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Interested committees:

Title: BS EN IEC 62541-22 OPC Unified Architecture

Part 22: Base Network Model

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:

IEC 62541-22 ED1

DATE OF CIRCULATION:

2024-01-26

CLOSING DATE FOR VOTING:

2024-04-19

SUPERSEDES DOCUMENTS:

65E/957/NP, 65E/1017/RVN**IEC SC 65E : DEVICES AND INTEGRATION IN ENTERPRISE SYSTEMS**

SECRETARIAT:

United States of America

SECRETARY:

Mr Donald (Bob) Lattimer

OF INTEREST TO THE FOLLOWING COMMITTEES:

PROPOSED HORIZONTAL STANDARD:



Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

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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 subject to change. It should not be used for reference purposes.

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TITLE:

OPC Unified Architecture – Part 22: Base Network Model

PROPOSED STABILITY DATE: 2026

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPC UNIFIED ARCHITECTURE –

Part 22: Base Network Model

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International Standard IEC 62541-22 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

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

CDV	Report on voting
65E/XX/CDV	65E/XX/RVC

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

179 *Italics* are used to denote a defined term or definition that appears in the “Terms and definition” clause
180 in one of the parts of the series.

181 *Italics* are also used to denote the name of a service input or output parameter or the name of a structure
182 or element of a structure that are usually defined in tables.

183 The *italicized terms* and *names* are also often written in camel-case (the practice of writing compound
184 words or phrases in which the elements are joined without spaces, with each element's initial letter
185 capitalized within the compound). For example, the defined term is *AddressSpace* instead of Address
186 Space. This makes it easier to understand that there is a single definition for *AddressSpace*, not
187 separate definitions for Address and Space.

188 A list of all parts of the IEC 62541 series is included in IEC 62541-1 clause 4 Structure of the OPC UA
189 series and published under the general title OPC Unified Architecture, can be found on the IEC website.

190 The committee has decided that the contents of this publication will remain unchanged until the stability
191 date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific
192 publication. At this date, the publication will be

- 193 • reconfirmed,
- 194 • withdrawn,
- 195 • replaced by a revised edition, or
- 196 • amended.

197

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

199

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1 Scope

The Base Network Model (BNM) specifies an OPC UA *Information Model* for a basic set of network related components to be used in other *Information Models*.

The initial version defines parameter sets for TSN Talkers and Listeners as well as network interfaces and ports as shown in Figure 1. A future version of this document is expected to have a broader scope of other network technologies than Ethernet only.

