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RM 2128/TC 3
May 1979

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No. 3: GRAPHICAL
SYMBOLS

Unconfirmed Minutes of the meeting
held in Paris
on 8th September 1978

Present:

Chairman: Mr. M. DUCOMMUN (Switzerland)
Secretary: Mr. E. RUOSCH (Switzerland)

COUNTRY

CZECHOSLOVAKIA

FINLAND

FRANCE

GERMANY

ITALY

NETHERLANDS

NORWAY

SWEDEN

SWITZERLAND

UNITED KINGDOM

U.S.A.

Observer: IFAC

DELEGATES

Mr. V. Prosr

Mr. T. Viitanen

Mr. P. Cornu

Mr. J. Dubray

Mr. R. Mauduech

Mr. J.--J. Thurwanger

Mr. W. Amann

Mr. G. Herder

Mr. G. Corbellini

Mr. J.P. Keizer

Mr. P.D.C. Reefman

Mr. J. Petterson

Mr. B. Åkerberg

Mr. E. Georgii

Mr. S.J. Aries

Mr. C.A. Fricke

Mr. C.R. Muller

Mr. J. Hoffmann

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I. OPENING OF THE MEETING

The new Chairman of TC 3, Mr. Ducommun, opened the meeting, welcomed the delegates and confirmed the appointment of Mr. Höpp as Chairman and Mr. Mauduech as Secretary of SC 3C, Mr. Svensson as Secretary of SC 3B and Mr. Dubray as Secretary of JWG. Also he thanked the French National Committee, especially Mr. Ludwig, for the organisation of the meeting and all the arrangements taken for the success of the deliberations.

II. APPROVAL OF THE DRAFT AGENDA

Approved.

III. CONFIRMATION OF THE MINUTES OF THE MEETING HELD IN BERN ON 29TH SEPTEMBER 1977 - RM 2033/TC 3

Accepted.

IV. REPORT FROM THE CHAIRMAN OF THE CCI/IEC JOINT WORKING GROUP: GRAPHICAL SYMBOLS FOR TELECOMMUNICATIONS

Activity since previous report

At the kind invitation of Messrs. Siemens the JWG met in Munich in April 1978. Work was carried out for both SC 3A and SC 3B as before. On this occasion the Group was also able to give its opinion on a number of symbols proposed for use on tele-communications equipment. The French National Committee will take account of these comments when preparing a document for submission to SC 3C.

A small sub-group studied Documents 3B(Central Office)19 and 3B(Secretariat)19 and prepared proposals for the amalgamation of the material therein. These have been forwarded to the Secretariat of SC 3B for consideration at its meeting. A good deal of the meeting's time was occupied by discussion of a draft revision of IEC Publication 113-2 on item designation and of the rules and symbols applicable to function charts. Work on both these subjects is proceeding.

At SC 3A's request the JWG studied the symbols for blocking, locking and latching and prepared proposals for rationalisation for consideration by SC 3A at its next meeting. Documents containing symbols proposed for concentrators, multiplexers and static relays were drafted for submission to the Secretariat of SC 3A.

Membership

Since Mr. Nordelöf's retirement the Secretariat has been ably taken over by Mr. Dubray and his place as an IEC member has been filled by Mr. Van de Walle of France. Mr. Shapiro has resigned and has been replaced by Mr. Fricke of the U.S.A. Mr. Duran the CCIR member has also had to give up his membership and the CMV has confirmed Mr. Quintos as his replacement.

At the last meeting a telegram was received from Mr. Schneider saying that due to retirement he could no longer participate in the Group's Work. TC 3 is hereby requested to nominate a replacement.

Next meeting

Arrangements for the next meeting have not yet been finalised but it is hoped to hold it in the Spring of 1979, possibly in association with SC 3A/WG 4.

Since Switzerland has no proposal for the nomination of a replacement of Mr. Schneider in the CCI/IEC-JWG Mr. Herder asked to have the possibility for this membership. He was confirmed and Mr. Dubray, Secretary of JWG, will distribute a new list of delegates.

V. REPORTS FROM SUB-COMMITTEE 3A: GRAPHICAL SYMBOLS FOR DIAGRAMS

a) REPORT FROM THE CHAIRMAN OF SC 3A

Mr Georgii read his report:

During the meeting in Paris the following drafts were approved: Documents 3A(Central Office)87, 88, 89, 90, 91, 92. These documents will be integrated respectively in the different parts of the new IEC Publication 617.

