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# Implementation of IEC/IEEE 82079-1 Ed. 2

Considering other  
Sector-Specific Standards

Practical Guides

# 1 Introduction

*IEC/IEEE 82079-1 Edition 2 Preparation of information for use (instructions for use) of products – Part 1: Principles and general requirements* since its publication in 2012 has developed into the most important standard in the field of technical communication. As a so called “horizontal standard” it is applicable to any type of product and all branches of the industry.

*Note:*

*The present commentary always refers to edition 2 of the standard without specifically saying so in each instance.*

## 1.1 Why was the standard revised?

Generally, all standards are subject to a five-year scrutiny and revision cycle. The revision of IEC 82079-1 was initiated as early as 2014. The so called “review report” laid down an outline for this revision: Not only revision errors, such as faulty references, should be corrected; rather, it was clear from the outset that this would be a comprehensive revision dealing in depth with the issues not considered in the first edition; it would contain substantial improvements, new content and address new findings from current practice.

The structure of the standard was identified as a major weakness. Many topics and their related aspects were scattered across the entire standard, resulting in lack of clarity and user-friendliness. Additionally, the comprehensibility of the standard needed improvement, as some passages were incomprehensible or ambiguous.

With regard to the standard’s content, the review report mentioned some new topics to which the revised edition should attribute greater importance. In particular, this includes the quality assurance process, which should be given more room—including a definition of pertinent quality criteria. Primarily, the information development process should be represented in greater detail. Also, information on the general principles of and criteria for structuring information were to be added. The structure of step-by-step instructions was to be a key aspect.

## 1.2 Who shared in the revision?

The revision was handled by a joint working group JWG 16 (Joint Working Group 16) of the two standardisation organisations ISO (International Organization for Standardization) and IEC (International Electrotechnical Commission). The basis for this cooperation is an agreement between the two standardisation organisations to the effect that a standard shall bear only the name of the organisation that took the lead in its preparation. Since IEC always spearheaded the development of 82079-1, the previous standard bore the designation IEC 82079-1 although it was and still is also supported by ISO. It is important to note this, because the acceptance of a particular standard in some industry branches may depend on the standardisation organisation that has published it. For instance, standardisation for mechanical

engineering is mainly issued by ISO, making it harder for IEC standards to gain the necessary acceptance by mechanical engineering companies.

Additionally, a third large standardisation organisation shared in preparing the standard, IEEE (Institute of Electrical and Electronics Engineers, see figure 1). Since only IEC and IEEE have an agreement concerning joint publication of standards, the new edition's designation only reads IEC/IEEE. We consider this unfortunate, because ISO is still supporting its publication. Visibility and significance of the standard in the US market, however, will have grown with IEEE sharing.

<b>International level</b>	<b>ISO</b> iso.org		<b>IEC</b> iec.ch		<b>IEEE*</b> ieee.org
<b>National level worldwide</b>	<b>DIN</b> din.de	<b>SAC</b> sac.gov.cn	<b>SA</b> standards.org.au	<b>ANSI</b> ansi.org	<b>JIS</b> jisc.go.jp (and further org.)
<b>Europe</b>	<b>CEN</b> cen.eu		<b>CENELEC</b> cenelec.eu		
<b>National level in Europe</b>	<b>ASI</b> austrian-standards.at	<b>UNI</b> uni.com	<b>DS</b> ds.dk	<b>SFS</b> sfs.fi	<b>BSI</b> bsigroup.com (and further org.)
	<b>DIN</b> din.de		<b>DKE VDE</b> dke.de		

\* of special interest: IEEE (Institute of Electrical and Electronics Engineers), as one of the largest professional associations worldwide, has participated on the international level.

Figure 1: Standardisation organisations, international and national

The following overview in Figure 2 shows the time line of the work by JWG 16. By the way: Many of the participants in JWG 16 are working in an honorary capacity, which has had some influence on the composition of the committee.

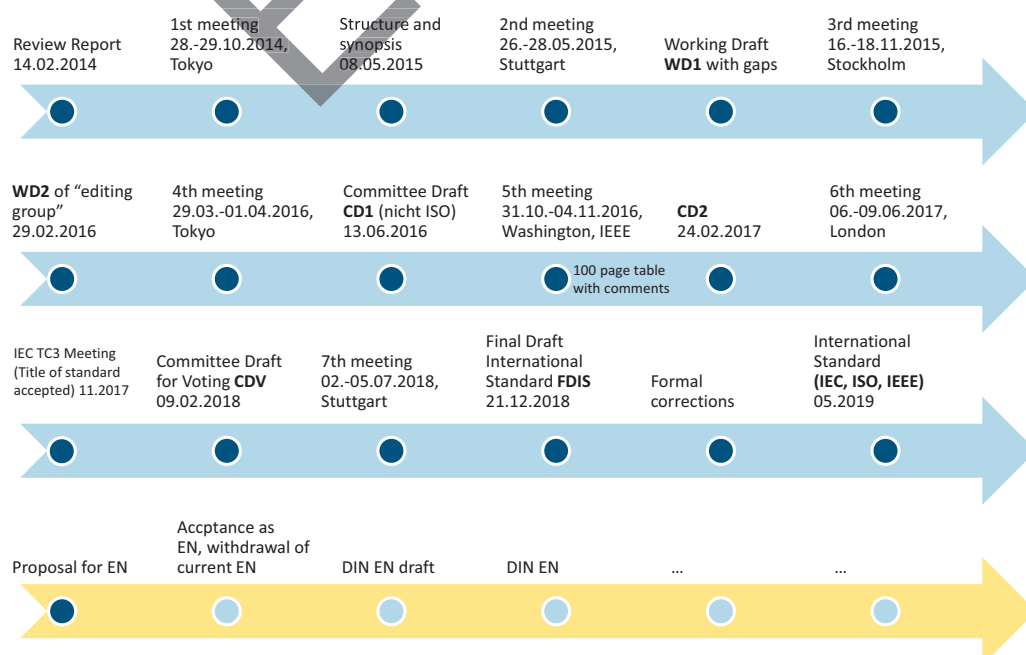


Figure 2: Time line of the standard's revision

In all, 21 experts from nine countries participated in the revision effort. Additionally, experts from numerous further countries commented the draft standards and thereby contributed to the international applicability of the standard.

