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**OPC unified architecture -**
**Part 3: Address Space Model**

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# OPC unified architecture - Part 3: Address Space Model

## FOREWORD

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 62541-3:2020. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

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;
f) addition of a Constant bit and ConfigurationConstant 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.

## 1 Scope

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 ~~TR~~ 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/IEC/IEEE 60559:2011, *Information technology – Microprocessor Systems – Floating-Point arithmetic*~~

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 8601 (all parts), *Date and time – Representations for information interchange*~~

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 RFC5646, Tags for Identifying Languages~~
~~http://tools.ietf.org/html/rfc5646~~

~~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/~~

~~TAI: International Atomic Time~~
~~http://www.bipm.org/en/bipm-services/timescales/tai.html~~

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http://www.unicode.org/reports/tr15/

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

Unicode C0 Controls and Basic Latin:
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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[FF04] Eric Freeman, Elisabeth Freeman, Kathy Sierra, Bert Bates, *Head First Design Patterns*, O'Reilly, 2004
https://www.oreilly.com/library/view/head-first-design/0596007124/