

Havenbedrijf Rotterdam

Introduction to maritime standardisation

Where to participate to influence standards

Date

16 August 2023

DESCRIPTION

Project Name

Havenbedrijf Rotterdam

Main title

Introduction to maritime standardisation

Subtitle

Where to participate to influence standards

Project number

VSO69104

Date

16 August 2023

Version

1.0

Total number of pages

14

Author

Jan-Kees van der Ven

Quality control

Djurre Wikkerink

SignatureA handwritten signature in blue ink, appearing to read 'J. van der Ven', written over a horizontal line.**Signature**A handwritten signature in black ink, appearing to read 'D. Wikkerink', written over a horizontal line.

DESCRIPTION

Table of contents

Management summary	3
References	5
Updates.....	5
Abbreviations.....	6
Definitions.....	6
Legal Disclaimer	6
1. Introduction.....	7
2. Standardization bodies.....	7
2.1 National standardization bodies.....	7
2.2 Regional standardization bodies.....	7
2.3 Global standardization bodies.....	7
3. Work on standards	8
4. Stages during the standardization process.....	9
5. Are standards mandatory?	9
6. Standardization process.....	10
6.1 IEC.....	10
6.2 CENELEC	13
7. Conclusion and recommendations.....	14

Management summary

The partnership Port of Rotterdam, Port of Amsterdam, Koninklijke Vereniging van Nederlandse Reders (KVNR) and StenaLine wants to get insight in the process of technical standardisation of shore power. There are several standardisation organisations. IEC operates worldwide, while the focus of CENELEC (Produces EN standards) is on Europe. Standards from both organisations can become mandatory either by ratified conventions or as harmonised standards belonging to specific European directives. In order to influence the content of these standards, it is advisable to participate in the standardisation work as early in the process as possible. The topics with which standards deal can be selected by writing proposals for new (parts of) standards. By actively participating in working groups or maintenance teams, the content of standards can be determined. And, by delivering well substantiated comments, it is possible to modify the content of the standard. Only once every few years, depending on the stability date that was set for that specific standard, there is the possibility to update a standard.

DESCRIPTION

In the updating process there are specific time slots in which specific information can be brought in as shown in the table below:

Table 1: Standardisation process over time versus the input that can be submitted

Type of information submitted	Stage			
	1	2	3	4
	New work item / proposal of revision	Committee Draft	Committee Draft for Vote	Final Draft International Standard
New topics / New approaches	X			
Technical information	X	X		
Minor technical modifications		X	X	
Editorial		X	X	
Minor editorial modifications		X	X	X
Vote	X		X	X

Table 2: Actions to be taken during the different stages:

Moment in time	Actions	Responsibility
Before stage 1	Inform experts from other member states, share ideas, and convince them to support, or better, to participate in the proposals for new work or revisions.	Stake holders / Members of national committees
Stage 1	Write a good proposal why and how to modify / create a standard. Find other national committees that will vote in favour of the proposal. Each member nation has one vote.	Members of national committees
Stage 2 start	Volunteer to be a convenor of the team / group that is doing the work, or at least contribute with one or more technical experts.	Members of national committees
Stage 2 start	Contribute with experts to this team / group. The decisions within these groups are based on consensus. The more technical experts with similar ideas, the easier it will be to modify the standard.	Members of national committees
Stage 2 middle	Don't deliver just ideas, but concrete text proposals that can be pasted into the standard immediately.	Technical experts in international team
Stage 2 end	Make a proper review of the proposal (committee draft) and describe exactly in the template provided by IEC why and how to modify the proposal. If there are really important topics, point them out to other national committees and ask them to submit similar comments on that topic.	Members of national committees
Stage 3 start	Ensure that to contribute with technical experts in the team / group that does the work.	Members of national committees