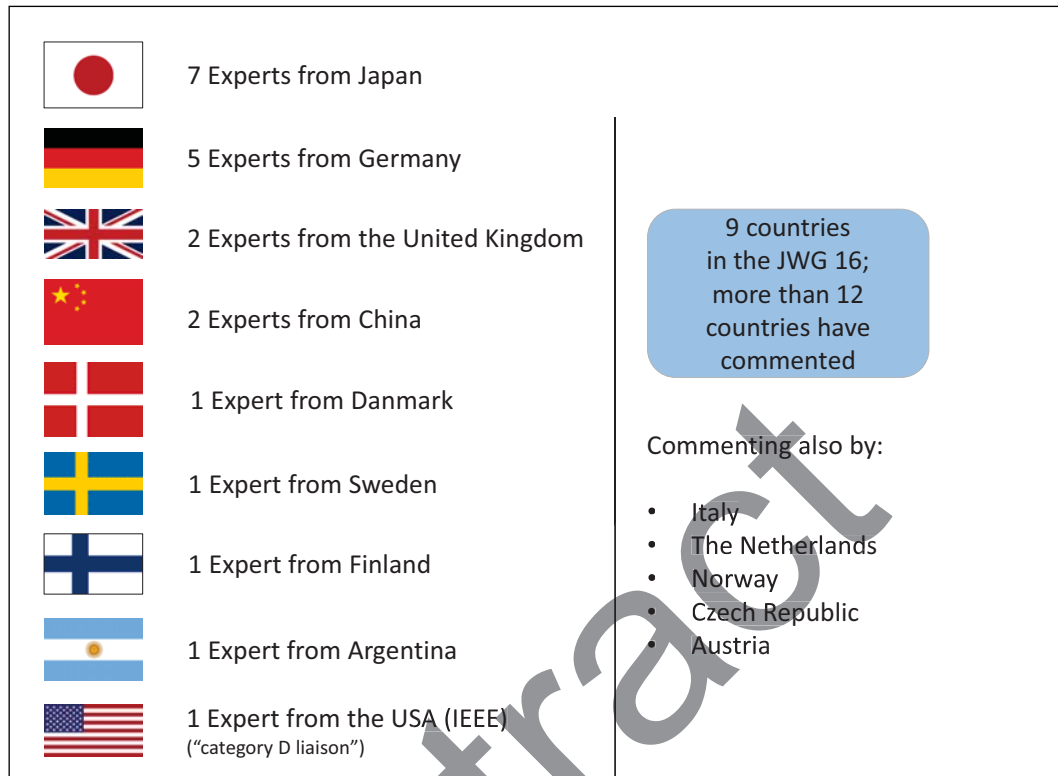


Figure 3: Composition of the Joint Working Group 16 by countries

### 1.3 Participation of tekomp and the share of the authors of the present publication

Never before has tekomp been involved as intensively in a standardisation project as in this revision. tekomp was directly represented by Dr. Michael Fritz and Dr. Claudia Klumpp. In 2017, Dr. Klumpp assumed the convenor-ship, that is she acted as the chairperson of the working group. Roland Schmeling and Stephan Schneider shared in the international working group as leading experts.

Martin Tillmann, the primary author of the present guide, contributed significantly to the work of the German mirror committee for IEC/IEEE 82079-1, DEK GUK 113.1. Martin Rieder is an expert of the international working group ISO TC 199 WG5, that worked on *ISO 20607 Safety of machinery – Instruction handbook – General drafting principles*.

The background knowledge of the authors about the entire revision process and the numerous discussions, for instance regarding the development of the new concept of “information for use”, has found its way into this practical implementation guide.

## 1.4 Who are in the target audience of this practical implementation guide?

The target audience is identical with the target audience of the standard itself: The practical implementation guide is addressed to all those who are responsible for or who share in the design, preparation, sustainment, translation, localisation, integration of content, production and delivery of information for use.

## 1.5 Normative contents and innovations

Upon restructuring, IEC/IEEE 82079-1 now contains the following sections:

- (1) Scope
  - (2) Normative references
  - (3) Terms and definitions
  - (4) Fulfilment of requirements (previously: evaluation of conformity)
  - (5) Principles
  - (6) Information management process
  - (7) Content of information for use
  - (8) Structure of information for use
  - (9) Media and format of information for use
  - (10) Professional competencies
- Annex A (informative): Guidance on evaluation (of fulfilment of requirements)

The scope outlined in *section 1* has not been extended, but defined in more detail. The normative references and definitions of terms in *sections 2 and 3* have been revised but—apart from the new concept of information for use—do not hold any great surprises.

*Section 4* replaces *section 7* (Evaluation of conformity) of the previous version. Based on ISO and IEC rules the section was renamed and moved up front.

