INTERNATIONAL ELECTROTECHNICAL COMMISSION

2017-08

TECHNICAL COMMITTEE 80

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS –

Committee Good Working Practice (GWP)

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INTRODUCTION

The scope of TC80 is to prepare standards for maritime navigation and radiocommunication equipment and systems, making use of electrotechnical, electronic, electroacoustic, electro-optical and data processing techniques for use on ships and where appropriate on shore.

TC80 was originated in 1980 and has identified a need to develop International technical standards for the equipment and systems that are part of, or are likely to become part of, the mandatory carriage requirements of the Conventions of the International Maritime Organization (IMO) and in particular, the International Convention for the Safety of Life at Sea (SOLAS).

The priority work programme is directly associated with that of the IMO Maritime Safety Committee. It mirrors the performance standards adopted by IMO in their Resolutions and any relevant ITU Recommendations. The scope does not however exclude items that are not mandatory with regard to the IMO SOLAS Convention.

TC80 has currently published 38 standards of which 34 support IMO requirements.

The Technical Committee is able, by being represented in both IMO and ITU, to influence the performance and technical content of the Resolutions and Recommendations. This is invaluable to manufacturing industry, in that the performance and technical standards represent the practical state of the current and emerging technology. The Technical Committee has little or no control over the regulatory aspects of the mandatory equipments selected or of some of technical aspects that influence manufacturing design for example radio frequency allocation. This aspect is covered to some extent by members of the Committee being members of their National Government regulatory bodies.

The Committee objective is to publish standards that have gained overwhelming International acceptance, and thus provide International industry with a single equipment standard. This objective is achieved, in most cases, by ensuring that the Committee has representatives from industry, Government, the user and test certification bodies.

MARITIME NAVIGATION AND RADIOCUMMUNICATION EQUIPMENT AND SYSTEMS –

Committee Good Working Practice (GWP)

1 Scope

This TC80 Good Working Practice details committee working practices for the organisation, communication and the drafting of standards in TC80.

It is intended to promote a common approach:

- To the drafting of standards,
- To the working practices, organisation and communication of Convenors of Working Groups (WG) and Maintenance Teams (MT).

2 General working methods

2.1 New texts

New texts are normally generated by Working Groups which are set up for the dedicated purpose. A Working Group should ideally be small whilst representing all interests.

The first output of the Working Group is a Committee Draft (CD) which is circulated to all the TC80 members for a comment period of 2 to 4 months. The CD is developed into the Committee Draft for Voting (CDV). It may be possible to proceed directly to the CDV.

The programme of the work including the target dates for the CD, CDV, and publication is agreed with the Working Group Convenor as part of a new work item proposal. Progress is monitored in Geneva and any delay exceeding 4 months requires justification. If a project is delayed so that it can not be completed within 5 years it will be stopped.

The work of the Working Group is finished when it completes the text for the CDV although assistance may be needed from the Working Group to resolve any comments after the vote and the project leader remains with consultant status until completion of the publication stage.

An alternative, simpler, quicker output is a Publically Available Specification (PAS) which remains valid for 3 years after which it is withdrawn or turned into a full standard.

2.2 Timescales

The process in Central Office Geneva commences with the receipt of the text for the CDV from the TC80 Secretariat. There is then a two month period for translation followed by a three month period for national committees to make technical comments and provide a voting result. A period of up to seven months is allowed to resolve the comments and produce and circulate the draft for the next stage of Final Draft International Standard (FDIS). There is a two month period for national committees to make editorial comments and provide a final vote. Two weeks are then allowed to resolve the editorial comments after which the document moves into the publication stage for which one and a half months are allowed. The complete cycle time is therefore 16 months. It is possible to run some of the stages in parallel and Central Office are very helpful, so in practice it may be possible to complete the cycle more rapidly.

