



# ISO/TC145-IEC/SC3C JWG 11 N 108

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**ISO**  
ORGANISATION INTERNATIONALE DE NORMALISATION  
INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE  
INTERNATIONAL ELECTROTECHNICAL COMMISSION

<b>Title:</b>	<b>Unconfirmed report of the 12<sup>th</sup> meeting of ISO/TC 145-IEC/SC 3C JWG 11 meeting</b>
<b>Source:</b>	<b>Secretary and Convener</b>
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## INTRODUCTION

This document was co-authored by Secretary and Convener for JWG 11 for confirmation by the members of ISO/TC 145-IEC/SC 3C JWG 11.

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**Report of the 12<sup>th</sup> meeting of ISO/TC 145-IEC/SC 3C JWG 11  
held from 2005-03-15 to 2005-03-17  
at the IEC Central Office, 3 Rue de Varembe, Geneva, Switzerland**

### 1. OPENING OF MEETING

The convenor welcomed members and thanked Mr Jack Sheldon of the IEC/CO for the meeting arrangements.

### 2. ROLL CALL OF ATTENDANCE

The list of those attending the meeting is given in Annex A.

### 3. APPROVAL OF THE AGENDA

The revised draft agenda, document N104A, was accepted.

### 4. REPORTS OF RELEVANT ACTIVITIES SINCE THE 11<sup>th</sup> MEETING

#### 4.1 Activity in ISO/TC 145

Bob Stratton advised that ISO/FDIS 80416-4 “Basic principles for graphical symbols used on equipment – Part 4: Guidelines for the adaptation of graphical symbols for use on screens and displays (icons)” was to be issued for parallel ballot in ISO and IEC on 2005-03-18.

#### 4.2 Activity in IEC/SC 3C

The convenor drew attention to a number of documents.

a) 3C/1183/INF, the meeting report of last JWG 11, which was now regarded as being confirmed.

b) 3C/1233/INF was a liaison statement from ISO/TC 130 “Graphic technology”. That committee supported the principles for the revision of the 80416 series along the lines already requested by several other ISO committees.

c) 3/749/DC detailed consolidated procedures for standards in database format. Jack Sheldon outlined the current situation in IEC pointing out that a list of those standards available in database format, IEC 60417, IEC 60617 and IEC 61360, had been given on the front page of IEC website. Proposed procedures for the revision of annex J to IEC supplement to the ISO/IEC Directives were incorporated in 3/749/DC, although the compilation of comments was not yet available.

### 5. COMMON STRUCTURE, CLASSIFICATION SCHEME AND TERMINOLOGY FOR THE JOINT ISO/IEC DATABASE OF GRAPHICAL SYMBOLS

Report from the ad hoc Task Force (TF)

Fred Brigham took the committee through document N105, pointing out that the TF had held a very successful meeting. He explained the principles given on the first page, pointing out that the activity had been prompted by the existing classification scheme being inadequate for the symbols in ISO 7000. The TF wanted to develop a scheme that would also be of use in the future and the scheme proposed represented the consensus view of the TF.

To assist the TF a Microsoft Access database had been developed. Regarding shape, basically the same classification as used in IEC 60417 was being proposed except that polygons were a separate category, barrels and ovals were linked together and shields were a new category. Also, rectangles and polygons had been split. The proposed system now allowed multiple classifications. A more complex classification was now included for lines and arrows. When searching, it would be possible to search for up to two basic shapes and other combinations, for example double-headed arrows and single lines. The TF were suggesting that search criteria should be similar to the current database but with “and/or” as an option and with

sub-levels not just the top level having to be specified. The Annex to N105 gave guidelines for classifying according to shape.

Fred Brigham pointed out that there were some illogical combinations of check boxes, e.g. could not have single and multiple lines. This would need to be amended so that single and multiple lines, and arrows, were radio buttons not check boxes.