*Section 4*, in discussing the options for providing evidence of fulfilment of the requirements of the standard, contains a pertinent novelty: A supplier cannot not only claim to have fulfilled the requirements for the information for use, but may also claim fulfilment of the requirements for the information management process. It is at the supplier's discretion whether he wishes to claim to have fulfilled just the requirements for the information for use or also the requirements for the information management process. This serves to emphasise the importance of the new *section 6*, which outlines the requirements for the information management process. However, for consumer products fulfilment of the requirements for the information for use alone is relevant.

Scattered across the standard, already the first edition contained quality principles concerning information for use. These are now neatly collected and presented in clearer and more consistent wording in *Section 6*, under the heading “Principles”. The “Minimalism” principle has been added, now resulting in a total of seven principles governing high-quality information for use:

- completeness
- minimalism
- correctness

- conciseness
- consistency
- comprehensibility
- accessibility

*Section 6* is dedicated entirely to the information management process. The information management process is characterised by the principle of employing reproducible procedures.

The following four process groups are differentiated and dealt with in a subsection each:

- analysis and planning of information (subsection 6.2)
- design and development, including review, editing and testing (subsection 6.3)
- production and distribution (subsection 6.4)
- sustainment, maintenance and improvement (subsection 6.5)

A large subsection has been dedicated to analysis of the target audience(s). Analysis of the target audience is not a new requirement; however, so far only few organisations have a sufficiently meaningful target audience analysis, which can be used in developing appropriate information products. The detailed presentation of target audience analysis is meant to contribute to improving this situation.

The contents of information for use are covered in *section 7*. At first glance, many content items well known from the previous version are still listed. Viewed in detail, however, a large number of new items have also been added. For instance, the requirements for information about spare parts and consumables have been substantiated, and the requirements for the contents of a safety clause or section have been revised.

*Section 8* is dedicated to the structure of information for use and is much more detailed than subsection 5.15 of the previous edition. For instance, the section recommends structuring information for use based on an information type model, and thus recommends following the three methods listed below:

- developing an information model by using a structuring method
- using an existing information model, for example an open source information model
- adapting an existing information model by using a structuring method

*Section 8* provides for in-depth assistance in selecting suitable structuring principles. Additionally, this section describes the structure of step-by-step instructions concretely and comprehensively.

*Section 8.4* is dedicated to navigating in and delivery of information for use. “Navigating” printed information for use continues to be covered. However, the focus now is on the aspects of dynamic delivery of information for use, e. g. pertaining to context sensitivity and search functions.

*Section 9* addresses diverse means of communication, media, and the presentation of information for use; it contains specifications for durability, availability and presentation, including design of safety notes and warning messages.

Additionally, the external conditions of use have been addressed, to support the selection of the correct format or medium. For instance, if the target audience is

service technicians for heating systems, who are often working in badly illuminated cellars, paper as a medium is not the optimum choice.

In summary, *section 9* contains numerous requirements already covered by the previous edition of the standard. One of those is the overview of recommended text font sizes.

*Section 10*, as a novelty, presents task and proficiency-related competencies for the designers/authors of information for use as well as requirements and recommendations for the competencies of translators. The first edition of the standard contained a short subsection (4.2) on this subject; however, the concept of absolute requirements for competencies has been dropped and replaced by process-oriented competency definitions. These are meant to support enterprises in developing the concrete requirements for the personnel involved in the information management process.

## 1.6 Structure of this implementation guide

*Note:*

*The standard is subdivided into “sections” and “subsections”. This implementation guide is subdivided into chapters. Therefore, references to “sections” refer to the standard, while references to “chapters” refer to the present implementation guide.*

The implementation guide focuses on practical implementation of the standard. Since the structure of IEC/IEEE 82079-1 has been improved substantially, the structure of this implementation guide largely follows the sections of the standard. However, the implementation guide first addresses sections relating to the requirements for information for use itself; aside from some of the principles presented in *section 5*, these are mainly found in the *sections 7 to 9*. Thereafter the implementation guide deals with *sections 6 to 10* of the standard, which cover the information management process.

CHAPTER 11 THE RELATION BETWEEN IEC/IEEE 82079-1 AND PRODUCT OR SECTOR-SPECIFIC STANDARDS deals with the question of how IEC/IEEE 82079-1 can be implemented in parallel with product-specific standards and their requirements concerning information for use. One such pair of standards is dealt with in depth, the parallel implementation of IEC/IEEE 820791 and ISO 20607.

All chapters discussing specific sections of the standard begin with a table of “mandatory requirements” of the respective section of the standard. The subsequent sub-chapters then discuss the requirements and their implementation in detail.

### 1.6.1 Mandatory requirements and strong recommendations

The mandatory requirements form the major part of the requirements set forth in the standard. The focus of the present implementation guide on these mandatory requirements is meant to reach its objective, which is to help readers get going with implementation of the standard. That does not mean, however, that the strong recommendations of the standard are irrelevant; rather, those recommendations are quasi-requirements, and an organisation should have definite reasons to deviate

from any of them, if it wishes to claim conformity with the requirements of the standard as a whole.

Standards use certain formulations to differentiate the types of requirements. The basis for this are the guidelines of the standardisation organisations. This implementation guide follows these guidelines. Table 1 provides an overview of the formulations used in the standard and this implementation guide.

