
E C M A

European Computer Manufacturers Association

Introduction

By 1959 the growing use of computers, made by several different manufacturers, showed the necessity for standardisation 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 AB 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 AB
Ferranti Ltd.
IBM-WTEC
ICT Ltd.
Leo Computers Ltd.
Olivetti & C. S.p.A.
S.E.A.
Siemens & Halske AG
Standard Elektrik Lorenz AG
Standard Telephones & Cables Ltd.
Telefunken G.m.b.H.
Zuse KG.

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 Organisation 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 ITT-Europe as the parent company represented Standard Elektrik Lorenz and Standard Telephones & Cables Ltd., and Aktiebolaget Addo represented Bo Nyman AB N 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 standardisation in the general field of computers. This meeting resulted in the formation of TC97 and in the organisation of its own Working Groups, and ECMA was asked to become a liaison member.

Though none of the Technical Committees has yet made a full report to the General Assembly of ECMA, there seems to be general agreement within Europe on the structure of codes to be used for input and output. This code appeared to be not fully compatible with the code that was being proposed to the American Standards Organisation as the American standard. Fortunately, and generously, the relevant ASA Committee sent representatives over to Europe to discuss the standard and to put forward their own views. Arising out of this meeting and a meeting of ISO/TC97 WG/B, it looks hopeful that a code will be adopted by ISO which is compatible with both the ASA code and the ECMA code, both of these codes being modified so that this desirable end can be achieved.

Further Technical Committees have now been formed:

TC4—Characters for Recognition;

TC5—ALGOL;

TC6—COBOL.

The last two Committees were formed as it appeared probable that these two 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 standardised, whether or not these languages were eventually adopted as standards. TC2 is now concerned with general research in the field of programming languages.

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 organisations, 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 organisations, as a scientific endeavour and in the general interest, methods and procedures in order to facilitate and standardise 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 organisation and shall devote itself to no commercial activity whatsoever.

Membership

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.

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 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 of the following characteristics:

- a. Means for automatic entry of input data involved in business transactions, engineering and scientific requirements.
- 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 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.

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.

Promulgation of Standards

Promulgation of standards by the Association shall require approval by at least four-fifths 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: Mr. C. G. Holland-Martin (ICT)
Vice-President: Prof. J. Engelfriet (N.V. Electrologica)
TREASURER: Mr. Mario R. Pedretti (IBM-WTEC)
SECRETARY-GENERAL: Mr. D. Hekimi

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**The National Cash Register Co. Ltd. is not as such a member of ECMA but by virtue of their association with Elliott Brothers, employees of NCR may represent Elliott on ECMA committees.*

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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.

OFFICERS:

Chairman: Mr. H. L. S. ORDE (NCR representing Elliott)

MEMBERS: Mr. A. BAEUMLER (Zuse)
Prof. Dr. J. ENGELFRIET (Electrologica)
Mr. M. R. PEDRETTI (IBM-WTEC)

Technical Working Committees

Input and Output Codes Committee TC1

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 standardisation 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 organisations in order to present ECMA proposals to them and to make comments on their proposals.

OFFICERS:

Chairman: Dr. W. LOCKEMANN (Siemens & Halske)

Vice-Chairman: Mr. W. EADIE (IBM-WTEC)

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Mr. D. STARYNKEVITCH (S.E.A.)
 Dr. E. ULBRICH (Telefunken)
 Mr. Å. WANNERBERG (Facit)

General Programming Languages Committee TC2

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:

Prov. Chairman: Mr. R. L. COOK (Elliott Brothers)
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 alternate: Dr. E. W. DIJKSTRA

Flow Charting Committee TC3

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 organisations in order to present ECMA proposals to them and to make comments on their proposals.

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Character Recognition Committee TC4

SCOPE:

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

Specification of founts, parameters, measurements and tolerances.

Definition of document specification (size limits, ink, position of pointed 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 founts standard specifications (magnetic and optical founts shall be considered).
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 founts (magnetic and optical), 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 organisations, users and printers associations, etc.

OFFICERS:

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Mr. VAN STEENIS	(IBM-WTEC)
Mr. G. WEILL	(Bull)

ALGOL Committee TC5

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.

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 alternate: Dr. A. WILHELMY
 Prof. Dr. H. ZEMANEK (IBM-WTEC)

COBOL Committee TC6

SCOPE:

The definition of a common interpretation of COBOL 61 which will take into account specific European requirements, in order that ECMA members may realise 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:

Prov. Chairman: Mr. F. A. BERNARD (IBM-WTEC)
Prov. Vice-Chairman: Mr. E. HUMBY (I.C.T.)
 MEMBERS: Mr. G. BLAISE (Bull)
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Representatives

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