or instruction words or data records or programs.
3. Definition of terms and syntax used in programming for data processing. The definitions will also be given in languages other than the official English of the Association.
4. A minimum number of programming languages independent of any specific machine, in which to define problems so that they may be solved on data processing equipment.
5. Diagrammatic and symbolic representation of processes on charts.
6. Other appropriate subjects as decided from time to time.

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 who 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.

These machines or groups of machines shall have all four 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.

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.

No two or more companies, at least 50 percent 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.

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.

Application for membership shall be made to the Secretariat.

(For associate membership see page 27).

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.

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

Officers

MANAGEMENT:

President: Prof. Dr. **J. Engelfriet** (N.V. Electrologica)
Vice-President: Mr. **M. R. Pedretti** (IBM-WTEC)
TREASURER: Mr. **H. E. C. Nash** (Elliott Bros)
SECRETARY GENERAL: Mr. **D. Hekimi**

Offices

E C M A Headquarters
Rue d'Italie 11
GENEVA Switzerland

Cable: Eucomanufas Geneva
Phone: 26 22 87

All correspondence should be addressed to the Secretary General.

Ordinary Members and Official Representatives

A.E.I. Ltd
Associated Electrical Industries
Trafford Park
MANCHESTER 17, Great Britain
Mr. A.G. Barton

Cable: Assoelect Manchester
Phone: Trafford Park 2431
& 2331

Compagnie des Machines Bull
94, Avenue Gambetta
PARIS XX, France
Mr. J. Raison

Cable: Bugli Paris
Phone: PYRénées 23-30
Telex: 22898

N.V. Electrologica
Stadhoudersplantsoen 214
THE HAGUE, Holland
Prof. Dr. J. Engelfriet

Phone: Den Haag 514651

Elliott Bros. (London) Ltd
Elstree Way
BOREHAMWOOD, Herts
Great Britain
Mr. H.E.C. Nash

Cable: Poynting Borehamwood
Phone: Elstree 2040
Telex: Elliott Borehamwood
22777

**English Electric-Leo
Computers Ltd**
24, Minerva Road
North Acton
LONDON, N.W. 10, Great Britain
Dr. J.M.M. Pinkerton

Cable: Leonine London W2
Phone: Elgar 2894

Facit Electronics AB
Fack
SOLNA 1, Sweden
Mr. Å. Wannerberg

Cable: Facitron Stockholm
Phone: 010-290020
Telex: 190-35

Ferranti Ltd
Moston
MANCHESTER 10, Great Britain
Mr. R.H. Davies

Cable: Ferranti Manchester
Phone: Failsworth 2071
Telex: 66-247

IBM-WTEC

3-5, Cité du Retiro
PARIS VIII, France
Mr. M.R. Pedretti

Cable: Inbuseurop Paris
Phone: Anjou 81-70
Telex: 27084

I.C.T. International Computers and Tabulators Ltd

149, Old Park Lane
LONDON, W.1, Great Britain
Mr. C.G. Holland-Martin

Cable: Tabulorial London
Phone: Hyde Park 8080
Telex: 21159

I.T.T. Europe Inc.

5, Bd. de l'Empereur
BRUSSELS, Belgium
Mr. J.M. Kirk

Cable: Intel-Brussels
Phone: 12 38 46
Telex: 21177

N.C.R. The National Cash Register Company Ltd

206-216, Marylebone Road
LONDON, N.W. 1, Great Britain
Mr. H.L.S. Orde

Phone: Nacareco London
Cable: Paddington 7070

Ing. C. Olivetti & Co. S.p.A.

Pregnana Milanese
MILANO, Italy
Mr. G. Sacerdoti

Cable: Olivetti Pregnana
Milanese
Phone: 93-3022

S.E.A. Société d'électronique et d'automatisme

17-19, Rue du Moulin des Bruyères
COURBEVOIE (Seine), France
Mr. R. Riou

Phone: DEFense 41-20
Cable: Sea-Courbevoie

Siemens & Halske A.G.