2.3 Maintenance

All IEC standards have a maintenance date which is decided as part of the CDV voting. The date may be any time between two years and twelve years. At that date there are four actions which may be taken: the standard can be withdrawn, the standard can be re-confirmed for a further period, the standard can be amended or the standard can be revised into a new edition. The decision on what action to take is made at the TC80 Plenary meetings. Maintenance may involve the setting of small teams for the work if it is extensive. Maintenance Teams should note that if a new edition is planned, the text will be required at least a year before the maintenance date. Maintenance is a limited exercise intended to keep the standard up to date. It is not intended for a major change or extension to the standard for which a new standard, or a new part, may be more appropriate.

2.4 Progress of work

Convenors and project leaders should enquire about any difficulties they encounter or issues they do not understand at the earliest opportunity. When there appears to be unresolvable issues that are significantly affecting the progress of the development of a standard the Chairman should be contacted to provide guidance.

The Secretary will normally advise conveners and project leaders as the deadline dates for any standards under its cognizance approaches, and assist them getting an extension from the SMB or the Committee when necessary.

National committees, project leaders, conveners and committee officers can seek Committee decisions on a topic at any time by submitting the matter for circulation for comment or approval to TC80 members as a DC document.

3 TC80 standards

3.1 General

All IEC standards are required to conform to rules for the structure and drafting given in Part 2 of the ISO/IEC Directives which can be obtained from the IEC web site (see 5.1). These rules ensure uniform drafting of IEC and ISO standards. TC80 standards have an additional structure if they are intended to support SOLAS requirements and be used to assist type approval against IMO performance standards. The TC80 standards quote the IMO requirements in italics with the IMO recommendatory word “should” substituted by a mandatory “shall”, for example:

(148/A.5.1) *The printer* shall *be able to print a minimum of 32 characters per line.*

If it is absolutely necessary to add further clarification to IMO requirements, this is added in normal (non-italic) text, for example:

(148/A6.3) *Information for location (B_1) and message (B_2) designators in programmable memories* shall be permanently stored in non-volatile memory and shall *not be erased by interruptions in the power supply of less than 6 h.*

Default programmable settings shall be, for the location (B_1) designators set to all characters and for the message (B_2) designators set to characters ABCDEFHJKLVZ.

NOTE This structure is not used for standards which are not intended to support SOLAS requirements.

Some IMO requirements call up detail from other organizations such as the ITU, for example:

(148/A.1.1) *The equipment, in addition to meeting the requirements of the Radio Regulations, the provisions of Recommendation ITU-R M.540 applicable to shipborne equipment* shall

comply with the following performance standards.

In this case any ITU requirements which are essential in order to define the technical characteristics in the IEC standard are included in italic text, for example:

(540/AII.4) *Facilities* shall *be provided to avoid printing, storage or display of the same message several times on the same ship, when such a message has already been satisfactorily received.*

NOTE Only relevant parts of other organizations requirements need to be included. IMO reference does not necessarily incur meeting the whole requirement.

3.2 General requirements

Since all IMO performance standards refer to the general requirements given in IMO resolution A.694(17), the TC80 standards refer to IEC 60945. For example:

(112/A1.2) *Receiver equipment for the Global Positioning System (GPS) system intended for navigational purposes on ships with maximum speeds not exceeding 70 knots* shall, *in addition to the general requirements contained in resolution A.694(17), comply with the following minimum performance requirements.*

The equipment shall comply with the general requirements contained in IEC 60945, as applicable to the equipment category, for example “protected”, “exposed”.

Further quotation from IEC 60945 is not required but it is necessary to define in the standard the performance check and performance test required by IEC 60945, for example:

Performance test

Position fix measurements shall be taken over a period of not <24 h. The absolute horizontal position accuracy shall be within 13 m (95 %), having discarded measurements taken in conditions of HDOP ≥ 4 and PDOP ≥6.

Performance check

A minimum of 100 position measurements shall be taken over a period of not <5 min and not >10 min, discarding any measurements with HDOP ≥4. The position of the antenna of the EUT shall not be in error compared with the known position by >100 m 95 %.

NOTE Although this structure is not necessary for standards which are not intended to support SOLAS requirements, it will normally be found in practice that all maritime equipment needs to conform to IEC 60945.