*Table 1: Formulations adapted to ISO/IEC Directives Part 2: 2018, section 7 and DIN 820-2, section 7*

<b>Requirements</b>	
shall	is to is required to it is required that has to only ... is permitted it is necessary needs to
shall not	it is not allowed [permitted, acceptable, permissible] is required to be not is required that ... be not is not to be need not do not
<b>Recommendations</b>	
should	it is recommended that ought to
should not	it is not recommended that ought not to
<b>Permissions</b>	
may	is permitted is allowed is permissible
need not	it is not required that no ... is required

### 1.6.2 Use of the implementation guide

The practical implementation guide is meant as an introduction to the standard, helping to comprehend the normative contents. Since the structure follows that of the standard, it can easily be read together with the standard, helping readers understand its individual sections.

Thanks to its structure being aligned with the standard, the implementation guide is also most suitable as a reference work.



# 5 Principles

## 5.1 General

The principles play a central role in the standard, which is readily seen in the following quotation from annex A.2.2 of the standard: “Where fulfilment of a specific requirement is incomplete, but overall the information for use is judged as fulfilling Clauses 8 and 9, the reasons should be explained in the record, referring to the principles in Clause 5.” That is, if detailed requirements of the standard are not fulfilled in their entirety, but the requirements as a whole can be considered fulfilled, fulfilment of the standard can be evidenced by referring to the principles. Thus, the principles in a way are considered superior to the more detailed requirements, and a deviation in some detail is acceptable, as long as the principles are adhered to.

### *List of requirements based on principles*

Subsection	Requirement to be checked	Notes
<b>Adherence to general principles</b>		
5.2.1 General	– Information for use provides the necessary information for the target audiences to make safe, efficient, and effective use of the supported product	
5.2.2 Part of the product	– The information for use has been given the same attention and importance as every other part of the product – The information for use can be clearly and easily identifiable with the supported product.	
5.2.3 Target audience orientation	– The information for use is usable and relevant for the target audiences with respect to their expected tasks and goals	
5.2.4 Safe use	– The information for use promotes the safe operation and maintenance of the supported product	
5.2.5 Product compliance	This section does not contain any requirements, but only a statement	
<b>Principles to be applied to ensure information quality</b>		
5.3.2 Completeness	– The information for use is complete. To ensure this, the information for use must cover the following aspects: ▷ the risks of using the product ▷ the tasks that the target audiences are intended or allowed to perform throughout the life cycle of the supported product ▷ the target audiences' need for information ▷ all legal requirements, including ▷ the contractual requirements	
5.3.3 Minimalism	– Minimalism has been applied to the information for use – Safety-related information has been repeated where needed (as an exception from the minimalism principle)	
5.3.4 Correctness	– The information for use is technically correct – The information for use contains the current information on the supported product	

Subsection	Requirement to be checked	Notes
5.3.5 Conciseness	<ul style="list-style-type: none"> <li>– The information for use is concise with respect to contents, format and media:               <ul style="list-style-type: none"> <li>▷ wording is succinct (short and precise)</li> <li>▷ illustrations do not contain unnecessary details</li> <li>▷ videos contain only relevant material</li> </ul> </li> </ul>	
5.3.6 Consistency	<ul style="list-style-type: none"> <li>– The information for use is consistent with respect to contents, format and media:</li> </ul>	
5.3.7 Comprehensibility	<ul style="list-style-type: none"> <li>– The information for use is comprehensible for the target audience(s):               <ul style="list-style-type: none"> <li>▷ The text and terminology are comprehensible for the target audience(s)</li> <li>▷ The illustrations, safety signs and graphical symbols are comprehensible for the target audience(s)</li> <li>▷ The methods of navigation and use of media are comprehensible for the target audience(s)</li> </ul> </li> </ul>	
5.3.8 Accessibility	<ul style="list-style-type: none"> <li>– The information for use is accessible for the target audience(s) in a concrete context of use</li> <li>– The information for use is accessible for the target audience(s) throughout the intended lifetime of the supported product</li> </ul>	
5.4 Use of repeatable processes	This is a process-related requirement, see insertion 5.4 at the end of CHAPTER 6	

## 5.2 Purpose of information for use

### 5.2.1 General

To fulfil the requirements of the standard, the information for use must generally contain all necessary information enabling safe, efficient, and effective use of the product.

**Safe:** The information for use must contain all notes alerting to residual risks, which have been identified in course of risk assessment. For integration of safety notes and warning messages see CHAPTER 7.11.

**Efficient:** Efficiency is the ratio of the success of work to the effort invested. Information for use must be designed such that the user can successfully use the product with the least possible effort.

**Effective:** Effectiveness is the ratio of achievement of an objective to the definition of that objective. Thus, information for use must be designed such that the objective achieved matches the objective defined as closely as possible.

To meet these purposes, the information for use must provide the following information types:

- conceptual information: concepts, explanations and descriptions to enable the target audiences to perform tasks by understanding their purpose and the principles of operation of the supported product

## 6 Information management process

*List for inspection of fulfilment of the requirements for the information management process*