Hofmannstr. 51
8000 MUNICH 25, Germany
Dr. W. Lockemann

Cable: Wernerwerkte München
Phone: 76761
Telex: 52 4721

Sperry Rand International Corporation

1-3, Avenue des Jordils
LAUSANNE, Switzerland
Mr. K. Elsworth

Cable: Sperand Lausanne
Phone: (021) 27 72 72

Telefunken Aktiengesellschaft

Elisabethenstr. 3
Dr. H. Lux
79 ULM (Donau), Germany

Cable: Teleanlagen Ulm
Phone: 61921

Zuse KG

Wehnebergerstr. 4
6430 BAD HERSFELD, Germany
Mr. A. Baeumler

Telex: 7-12723

Phone: 2751
Telex: 04-93329

Associate Members and Official Representatives**Aktiebolaget Addo**

Fack
MALMÖ 3, Sweden
Mr. Wang-Andresen

Cable: Addo Malmö
Phone: 040/93 68 00
Telex: 3178

SETI Société Européenne pour le Traitement de l'Information

100, Route de Paris
MASSY (S. et O.), France
Mr. J. Gaudfernau

Phone: 928 13 41
Telex: 27676

Co-ordinating Committee**FUNCTION:**

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. **C.G. Holland-Martin** (ICT)

MEMBERS:

Mr. A. Baeumler	(Zuse)
Mr. H. Delaage	(Bull)
Mr. K. Elsworth	(SRIC)
Dr. W. Lockemann	(Siemens & Halske)
Dr. J.M.M. Pinkerton	(EE-Leo)
Mr. G. Sacerdoti	(Olivetti)

Technical Working Committees

Input and Output Codes Committee TC 1

SCOPE:

Definition of common character sets (including alphabets, numbers, punctuation marks, special symbols and controls) and their coded representation suitable for input/output media and data transmission in order to facilitate interchange of information between DP equipment.

OUTLINE OF PROGRAM OF WORK:

1. The Input and Output Codes Committee of ECMA takes as a first and main objective participation in the research of common coded character sets applicable to sequential continuous media.
2. Punched-card coding standardization is considered as a second and separate objective.
3. Determination of common sets which shall take into account the European requirements for character, symbol and control representations in data handling and programming, in accordance with computer and auxiliary equipment characteristics.
4. Consideration shall be given in defining the coded character sets to permit possible expansion and contraction.
5. To follow technical development in the field in order to maintain and improve the recommended standards.
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. **H. McG. Ross** (ICT)
Vice-Chairman: Mr. **L. Durand** (Bull)

MEMBERS:

Mr. P. Aust	(Telefunken)
Mr. E.G. Cluff	(ICT)
Mr. L.R. Crawley	(ITTE)
Mr. A.E. Curnow	(NCR)
Mr. K.C. Evans	(AEI)
Mr. R.S. Ferguson	(EE-Leo)
Mr. R. Gottlieb	(Olivetti)
Mr. Y. Harrand	(SETI)
Mr. B. Ten Hoove	(SRIC)
Dr. W. Lockemann	(Siemens & Halske)
Mr. J.A. Samwel	(Electrologica)
Mr. D. Starynkevitch	(SEA)
Mr. B.E. Summerton	(IBM-WTEC)
Mr. Å. Wannerberg	(Facit)

General Programming Languages Committee TC 2

SCOPE:

To carry out a survey of basic development in the field of programming techniques, and to define the desirable characteristics of programming languages with a view to establishing programming languages with wide applicability and to facilitating compatibility between them.

OUTLINE OF PROGRAM OF WORK:

The following aspects should be covered by the Committee:

1. To prepare a brief information report on the extent to which COBOL and ALGOL and their variants have been implemented.
2. To prepare a survey of programming languages with respect to their aims, syntax and the programming concept involved. To report on their implementation and use.
3. To propose methods for the description of programming languages.
4. To propose a glossary for programming languages.
5. To assess the present needs for programming languages and recommend how these needs should be met.
6. To define what constitutes acceptable machinery for the maintenance of a language.
7. To consider the problem of programming languages within the environment of total operating systems.
8. To establish liaison with other groups working in the same field.