DESCRIPTION

Stage 3 middle	Prevent that relevant comments are dismissed and explain the importance of important comments.	Technical experts in international team
Stage 3 end	Perform a thorough check on the committee draft for vote to determine if nothing has changed, is deleted, or is added, that would harm the intentions of the standard.	Members of national committees
Stage 3 end	If the outcome of the previously mentioned check was positive, ensure that enough national committees will vote in favour of the standard.	Stake holders / Members of national committees
Stage 4 end	Perform a final check if no relevant unfavourable changes are made, this shouldn't happen in this stage but it is good to check. Also ensure that enough national committees will vote in favour.	Stake holders / Members of national committees

References

https://www.iec.ch/standards-development/resource-area/forms_docs
<https://www.iec.ch/standards-development/stages>
https://www.iec.ch/system/files/2020-08/StageCodes_IS_v2.pdf
<https://iec.ch/news-resources/reference-material>
<https://www.cencenelec.eu/european-standardization/european-standards/>

Updates

In the table below the corrections are recorded of those parts that have changed since the previous version.

Version	Date	Change/Correction	Reason
0.1	2023-04-17		For review by RHM
0.2	2023-04-17		For review by the Port of Rotterdam
0.3	2023-06-07	Processed comments and added chapter 2, 3 and 4	Processed review comments
1.0	2023-08-16		Final version after approval from Port of Rotterdam

DESCRIPTION

Abbreviations

CD	Committee Draft
CDV	Committee Draft for Vote
CENELEC	Comite Europeen de Normalisation ELECtrotechnique
EN	European Norm
FDIS	Final Draft International Standard
IACS	International Association of Classification Societies
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
ISO	International Organization for Standardization
IMO	International Maritime Organization (<i>UN</i>)
JMT	Joint Maintenance Team
JPT	Joint Project Team
JWG	Joint Working Group
KVNR	Koninklijke Vereniging van Nederlandse Reders
MT	Maintenance Team
NC	National Committee
NEC	Nederlands Elektriciteitscentrum
NEN	Nederlandse Norm (Dutch standard)
NEN	Nederlands Normalisatie-instituut. (So it can refer to the institute as well as to a standard)
NP	New Work Item Proposal
PT	Project Team
TC	Technical Committee
UN	United Nations
WG	Working Group

Definitions

P-member = IEC Member country who sends experts to participate actively in technical work

O-member = IEC Member country who has observer status only

Legal Disclaimer

This report has been made by RH Marine Netherlands B.V. with the best possible care and is based on the information supplied to RH Marine Netherlands B.V. RH Marine Netherlands B.V. cannot be held accountable for incompleteness and/or incorrectness of this reports content in case insufficient or inappropriate information has been supplied. This document may be distributed in whole by the Port of Rotterdam as they see fit.

RH Marine, 16-08-2023, Schiedam, the Netherlands.

DESCRIPTION

1. Introduction

This report was written to assist the partnership Port of Rotterdam, Port of Amsterdam, KVNR and StenaLine to share its knowledge and experience in the standardisation process for the maritime environment. RH Marine is asked to give this insight, based on their involvement and knowledge of this process.

However, it is entirely the responsibility of the reader to decide what suggestions, if any, are adopted. The report briefly discusses the different organisations that are involved in the standardisation process and how they interact. After that, a description of the standardisation process itself is given with the possibilities to participate in this process and/or influence the outcome of the process. The information given in this report is a simplification of the real procedures. It is not feasible or desired to repeat the entire process description already available in, for example, the International Electrotechnical Commission ([IEC directives](#)).

2. Standardization bodies

There are numerous standardization bodies. Some operate at the national level, such as the 'Nederlands Normalisatie-instituut' (NEN) in the Netherlands. Others function at the regional level, like Comite Europeen de Normalisation ELECTrotechnique (CENELEC) with its European Norm¹ (EN). Furthermore, there are global organizations like IEC and 'International Organization for Standardization' (ISO).

2.1 National standardization bodies

The core task of national standardisation bodies is to facilitate the standardisation work in international standardisation bodies and represent the nation's opinion / vote in international standardisation processes. As a general rule, each country can only be represented in an international standardisation body by one national standardisation body. In the Netherlands this is NEN. NEN is member of international standardisation bodies like CENELEC, IEC, ISO and several others.