Subsection	Requirement to be checked	Notes
<b>Fulfilment of general requirements</b>		
6.1 General	<ul style="list-style-type: none"> <li>– An information management process for planning, designing, producing, and sustaining information for use has been implemented</li> <li>– The information management process generates, obtains, confirms, transforms, retains, retrieves, and disseminates information</li> <li>– The process               <ul style="list-style-type: none"> <li>▷ identifies information to be managed,</li> <li>▷ defines information representations,</li> <li>▷ includes concepts to obtain, develop or transform, store, validate, present, and dispose of information,</li> <li>▷ identifies the status of information,</li> <li>▷ makes information available for use</li> </ul> </li> <li>– The four process groups have been implemented:               <ol style="list-style-type: none"> <li>1. Analysis and planning of information for use (section 6.2)</li> <li>2. Design and development, including review, editing and testing (section 6.3)</li> <li>3. Production and distribution (section 6.4)</li> <li>4. Sustainment, including maintenance and improvement (section 6.5)</li> </ol> </li> </ul>	
<b>Analysis and planning of information for use</b>		
6.2.1 General	<ul style="list-style-type: none"> <li>– Analysis and planning of information begins with an organizational strategy and policy regarding the development and sustainment of information for use</li> <li>– Instructional procedures are formulated based on a market analysis or an analysis of the characteristics, needs and intended tasks of the target audiences</li> <li>– The analyses are performed early in the life cycle of the supported product, and by collecting information about the product</li> <li>– Factors affecting the information design for information for use include target audience analysis, media and languages, information sources, risk management, and legal considerations</li> </ul>	
6.2.2 Target audience(s)	<ul style="list-style-type: none"> <li>– Planning of information for use considers the skills and tasks required of the target audiences</li> <li>– Planning of information for use considers the characteristics of the target audiences</li> </ul>	
6.2.3 Media	<ul style="list-style-type: none"> <li>– Analysis and planning of information for use include the choice of media for the information for use</li> </ul> <p>Example: Electronic and/or printed media, provided as part of the supported product, its packaging, or separately</p>	

Subsection	Requirement to be checked	Notes
6.2.4 Languages	<ul style="list-style-type: none"> <li>– Planning of information includes identification of local language requirements for the information for use</li> <li>– The local language requirements have been identified and versions of the information for use are translated and provided accordingly</li> </ul>	
6.2.5 Information sources	<ul style="list-style-type: none"> <li>– Planning of information includes the identification of information sources and the most effective ways to use them</li> </ul>	
6.2.6 Information sustainment	<ul style="list-style-type: none"> <li>– The needs for maintaining and supporting information during the life cycle of the supported product have been taken into account when planning the preparation of information for use</li> <li>– Information is managed so that relevant information on product changes and new releases is available for inclusion in the process</li> <li>– Planning for information for use includes identification of the expected duration and level of post-delivery support for the supported product and, therefore for the information for use. Plans to store, retrieve, change, protect, and dispose of the information for use have been implemented</li> </ul>	
6.2.7 Risk management	<ul style="list-style-type: none"> <li>– Analysis and planning of information is based on considerations of hazards inherent in the installation, operation, and maintenance of the supported product</li> <li>– The risk assessment (analysis of hazards) considers tasks or use cases</li> <li>– The supplier identifies, analyses, and evaluates hazards for their impact, likelihood of occurrence, and availability of methods to avoid or limit them</li> <li>– Residual risks (risk remaining after risk reduction) are included in the information for use as limitations or special exceptions and addressed in warning messages</li> <li>– The planning process includes the treatment of risks in the information for use</li> </ul>	
6.2.8 Legal requirements	<ul style="list-style-type: none"> <li>– Requirements regarding information for use resulting from contractual agreements and legal constraints are available for the information development process</li> </ul>	
6.2.9 Project management and control	<ul style="list-style-type: none"> <li>– Managing projects includes planning, developing, maintaining project schedules, performing resource management, and measuring and reporting the status of the project and the information for use</li> <li>– Project control includes the responsibility for authorizing and closing projects, obtaining and communicating accurate and timely information on project status, and redirecting project activities and tasks to take advantage of opportunities or to correct deficiencies</li> </ul>	

Subsection	Requirement to be checked	Notes
6.2.10 Configuration management	<ul style="list-style-type: none"> <li>– Persons in charge of configuration management               <ul style="list-style-type: none"> <li>▷ establish baseline versions and manage changes to information for use under their control,</li> <li>▷ control work information, such as reusable content (“single source”) for information for use, product components, plans and design artefacts,</li> <li>▷ define activities to review and approve changes and releases</li> </ul> </li> </ul>	
6.2.11 Human resource management	<ul style="list-style-type: none"> <li>– Preparation of information for use includes planning for, obtaining, and allocating the required competent human resources</li> <li>– This includes training in the use of software tools and methods and familiarization with organizational procedures where necessary</li> </ul>	
6.2.12 Quality assurance	<ul style="list-style-type: none"> <li>– When preparing information for use, quality assurance techniques and activities have been identified and are implemented throughout the information development process</li> </ul>	
<b>Design and development, including review, editing, and testing</b>		
6.3.1 General	<ul style="list-style-type: none"> <li>– The development process includes the following:               <ul style="list-style-type: none"> <li>▷ preparation of information design concepts, templates or models</li> <li>▷ gathering of information</li> <li>▷ selection of the content structure</li> <li>▷ application of the information design to create the written and graphic content</li> <li>▷ implementation of the information in the specified media;</li> <li>▷ editing and review of the content, and evaluation of the information for use together with the supported product</li> </ul> </li> </ul>	
6.3.2 Design	The section does not contain requirements, only recommendations	
6.3.3 Review	<ul style="list-style-type: none"> <li>– Errors discovered during reviews and testing are recorded, analysed for severity and time and cost to correct, and are resolved</li> <li>– A designated person is the review authority for determining whether the information for use has met its review criteria and can proceed to the next stage</li> </ul>	
<b>Production and distribution</b>		
6.4	<ul style="list-style-type: none"> <li>– Production of information for use comprises the integration, preparation, reproduction, packaging and distribution of physical media or electronic copies of the information for use</li> </ul>	