The convenor questioned the excessive precision of the search results obtained, which might always give a null result. Fred Brigham said that many issues related to how searches were carried out rather than the detail of the classification scheme. Richard Gast said that the main area of disagreement in applying the classification was likely to be in deciding on whether something was a depicting shape or not but overall the proposed classification made the process much more objective.

Fred Brigham spoke to the document as it related to function. The TF had felt that the "safety related" function was important even though this had previously been avoided due to potential problems with safety signs. It had been found that the application of proposed function categories was straightforward and gave results that could be understood, although searching on function was not likely to be the first way of entering the search area.

Alan Maislich questioned whether searching on function could be dropped altogether if users were not likely to use it. Fred Brigham said that some users would find it a logical means of searching and Anette Schwuchow said that it could be useful if searching in combination with other parameters. John Perry said that users needed to advise if function was a helpful search parameter or not and, after discussion, it was agreed to keep the functionality for the time being.

Fred Brigham explained the background to the "application" area. It would be necessary to add printing and publishing; there would be no entries for this application as yet but many would be included shortly.

It was recognised that for IEC 60417 the classification scheme had not been a standard, but only informative element in which the standardized graphical symbol was included. It would be useful to introduce such an informative part to make the database more useful.

Regarding the "general application" category, the TF were uncertain if it was needed and so three options had been put forward. The convenor said that a symbol having multiple references should be in the general category if some set threshold was exceeded, although John Perry questioned why it would be necessary to classify a symbol in "general" in addition to other categories. He was uncertain what benefit a general category would be to the users of the database. Fred Brigham said that personally he felt that the general category should be dropped, unless clear rules for its use could be developed.

Regarding keywords, Fred Brigham said that the term in general parlance, e.g. Google, had a different meaning to how it was used in the database. It was proposed that "supplementary search terms" should be included in place of keyword search. This was agreed.

John Perry felt that there would be arbitrary criteria chosen for a symbol to be classified as "general" and it would just be something else to argue about when classifying. Richard Gast questioned what advantage a "general" category would give the user of the database. Sue Callihan felt that it would be useful to show that a symbol was widely known and applied. After discussion, it was agreed not to use the general classification for the time being but to leave it for later once a rule for defining "general" had been agreed.

It was noted that the category "Audio, video and multimedia" should be used instead of "audiovisual". The convenor suggested that other application areas may be needed, e.g. transformers. Also, photography was becoming obsolete to be replaced by digital camera technology. The need to do further work on table 2 was agreed.

Yuji Nakamura felt that further work on classifying symbols should be carried out in ISO/TC 145/SC 3 and IEC/SC 3C not in the TF appointed by JWG 11 as this work was outside the scope of JWG 11. Anette Schwuchow said that JWG 11 had been given the task of developing a classification scheme for the database and that the classification work itself should also continue through JWG 11 and not in separate committees to avoid inconsistencies. Fred Brigham said that once a common scheme had been agreed, it was then a separate matter how the scheme was applied. There would have to be a meeting to do the work and however that meeting was described, the same people would most likely attend. The convenor felt that the initial classification should be carried out in a small group, pointing out that the classification was not a normative part, but merely an informative part of the database to assist searching, etc. and that it would not be necessary for National Committees to agree to the classification of the symbols. Sue Hooker said that the TF should finalize the categorization scheme, seek support for the scheme from ISO/TC 145/SC 3 and IEC/SC 3C and then apply the classification. This was agreed.

Regarding descriptions, Sue Hooker said that some existed for symbols in ISO 7000 but not many. Work need to be carried out by TC 145/SC 3/WG 2 but no work plan existed. She suggested doing the categorization and the addition of descriptions at the same time. Marie-Noelle Bourquin had already asked relevant TCs for descriptions for their symbols but there had so far been no responses. Fred Brigham pointed out that missing descriptions were not a TF issue. When the TF had finalized table 2, it would be useful if ISO/TC 145/SC 3/WG 2 could produce a list of available descriptions for review; the WG 2 convenor had been asked for a work plan for consideration at the Oslo meeting of TC 145/SC 3.