A national standardisation body can develop national standards, like for example the NEN1010.

Closely related to NEN is the 'Nederlands Elektriciteitscentrum' (NEC). Where NEN focuses primarily on ISO, NEC focusses primarily on IEC. NEN submits the international votes for NEC.

In the Netherlands NEC18 facilitates the work that is done in the Netherlands on Electrical installations of ships and of mobile and fixed offshore units while, for example, 'Norm commissie Jachtbouw' focusses on the entire building process of yachts and is assisted by NEN.

2.2 Regional standardization bodies

CENELEC (EN standards) are primarily used in Europe. EU member countries are obliged to issue approved EN standards as national standards, e.g., in the Netherlands, that means that it becomes for example an (IEC-)EN-NEN standard. Those countries also have the obligation to withdraw any national standards which conflict with the EN standard.

In CENELEC, work on standards related to electrical installations of ships and of mobile and fixed offshore units, is supervised by Technical Committee (TC)18x.

2.3 Global standardization bodies

Both IEC and ISO are standardization bodies, but ISO sets standards across various industries, while IEC specifically deals with electrical and electronic technologies. Both organizations play crucial roles in

¹ The words norm and standard are interchangeable in this document.

DESCRIPTION

promoting global standardization and facilitating international trade. In this list of global standardisation bodies, also the 'Institute of Electrical and Electronics Engineers'(IEEE) is often encountered. However, where the purpose for IEC and ISO is to write and maintain standards, for IEEE it is a means to support their mission: "to foster technological innovation and excellence for the benefit of humanity". So, while they do develop standards, IEEE is primarily known for its role in fostering technical advancements, research, and knowledge exchange. It publishes numerous journals, organizes conferences, and provides a platform for professionals to collaborate and share expertise. However, IEEE standards are often used in the America's Since some standards deal for example with both electric (IEC) and mechanical (ISO) aspects, collaborations can be established between the different standardisation bodies. There are several advantages when standards result from collaborations between different standardisation bodies:

- The number of standards required to build a certain project is reduced, one standard can cover multiple interdisciplinary aspects.
- The boundaries between the jurisdiction of the standardisation bodies are not always clear. For example, electrical energy can be utilised to power mechanical labour. This process should partly be described by IEC (electrical) and partly by ISO (mechanical). If both standardisation bodies collaborate, contradicting overlapping requirements and undefined areas are prevented.
- In certain parts of the world, preference is given to specific standardisation bodies. If standardisation bodies collaborate this will result in standards that are applied in larger parts of the world, making trade easier, like IEEE in the America's
- If multiple standardisation bodies collaborate, the support base will be larger.

Of course, there are also disadvantages:

- If several standardisation bodies collaborate, more nations and people are involved so, it is much more challenging to reach consensus.
- The different standardisations bodies each have their own background, way of working, and purpose which can make collaboration difficult.
- Since each standardisation body has its own disciplines, cooperation in a joint working group might be difficult because members don't have enough knowledge of each other's disciplines to understand one another. For example, in the US also lawyers (ISO orientated) often participate in the standardisation process, in Europe (IEC orientated) there are more technicians you encounter. It can be challenging for them to write a standard together.

In IEC, work on standards related to electrical installations of ships and of mobile and fixed offshore units, is supervised by TC18.

3. Work on standards

The work on international standards is supervised by technical committees. For example, IEC has TC18: 'Electrical installations of ships and of mobile and fixed offshore units', but also lots of other TCs that deal with different topics. Within a TC there are multiple international groups active like.

- MT: Maintenance Teams - To maintain and revise existing standards.
- PT: Project Teams - To develop a new standard.
- WG Working Groups - A subcommittee within a technical committee, focusing on a particular area of standardization.
- JMT Joint Maintenance teams: – To maintain and revise existing standards that were issued under the supervision of multiple standardisation bodies
- JPT Joint project teams - To develop a specific new standard together with experts from other standardisation bodies
- JWG Joint Working Groups – A subcommittee within a technical committee, focusing on a particular area of standardization together with experts from other standardisation bodies

DESCRIPTION

Within these teams of international experts, the actual work is done according to the process given in chapter 6.