Subsection	Requirement to be checked	Notes
<b>Sustainment, maintenance and improvement</b>		
6.5	<ul style="list-style-type: none"> <li>– Sustainment includes continuing target audience feedback, in order to keep the information for use current for different versions of a supported product throughout the life cycle of those products. Additionally, feedback is used to make modifications with a view to improving usability</li> <li>– The supplier has established a method for receiving information on changes, updating information for use, and making updates available to the target audiences</li> </ul>	
<b>Process-related requirements from section 5</b>		
5.4 Insertion concerning use of repeatable processes	<ul style="list-style-type: none"> <li>– The processes                             <ul style="list-style-type: none"> <li>▷ are defined and repeatable</li> <li>▷ are planned so as to obtain sufficient competent human resources for information development and to make information accessible at the required time</li> <li>▷ guarantee that the quality is managed and assured on the basis of clear and common quality objectives</li> <li>▷ use single-source information management</li> </ul> </li> </ul>	

## 6.1 General

The standard requires that the supplier develops and implements an information management process to create the information for use.

This topic had been handled in an informative annex in edition 1 and now is the subject of a substantial valorization due to it being treated in a normative section of edition 2. The requirement is primarily targeted at product manufacturers. However, suppliers may be involved in this information management process, particularly in delivery, monitoring and disposal of information for use. Information for use is part of the product and is thus subject to the obligation to monitor products in the market; this also must be fulfilled by suppliers.

The information management process:

- obtains information  
It determines how to perform product and target audience research, for instance.
- develops and stores information  
It determines how to archive the information obtained, for instance.
- validates information  
It determines how to validate the information obtained, for instance.
- transforms and distributes information  
It determines which media are used to distribute the information, for instance.
- retrieves information  
It determines which information can be retrieved by whom and when, for instance.

The process must ensure the following:

- Identification of the information to be managed
 

It must be determined which information is to be passed on to those involved in creating the information for use in order for them to be able to create information conforming to standards. This includes:

  - ▷ risk assessments
  - ▷ target audience analyses
  - ▷ marketing documents
  - ▷ documents on similar products (own and those of competitors)
  - ▷ documents from service (e. g. concerning claims and customer queries)
  - ▷ documents from market research concerning own and competing products
- Definition of the presentation of the information
 

It must be determined which information is to be presented in what form, e. g.:

  - ▷ quick-reference printed on paper
  - ▷ operating instructions in a file on a chip
  - ▷ troubleshooting as “help” on a display
  - ▷ information for maintenance and safety-related troubleshooting as an AR file (augmented reality file) of a qualified partner
- Concepts for sustainment, development, storage, change, validation, presentation and disposal of information as well as for determining the status and for distribution
 

Concepts determining how to define the information development process must be developed and held available. Time lines, resources and budgets must be determined.

It must be recorded, for instance, how information can be made available if the expected service life of a product exceeds the service life of the storage media. The concept should consider that the information must still be available even if the storage medium has been destroyed. The concepts for sustainment and storage of information are directly intertwined.

It must be considered that the information for use may change, e. g. based on information from service, and the supported product may also be developed further. It is important to ensure that, on request, the users will receive the most recent version of the information for use matching exactly the product supplied to them. This requires the ability to query the status of the individual information for use published.

The concept also determines how information for use is presented to the users. The presentation of information for use to a large extent depends on the target audience (see above).

The creation of information for use is also subject to the needs imposed by sustainability. Therefore, the presentation of information for use must ensure that it can be disposed of in an environmentally compatible way at the end of use.

In designing the concept, the following four process groups shall be addressed:

- analysis and planning of information for use (see CHAPTER 6.2)
- design and development, including review, editing and testing (see CHAPTER 6.3)
- production and distribution (see CHAPTER 6.4)
- sustainment, including maintenance and improvement (see CHAPTER 6.5)

## 8 Structure of information for use

*List of requirements of the standard for the structure of information for use*

Subsection	Requirement to be checked	Notes
<b>General requirements for the structure</b>		
8.1 General	<ul style="list-style-type: none"> <li>– The structure of the information for use enhances its user-friendliness and comprehensibility</li> <li>– Complex information for use is clearly divided into convenient parts serving specific purposes and is presented in a consistent format</li> <li>– Printed information for use comprising multiple documents (see CHAPTER 11.2.1) the information on the front covers or spines makes it easy to distinguish one document from another</li> <li>– If information for use is integrated from multiple sources, the following has been observed:               <ul style="list-style-type: none"> <li>▷ the documents are consistently numbered</li> <li>▷ methods of integration of information for use, for example, integration of a copy, adaptation of the content, cross-reference to the source document, or a specific section in the source document have been implemented</li> <li>▷ the terminology and cross-references used are consistent</li> </ul> </li> </ul>	
8.2 Information types	The section does not contain requirements, only recommendations	
<b>Structuring of step-by-step instructions</b>		
8.3.4.1	– A step-by-step instruction contains preliminary information, the actual instructions, and completion information	
8.3.4.2	<p>The preliminary information includes the following:</p> <ul style="list-style-type: none"> <li>– A brief overview of the purpose of the procedure and definitions or explanations of necessary concepts not included elsewhere</li> <li>– Identification of technical or administrative activities required before starting the task</li> <li>– A list of resources the target audience needs in order to complete the task. It can include, for instance: tools, other people (helpers), relevant data, documents, passwords (see CHAPTER 11.2.3), required or additional software or equipment</li> <li>– Relevant warnings, cautions, and notes that apply to the entire procedure</li> </ul>	
8.3.4.3	<ul style="list-style-type: none"> <li>– Instructional steps are numbered using Arabic numerals and presented in the order of performance</li> <li>– Relevant warning messages and cautions are provided before the applicable instructional steps</li> <li>– Each step provides a single action:               <ul style="list-style-type: none"> <li>▷ Instructional steps indicate the expected result</li> <li>▷ Error messages and recovery procedures which could occur are mentioned</li> </ul> </li> </ul>	



