

Dear Member.

The following document is being circulated for vote at CENELEC level:

Work Item Number : 62932

CLC reference : prEN IEC 62304:2021

Reference document : IEC 62304:202X (62A/1422/CDV) (EQV)

Title : Health software - Software life cycle processes

Technical Body : CLC/TC 62 IEC/TC : IEC/SC 62A

Procedure : Parallel Vote on CDV

BT decision : -

 Submission date
 : 2021-01-08

 Deadline
 : 2021-03-26

 doa
 : dor + 3 months

 dop
 : dor + 9 months

 dow
 : dor + 36 months

Directive(s) : -

Mandate(s) : -

Supersedes : EN 62304:2006/corrigendum Nov. 2008 EN 62304:2006 + A1:2015

Available languages : Document link : -

(Acting) Secretary : Mr Petar Luzajic

Assistant Secretary :

Chairman/Convenor : Dr Peter Linders

Permanent Delegate : -

c.c : Mr Vaughan, Mr Russell

CCMC comment : -

CCMC general remarks:

- The National Committees are invited to check carefully the validity of the proposed implementation dates and Directive(s).
- Superseded documents are withdrawn at the dow of the new EN/HD or at the publication date of the new TS/TR.
- If the above project is submitted simultaneously to the IEC voting procedure in the framework of the IEC/CENELEC cooperation agreement (parallel procedure) you will receive the text of the document from the IEC Central Office. Should your vote be different in IEC and CENELEC, a detailed technical justification shall be sent to the CCMC, with copy to the IEC Central Office.
- If the above project is an amendment circulated to withdraw special national conditions and/or A-deviations from a standard the National Committees are invited to check their national situation regarding the same standard and to inform the CCMC of any change, with a copy to the Secretary of the relevant Technical Body. There is no possibility to vote through the usual online voting system.

Yours sincerely,

Standardization and Digital Solutions production@cencenelec.eu
CEN-CENELEC Management Centre
23 Rue de la Science
B-1040 Brussels
Belgium



62A/1422/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

CLOSING DATE FOR VOTING:

2021-03-26

	SUPERSEDES DOCUMENTS:					
	62A/1349/CDV, 62A/1383B/RVC					
IEC SC 62A: COMMON ASPECTS OF ELECTRICAL EQUIPMENT USED IN MEDICAL PRACTICE						
SECRETARIAT:		SECRETARY:				
United States of America		Ms Hae Choe				
OF INTEREST TO THE FOLLOWING COMMITTEES:		PROPOSED HORIZONTAL STANDARD:				
TC 62,SC 62B,SC 62C,SC 62D,TC 65,TC 66,TC 76,TC 106,TC 108						
70,10 100,10 100		Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.				
FUNCTIONS CONCERNED:						
☐ EMC ☐ ENVIR	ONMENT	QUALITY ASSURANCE	SAFETY			
SUBMITTED FOR CENELEC PARALLEL VOTING		□ NOT SUBMITTED FOR CEN	NELEC PARALLEL VOTING			
Attention IEC-CENELEC parallel vo	ting					
The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.						
The CENELEC members are invited to vote through the CENELEC online voting system.						
This document is still under study and	I subject to change.	It should not be used for ref	erence purposes.			
Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.						
TITLE:						
IEC 62304 Ed. 2: Health software - Software life cycle processes						
PROPOSED STABILITY DATE: 2024						

PROJECT NUMBER: IEC 62304 ED2

2021-01-01

DATE OF CIRCULATION:

Copyright © 2020 International Electrotechnical Commission, IEC. All rights reserved. It is permitted to download this electronic file, to make a copy and to print out the content for the sole purpose of preparing National Committee positions. You may not copy or "mirror" the file or printed version of the document, or any part of it, for any other purpose without permission in writing from IEC.

NOTE FROM TC/SC OFFICERS:

Please note that this draft is a joint project between IEC/SC 62A and ISO/TC 215 and is IEC led. During the last CDV stage, this project was approved on the IEC side but not approved in ISO and CENELEC. A task group was assigned to develop proposed resolutions to the comments and to the draft which were reviewed by the 62304 Project Team and the IEC/ISO Joint Working Group. Attached is the result of that extensive work. Some comments did not offer specific changes but provided ideas that may be better utilized during the next maintenance cycle for this document.

1

2

prEN IEC 62304:2021 - Preview only Copy via ILNAS e-Shop

CONTENTS

3	F	OREWO)RD	6
4	IN	ITRODU	JCTION	
5	1	Scor	oe	1′
6		1.1	* Purpose	11
7		1.2	* Field of application	
8		1.3	Relationship to other standards	
9	2	* No	rmative references	12
10	3	* Tei	rms and definitions	13
11	4	* Ge	neral requirements	21
12		4.1	* Quality management	21
13		4.2	* RISK MANAGEMENT	
14		4.3	Conformance	21
15		4.4	Software process rigor level	22
16		4.5	* LEGACY SOFTWARE	25
17	5	Soft	ware development PROCESS	26
18		5.1	* Software development planning	26
19		5.2	* Software requirements analysis	29
20		5.3	* Software ARCHITECTURAL design	3′
21		5.4	* Software detailed design	32
22		5.5	* SOFTWARE UNIT implementation	33
23		5.6	* Software integration and integration testing	33
24		5.7	* SOFTWARE SYSTEM testing	35
25		5.8	* Software release	36
26	6	Sof	TWARE MAINTENANCE PROCESS	37
27		6.1	* Establish SOFTWARE MAINTENANCE plan	37
28		6.2	* Problem and modification analysis	38
29		6.3	* Modification implementation	39
30	7	* So	ftware RISK MANAGEMENT PROCESS	39
31		7.1	* Analysis of software contributing to HAZARDOUS SITUATIONS	39
32		7.2	RISK CONTROL measures	40
33		7.3	VERIFICATION of RISK CONTROL measures	40
34		7.4	RISK MANAGEMENT of software changes	4′
35	8	* So	ftware configuration management PROCESS	4′
36		8.1	* Configuration identification	41
37		8.2	* Change control	42
38		8.3	* Configuration status accounting	42
39	9	* So	ftware problem resolution PROCESS	42
40		9.1	Prepare PROBLEM REPORTS	42
41		9.2	Investigate the problem	43