OFFICERS:

Chairman: Mr. **J. Caldwell** (EE-Leo)
Vice-Chairman: Mr. **K.V. Hanford** (IBM-WTEC)

MEMBERS:

Dr. J. Berghuis	(Bull)
Mr. J. Bourgain	(Bull)
Mr. M.H. Callacher	(AEI)
Mr. R.L. Cook	(Elliott Bros.)
Mr. A.S. Cormack	(NCR)
Mr. F.G. Duncan	(Electrologica)
Mr. R. Edwards	(SRIC)
Mr. Y. Harrand	(SETI)
Mr. E. Humby	(ICT)
Mr. P.M. Hunt	(ICT)
Mr. B. Mellor	(ITTE)
Mr. M. Pacelli	(Olivetti)
Prof. A. van Wijngaarden	(Electrologica)

Flow Charting Committee TC 3

SCOPE:

Definition of a common diagrammatic and symbolic representation of problems and their solutions with computer systems.

OUTLINE OF PROGRAM OF WORK

1. To define the concepts which should be considered in a standard diagrammatic method for representation of problems and their solutions with computer systems.
2. To define and determine symbols and their connection both for hardware configuration and logical flow of process.
3. To review from time to time the decision taken in order to maintain and improve the standard proposed.
4. To keep liaison with the programming language committees of ECMA.
5. To maintain liaison with other standard organizations in order to present ECMA proposals to them and to make comments on their proposals.

OFFICERS:

Chairman: Mr. **A.E.C. Hodgson** (ICT)
Vice-Chairman: Dr. **E. Schieferdecker** (Siemens & Halske)

MEMBERS:

Mr. J. Bourgain	(Bull)
Miss A. Eckert	(IBM-WTEC)
Mr. H. Grosch	(Telefunken)
Mr. J.P.U. Lilley	(ICT)
Mr. S. Marsich	(Olivetti)
Mr. F.J. Schmidt	(Electrologica)
Mr. D. Starynkevitch	(SEA)
Miss M. Theobald	(SRIC)

Optical Character Recognition Committee TC 4

SCOPE:

Definition of a minimum number of character sets legible both to humans and to machines.

Specification of fonts, parameters, measurements and tolerances.

Definition of document specification (size limits, ink, position of printed lines, etc.).

OUTLINE OF PROGRAM OF WORK:

1. By considering European application requirements and the existing projects, establish basic criteria to be considered in the definition of documents and type fonts standard specifications.
2. Evaluate existing projects in the light of the defined criteria, giving careful consideration to the printing and reading problems involved in the implementation of such projects.
3. Establish a minimum number of character sets and type fonts specifying their parameters, measurement methods and tolerances to be recommended as possible standards.
4. Specify a range of document sizes, position of printed lines on documents, paper quality, etc.
5. Review periodically or when appropriate the subjects covered by items 1 to 4 in the light of changes in techniques and requirements.
6. Establish liaison from the beginning with other standard organizations, users and printers associations, etc.

OFFICERS:

Chairman: Mr. **G.G. Scarrott** (ICT)
Vice-Chairman: Mr. **G. Gattner** (Siemens & Halske)

MEMBERS:

Mr. A.G. Aghib	(Olivetti)
Mr. Ch. Cooreman	(SEA)
Dr. W. Dietrich	(ITTE)
Mr. A.C.D. Haley	(EE-Leo)
Mr. D.J. Hatley	(ICT)
Mr. G. d'Herbement	(Bull)
Mr. N.E.F. Holmqvist	(Addo)
Dr. P. Nassutti	(SRIC)
Mr. M. Prennushi	(Olivetti)
Dr. K. Scheidhauer	(Telefunken)
Mr. J.J. Schreuders	(Electrologica)
Mr. G.G. Sipkes	(NCR)
Mr. K.P. Terpstra	(IBM-WTEC)
Mr. H. van Steenis	(IBM-WTEC)
Mr. G. Weill	(Bull)

ALGOL Committee TC 5

SCOPE:

To examine the present position of ALGOL and to report on the extent to which it would be possible for ECMA members to use ALGOL, as defined in the 1960 report, as a standard.