Subsection	Requirement to be checked	Notes
8.3.4.4	– The end of a set of step-by-step instructions is indicated, allowing the target audience to determine that the procedure has been completed successfully	
<b>Navigation and information delivery</b>		
8.4.1	– The information for use includes elements that make it easy to navigate the contents	
8.4.2.1	– Where more than two (printed) pages have been provided, the pages are numbered	
8.4.2.2	– If the volume exceeds 12 pages, a table of contents consistent with the contents is included	
8.4.3.3	– A mechanism for electronic search has been provided in information for use delivered electronically	

## 8.1 General

The standard requires that the structure of information for use must enhance the usability (user-friendliness) and comprehensibility.

One of the central requirements of the standard is that the information products must provide for efficient accessibility of information in any given application context. In case of power failure for instance, an emergency power supply should ensure that information on further action can still be displayed. Printed documents should be stored so that they can be located quickly – if possible directly on/at the product. To achieve this, a well thought-out structure of the information for use is indispensable.

To ensure this, the standard provides general requirements and detailed requirements for the exterior and interior structure.

If printed information for use comprises multiple documents, the information on the front covers or spines shall make it easy to distinguish one document from another. To achieve that, it may be useful to subdivide it into parts that suit the application and/or target audience.

For information for use for complex systems (e. g. overall documentation of a processing plant), the standard allows using the information for use of the elements integrated into the system as parts of overall documentation (also see CHAPTER 10.2.1).

For general structuring of information for use, the following features may be used as part of a conventional setting:

- Table of contents

The structure of the table of contents for products coming under legal regulations (e. g. EU directives) should follow the structure therein presented.

Where the product comes under the Machinery Directive (2006/42/EC), refer to CHAPTER 12.4.

The table of contents should not exceed four levels (see example in figure 23 in the annex).

## 11 The relation between IEC/IEEE 82079-1 and product or sector-specific standards

As a horizontal standard IEC/IEEE 82079-1 addresses all kinds of products. This is independent of whether the product is meant for industrial use (processing plant, industrial robot etc.) or for use by consumers (toaster, defibrillator for use by non-medical personnel) or even a service (see CHAPTER 2).

The standard provides basic and very comprehensive requirements on the principles for information quality, but without addressing product-specific details. This allows for interfaces with further standards to be applied parallel to IEC/IEEE 82079-1, such as EN ISO 20607 for machinery, ISO/IEC 26514 for software products, ISO 20417 for medical products and numerous others (see Figure 21).

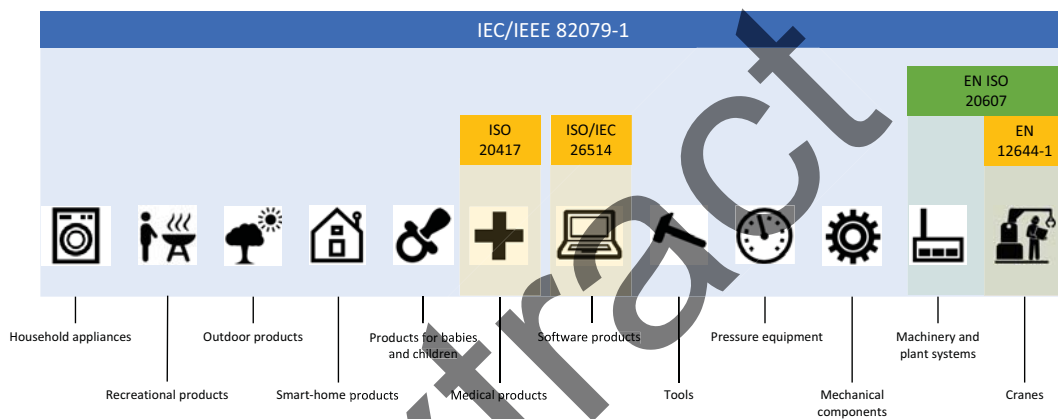


Figure 21: Interfaces between IEC/IEEE 82079-1 and other standards (excerpt)

Generally, product standardization committees should consider the basic principles and general requirements of applicable horizontal standards and include normative references to them in their product-specific standards (normative reference, see CHAPTER 2.5).

Product-specific standards should thus only standardize contents that are considered unique to the respective product group or a specific product and which must be added to the requirements of the horizontal standard, or which specify well-founded deviations.

However, in reality this principle is unfortunately rarely followed or observed to full extent. The main reason for this is the great number of horizontal standards, which are not all known to the individual product standardization committee.

Thus, if a product specific standard refers to IEC/IEEE 82079-1 informatively only or not at all regarding information for use, it can be concluded that the standard has not been considered sufficiently during preparation of the product-specific standard.

In such cases, therefore, possible overlap and even contradictions need to be traced down, to be able to fulfil the product-specific normative requirements. Overlaps and contradictions between the standards that need to be resolved, can only be determined by comparing the requirements.

In doing so, either a top-down or bottom-up principle may generally be followed.