42	9.3 Advise relevant parties	43
43	9.4 Use change control PROCESS	43
44	9.5 Maintain records	43
45	9.6 Analyse problems for trends	
46	9.7 Verify software problem resolution	
47	9.8 Test documentation contents	
48	Annex A (informative) Rationale for the requirements of this document	
49	Annex B (informative) Guidance on the provisions of this document	
50	Annex C (informative) Relationship to other standards	
51	Annex D (informative) Implementation	
52	Bibliography	98
53 54	Annex ZA (informative) Relationship between this European standard and the General Safety and Performance Requirements of Regulation (EU) 2017/745 aimed to be covered	101
55	Figure 1. Overview of activisms development and maintanenes PROCESSES and ACTIVITIES	10
56	Figure 1 – Overview of software development and maintenance PROCESSES and ACTIVITIES	
57	Figure 2 – HEALTH SOFTWARE field of application	
58	Figure 3 – Assigning software process rigor level	
59	Figure B.1 – Relation between HAZARD, HAZARDOUS SITUATION, HARM and SECURITY terminology	52
60 61	Figure B.2 – Pictorial example of the relationship of HAZARD, sequence of events, HAZARDOUS SITUATION, and HARM	53
62 63	Figure B.3 – Pictorial representation of the relationship of RISK MANAGEMENT (ISO 14971:2019 Figure 1) and software process rigor level	54
64	Figure B.4 – Determining software process rigor level in steps	55
65	Figure B.5 – SOFTWARE SYSTEM contributing to HAZARDOUS SITUATIONS	57
66 67	Figure B.6 – SOFTWARE SYSTEM contributing to HAZARDOUS SITUATIONS with RISK CONTROL measures	58
68	Figure B.7 – Example of partitioning of SOFTWARE ITEMS	65
69 70	Figure B.8 – Interaction between software problem resolution and software configuration management	72
71	Figure C.1 – Relationship of key MEDICAL DEVICE standards to this document	
72	Figure C.2 – Software as part of the V-model	
73	Figure C.3 – Application of IEC 62304 with IEC 61010-1	
74	Figure C.4 – Relationship between IEC 82304-1 and IEC 62304	
75		
76	Table A.1 – Summary of requirements by software SAFETY class	47
77 78	Table B.1 – Development (model) strategies as defined in ISO/IEC 12207 Error! Bookmadefined.	ark not
79	Table B.2 – Analysis of HAZARDOUS SITUATIONS	56
80	Table B.3 – Identification of HAZARDOUS SITUATIONS with external RISK CONTROL measure	58
81	Table B.4 – Identification of HAZARDOUS SITUATIONS with software SAFETY classification	60
82	Table C.1 – Useful SECURITY standards	76

93

94

83	Table C.2 – Relationship to ISO 13485:2016	77
84	Table C.3 – Relationship to ISO 14971:2019	78
85	Table C.4 – Relationship to IEC 60601-1:2005 and IEC 60601-1:2005/AMD1:2012	80
86	Table C.5 – Relationship to ISO/IEC 12207:2017	90
87	Table D.1 – Checklist for small companies without a certified QMS	97
88 89	Table ZA.1 – Correspondence between this document and Annex I of Regulation (EU) 2017/745 [OJ L 117]	101
90 91 92	Table ZA.2 – Relevant Essential Health and SAFETY Requirements from Directive 2006/42/EC on machinery that are addressed by this Document (according to article 1, item 12, of Regulation (EU) 2017/745)	102

INTERNATIONAL ELECTROTECHNICAL COMMISSION

97

99

96

98

HEALTH SOFTWARE -

SOFTWARE LIFE CYCLE PROCESSES

101

100

102

103

104

105 106 107

108

109

110

111

112

113 114

115 116 117

118 119 120

121 122

123 124

125 126 127

128

129 130 131

133

132

134 135

137

138

139 140

141 142

143

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities. IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.
- International Standard IEC 62304 has been prepared by a joint working group of subcommittee
- 62A: Common aspects of electrical equipment used in medical practice, of IEC technical
- committee 62: Electrical equipment in medical practice, in cooperation with ISO Technical
- Committee 215, Health informatics. Table C.5 was prepared by ISO/IEC JTC 1/SC 7, Software 136
 - It is published as a dual logo standard.

and systems engineering.

- This second edition cancels and replaces the first edition published in 2006 and
- Amendment 1:2015. This edition constitutes a technical revision.
 - This edition includes the following significant technical changes with respect to the previous edition:
 - a) the scope of this document has been expanded to HEALTH SOFTWARE;