4. Stages during the standardization process

When a standard is developed or maintained it passes different stages. In order of appearance those are:

1. NP New work item proposal. This document is primarily used for entire new standards and describes why this new standard should be written and might contain examples or some preliminary text of what should come into that standard.
2. CD Committee Draft, this document is created by a team of international experts. It is a document on which national committees may respond with all kinds of suggestions, corrections, both at technological as well as editorial.
3. CDV Committee Draft for Vote, this is the updated CD document. The input of the different national committees is processed by a team of international experts. It is a document on which national committees may respond with minor technological and editorial remarks. On this document the national committees are asked to cast a vote.
4. FDIS Final Draft International Standard, this document is created by the convenor of the working group, project team, or maintenance team, based on the remarks submitted by the national committees on the CDV. National committees are asked to cast their vote on this document and might submit some minor editorial comments.

The process how a document goes from one stage to the next is explained in chapter 6.

5. Are standards mandatory?

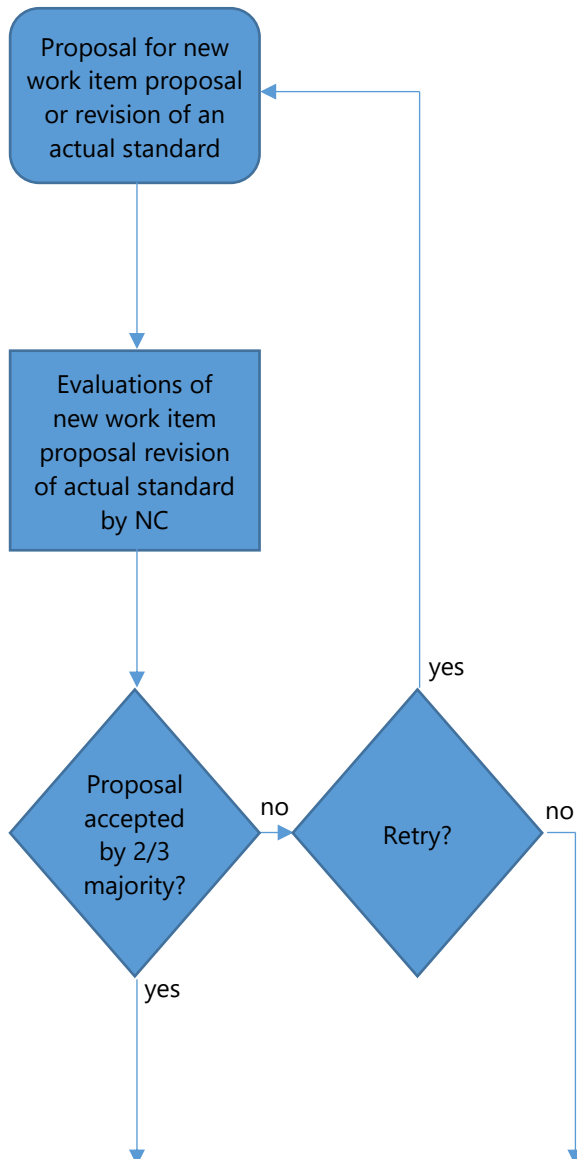
Maritime standards related to electrical or electronic installations are generally speaking developed by IEC. If the 'International Maritime Organization' (IMO) refers to these standards and the flag state of the ship has ratified the IMO conventions referring to the specific standard, the content of the respective standard becomes mandatory.

Standards can also become mandatory based on EU regulations but then CENELEC has to evaluate a specific IEC standard first and turn it into an EN standard, sometimes slightly modified. Alternatively, a standard can be developed by CENELEC, but for maritime standards this is usually not the case. After that, the standard needs to be harmonised under a specific EU directive. Member states should incorporate these directives into their national legislation. Harmonised standards can be used to show the assumption of compliance with the directive, making them more or less mandatory.

