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OPC unified architecture – Del 14: PubSub

OPC unified architecture – Part 14: PubSub

Som svensk standard gäller europastandarden EN IEC 62541-14:2020. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 62541-14:2020.

Nationellt förord

Europastandarden EN IEC 62541-14:2020

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62541-14, First edition, 2020 - OPC unified architecture - Part 14: PubSub**

utarbetad inom International Electrotechnical Commission, IEC.

ICS 25.040.40; 35.100.05

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN IEC 62541-14

September 2020

ICS 25.040.40; 35.100.05

English Version

OPC unified architecture - Part 14: PubSub (IEC 62541-14:2020)

Architecture unifiée OPC - Partie 14: PubSub
(IEC 62541-14:2020)

OPC Unified Architecture - Teil 14: Festlegungen zur Umsetzung des Publisher-Subscriber-Models
(IEC 62541-14:2020)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 62541-14:2020 E

European foreword

The text of document 65E/720/FDIS, future edition 1 of IEC 62541-14, prepared by SC 65E "Devices and integration in enterprise systems" of IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62541-14:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-05-12
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-08-12

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The text of the International Standard IEC 62541-14:2020 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC/TR 62541-1	-	OPC unified architecture - Part 1: Overview and concepts	CLC/TR 62541-1	-
IEC/TR 62541-2	-	OPC unified architecture - Part 2: Security model	CLC/TR 62541-2	-
IEC 62541-3	-	OPC Unified Architecture - Part 3: Address Space Model	-	-
IEC 62541-4	-	OPC Unified Architecture - Part 4: Services	-	-
IEC 62541-5	-	OPC Unified Architecture - Part 5: Information Model	-	-
IEC 62541-6	-	OPC Unified Architecture - Part 6: Mappings	-	-
IEC 62541-7	-	OPC unified architecture - Part 7: Profiles	EN IEC 62541-7	-
IEC 62541-8	-	OPC Unified Architecture - Part 8: Data Access	EN IEC 62541-8	-
IEC 62541-12	-	OPC unified architecture - Part 12: Discovery and global services	EN IEC 62541-12	-
ISO/IEC 19464	2014	Information technology - Advanced Message Queuing Protocol (AMQP) v1.0 specification	-	-
ISO/IEC 20922	2016	Information technology - Message Queuing Telemetry Transport (MQTT) v3.1.1	-	-
IETF RFC 7159	-	The JavaScript Object Notation (JSON) Data Interchange Format	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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OPC UNIFIED ARCHITECTURE –

Part 14: PubSub

FOREWORD

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International Standard IEC 62541-14 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 standard is based on the following documents:

FDIS	Report on voting
65E/720/FDIS	65E/736/RVD

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 document has been drafted in accordance with the ISO/IEC Directives, Part 2.

Throughout this document and the other parts of the IEC 62541 series, certain document conventions are used:

Italics are used to denote a defined term or definition that appears in Clause 3 in one of the parts of the series.

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, with a few exceptions, 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 separate definitions for Address and Space.

A list of all parts of the IEC 62541 series, published under the general title *OPC Unified Architecture*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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OPC UNIFIED ARCHITECTURE –

Part 14: PubSub

1 Scope

This part of IEC 62541 defines the OPC Unified Architecture (OPC UA) *PubSub* communication model. It defines an OPC UA publish subscribe pattern which complements the client server pattern defined by the *Services* in IEC 62541-4. IEC TR 62541-1 gives an overview of the two models and their distinct uses.

PubSub allows the distribution of data and events from an OPC UA information source to interested observers inside a device network as well as in IT and analytics cloud systems.

This document consists of

- a general introduction of the *PubSub* concepts,
- a definition of the *PubSub* configuration parameters,
- mapping of *PubSub* concepts and configuration parameters to messages and transport protocols, and
- a PubSub configuration model.

Not all OPC UA *Applications* will need to implement all defined message and transport protocol mappings. IEC 62541-7 defines the *Profile* that dictates which mappings need to be implemented in order to be compliant with a particular *Profile*.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

IEC TR 62541-2, *OPC Unified Architecture – Part 2: Security Model*

IEC 62541-3, *OPC Unified Architecture – Part 3: Address Space Model*

IEC 62541-4, *OPC Unified Architecture – Part 4: Services*

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

IEC 62541-6, *OPC Unified Architecture – Part 6: Mappings*

IEC 62541-7, *OPC Unified Architecture – Part 7: Profiles*

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

IEC 62541-12, *OPC Unified Architecture – Part 12: Discovery and Global Services*

ISO/IEC 19464:2014, *Advanced Message Queuing Protocol (AMQP) v1.0 specification*

ISO/IEC 20922:2016, *Message Queuing Telemetry Transport (MQTT) v3.1.1*

IETF RFC 7159, *The JavaScript Object Notation (JSON) Data Interchange Format*
http://www.ietf.org/rfc/rfc7159.txt