Edition 4.0 2025-12

INTERNATIONAL STANDARD

OPC unified architecture -
Part 3: Address Space Model

ICS 25.040.40; 35.100.05

ISBN 978-2-8327-0839-2

IEC 62541-3:2025-12(en)

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FOREWORD

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IEC 62541-3 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2020. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) addition of the concept and modelling elements for Interfaces and AddIns;
b) addition of Currency;
c) addition of Method Meta Data to define additional attributes for Method Arguments;
d) addition of ApplyRestrictionToBrowse bit to AccessRestrictionType;
e) addition of a Non-Volatile Storage bit to AccessLevelExType;

g) the View NodeClass has been changed to define the EventNotifier as an EventNotifierType in the same way the Object NodeClass defines it;

h) correctition of HasNotifier, HasEventSource, and Organizes, to include ObjectType as valid source node;

i) NamingRules have become deprecated;

j) addition of AssociatedWith ReferenceType.

The text of this International Standard is based on the following documents:

Draft	Report on voting
65E/1061/CDV	65E/1128/RVC

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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 the "Terms and definitions" clause in one of the parts of the IEC 62541 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, 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 in 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 webstore.iec.ch in the data related to the specific document. At this date, the document will be

– reconfirmed,

– withdrawn, or

– revised.

This part of IEC 62541 describes the OPC Unified Architecture (OPC UA) *AddressSpace* and its *Objects*. This specification is the OPC UA meta model on which OPC UA information models are based.

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

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

IEC 62541-11, *OPC Unified Architecture – Part 11: Historical Access*

IEC 62541-18, *OPC Unified Architecture – Part 18: Role-Based Security*

IEC 62541-21, *OPC Unified Architecture – Part 21: Device Onboarding*

ISO 639 (all parts), *Codes for the representation of names of languages*

ISO 3166 (all parts), *Codes for the representation of names of countries and their subdivisions*

ISO 4217, *Codes for the representation of currencies*

ISO 8601-1:2019, *Date and time – Representations for information interchange – Part 1: Basic rules*

ISO/IEC/IEEE 60559:2020, *Information technology – Microprocessor Systems – Floating-Point arithmetic*

IETF RFC 3986, Berners-Lee T., Fielding R. and Masinter L., “Uniform Resource Identifier (URI): Generic Syntax”, January 2005, available at https://www.ietf.org/rfc/rfc3986.txt

IETF RFC 4151, Kindberg T. and Hawke S., “The 'tag' URI Scheme”, October 2005, available at https://datatracker.ietf.org/doc/html/rfc4151

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Unicode Annex 15, *Unicode Standard Annex #15: Unicode Normalization Forms*
http://www.unicode.org/reports/tr15/

W3C XML Schema Definition Language (XSD) Part 2, DataTypes
http://www.w3.org/TR/xmlschema-2

https://www.unicode.org/charts/PDF/U0000.pdf

Unicode C1 Controls and Latin-1 Supplement:
https://www.unicode.org/charts/PDF/U0080.pdfhttps://www.unicode.org/Public/UCD/latest/ucd/PropList.txt

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https://www.oreilly.com/library/view/design-patterns-elements/0201633612/

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