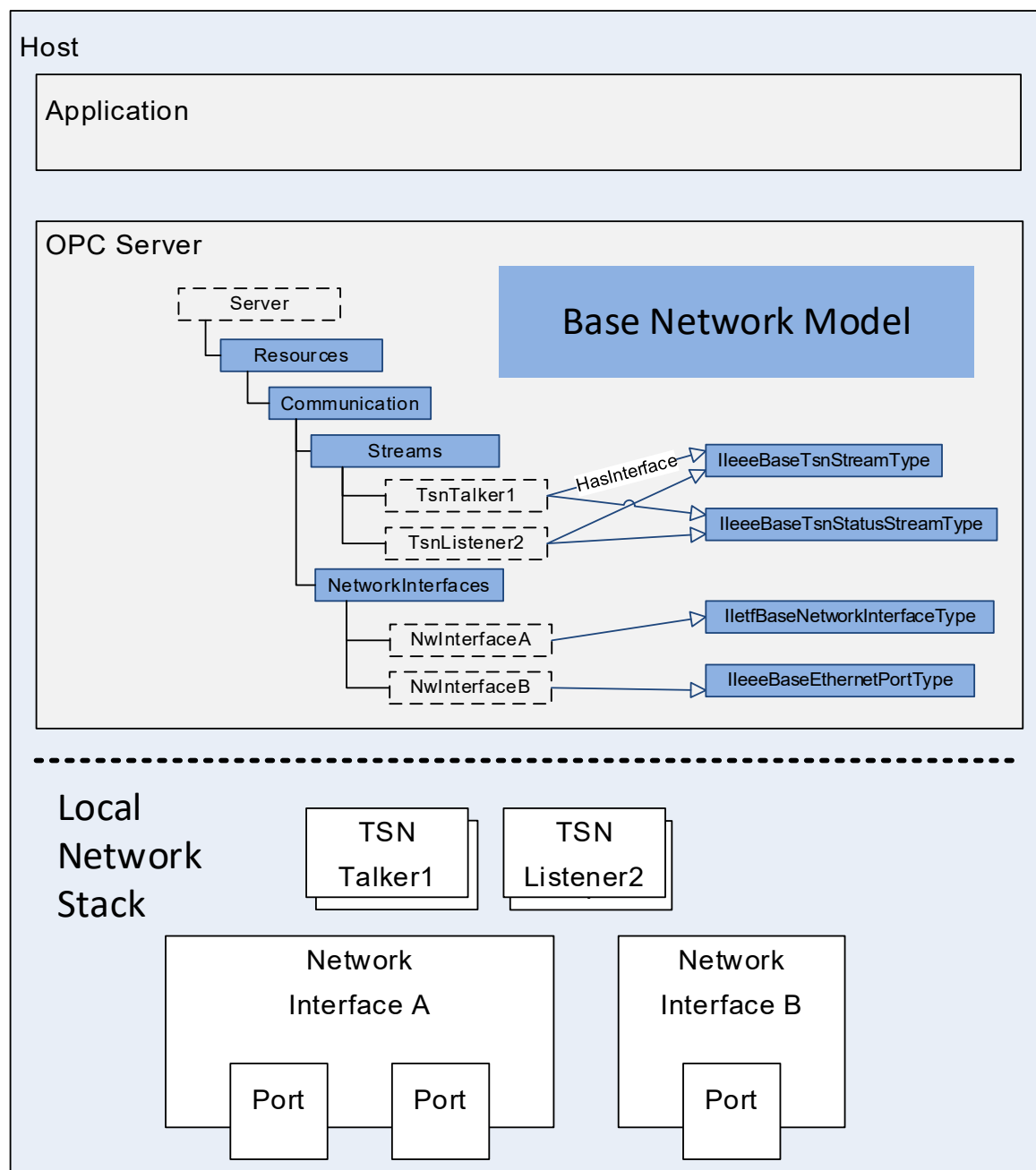


Figure 1 – Scope of Base Network Model

2 Normative references

The following referenced documents are indispensable for the application of this OPC UA part. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments and errata) applies.

217 IEC 62541-1, *OPC Unified Architecture – Part 1: Overview and Concepts*

218 IEC 62541-5, *OPC Unified Architecture – Part 5: Information Model*

219 IEC 62541-8, *OPC Unified Architecture – Part 8: Data Access*

220

221 IEEE Std 802.3, *ETHERNET*

222 <http://www.ieee802.org/3/>

223 IEEE 802.1Q-2018, *IEEE Standard for Local and Metropolitan Area Networks Bridges and Bridged*
224 *Networks*

225 <http://www.ieee802.org/1/>

226 IEEE 802.1Qcc-2018, *Bridges and Bridged Networks, Amendment: Stream Reservation Protocol*
227 *(SRP) Enhancements and Performance Improvements*

228 <http://www.ieee802.org/1/>

229 IETF RFC 2863, *The Interfaces Group MIB*

230 <https://tools.ietf.org/html/rfc2863>

231 **3 Terms, definitions, abbreviated terms, and conventions**

232 **3.1 Terms and definitions**

233 For the purposes of this document, the terms and definitions given in IEC 62541-1, IEC 62541-5 and
234 IEC 62541-8 apply.

235 All used terms are *italicized* in this document.

236 **3.2 Abbreviated terms**

237	AVB	Audio Video Bridging
238	BNM	Base Network Model
239	CNC	Centralized Network Configuration
240	CUC	Centralized User Configuration
241	DSCP	Differentiated services code point for packet classification purposes
242	IEEE	Institute of Electrical and Electronics Engineers
243	IETF	Internet Engineering Task Force
244	MAU	Medium Attachment Units
245	MIB	Management Information Base
246	PCP	Priority Code Point for classifying and managing network traffic
247	TSN	Time Sensitive Networks
248	VLAN	Virtual Local Area Network
249	YANG	Yet Another Next Generation (Data modelling language for network management)

250 **4 Concepts**

251 **4.1 Type and Naming Conventions**

252 The BNM shall align its parameters to existing standards defined by IETF and the IEEE to allow an
253 effortless mapping against existing network technologies. Therefore, selected *DataTypes* shall fit to
254 the types used by the related managed objects of IEEE and IETF. *BrowseNames* of *Variables* and
255 parameter sets (UA interface) are preferably derived from standardized IETF / IEEE YANG models. If
256 no standardized YANG representation is available, MIB definitions are chosen.

257 **4.2 Usage of OPC UA Interfaces**

258 The parameters of the BNM are grouped in the form of OPC UA *Interfaces*. *Interfaces* have been
259 chosen to define parameter sets independent of the implementation in future *ObjectType* hierarchies.
260 This allows these grouped parameters to be used in other *Information Models* independent of
261 *ObjectType* hierarchies that may be found in the BNM.