3.3 Presentation of information

IMO resolution MSC.191(79) defines presentation requirements for navigation related information on shipborne navigational displays. IEC 62288 incorporates these requirements and there are general requirements applicable to all navigation equipment. TC80 standards for navigation equipment are required to refer to IEC 62288:

The BNWAS shall be tested as applicable against the general requirements for all displays contained in IEC 62288.

3.4 Reference to IEC 61162

Virtually all the TC80 standards involve interconnections between equipment to transfer data. IMO performance standards refer by footnote to the IEC 61162 series to achieve interconnection. It is necessary in each standard to define the mandatory portions of all applicable IEC 61162 series interfaces for the particular equipment, for example:

As a minimum, the equipment shall support the sentences GGA, GLL, GNS, RMC and ZDA to IEC 61162-1.

As a minimum, the equipment shall support the parameter group number PGN 129029 to IEC 61162-3.

It is also necessary to define any critical or unique interface characteristics, for instance. timing, resulting actions or equipment behaviours, which are additional to those specified in the IEC 61162 series.

The IEC 61162 series is developed and maintained by WG6. Any proposals for development of new or amending existing sentences should be made with WG6 well before the CD or CDV stage of a standard developed by a WG, MT or PT in order to resolve any issues and questions.

When the scheduled meeting dates of working groups, project or maintenance teams precludes the timely coordination of proposed new or revised data sentences with WG6, then the coordination should be done by correspondence with WG6.

3.5 Reference to IEC 62923

Many TC80 standards involve alert communications, to which Bridge Alert Management principles apply. This includes interconnections between equipment to transfer alerts. Many standards define mandatory alerts, for which mandatory alert identifiers could be applied to enable machine-reading of these alerts.

It is necessary to coordinate the mandatory alert identifiers, to maintain machine-readability and to prevent double use of an identifier. Alert identifiers are laid down in the IEC 62923 series. Due to the development of standards, it is necessary to maintain this list.

The IEC 62923 series is developed and maintained by IEC TC80 WG16. Any proposals for development of new or amending existing reserved alert identifiers should be made with WG16 well before the CD or CDV stage of a standard developed by a WG, MT or PT in order to resolve any issues and questions.

When the scheduled meeting dates of working groups, project or maintenance teams precludes the timely coordination of proposed new or revised data sentences with WG16, then the coordination should be done by correspondence with WG16.

4 Some drafting points

4.1 Scope

The Scope for a standard which is intended to support SOLAS requirements should contain a statement based on the text of the following example:

This International Standard specifies the minimum performance requirements, technical characteristics and methods of testing, and required test results, for shipborne voyage data recorder (VDR) installations as required by Chapter V of the International Convention for Safety of Life at Sea (SOLAS), as amended. It takes account of IMO resolution A.694(17) and is associated with IEC 60945. When a requirement in this standard is different from IEC 60945, the requirement in this standard takes precedence.

This standard incorporates the applicable parts of the performance standards included in IMO Resolution A.861(20).

NOTE All text of this standard, whose wording is identical to that of IMO Resolution A.861(20), is printed in *italics,* and the Resolution and associated performance standard paragraph numbers are indicated in brackets.

4.2 Normative references

There is a standardised version of the normative standard reference clause which can be inserted from the IEC Template by clicking on the "Insert" menu, selecting the menu choice "AutoText", and then choosing the introduction to this clause from the list.

References to other standards should wherever possible, be of a general nature, so that reference to the standard can be an undated reference. If a specific clause number needs to be identified, the normative reference to the standard needs to be a dated reference, since the reader may have to reference an earlier version of the standard than the current issue to get the information on which the reference was based.

Any normative reference quoted should be referred to in the text of the standard. Additional references may be added at the end of the standard in a Bibliography if needed.

4.3 Terms, definitions, symbols and abbreviations

If any terms, definitions, symbols or abbreviations are required to be quoted the opening paragraph should be as in the following example:

> For the purposes of this document, the following ……. apply.

If required, list abbreviations used in the standard but note that it is not necessary to define the sentences formatters (for instance GGA, GLL) of IEC 61162. The list should however include the following note:

> NOTE Abbreviations related to IEC 61162 series are not included in the above list. For their meaning refer to that standard.