Document 3A(Central Office)93 will be amended and circulated under the Two Months' Procedure.

Discussed and amended for circulation under the Six Months' Rule were the following documents:

3A(Secretariat)75, 76, 77, 78, 81, 83

The numbering is fixed by the first Publication 617-13.

The Documents 3A(Secretariat)79, 80 and 82 were deferred until the next meeting.

The preparation of the new Central Office document will be dealt with based on the originals:

- 3A(Secretariat)75 : U.S.A., Mr. Muller
- 3A(Secretariat)76 : U.S.A., Mr. Muller
- 3A(Secretariat)77 : Switzerland, Mr. Ducommun
- 3A(Secretariat)78 : Switzerland, Mr. Ruosch
- 3A(Secretariat)79 : (not dealt with)
- 3A(Secretariat)80 : Netherlands (not dealt with)
- 3A(Secretariat)81 : United Kingdom, Mr. Aries
- 3A(Secretariat)82 : (not dealt with)
- 3A(Secretariat)83 : Switzerland, Mr. Georgii

Mr. Aries would undertake to find out where the original masters were and send them to the respective Committees.

b) REPORT FROM THE CHAIRMAN OF WORKING GROUP 2: GRAPHICAL SYMBOLS FOR INFORMATION PROCESSING

Mr. Reefman read this report: *of Mr. Aries*

1. Activities since the Report presented in Bern

After the meeting of SC 3A in Bern in September 1977 a meeting of WG 2 was organized in Bern in October 1977 together with WG 4. The main subject was the revision of IEC Publication 117-15 (Part 12 of IEC Publication 617). This fruitful cooperation between WG 2 and WG 4 was carried further at the meeting of WG 2 in Paris in February 1978. During this meeting much attention was paid to the first chapters of IEC Publication 617-12.

The chapters 1, 2 and 3 were finished. A table of contents is given in an Appendix to this Report.

A great number of definitions were re-written to make them more clear and to avoid misinterpretation.

No Secretariat documents containing new material will be published but the new material will be introduced into the revised IEC Publication 117 which will itself be a Secretariat draft. This is done to obtain a better integration and to avoid confusion of the National Committees.

2. Next meeting of WG 2

The next meeting of WG 2 will be held in Munich in 1978 from 23rd to 28th October.

Table of contents of the chapters 1, 2 and 3 of IEC Publication 617-12.

<u>Chapter 1</u>	<u>Scope and general notes</u>
Section One	Scope
Section Two	General notes
<u>Chapter 2</u>	<u>Symbol construction</u>
Section One	Composition of the symbols
Section Two	Outlines
Section Three	Combination of outlines
<u>Chapter 3</u>	<u>Qualifying symbols associated with inputs and with outputs</u>
Section One	Explanation of terms
Section Two	Negation, logic polarity and dynamic input
Section Three	Internal connections
Section Four	Symbols inside the outline
Section Five	Non-logic symbols

c) REPORT FROM THE CHAIRMAN OF WORKING GROUP 4: RE-ORGANISATION OF IEC PUBLICATION 117

Mr. Aries presented his report:

1. Activities since the report presented in Bern

1.1 Co-operation with WG 2 on the revision of IEC Publication 117-15 (Part 12 of IEC Publication 617).

Progress with this difficult exercise was made at a joint WG 2/4 meeting in Bern in October 1977 and was carried further at the meeting of WG 2 in Paris in February. At the latter meeting it was decided that no separate Secretariat document containing new material (e.g. F input) should be published but the proposals should be introduced into the revision which will itself be a Secretariat draft. WG 2 plans to meet in October 1978 after which it is hoped that the revision work will have reached the point at which it can be handed over to WG 4 for the preparation of the final draft.

1.2 Preparation of drafts for Parts 8 and 11 of IEC Publication 617.

WG 4 met in Munich in March 1978 and prepared drafts for the two remaining parts of the new Publication viz Part 8 containing symbols for measuring instruments, clocks, etc., and Part 11 containing topographical symbols. The draft documents have now been forwarded to the Secretariat of SC 3A for circulation to the National Committees.