Regarding the conclusions, if JWG 11 agreed to the proposals, the TF would need one further meeting to apply the agreements but not to re-visit the classification scheme. JWG 11 expressed their thanks to Fred Brigham and all TF members for a job very well done.

## 6 MAINTENANCE OF IEC 80416-1:2001

The convenor introduced document N106 reminding members of the options and the procedure agreed at last meeting. Anette Schwuchow agreed that the symbol original was an idealised graphic drawn in accordance with the basic design principles. If applied on equipment, the symbol would be different from the original. She felt that allowing different line widths in symbol originals was not a solution in that it was better to have a consistent base from which to develop application symbols. She went on to say that the possibility of including application symbols in the database should be explored but she did not want to open up the design principles completely.

Motoya Mohri expanded on his comments and Sue Callihan spoke to her comments in annex C. She felt strongly that to insist that a symbol original should have a line thickness of 2 mm with anyone then having the opportunity to change it as they wished for applications was short-sighted. Although there were some symbols that were applicable in a number of sectors, many, for example vehicle symbols or medical symbols, would not be used outside of those industries. Why should they have to draw their symbols twice – one that nobody would use just to follow the rules and one that would be applied to the product? Fred Brigham questioned where it was required that applicants had to produce symbol originals in accordance with IEC 80416-1 before symbols could be registered; maybe we did not need the concept of a symbol original. John Perry pointed to the requirement in the introduction to ISO 7000. Richard Gast said that if ISO 7000 could include a symbol original in accordance with IEC 80416-1 and a non-original version, then there would not be a problem, although Sue Callihan again questioned the need for a symbol original that nobody would use.

Referring to annex D, Richard Gast pointed out that the only voices heard in favour of the current restrictive rule on line thickness were from within JWG 11. Every TC dealing with symbols that had expressed a view had said that the rules were too restrictive. JWG 11 should respond to industry's needs or JWG 11 would be seen as irrelevant and obstructionist. Symbols actually used by committees could not be anything other than equal to other versions – application versions were not "2<sup>nd</sup> class". Sue Hooker supported this, pointing out that she had received representations, particularly from ISO/TC 127. Our standards were for use by all TCs and JWG 11 had to recognize what was needed by industry. Industry should not have to redesign symbols unnecessarily; it should be possible to register a symbol as it was needed to be used in industry. Also, that version should be on the database and available for downloading, otherwise the database would just be something to look at rather than use.

John Perry said that there was clearly no problem in developing application symbols based on symbol originals; it came down to industry having to do extra work to develop a symbol original for registration. That would be bad if it led to product committees developing symbols but not registering them. He felt that the current rigid rules were unsustainable if industry found them restrictive. Fred Brigham questioned whether it was the requirement in ISO 7000 that needed to change. Either we needed the idealised versions that all could use and adapt or we had to have a set of design principles for the inclusion of symbols in ISO 7000 or IEC 60417.

The convenor drew attention to the original version of IEC 416 (ISO 3461-1) which introduced the concept of a symbol original as being the original film held by the Secretariat of ISO/TC 145. There was nothing that required the symbol original to be what was included in ISO 7000 before being included in the database.

Richard Gast said that one difficulty was the dichotomy between the symbol original and the application symbol. Both were standardized graphical symbols, although the convenor pointed out that only symbol originals were standardized by ISO/TC 145/SC 3 and IEC/SC 3C. Richard Gast went on to say that the difference in philosophy between those who wanted to keep the current restrictive rules and those who did not hinged on how the symbols were used or not used. The original meaning of symbol original did not now apply. The majority of symbols in ISO 7000 were not consistent with the current edition of IEC 80416-1 and so were not symbol originals as defined nor were they application symbols. New terms were needed recognizing that both were standardized and were of equal status. Those that were product specific within an industry could be industry standardized symbols. Replacing "symbol original" would be more difficult – using "idealized symbol" could be taken to mean that this was superior, although the use, perhaps, of "generalized symbol" could be misleading as they were not for general application. "Resource symbol" may be better but not entirely satisfactory. All would be standardized symbols and all would have registration numbers. The rules in the current IEC 80416-1 were clearly too restrictive, shown by the need for application symbols and the fact that symbols used in some industries did not comply with the rules. Sue Callihan said that no matter what they were called all such variants were graphical symbols; having different names just perpetuated the problem.