4.4 Performance requirements, Methods of test and required test results

Performance requirements may be in a standalone Clause or may be in a Clause combined with Methods of test and required test results. If the Methods of test are extensive it is normally better to put them in a separate Clause. In any event the Methods of test should refer to the performance requirements (which if intended to support SOLAS requirements will be based on the IMO performance standard requirements). If separate Clauses are used it is necessary to provide cross references as shown in the example below:

> **4 Minimum performance requirements**
>
> **4.2.4.1** (A.824/A2.4.1) *When contact closure is used, forward speed only* shall *be indicated. The information* shall *be in the form of one contact closure (or the equivalent) for each 0,005 nautical miles run.*
>
> The minimum contact closure time or equivalent pulse width shall be 50 ms.
>
> **5 Methods of testing and required test results**
>
> **5.9.1 Contact closure**
>
> (See 4.2.4.1)
>
> **5.9.1.1 Method of test**

The equipment shall be set up in accordance with 5.2 and the closures of each set of output contacts shall be recorded accurately while the simulated sensor signals are applied. A constant forward speed of at least 10 kn shall be applied during which a series of not less than 10 consecutive contact closures shall be recorded.

5.9.1.2 Results required

The contact closure time or equivalent pulse width shall be not less than 50 ms. The interval in distance between the occurrence of the leading edge of one contact closure and the next for at least 10 consecutive contact closures shall be within 2 % of 0,005 nautical miles.

If no test method can be defined then a statement is made to the effect that the requirement is checked by inspection of the equipment, its manufacturing drawings or other relevant documents.

5 Guidance for Convenors

5.1 Drafting

Have a copy or access to the ISO/IEC Directives handy for reference:

http://www.iec.ch/members_experts/refdocs/

Only the Convenor, or a person nominated by him and/or the Secretary shall revise a text electronically to avoid corruption of the template and to maintain control of the changes and avoid copyright issues.

Download the latest IEC Standard Template to your computer from the IEC web site:

http://www.iec.ch/standardsdev/resources/docpreparation/iec_template/template.htm

This link also provides a guide to using the template. Remember to apply this latest IEC standard template initially and each time you open a document for the first time, for example, when a document is sent to you as Convenor after revision by the Secretary or a person nominated by you. In Word, under “Tools”, then “Templates and Add-ins”, the box for "Automatically update document styles" should not be checked.

5.2 TC80 GWP Document

This TC80 reference document is available for viewing and downloading on the IEC TC80 web site

http://www.iec.ch/tc80

5.3 IEC Guide for Convenors

Guidance is available on the IEC web site under “Collaboration Tools”, “Information and guides”. For this you need a user name and password which is obtained from your national committee.

http://www.iec.ch

5.4 IEC supporting information

IEC technical support information including forms can be found and downloaded from the IEC website:

http://www.iec.ch/tiss/forms-templ.htm

5.5 Texts

The initial electronic text to be used in a revision or amendment is the IEC published text of the existing publication. This is the actual text to be altered, which will avoid unnecessary editing. This text is to be obtained from the Secretary. Maintenance Teams are advised to start their work by producing an amendment document. This can always be edited into the main text later if the changes prove to be extensive.

5.6 WG/MT Meetings

Technical committees and subcommittees shall use modern electronic means to carry out their work (for example, e-mail, groupware and teleconferencing) wherever possible.

The Convenor should consult the Meeting Schedule on the CIRM web site before calling a meeting. This is to ensure that it does not take place at the same time as another meeting that would conflict with the experts being able to attend. It is also to optimize the travelling time and costs of the experts, for example by calling meetings in conjunction with other meetings at the same location and time frame that the experts will be attending.

The meeting schedule is available on the following CIRM web site:

http://www.cirm.org

under “International Meetings”. When dates have been decided the Convenor should inform the Secretary in order to have the meeting added to the CIRM web site. A minimum of 6 weeks notice should be given of a meeting.

Convenors may note that it is generally possible to hold meeting at BSi London for no charge.

NOTE CIRM is acting Committee Secretary of TC80 on behalf of the British Standards Institution.

