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Enotna arhitektura OPC - 17. del: Nadomestna imena

OPC unified architecture - Part 17: Alias names

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65E/1042/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 62541-17 ED1**	
DATE OF CIRCULATION: **2024-01-26**	CLOSING DATE FOR VOTING: **2024-04-19**
SUPERSEDES DOCUMENTS: **65E/952/NP, 65E/1012/RVN**	

IEC SC 65E : DEVICES AND INTEGRATION IN ENTERPRISE SYSTEMS

SECRETARIAT: United States of America	SECRETARY: Mr Donald (Bob) Lattimer
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY

☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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The CENELEC members are invited to vote through the CENELEC online voting system.

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TITLE:

OPC Unified Architecture – Part 17: Alias Names

PROPOSED STABILITY DATE: 2026

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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OPC UNIFIED ARCHITECTURE –

Part 17: Alias Names

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International Standard IEC 62541-17 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 international standard is based on the following documents:

CDV	Report on voting
65E/XX/CDV	65E/XX/RVC

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

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

Italics are used to denote a defined term or definition that appears in the “Terms and definition” clause 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 often 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 is included in IEC 62541-1 clause 4 Structure of the OPC UA series and published under the general title OPC Unified Architecture, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

OPC Unified Architecture Specification

Part 17: Alias Names

1 Scope

This specification provides a definition of *AliasNames* functionality. *AliasNames* provide a manner of configuring and exposing an alternate well-defined name for any *Node* in the system. This is analogous to the way domain names are used as an alias to IP addresses in IP networks. Like a DNS Server, an OPC UA *Server* that supports *AliasNames* provides a lookup *Method* that will translate an *AliasName* to a *NodeId* of the related *Node* on a *Server*. An aggregating *Server* can collect these *AliasNames* from multiple *Servers* and provide a lookup *Method* to allow *Client* applications to discover *NodeIds* on a system wide basis. An aggregating *Server* might also define *AliasNames* for *Nodes* in other *Servers* that do not support *AliasNames.* A GDS may be constructed that would automatically aggregate all *AliasNames* that are defined on any *Server* that has registered with the GDS. In this case the GDS also provides the lookup mechanism for *Clients* at a well-known endpoint and address. The GDS functionality for *AliasNames* is formally defined in Annex B.

2 Normative references

The following referenced documents are indispensable for the application of this specification. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments and errata) applies.

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

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 62541-12, *OPC Unified Architecture – Part 12: Discovery and Global Services*

IEC 62541-14, *OPC Unified Architecture – Part 14: PubSub*

http://www.opcfoundation.org/UA/Part14/

3 Terms and abbreviated terms

3.1 Terms

For the purposes of this document, the terms and definitions given in IEC 62541-1, IEC 62541-3, IEC 62541-4, IEC 62541-5, IEC 62541-12, and IEC 62541-14 apply.

All used terms are *italicized* in the specification.

3.1.1
AliasName
alternate well-defined name for any *Node* in the system

3.2 Abbreviated terms

GDS Global Discovery Server

4 Use cases

4.1 Complex configuration

For systems that are large and complex, engineering is often done in multiple tools and by multiple individuals. The separate configurations are required to work together, but resolving the references between these different configurations can be a significant task. A common solution to simplify this task is a naming convention for the items that are being referenced. Providing an automatic lookup capability for these names would greatly simplify configuration. Each system can specify its own names and configurations can be built to just use the names, without having to know the exact address of the items. The exact address would include the address of the *Server*, the address of the tag in the *Server*, the required protocol for connecting to the *Server*, security settings etc. OPC UA defines a GDS that can provide information about what *Servers* are available in a system and how to connect to them, but it does not currently provide information about the tags that are available in a given *Server*.

4.2 Automatic reconfiguration

In a system where many smaller *Servers* exist and these *Servers* might be dynamic, in that new *Servers* can appear and disappear. Configuration might move between *Servers*. The automatic resolution of where a specific piece of information is located would greatly simplify these systems.

4.3 Cloud based system

Much like the previous use case, a cloud-based system, where *Servers* can be spun up in a new cloud system or adjusted and split based on loading to multiple *Servers*. The automatic resolution of where a specific piece of information is located would greatly simplify these systems.

4.4 Aggregated systems

In systems where many simple devices exist, any given simple device might not have the ability to provide name resolution, yet these systems can be much like systems in one of the previous use cases. In a system such as this an aggregating *Server* might exist, where the aggregating *Server* would provide the names as well as the lookup for the underlying *Server*. This aggregating *Server* might also provide other functionality such as aggregation of values, but it might only provide the name definitions and resolutions. The underlying *Server* might have no knowledge of the name.

5 AliasNames Information Model overview

The *AliasNames* functionality (illustrated in Figure 1) defines a number of *ObjectTypes*, *Methods*, *DataTypes* and *References*. Figure 2 illustrates an example of the *Object* model defined for *AliasNames*.

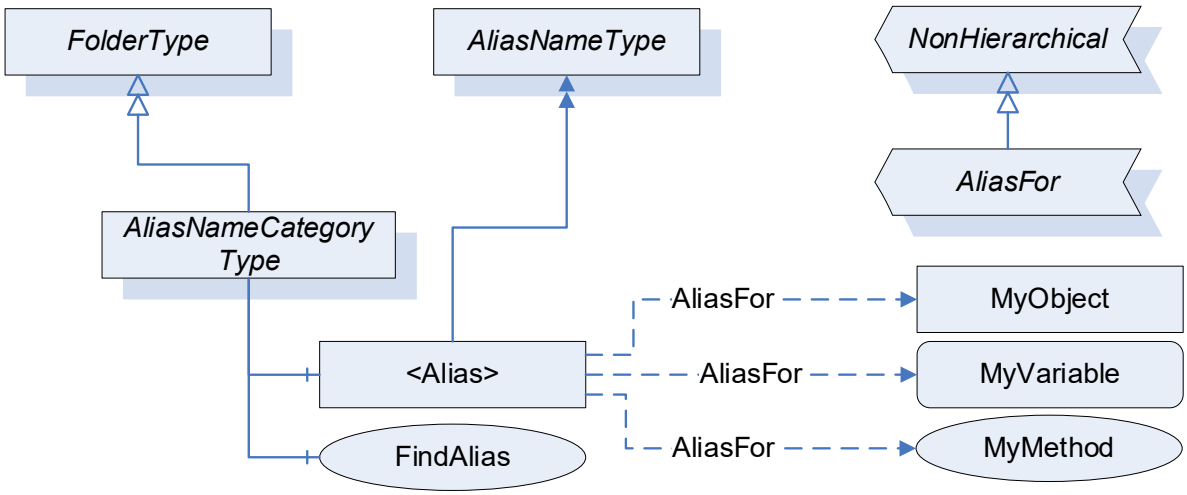

Figure 1 - AliasNames Overview

The model also includes some well-known fixed instances. The key functionality of *AliasNames* is to reference the information that an AliasName is assigned to. These can be any *Node*. The *AliasNames* can be grouped according to types of functionality. The OPC Foundation defines some initial groups, but the groups can be extended by companion specifications, vendors or end users to meet their needs.