

SLOVENSKI STANDARD oSIST prEN IEC 62541-23:2024

01-marec-2024

Enotna arhitektura OPC - 23. del: Skupni tipi zvez

OPC unified architecture - Part 23: Common reference types

Ta slovenski standard je istoveten z: prEN IEC 62541-23:2024

ICS:

Merjenje in krmiljenje 19594-9e Industrial process 2693e7a/osist-pren-iec-62541-23-2024 https://st.25.040.40

industrijskih postopkov measurement and control

35.240.50 Uporabniške rešitve IT v IT applications in industry

industriji

oSIST prEN IEC 62541-23:2024 en,fr,de oSIST prEN IEC 62541-23:2024

iTeh Standards (https://standards.iteh.ai) Document Preview

oSIST prEN_IEC_62541-23:2024
https://standards.iteh.ai/catalog/standards/sist/b5dd9594-9cf9-469c-9b48-4fd882693e7a/osist-prep-iec-62541-23-2024

oSIST prEN IEC 62541-23:2024

PROJECT NUMBER: IEC 62541-23 ED1

DATE OF CIRCULATION:



65E/1048/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

CLOSING DATE FOR VOTING:

	2024-01-26		2024-04-19	
	SUPERSEDES DOCUM	ENTS:		
	65E/958/NP, 65E/1018/RVN			
IEC SC 65E: DEVICES AND INTEGRATION I	N ENTERPRISE SYSTEM	ıs		
SECRETARIAT:		SECRETARY:		
United States of America		Mr Donald (Bob)	Lattimer	
OF INTEREST TO THE FOLLOWING COMMITTE	EES:	PROPOSED HORIZONTAL STANDARD:		
		Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.		
FUNCTIONS CONCERNED:				
☐ EMC ☐ ENVIRO	ONMENT	Quality assura	NCE SAFETY	
SUBMITTED FOR CENELEC PARALLEL V	OTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING		
Attention IEC-CENELEC parallel voting	giTeh Sta			
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 CENELEC online voting system.	o vote through the	t Previe	W	
This document is still under study and su	ubject to change. It al	62541-23-2024	r reference purposes	
This document is still under study and subject to change. It should not be used for reference 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.				
Recipients of this document are invited to submit, with their comments, notification of any relevant "In Some Countries" clauses to be included should this proposal proceed. Recipients are reminded that the CDV stage is the final stage for submitting ISC clauses. (SEE AC/22/2007 OR NEW GUIDANCE DOC).				
TITLE:				
OPC Unified Architecture – Part 23: Common ReferenceTypes				
proposed stability date: 2026				
NOTE FROM TC/SC OFFICERS:				

Copyright © 2023 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.

1 2			CONTENTS	Page
3				-
4	1	Scop	e	1
5	2	Norm	native references	1
6	3	Term	s, definitions, abbreviated terms, and conventions	1
7		3.1	Terms and definitions	1
8		3.2	Abbreviated terms	1
9	4	OPC	UA ReferenceTypes	2
10		4.1	Overview	2
11		4.2	IsExecutableOn	2
12			4.2.1 Overview	
13			4.2.2 Definition	
14		4.3	IsExecutingOn	
15			4.3.1 Overview	
16			4.3.2 Definition	
17		4.4	Controls	
18 10			4.4.1 Overview	-
19 20		4.5	4.4.2 Definition	_
20 21		4.5	4.5.1 Overview.	
22			4.5.2 Definition	
23		4.6	Requires	
24			4.6.1 Overview	
25			4.6.2 Definition	5
26		4.7	IsPhysicallyConnectedTo	5
27			4.7.1 Overview	5
28			4.7.2 Definition	5
29		4.8	RepresentsSameEntityAs	
30			4.8.1 Overview <u>aSIST_prFM.IEC.62541.23:2024</u>	
31://		dards.i	4.8.2 Definition lands/sist/h5/dd9594-96f9-4696-9b48-4fd882693e7a/osist-men-i	
32		4.9	RepresentsSameHardwareAs	
33			4.9.1 Overview	
34 35		4.40	4.9.2 Definition	
36		4.10	RepresentsSameFunctionalityAs	
30 37			4.10.1 Overview	
38		4 11	IsHostedBy	
39			4.11.1 Overview	
40			4.11.2 Definition	
41		4.12	HasPhysicalComponent	
42			4.12.1 Overview	
43			4.12.2 Definition	9
44		4.13	HasContainedComponent	9
45			4.13.1 Overview	9
46			4.13.2 Definition	
47		4.14	HasAttachedComponent	
48			4.14.1 Overview	
10			1112 Definition	10