OUTLINE OF PROGRAM OF WORK:

The following aspects should be covered by the committee:

1. An examination of the ALGOL report with a view of eliminating any possible ambiguities by giving definite interpretations where required.
2. To examine the 1960 report and to determine whether there are any areas not covered in it, which might lead to non-uniform interpretations. On the assumption that it would be desirable to implement the existing ALGOL report, the Committee should make appropriate recommendations.
3. The issuing of recommendations to TC1 on specific symbol requirements needed for the uniform implementation of ALGOL.
4. The establishment of machinery for ensuring that European requirements are taken into account in the maintenance of ALGOL.

OFFICERS:

Chairman: Mr. **F.G. Duncan** (Electrologica)
Vice-Chairman: Dr. **J. Berghuis** (Bull)

MEMBERS:

Mr. **L. Bosset** (SETI)
Mr. **R.L. Cook** (Elliott Bros.)
Mr. **I. Dahlstrand** (Facit)
Mr. **P.M. Hunt** (ICT)
Mr. **P. Lucas** (IBM-WTEC)
Mr. **J.G. Miles** (AEI)
Mr. **U. Picciafuoco** (Olivetti)
Mr. **F. Sallé** (Bull)
Prof. **A. van Wijngaarden** (Electrologica)
Dr. **A. Wilhelmy** (SRIC)

COBOL Committee TC 6

SCOPE:

The definition of a common interpretation of COBOL 61 which will take into account specific European requirements, in order that ECMA members may realize in practice to the greatest possible extent the aims expressed in the COBOL 61 report.

OUTLINE OF PROGRAM OF WORK:

1. An examination of the report with a view to eliminating any possible ambiguities by giving definite interpretations where required.
2. The problem of the translation of COBOL words into European languages. An examination of the problem of input/output formats in order to comply to National Standards and usages.
3. The issuing of recommendations to TC1 on specific symbols requirements needed for the implementation of COBOL.
4. The establishment of machinery for effective liaison with CODASYL and any other committees working in the same area with a view to ensuring that European requirements are taken into account in the maintenance of COBOL and in the translation of the COBOL 61 report.

A further task for the committee, after the completion of the above, could be the examination of any omissions in the latest version of COBOL which seriously limit its application.

OFFICERS:

Chairman: Mr. **E. Humby** (ICT)
Vice-Chairman: Mr. **J. Bourgain** (Bull)

MEMBERS:

Mr. **L. Bosset** (SETI)
Mrs. **F. Chasles** (IBM-WTEC)
Mr. **A.S. Cormack** (NCR)
Mr. **P.J. Cropper** (AEI)
Miss **R. Horwood** (SRIC)
Mr. **H. Hoseit** (Siemens & Halske)
Mr. **P.M. Hunt** (ICT)
Mr. **G. M. Palermo** (Olivetti)
Mr. **F.J. Schmidt** (Electrologica)
Mr. **D. Starynkevitch** (SEA)

Magnetic Ink Character Recognition Committee TC 7

SCOPE:

To draft working specifications for applications of CMC7 and E13B, taking European requirements into account.

PROGRAM OF WORK:

1. To plan its work with due regard to urgency of banking applications in Europe.
2. To list the tasks, to set them in order of priority, to give target dates for their completion and to work on them accordingly.
3. To undertake the technical work involved in any international working group on MICR standards set up with collaboration of ECMA.
4. To review periodically or when appropriate the MICR standards in the light of changes in techniques and requirements.
5. To maintain liaison with other standards organizations in order to present ECMA proposals and to make comments to their proposals.

