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**OPC unified architecture -
Part 11: Historical Access**

**Architecture unifiée OPC -
Partie 11: Accès à l'historique**



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OPC unified architecture - Part 11: Historical Access

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IEC 62541-11 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) a functionality has been added to support retrieving of modified events;
- b) an Event has been added to indicate when a backfill occurred;
- c) a new ReferenceType that can be used to indicate an external node has been defined;
- d) the text has been improved to better explain the concept of annotation and remove conflicting explanations;

- e) a default historian configuration (and where to find it) has been defined;
- f) `HistoricalEventConfigurationType`, which provides general configuration information about the historical Event storage, has been added;
- g) the text has been updated and optional fields have been added to HA configuration object to allow configuration to be defined for periodic data collection, not just for exception-based collection;
- h) an `ObjectType` that can be used for external event collection has been provided as well as an example how historians can be configured.

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

Draft	Report on voting
65E/1058/CDV	65E/1096/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.

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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.

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- reconfirmed,
- withdrawn, or
- revised.

1 Scope

This part of IEC 62541 belongs to the OPC Unified Architecture standards series and defines the *Information Model* associated with Historical Access (HA). It particularly includes additional and complementary descriptions of the *NodeClasses* and *Attributes* needed for Historical Access, additional standard *Properties*, and other information and behaviour.

The complete *AddressSpace* Model including all *NodeClasses* and *Attributes* is specified in IEC 62541-3. The predefined *Information Model* is defined in IEC 62541-5. The *Services* to detect and access historical data and events, and description of the *ExtensibleParameter* types are specified in IEC 62541-4.

This document includes functionality to compute and return *Aggregates* like minimum, maximum, average etc. The *Information Model* and the concrete working of *Aggregates* are defined in IEC 62541-13.

Conventions for Historical Access Clients are informatively provided in Annex A.

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 62541-3, *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 62541-7, *OPC Unified Architecture - Part 7: Profiles*

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

IEC 62541-13, *OPC Unified Architecture - Part 13: Aggregates*