50	5	Refe	rence Description	10
51		5.1	Overview	10
52		5.2	Reference Refinement	12
53		5.3	OPC UA VariableTypes	14
54			5.3.1 ReferenceDescriptionVariableType	14
55		5.4	OPC UA ReferenceTypes	14
56			5.4.1 HasReferenceDescription	14
57		5.5	OPC UA DataTypes	15
58			5.5.1 ReferenceDescriptionDataType	15
59			5.5.2 ReferenceListEntryDataType	15
60	An	nex A	(Informative) ReferenceDescription Design Decisions	16
61		A.1	Overview	16
62		A.2	· · · · · · · · · · · · · · · · · · ·	
63	Bib	liogra	phy	17
64				
65				

iTeh Standards (https://standards.iteh.ai) Document Preview

SIST prEN IEC 62541-23:2024

https://standards.iteh.ai/catalog/standards/sist/h5dd9594_9cf9_469c_9h48_4fd882693e7a/osist_prep_iec_62541_23_202

3

36	Figures	
67		
86	Figure 1 – Overview of ReferenceTypes	. 2
69	Figure 2 – Example of ReferenceDescriptions	11
70	Figure 3 – Examples of Reference Refinements	12
71	Figure 4 – Example of Reference Refinements with multiple path options	12
72	Figure 5 – Example of how to use Reference Refinements	13
73	Figure 6 – Example of how to use Reference Refinements with two Levels and Multiple Hops	:13
74	Figure A.1 – Refinement of References by Proxy Object	16
75		
76		

iTeh Standards (https://standards.iteh.ai) Document Preview

oSIST prEN IEC 62541-23:2024

https://standards.iteh.ai/catalog/standards/sist/h5dd9594_9cf9_469c_9h48_4fd882693e7a/osist_prep_iec_62541_23_202

77	Tables	
78	Table 1 – IsExecutableOn Definition	3
79	Table 2 – IsExecutingOn Definition	3
80	Table 3 – Controls Definition	4
81	Table 4 – Utilizes Definition	4
82	Table 5 – Requires Definition	5
83	Table 6 – IsPhysicallyConnectedTo Definition	6
84	Table 7 – RepresentsSameEntityAs Definition	6
85	Table 8 – RepresentsSameHardwareAs Definition	7
86	Table 9 – RepresentsSameFunctionalityAs Definition	8
87	Table 10 – IsHostedBy Definition	8
88	Table 11 – HasPhysicalComponent Definition	9
89	Table 12 – HasContainedComponent Definition	10
90	Table 13 – HasAttachedComponent Definition	10
91	Table 14 – ReferenceDescriptionVariableType Definition	14
92	Table 15 – HasReferenceDescription Definition	14
93	Table 16 – ReferenceDescriptionDataType Structure	15
94	Table 17 – ReferenceDescriptionDataType Definition	15
95	Table 18 – ReferenceListEntryDataType Structure	15
96	Table 19 – ReferenceListEntryDataType Definition	15
97		
98		

oSIST prEN IEC 62541-23:2024

https://standards.iteh.ai/catalog/standards/sist/b5dd9594-9cf9-469c-9b48-4fd882693e7a/osist-pren-iec-62541-23-2026

INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPC UNIFIED ARCHITECTURE -

Part 23: Common ReferenceTypes

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

consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC

in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate,

to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication

2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international

3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees

4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently

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

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

8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different

kind from that which is normally published as an International Standard, for example "state of the art".