Richard Gast said that the areas where there should be rules were as follows:

1. Symbols should be developed at a consistent size to help size symbols in use in relation to each other.
2. Minimum line thickness should be specified to ensure legibility when reproduced.
3. There should not be duplication of a previous symbol in appearance or meaning, particularly generalized meanings, to avoid confusion.
4. A minimum line spacing should be specified for legibility purposes.
5. Use and meaning of arrows should be specified.

This was the only truly essential set of rules. The space between lines was a recommendation not a requirement.

Sue Callihan asked what data backed up 2 mm being the optimum value for line weight? Fred Brigham asked what would be lost from the user's viewpoint if we went back to the flexibility previously allowed? He suggested removing references in clause 10 of IEC 80416-1 to break the link with symbol registration. IEC 80416-1 should not be where registration was specified. In the database there would be some 2 mm versions together with others that industry needed. For those that were going to be amended anyway, have them at 2 mm for consistency in a family of symbols. It was felt that the term "graphical symbols for registration" could be used instead of "symbol originals", although there was no agreement on line thickness – perhaps this should be a recommendation, "should, where appropriate".

Sue Callihan foresaw problems with "where appropriate". Fred Brigham said that the title of IEC 80416-1 was wrong in respect of what JWG 11 was trying to achieve which was delivering design principles for graphical symbols for registration. When making a selection, it was easier to compare symbols if line thicknesses were mostly 2 mm and if the symbol was unfilled rather than filled. Richard Gast pointed out that IEC 80416-3 should be specific to what could be done to a registered symbol for it to be an application symbol, Part 1 should relate only to symbols for registration.

Anette Schwuchow was concerned that if IEC 80416–1 allowed almost anything, what further guidance could be given in Part 3 for application symbols? Richard Gast introduced the concept of a registered symbol, complying with IEC 80416–1 and ISO 80416–2, a standardized symbol, complying with 80416–1 and 80416–2, which could have been registered originally if the product committee had published it in its standard, and application symbol (not in standard) that complied with IEC 80416–3. There could be an initial/generic registration, e.g. ISO 7000-3000, then there could be ISO 7000-3000-Cm and ISO 7000-3000-Cn for use by specific committees and further registration, where m and n were unique serial numbers. There could then be a change to clause 4.4 of IEC 80416-3 to read as follows.

"If International Standards prepared by technical committees contain standardized graphical symbols or suitably modified graphical symbols for specific applications, the graphical symbol shall be illustrated together with the registration number and title obtained from either ISO 7000 or IEC 60417."

Also, after further discussion, re-wording of clause 6.3 was provisionally agreed as follows.

"The line thickness of a graphical symbol for registration shall be 2 mm minimum and should not exceed 4 mm. In general, a line thickness of 2 mm is recommended. If, for the purpose of visual clarity and improved comprehension, more than one line thickness is used, the ratio of line thicknesses should be 2:1 as shown in figure 3."

Regarding document N107 on application of the basic pattern, it was said that the original was designed many years ago, although by whom was uncertain. Yuji Nakamura felt that essentially the basic pattern was a good idea but JWG 11 should re-consider the need for the octagon. Richard Gast said that he had a problem with the re-definition in 2001 that the octagon was the boundary for symbols. Symbols developed under the 1988 protocol (ISO 3464-1) had been proved to be worthy but would not be permitted today. There should be some standardized limit in size when preparing symbols for registration but, in keeping with the past, this should be within the 75 mm square. The convenor said that the basic pattern had a long history and so he would be reluctant to change it but it would be possible to amend the text on how it should be used. Sue Callihan pointed out that the shape of the octagon itself defeated the purpose of spacing and she could think of no logical reason to have it. Yuji Nakamura felt that the octagon should be kept to keep visual balance between symbols but there should not be a restriction on going outside of it into the corners of the square. This was generally agreed and it was felt that revision of clauses 7.1 and 7.2 would become straightforward, although Anette Schwuchow felt that 7.1 should no longer use the word "shall".