OFFICERS:

Prov. Chairman: **Dr. K. Scheidhauer** (Telefunken)
Prov. Vice-Chairman: **Mr. A. G. Aghib** (Olivetti)

MEMBERS:

Mr. L. Artru (Bull)
Mr. K. Elsworth (SRIC)
Mr. M. Prennushi (Olivetti)
Mr. J.E. Pullen (ICT)
Mr. J. Thierry (NCR)
Mr. H. van Steenis (IBM-WTEC)
Mr. S. van Straten (IBM-WTEC)
Mr. G. Weill (Bull)

FORTRAN Committee TC 8

SCOPE:

To consider the ISO and ASA working papers on FORTRAN and subsequent documents to ensure that European requirements are taken into account in order that ECMA members can realize in practice the highest possible degree of interchange of FORTRAN programs.

PROGRAM OF WORK:

1. To examine the available reports with a view of eliminating any ambiguous interpretation.
2. To issue recommendations to the committees working on standardization of FORTRAN on the specific European requirements.
3. To establish a suitable machinery for effective liaison with committees working on the standardization of FORTRAN.
4. To inform periodically the ECMA members on the progresses of this standardization.

OFFICERS:

Prov. Chairman: **Mr. Elliott Nohr** (IBM-WTEC)
Prov. Vice-Chairman: **Mr. P.M. Hunt** (ICT)

MEMBERS:

Mr. D. Combelic (ITTE)
Mr. H. Felsch (Electrologica)
Mr. T.O. Kelly (AEI)
Mr. Newey (Bull)
Mr. U. Picciafuoco (Olivetti)
Mr. W. Simon (SRIC)

Representatives

NOT FOR PUBLIC RELEASE

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

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 are 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. Such Standards will cover:
 1. Codes representing characters, including alphabets, numbers, punctuation marks and special symbols, for input and output.
 2. Systems for identifying sequences of characters as data words or instruction words or data records of programs.
 3. Definition of terms and syntax used in programming for data processing. The definitions will also be given in languages other than the official English of the Association.
 4. A minimum number of programming languages independent of any specific machine, in which to define problems so that they may be solved on data processing equipment.
 5. Diagrammatic and symbolic representation of process on charts.
 6. Other appropriate subjects as decided from time to time.
- 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 consist of those organizations listed in Schedule 1 and of any organizations fulfilling the qualifications set forth under Articles 3.3 and 3.4 of the present By-Laws, and who have been accepted under article 4.
- 3.3 Ordinary members shall be companies who 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 group 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 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 $\frac{2}{3}$ 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.
- 3.9.2 A prospective associate member shall declare the TCs in whose work he 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 simple majority of ordinary members.
- 3.9.5 If elected, an associate member is entitled fully to participate in the work of the authorized committees and receive all relevant papers. In addition, he may be authorized to participate in the work of such other committees as may be decided in General Assembly.
- 3.9.6 Associate members shall confirm to the Secretary General in writing in December of every year, that they intend to continue to participate in the work of the TCs of which they are already member.
- 3.9.7 The membership of associated members is confirmed each year at the first General Assembly of the year, by the same voting majority as mentioned in 3.9.4. above.
- 3.9.8 The membership fee for associated members is one half of the annual fee for ordinary 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 Secretariat before 30th June, to take effect at the end of the fiscal year.
 - 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 Article 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 who 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.
- 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.

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 the members present or represented by proxy 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 It is not obligatory for members to follow any standard.
- 8.3 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 may be formed by the Secretary General when so decided at a General Assembly or upon receipt of a proposal and written agreement to participate by at least five ordinary members.
- 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. Exceptionally, the first fiscal year shall commence the day of incorporation and end on December 31, 1961.

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. 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 who 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 de Genève. 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 A proposed member who has been accepted shall join the Association for a minimum period of 3 years. This rule shall cease to be applicable when the conditions mentioned in Article 5.1., b. c. d. or e. of the by-laws occur.

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. COORDINATING COMMITTEE

- 6.1 An Ad Hoc Committee consisting of individuals elected by the General Assembly will be set up under the name of Coordinating Committee, 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 months meetings will all Chairmen of Technical Working Committees at which the progress of the TCs will be reviewed and co-ordinated.