1.3 Amendments to existing Secretariat documents.

As a result of its work on Parts 8 and 11, WG 4 found a need to amend some of the Secretariat documents already circulated. Proposals have now also been circulated as 3A(Secretariat)xxA documents as appropriate.

2. Secretariat

Mr. J. Nordelöf who had served the Working Group so well since its inception has had to leave the post due to his retirement. For the meeting in Munich I was fortunately able to secure the services of Mr. D. Price of the United Kingdom. Unfortunately, Mr. Price is also retiring shortly and it will be necessary to find a new Secretary for the remaining work (mainly on Part 12).

3. Next meeting

No arrangements for the next meeting have been made so far. Depending on the progress made at the forthcoming meeting of WG 2 it is hoped that the Group can meet in association with the Joint Working Group in the Spring of 1979.

Invitation

The National Committees are requested to nominate a Secretary for WG 4.

VI. REPORT FROM THE CHAIRMAN OF SUB-COMMITTEE 3B: PREPARATION OF DIAGRAMS, CHARTS AND TABLES. ITEM DESIGNATION

Mr. Fricke presented his report:

1. Meetings

Since I reported to TC 3 in February 1978, SC 3B has held no meeting.

The Chairman of SC 3B has participated in the meeting of the CCI-IEC JWG in Munich in April this year.

Next meeting of SC 3B is to be held in Paris from 11th to 13th September 1978.

2. Work being dealt with

Applications of logic symbols and the preparation of logic diagrams

- Document 3B(Central Office)19 has been circulated under the Six Months' Rule and
- Document 3B(Secretariat)19, containing a supplement to Document 3B(Central Office)19, has been submitted to the National Committees for comments.

The required percentage of votes in favour of publication of Document 3B(Central Office)19 was obtained. However, the publication has been held since some National Committees drew attention to the relationship of the material of the two documents and made various proposals for a combination of them.

A proposal for the amalgamation of the material in Document 3B(Central Office)19 with that of Document 3B(Secretariat)19 has been drafted by an ad hoc Group at the Joint Working Group meeting in Munich. This draft, together with the comments on Document 3B(Secretariat)19, will be considered at the meeting in Paris.

Preparation of diagrams for functional documentations, Document 3B(Secretariat)20

A revised edition of Document 3B(Secretariat)18 (Preparation of diagrams, charts and tables for maintenance purposes) has been prepared by the CCI-IEC JWG and submitted for comments by the National Committees.

The comments will be considered at the meeting in Paris.

3. Future work

The following items, at present under consideration within the CCI-IEC JWG, are intended to be submitted as 3B(Secretariat)... documents for study at future meetings:

- Guidance for the application of IEC Publication 113-2, Item designation.
- The preparation of control system functions charts.
- Amendments to IEC Publication 113-1, Definitions and Classification.
- Preparation of terminal diagrams.

VII. REPORT FROM SUB-COMMITTEE 3C: GRAPHICAL SYMBOLS FOR USE ON EQUIPMENT, AND ITS WORKING GROUP 1: GRAPHICAL SYMBOLS FOR USE ON WASHING MACHINES AND DISH WASHERS

No meeting had been held since Bern.

VIII. APPOINTMENT OF THE CHAIRMAN OF SC 3A

The Chairman of TC 3, Mr. Ducommun, thanked Mr. Georgii for his excellent leadership of SC 3A during the past ten years with all the technical revolutions that had taken place. The best part of IEC Publication 117 had been made under his chairmanship, he has created in a clear view of the problems the three Sub-Committees 3A, 3B and 3C. The mandate of Mr. Georgii expired on 31st October 1978, but on behalf of all the delegates the Chairman hoped that he would still attend some of their meetings.

He then expressed his pleasure that Mr. Reefman had been nominated Chairman of SC 3A. In his address to the delegates, Mr. Reefman expressed his appreciation at having been appointed to this office (see Appendix).

IX. DISCUSSION OF IEC PUBLICATION 92-2 OF TC 18: INSTALLATIONS ON SHIPS, PART 2: GRAPHICAL SYMBOLS

This IEC Publication 92-2 was no longer up-to-date and should be withdrawn, since there were perhaps some new needs that had not been dealt with in their publications. TC 3 offered its collaboration and Mr. Ducommun would contact the Chairman of TC 18.

