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Part 5: Information Model

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FOREWORD

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IEC 62541-5 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) Annex B has been removed and used to create IEC 62451-16;
b) Annex C has been removed and used to create IEC 62451-20;
c) currency information model has been added;
d) information model for Interfaces and AddIns has been added;
e) information model for Method Metadata has been added;

f) MaxSessions, MaxSubscriptions, and MaxMonitoredItems have been added to capabilities;
g) information model for ordered list of objects has been added;
h) PortableQualifiedName and PortableNodeId DataTypes have been added;
i) UriString DataType has been added;
j) SemanticVersionString DataType has been added;
k) AssociatedWith Reference Type has been added;
l) ConfigurationVersion Property has been added to NamespaceMetadataType;
m) AuditClientEventType and AuditClientUpdateMethodResultEventType have been added;
n) ModelVersion has been added to NamespaceMetadataType;
o) NoTransparentBackupRedundancyType has been added to support a Primary/Standby use case;
p) BitFieldType and BitFieldDefinitionType have been added.

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

Draft	Report on voting
65E/1062/CDV	65E/1130/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 defines the Information Model. The Information model describes standardised *Nodes* of a *Server*'s *AddressSpace*. These *Nodes* are standardised types as well as standardised instances used for diagnostics or as entry points to server-specific *Nodes*. Thus, the Information Model defines the *AddressSpace* of an empty OPC UA *Server*. However, it is not expected that all *Servers* will provide all of these *Nodes*.

Annex C defines the OPC Binary Types Description System.

Annex B refers to encoding information for custom *DataTypes* in previous versions of this document.

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: Concepts*

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

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

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 62541-9, *OPC Unified Architecture - Part 9: Alarms and conditions*

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

IEC 62541-20, *OPC Unified Architecture - Part 20: File Transfer*

ISO/IEC 11578:1996, *Information technology - Open Systems Interconnection - Remote Procedure Call (RPC)*

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

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