DESCRIPTION

6. Standardization process

6.1 IEC



The best way **to bring up a completely new topic** for standardisation, is to propose a new standard or a new part of an existing standard. If a new (part of a) standard is proposed, a new work item proposal (NP) needs to be created. This new work item proposal can be submitted by, for example, a national committee or an organisation in liaison² to IEC. *The best moment to do this is shortly before the plenary meeting which is held once every 2 years. The advantage is that many steps can be taken during the meeting which saves a significant amount of time. Also, lobby work with other national committees is easier since everyone is present at the plenary meeting. Before investing time in new work proposals, it is advised to consult other member countries to determine under which conditions they would support the proposal and if they are willing to participate in the project. This will increase the chance of success.*³

The new work proposal is accepted when there is a 2/3 majority supporting the proposal and, in case of TC18, there are at least 5 experts from different countries willing to participate⁴. *This requirement is made to prevent that the interests of one country will dominate. So, in order to **increase the chance of a proposal being accepted**, it is advised to have allies in different national committees*³.

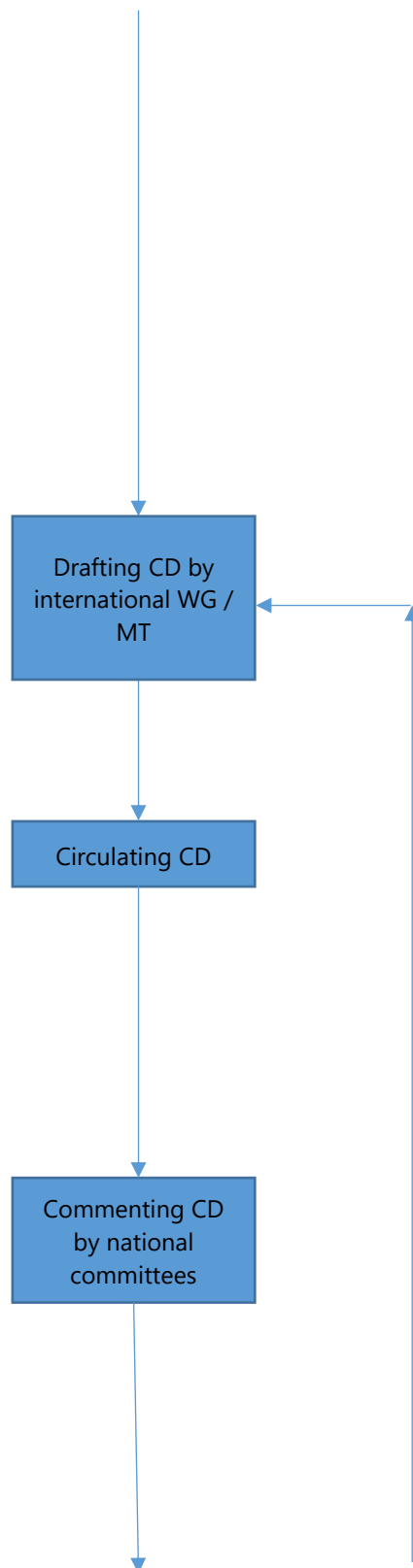
Updating an existing standard can be done without a voting process. *The best moment to initiate an update is also during the plenary meeting just before the stability date of the respective standard expires*³.

² Liaisons of TC 18 are other TCs form IEC and ISO and organisation like 'International Association of Classification Societies ' (IACS) and IMO

³ Text in blue shows the opinion of the author

⁴ In other TCs other requirements may apply with respect to the required number of participating countries.