5.7 WG/MT Meeting Agendas

To help the issue of meeting agendas on an IEC headed document, Annex A gives an example of a WG/MT Draft Agenda which can be copied and modified to suit the particular meeting.

6 Comment resolution

Comments received from National Committees on CDV documents are sent to the Secretary of TC80 on the IEC Comment form which has been collated by Central Office. The Secretary will resolve the comments calling for the assistance of the Convenor if necessary. If there are many comments, the Secretary may ask the Convenor to arrange a comment resolution meeting.

The Secretary will then send the completed RVC Annex document to the Central Office for distribution to the National Committees and prepare the next stage of the document (FDIS).

Any comments on the FDIS should be sent to the Secretary who will pass them on to Central Office who is responsible for preparing the next stage of the document. Note however that only errors in the draft are accepted. Further editorial or technical amendments are not accepted.

The dispositions of comments is as follows:

a) Agreed.

The comment was acceptable as presented.

b) Not agreed

This disposition indicates that the comment will not be incorporated into the document. All rejections have the justification for rejection, whether technical or editorial and documented as part of this disposition.

c) Partially agreed

This disposition indicates that some parts of the comment will be accepted and incorporated into the document. An explanation of how the accepted part is to be incorporated into the document is given. The parts that have not been accepted have the justification for doing so, whether technical or editorial, documented as part of this disposition.

d) Agreed in principle

This disposition indicates that the principle of the comment was accepted, but was incorporated into the document in a different manner than that suggested by the commenter. Explanation of how this is to be incorporated into the document is included along with the justification for the decision.

e) Held for next edition

This disposition used for major technical comments received for the CDV that has had a positive vote but have merit for consideration, but must be held until the next maintenance cycle of the document if the vote was in acceptance of the CDV. The reason for holding the comments is given, such as the proposal requires substantive research and has further implications.

f) Noted

This is used where there is no action required on the comment.

7 Golden Rules for Convenors

- Note that timescales in some instances may be set by the Technical Committee but in other instances may be set by external pressures such as in IMO and ITU.

- In any event keep to time. The average time to produce an IEC standard is 32 months. You should be able to do better than that. If you take longer than five years you will have to start again.

- Remember that it takes a year for the public voting phases in IEC (CDV and FDIS) and industry need another year for type approval. Your standard is required two years before the introduction of IMO carriage requirements.

- Be pro active. Take advantage of the IEC liaison membership in IMO and ITU and follow their work. Point out requirements that will be difficult to test or difficult to manufacture and attempt to influence the IMO/ITU outcome.

- Draft your standard while IMO/ITU work is in progress. While detail can change at the final acceptance of IMO Resolutions and ITU Recommendations it is usually minor.

- Have your CDV ready so that it can be released as soon as the IMO Maritime Safety Committee or ITU Study Groups have adopted their new Resolutions/Recommendations.

- Interpret adopted IMO/ITU requirements as honestly as possible. It is not your job to then question the decisions of IMO/ITU or to add additional functionality.

8 Committee General

Members of TC80 Working Groups and Maintenance Teams are invited to feed back any ideas they have to the TC80 Secretary for consideration to be included in this good working practice document.

Annex A

SAMPLE Draft Agenda (EDIT TO SUIT)

80/WG6/DA

2005- 12

INTERNATIONAL ELECTROTECHNICAL COMMISSION

To participants of IEC/TC80/WG6 meeting at US Coast Guard Academy, New London, Connecticut 31 Jan – 2 Feb, 2006

Agenda

1. Attendees.
2. Minutes of last meeting at BSI (UK).
3. IEC 61162-1:
   - 3.1. Third edition of 61162-1: Review of CDV.
   - 3.2. Radar Sentences.
4. IEC 61162-2:
5. IEC 61162-3 (NMEA2000):
   - 5.1. INS / IBS performance standard progress.
   - 5.2. NMEA Statement to IEC.
6. IEC 61162-4:
   - 6.1. Status.
7. Generic alarm handling:
   - 7.1. Response to WG6-0513.
8. Any other business:
   - 8.1. Members List.
   - 8.2. Other questions.
9. Dates of future meetings.