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OPC Unified Architecture - Part 14: PubSub

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TITLE:

OPC Unified Architecture – Part 14: PubSub

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OPC UNIFIED ARCHITECTURE –**Part 14: PubSub****FOREWORD**

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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 technical report is based on the following documents:

Enquiry draft	Report on voting
65E/XX/DTR	65E/XX/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

This is the first edition of edition of IEC 62541-14.

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

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

54 Italics are used to denote a defined term or definition that appears in the "Terms and definition"
55 clause in one of the parts of the series.

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

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

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

65 The committee has decided that the contents of this publication will remain unchanged until the
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- 68 • reconfirmed,
- 69 • withdrawn,
- 70 • replaced by a revised edition, or
- 71 • amended.

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73 The National Committees are requested to note that for this publication the stability date is 2021.

74 THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED AT
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76 A bilingual version of this publication may be issued at a later date. 20

77

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OPC Unified Architecture Specification

Part 14: PubSub

1 Scope

This specification 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. See IEC TR 62541-1 for an overview of the two models and their distinct uses.

PubSub allows distributing 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.

The specification 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 dictate which mappings need to be implemented in order to be compliant with a particular *Profile*.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application.

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) Version 1.0

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

RFC 7159: The JavaScript Object Notation (JSON) Data Interchange Format