DESCRIPTION



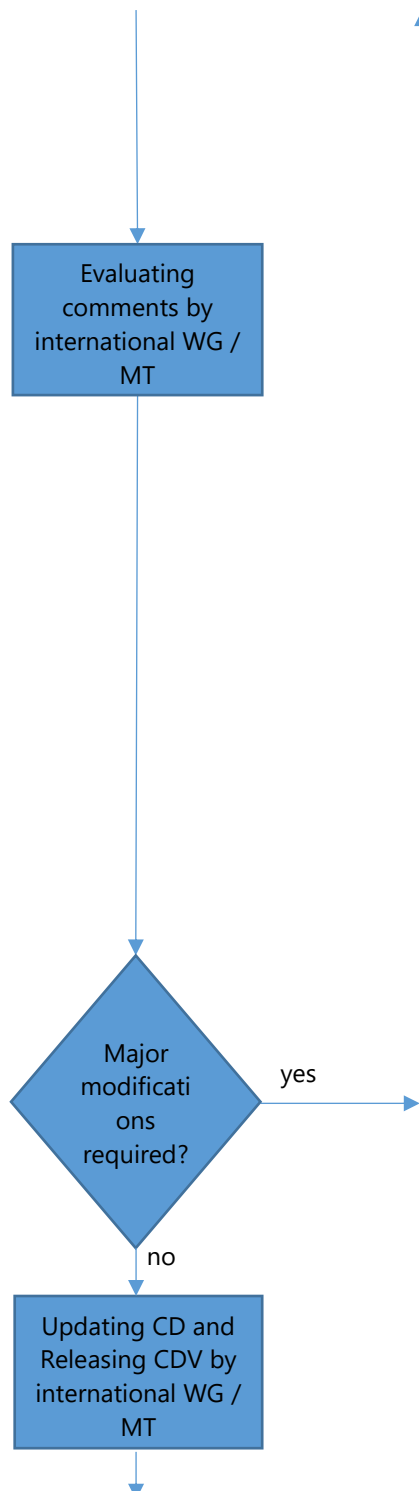
For each standard a stability date is given. The contents of the publications will remain unchanged before the stability date, in order to provide the users some security about the validity of the standard. If there is no need to update the standard at the moment the stability date expires, a new stability date will be set. Stability dates can for example be found on the IEC website under 'additional information' which is given for each standard. For IEC/IEEE 80005-1 the stability date expires in 2023 and for IEC/IEEE 80005-2 the stability date expires in 2024. Alternatively, a request may be submitted to the secretary of the TC to initiate work on an update.

The international maintenance team (MT) or working group (WG) is responsible to create a Committee Draft (CD). *If one wants to determine or have significantly influence on the content of a standard, it is important to participate in relevant maintenance teams or working groups. Since most of the work is done by volunteers and usually people don't get a lot of time to conduct standardisation work, it is quite easy to write significant parts of the standard. Of course, other members of the maintenance team / working group have to agree, but by writing the proposals you set the direction and line of thought. In general, other team members would like to make modifications, but rarely come up with completely different proposals because than they would have to do the work themselves³.* It also helps to have several experts in the MT / WG that support the same ideas and approaches, since standards are based on consensus.

The next stage is that the CD document is being distributed within the different national committees for comments. The influence one has on the standard is decreasing from this point, but there are two **things that can be done in order to be heard** at this stage.

1. If comments are required, use the [default comment form](#) (which can be downloaded from the IEC website as: 'Form comments.dotx'). When using this form, two things are really important:

