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OPC Unified Architecture - Part 14: PubSub

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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ICS 25.040.40, 35.100.05

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EUROPEAN STANDARD

**EN IEC 62541-14**

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2020

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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-Modells  
(IEC 62541-14:2020)

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## European foreword

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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
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## 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](http://www.cenelec.eu).

| <u>Publication</u> | <u>Year</u> | <u>Title</u>   | <u>EN/HD</u>    | <u>Year</u> |
|--------------------|-------------|--|-----------------|-------------|
| 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                        | -               | -           |

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**OPC unified architecture –  
Part 14: PubSub**

**Architecture unifiée OPC –  
Partie 14: PubSub**



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# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**OPC unified architecture –  
Part 14: PubSub**

**Architecture unifiée OPC –  
Partie 14: PubSub**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPC UNIFIED ARCHITECTURE –

Part 14: PubSub

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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*