To summarize the editing of IEC 80416-1, the convenor said that he would provide an edited Word file for all to review and give feedback before the next meeting.

It was agreed that reference should be made to where procedures could be found by including the URL to the ISO/TC 145/SC 3 and IEC/SC 3C websites. At end of clause 9, it was agreed to add "Information is available in the relevant part of the ISO/TC 145/SC 3 web site (<http://www.ISO.org/tc145/sc3>) and/or the IEC/TC 3/ SC 3C web site (<http://SC 3C.iec.ch>).

It was also agreed, provisionally, to amend clause 10 to read as follows (without notes).

"The designation system for graphical symbols registered in IEC 60417 and ISO 7000 consists of the following:

- a) the reference of the International Standard, either IEC 60417 or ISO 7000;
- b) a hyphen;
- c) the registration number of the graphical symbol.

Example: IEC 60417-5115  
ISO 7000-0091

Any graphical symbol shall have only one registration number, either from IEC/TC 3/SC 3C or ISO/TC 145/SC 3.

Registration numbers below 5000 have been assigned to ISO 7000 and numbers above 5000 have been assigned to IEC 60417.

In exceptional cases where the meaning of a symbol original is extended to include a new meaning, the symbol original with the new meaning may have the same registration number with a dashed numerical suffix.

Example: IEC 60417-5277-1,  
IEC 60417-5277-2, ...

In exceptional cases where there are two alternative graphical representations for one function, these are distinguished by the addition of a letter after the registration number.

Example: IEC 60417-5107A,  
IEC 60417-5107B."

Regarding the designation system, the following extension was discussed in order to accommodate different graphical appearances for the same title and description, mainly used by product committees. Such a designation system would be:

ISO 7000-4000-C1; ISO 7000-4000-C2  
for ISO 7000-4000.

Regarding future progress, the following was agreed.

- The TF will update table 2 in document N105 and submit the result to JWG 11.
- P-members will be informed of the proposed classification scheme in September 2005, in parallel with implementation in the database by Alan Maislich.
- Work on categorization within ISO/TC 145/SC 3 and IEC/SC 3C will begin in November 2005.

## 7. RECOMMENDATIONS FROM ISO/TC 145 AG

Anette Schwuchow reported that there no recommendations from the AG meeting held on 14 March 2005. Referring to those from the meeting in Prague, the convenor pointed out that these had all been addressed at the last JWG 11 meeting.

## 8. DATE AND PLACE OF NEXT MEETING

It was agreed to hold meetings in Vienna, as follows.  
29 and 30 August 2005, the ad hoc Task Force, 31 August to 2 September 2005, JWG 11.

Anette Schwuchow agreed to make meeting and hotel arrangements available as soon as possible.

Convener expressed his appreciation to the members and closed the JWG 11 meeting.

BOB STRATTON

Secretary to ISO/TC 145-IEC/SC 3C JWG 11

HIROAKI IKEDA

Convener for ISO/TC 145-IEC/SC 3C JWG 11

## Annex A

Attendance list for the 12<sup>th</sup> meeting of JWG 11, 2005-03-15 to 2005-03-17

Convenor: Hiroaki Ikeda (Japan)  
Secretary: Bob Stratton (UK)

### Present

Anette Schwuchow	Germany
Fred Brigham	UK
Richard Gast	USA
Sue Hooker	USA
Sue Callihan	USA
John Perry	UK
John Wall	UK
Yuji Nakamura	Japan
Motoya Mohri	Japan

### Technical and secretarial support

Jack Sheldon	IEC CO
Alan Maislich	IEC CO
Marie-Noelle Bourquin	ISO CS