DESCRIPTION



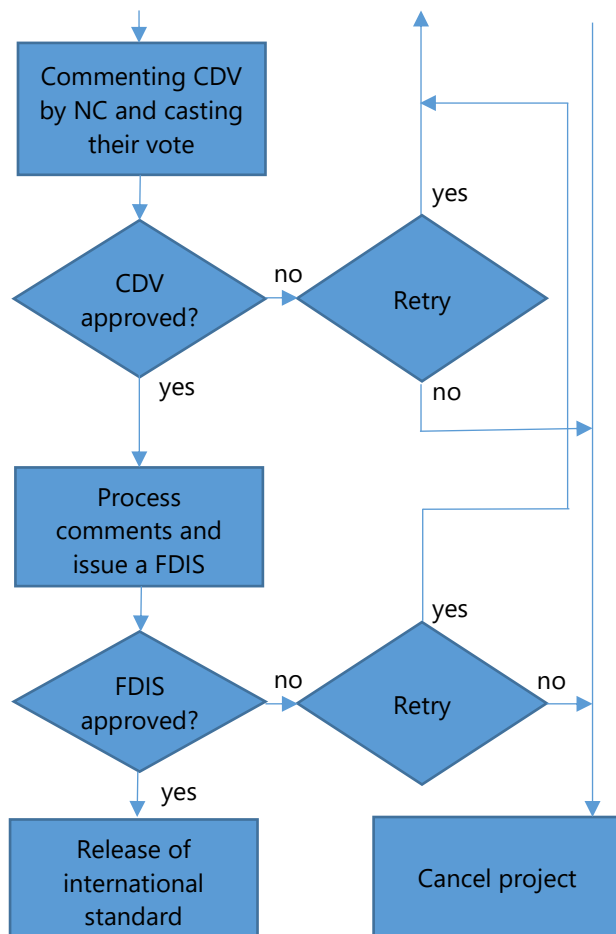
- a. Explain precisely WHY a modification is required in the column: 'Comments'.
- b. Write down exactly, if possible, HOW the standard should be changed in the column: 'Proposed change'.

Remember, this work is done by volunteers and they might get hundreds of comments. If they don't understand the why, or don't know what to do with the comment, they just reply with 'noted', meaning they don't do anything with the comment. This is the easiest response for them. So, to be heard, make it as easy as possible for them.

2. *For real important comments, it is advised to team up with other national committees³. When the maintenance team or working group get the comments, they are sorted by line number. So, if different national committees make a similar comment to the same line number, it is more likely that the committee will do something with that comment. Also, at this stage it is useful to have people who can **advocate your point of view** in the working group / maintenance team³. Usually, at least the technical comments, are discussed within the working group / maintenance team. Again, there can be several of hundreds of comments. *It can be beneficial to have someone in the working group / maintenance team that points out the items brought up by your allies in national committees and ensure that they are properly discussed³.**

When there are major technical additions or modification to the standard, a second CD might be issued. If the amount of comments doesn't fundamentally change the standard, the updated CD can be issued as a CDV.

DESCRIPTION



The CDV will be distributed to the national committees for review. For this review, the same [default comment form](#) is used which can also be used for the CD. However, in this stage, only general, editorial and minor technical feedback is accepted. The National committees are also asked to cast their vote on this document.

The CDV is approved if 2/3 of votes casted by P-members⁵ is in favour and if the number of negative votes casted by all national committees (NCs) does not exceed 25% of total votes. Each country has one vote.

If the CDV is approved, it could be published as an international standard if there are no technical changes required. However, this is almost never the case. So usually, the comments on the CDV are processed by the project leader. The standard is shared with the national committees as FDIS for review and to cast their vote.

The FDIS is approved if 2/3 of votes casted by P-members is in favour, and if the number of negative votes casted by all NCs does not exceed 25% of total votes.

After the approval of the FDIS, IEC will make the standard available in their web shop.

6.2 CENELEC

The CENELEC procedure to develop standards is comparable to that of IEC.

⁵ P-member = IEC Member country who sends experts to participate actively in technical work
O-member = IEC Member country who has observer status only

DESCRIPTION

7. Conclusion and recommendations

In order to have impact on standards it is important to:

1. Participate in the maintenance or development process of a standards as early as possible, the earlier in the process, the more impact one can have on a standard.
2. Align ideas and collaborate with experts from different nations. In the voting process each nation has one vote and a maintenance team, project group or working group needs to have experts from several different nations who need to reach consensus.
3. Explain clearly **why**, and **how** the standard should be written or modified. *The work is done by volunteers and the easier it is for them, the more likely it is that they will integrate proposals or modifications³.*