International Standard IEC 62541-23 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement,

9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. 23-2024

Report on voting

65E/XX/RVC

IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.

and the corresponding national or regional publication shall be clearly indicated in the latter.

6) All users should ensure that they have the latest edition of this publication.

IEC shall not be held responsible for identifying any or all such patent rights.

publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.

The text of this international standard is based on the following documents:

CDV

65E/XX/CDV

determined by agreement between the two organizations.

National Committees.

independent certification bodies.

control, and automation.

for the correct application of this publication.

100

99

101

102

103

104

105

106

107 108 109 110

111 112 113

115

116 117

118 119

120 121

122 123

124

126 127

128

129 130

131 133

134

137

144

145 Full information on the voting for the approval of this international standard can be found in the report

146

147

148

132

135 136

138 139

140 141

142

143

on voting indicated in the above table. This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

Throughout this document and the other Parts of the series, certain document conventions are used:

6

- 149 *Italics* are used to denote a defined term or definition that appears in the "Terms and definition" clause 150 in one of the parts of the series.
- 151 *Italics* are also used to denote the name of a service input or output parameter or the name of a structure or element of a structure that are usually defined in tables.
- The *italicized terms* and *names* are also often written in camel-case (the practice of writing compound
- words or phrases in which the elements are joined without spaces, with each element's initial letter
- capitalized within the compound). For example, the defined term is *AddressSpace* instead of Address
- Space. This makes it easier to understand that there is a single definition for AddressSpace, not
- 157 separate definitions for Address and Space.
- A list of all parts of the IEC 62541 series is included in IEC 62541-1 clause 4 Structure of the OPC UA
- 159 series and published under the general title OPC Unified Architecture, can be found on the IEC
- 160 website.
- 161 The committee has decided that the contents of this publication will remain unchanged until the stability
- date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific
- publication. At this date, the publication will be
- 164 reconfirmed,
- 165 withdrawn,
- replaced by a revised edition, or
- 167 amended.

168

169 A bilingual version of this publication may be issued at a later date.

170

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

171

oSIST prEN IEC 62541-23:2024

1

OPC Unified Architecture Specification 172 173 Part 23: Common ReferenceTypes 174 175 176 177 178 1 Scope 179 This part of the OPC Unified Architecture defines an Information Model. The Information Model defines 180 common ReferenceTypes. 181 2 Normative references The following referenced documents are indispensable for the application of this OPC UA part. For 182 dated references, only the edition cited applies. For undated references, the latest edition of the 183 184 referenced document (including any amendments and errata) applies. 185 IEC 62541-1, OPC Unified Architecture - Part 1: Overview and Concepts 186 IEC 62541-3, OPC Unified Architecture - Part 3: Address Space Model 187 IEC 62541-5. OPC Unified Architecture – Part 5: Information Model 188 3 Terms, definitions, abbreviated terms, and conventions 189 3.1 Terms and definitions 190 For the purposes of this document, the terms and definitions given in IEC 62541-1, IEC 62541-3, and 191 IEC 62541-5 apply. 192 All used terms are italicized in this document. 193 3.2 Abbreviated terms 194 Central Processing Unit ST prEN IEC 62541-23:2024 195 CPU IO lands itch a Input/Output dards/sist/b5dd9594-9cf9-469c-9b48-4fd882693e7a/osist-pren-iec-62541-23-2024 196 Internet Protocol 197 IΡ PC Personal Computer 198 199 PCI Peripheral Component Interconnect 200 Physical Laver PHY Programmable Logic Controller 201 **PLC**

Radio Frequency Identification

202

RFID