- 6.1.5 To make recommendations to the members of ECMA regarding the formation, re-organisation or dissolution of Technical Working Committees.

7. TECHNICAL WORKING COMMITTEES

7.1 Formation of Technical Working Committees :

- 7.1.1 Technical Working Committees may be formed by the Secretary General when so decided at a General Assembly or upon receipt of a written proposal to participate by at least 5 ordinary members.

- 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 Secretary General (SG).

- 7.1.3 When the conditions of Rule 7.1.1 and 7.1.2 are fulfilled, the S.G. shall prepare draft terms of reference and a draft program of work on the basis of proposals received, circulate this draft to all members for comments and ask those wishing to participate to the new TC to appoint representatives.

- 7.1.4 The CC shall approve terms of reference and a program of work and nominate a provisional Chairman and Vice-Chairman for the TC and shall inform the SG of the nominations.

- 7.1.5 The SG shall convene the first meeting of the TC.

7.2 Operating procedures of TC — Rules and recommendations for the Technical Committee :

- 7.2.1 All members of ECMA are entitled to send one or more representatives to any TC, but no member Company may have more than 1 vote. These representatives must be employees of the member Company. Anyone else can attend a meeting only at the special invitation of the Committee as a whole.

- 7.2.2 Voting shall be by simple majority of member Companies present at the meeting.

- 7.2.3 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.
- 7.2.4 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.
- 7.2.5 At the first meeting of the TC which takes place after the end to the initial period, a definitive Chairman and Vice-Chairman shall be elected.
- 7.2.6 The Chairman and Vice-Chairman, having been elected, 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.
- 7.2.7 Meetings of the TCs shall be conducted by the Chairman, according to the By-Laws and Rules of ECMA. The SG shall act as Secretary at all TC meetings. The Vice-Chairman shall assist the SG and shall act for the SG if the latter is unable to attend.
- 7.2.8 Agenda for meetings of the TCs shall be prepared by the Chairman and the SG 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.
- 7.2.9 The SG shall be responsible for the preparation of minutes of the meetings.
- 7.2.10 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.
- 7.2.11 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. They shall be signed by the Chairman and filed with the Secretariat.
- 7.2.12 The first task of each TC will be to define its programme of work within the assigned terms of reference. Within 2 months from the date of the first meeting, the TC will send to the SG a report setting out how it proposes to organize the work during the following year and the Chairman should indicate a time scale for each task undertaken by the TC.

- 7.2.13 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.
- 7.2.14 The Chairman is responsible for the preparation of an annual report for each TC. He will be assisted by the Vice-Chairman and the SG 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.
- 7.2.15 The annual report will be circulated to all members of the TC for ratification before submission to the GA.
- 7.2.16 Any member of a TC has the right to ask for a minority report to be submitted if he so desires.
- 7.2.17 The work of all TCs will be discussed every 6 months at a meeting of the Chairmen of TCs with the CC and the SG at one of which meetings the draft of the annual report will be presented.
- 7.2.18 First priority in discussion at the meetings of the TCs must be given to items on the agenda.
- 7.2.19 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.
- 7.2.20 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.

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 twice 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 licenses 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 licenses. 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 It is, however, expected from each TC to produce a survey of the patents related to the draft standard to be produced by the TC. This survey will be constituted by:
 - a) Statements of members of the Committee concerning the patents of their own company,
 - b) a list of the patents (still in force, and already lapsed) of third parties, which are known by the members of the Committee.
- 2.3 On the basis of this survey the Secretary General will prepare a report to the General Assembly. The purpose of this report is to clarify the problem (not to solve it at this stage). The Secretary General shall try to present the problem to the General Assembly in a synthetic manner, without going into the technicalities.
- 2.4 On the basis of this report, the General Assembly will either decide immediately upon the question or set up an ad hoc committee which will examine the questions raised in the Secretary General's report and present conclusions to the General Assembly for final decision.

Adopted at the General Assembly of March 29, 1963.