X. OTHER BUSINESS

TC 3 would be represented in ISO/TC 10 by Mr. Åkerberg.

XI. DATE OF THE NEXT MEETING

The next meeting would be held probably in 1980 in conjunction with the IEC General Meeting in Stockholm.

XII. CLOSE OF MEETING

The Chairman thanked all delegates for their kind collaboration.

Mr. Thurwanger complimented the Chairman on his excellent guidance of the meeting.

APPENDIX

Address of Mr. P.D.C. Reefman, on his appointment as Chairman of SC 3A

Mr. Chairman, Gentlemen,

I should like to say how greatly honoured I am by my appointment as Chairman of SC 3A and that I am grateful for the confidence that you, Mr. Chairman and gentlemen, have shown in me.

I am quite sure that my task will not be an easy one, in spite of the remarkable results obtained by our present Chairman, Mr. Georgii, without whose continuous efforts, we probably should not have recognized that the switching function in heavy current technique and in telecommunication is in principle the same and should therefore be represented by the same basic symbol.

I would further mention his decision to re-organize IEC Publication 117, which has been executed so well by our WG 4, and also his decision to create standard symbols for logic functions, which has been taken up by WG 2.

When we talk about symbology in general it seems to me that some big changes have already become evident.

In earlier days it was possible to create a new symbol for every modification of a device or a component. Later on the qualifying symbols were discovered to denote differences in the function.

Modern devices however, are so complex that an infinite number of variations on a basic pattern can be made, which cannot all be represented by the use of qualifying symbols so that labeling by means of letters becomes inevitable. This solution, which has already been used by WG 2, is not a bad one, in particular not if the letters are derived from well-known characteristic expressions.

I think that in the near future it will be impossible, even with this method, to depict every function on a bit level. This means, that relations between in- and outputs have to be shown by suitable mnemonics at these in- and outputs, so that at least the function of an integrated circuit can be made comprehensible without giving too much detail.

It is not impossible, that symbology in the future will be more a matter of language than of symbols and that it will restrict itself to the standardization of functional mnemonics. The present techniques of large scale integration and very large scale integration already point in this direction. This brings me to another important point: the maintenance. In spite of the expected increase of hardware reliability maintenance will be as important as ever, but its nature will change. Very complicated building blocks will be replaced at once and the faulty unit will be thrown away or repaired in a centralized workshop by highly skilled personnel.

The maintenance man in the field is a poor man, he gets no permission to repair anything or to check minor details for a step-by-step approach. He is a functional thinker and must be able to check complicated functions. It is obvious that he must be supported by clear and functional documentation which does not confuse him with unnecessary and unimportant details. It is not an easy task to develop this documentation but the problem will soon be spread all over the world and I am convinced that worldwide standardization in this field can be of great help.

A big task is waiting for TC 3.

Talking about logic symbols, I can say that in general, the new IEC-system has been received rather well by the manufacturers of equipment and by educational institutes. The manufacturers of logic circuits however, are still not quite in line. They are waiting, one for the other.

The one who starts first is afraid that he will lose his market to the others.

A big problem is, that changes in component catalogues will cost a lot of time and money since the standard integrated circuits have to be translated into the IEC-system. For this reason we have started in The Netherlands already with this translation, so that a complete circuit diagram will be available for each integrated circuit. Personally, I think that this work also should be done on an international level and here lies another task for WG 2.

Manufacturers of components have their own standardization organizations such as JEDEC and PRO-ELEKTRON, to standardize the coding, the packages and the pin numbering of their circuits; and we could ask ourselves whether it would not be wise to contact these organizations so that together with the other data, an IEC-symbol will be available for a new circuit. Mr. Chairman, I often hear you say: "do not make stories now", and I have to admit that this was quite a long story but I will not end it before I have thanked you on behalf of Sub-Committee 3A for all the work that you have done during the last ten years together with our Secretary, Mr. Ruosch, and I am very grateful that he will stay for another couple of years. I am quite sure that he and I will have a good and fruitful co-operation.

Mr. Chairman, members of this Sub-Committee, I thank you for your attention and as I know you all, I must say that I am very glad that I have the opportunity to co-operate with so many qualified specialists and I hope that together we can continue the important work of Sub-Committee 3A.

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Central Office of the IEC
1, rue de Varembe
GENEVA