*Note:*

*Applying the top-down principle means proceeding from the abstract, superordinate level step by step to concrete, special, subordinate items.*

*Conversely, applying the bottom-up principle means beginning with concrete, special, subordinate items and proceeding step by step toward the abstract, general, superordinate level.*

*The top-down and bottom-up principles are also applied in fields such as hazard and risk analysis as well as in FMEA and general product design.*

*Following the top-down principle, the applicable requirements of superordinate standardization documents (here IEC/IEEE 82079-1) are collected first; then these are supplemented step by step with the more precise requirements from product and sector-specific standards.*

*Following the bottom-up principle, it is first determined which specific standards must be applied to the respective product and the requirements contained in them are collected. These are then supplemented with requirements from the superordinate standards such as IEC/IEEE 82079-1.*

*In practical application, both approaches are feasible and produce the desired results. However, note that the product-specific requirements must not simply be replaced by requirements from the basic standards.*

Comparing the standards, it can be determined where individual documents include more detailed requirements. Applying the findings of such preliminary work allows ensuring that all relevant requirements for the information products to be prepared are observed. The remainder of this chapter illustrates this by comparing IEC/IEEE 82079-1 and EN ISO 20607 “Safety of machinery – Instruction handbook”.

## **11.1 Product and sector-specific requirements take priority over general requirements**

IEC/IEEE 82079-1, as a horizontal standard, contains more comprehensive requirements for the contents of information for use (see CHAPTER 7), requirements for the information management process (see CHAPTER 6), requirements for basic principles for preparation of information for use (see CHAPTER 5) as well as requirements for safety-related content (see CHAPTER 7.11).

By fulfilling these requirements of the standard, information for use will reach a high level, appropriate quality will be ensured and sustainable processes for their preparation likely be established.

Product and sector-specific standards often provide few generally applicable requirements. The contents of these specific standards are limited to the immediate applicability to a specific product or product group.

Connections to generally applicable horizontal standards are represented by means of normative or informative references (see CHAPTER 2.3). These cross-references are an important aid in applying the standards, because they allow identifying interfaces.

In many cases, product or sector-specific standards do not contain sufficient information for design of an all-embracing information development process. In such cases, IEC/IEEE 82079-1, as a horizontal standard, should be considered. Figure 22

## 15 Authors

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Dipl.-Ing. Martin Tillmann studied mechanical engineering from 1985 to 1990 with the focus on energy and processing technology at Essen University.

Upon several professional career stations, for instance, as scientific assistant for power station research, technical operations manager of a malt factory and manager of the subsidiary of a technical documentation service provider, he founded Engineering & Dokumentation Tillmann in 2002, which became part of ED-Technik GmbH in 2019. This engineering service provider supports manufacturers and operating companies in the areas of CE Marking of products and preparation of technical documentation.

Martin Tillmann is a trained technical author, certified CE coordinator and expert for CE conformity assessment and technical documentation certified to EN ISO/IEC 17024.

Michael Fritz



Michael Fritz holds a doctorate in media sciences and a master's degree in business administration with a focus on marketing. He has been employed with various associations, for instance as the manager of the Institut für lebenslanges Lernen (institute for lifelong learning).

Since 1996 he is the managing director of the Gesellschaft für Technische Kommunikation – tekomp Deutschland e.V. and since 2013 also the managing director of Europe's largest association of technical communicators – tekomp Europe. Additionally, he is the managing director of tcworld GmbH, a service provider for tekomp/tekomp Europe.

Claudia Klumpp



Dr. jur. Claudia Klumpp is a legal professional and holds a degree in business administration (VWA).

After years of work as a lawyer and legal consultant, she is working for tekomp since 2013 and – together with tekomp's Advisory Board for Legislation and Standards – is responsible for the involvement in standardization of tekomp Deutschland and tekomp Europe.

Since 2016 Claudia Klumpp as convenor chairs the international working group (IEC TC 3/ISO TC 10 JWG 16), who has revised IEC/IEEE 82079-1. Additionally, she chairs the national mirror committee for IEC/IEEE 82079-1 as the convenor.

Since 2016 she works as a lecturer for “Rechtliche Grundlagen und Normen” (legal basics and standardization) in the extra-occupational degree course “Technical Documentation” at Karlsruhe University.

#### Martin Rieder



Martin Rieder is the managing director of the engineering service provider CAVEO Safety Management & Documentation, an industrial engineer, technical communicator and expert for technical safety and documentation. He is offering consultancy for product safety, conformity and liability as well as for technical documentation to customers worldwide.

He is a member of the board of tekomp Europe and tekomp Austria; he also plays a major role in national and international standardization. As an expert of tekomp’s Advisory Board for Legislation and Standards he is dealing with topics such as product conformity and the revision of the Machinery Directive.

He is pleased to share his knowledge as a lecturer of the master course for Technical Documentation (FH Joanneum), as a trainer, speaker and author of technical books.

#### Roland Schmeling



Roland Schmeling, Dipl.-Phys., is the managing director of the consultancy SCHMELING + CONSULTANTS in Heidelberg.

Since 1999 he is providing consultancy services in the field of technical communication and documentation with a focus on standardization, information concepts, conformity and change. He studied physics and analytical philosophy. Since 2004 he teaches quality assurance at Furtwangen University. As an auditor of TÜV SÜD he inspects and audits documentations and editorial processes to the DocCert standard.

For tekomp Roland Schmeling participates in diverse working groups, committees and preparation of publications. As a voluntary member of the Advisory Board for Legislation and Standards he participates in the work on IEC/IEEE 82079-1 both on the national and international level.

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Since 1995 he is working for SEW-EURODRIVE and is the manager of the technical editing department since 2002. His responsibilities include the strategic and conceptual development of technical communication.

Before, he was employed as a development engineer in a medium-sized mechanical engineering company.