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Enotna arhitektura OPC - 6. del: Preslikave

OPC unified architecture - Part 6: Mappings

OPC Unified Architecture - Teil 6: Protokollabbildungen

Architecture unifiée OPC - Partie 6: Mappings

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TITLE:

OPC Unified Architecture - Part 6: Mappings

PROPOSED STABILITY DATE: 2026

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPC UNIFIED ARCHITECTURE –
Part 6: Mappings**FOREWORD**

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International Standard IEC 62541-6 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

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) Added support for ECC to UA Secure Conversation
- b) Added use of the AuthorityKeyIdentifier extension in Certificate Revocation Lists.
- c) Enhanced JSON mapping of Unions.
- d) Added Decimal data type encoding.
- e) Specified ECC keyUsage rules.
- f) Added Media assigned by IANA to UANodeSet definition.
- g) Added requirements for user and issuer Certificates.
- h) Added rules which specify what happens when DateTime precision is lost.
- i) Added rules to allow for the truncation of strings containing embedded nulls.

- 346 j) Defined a normative string representation for NodeId, ExpandedNodeId and QualifiedName for
347 JSON mapping.
- 348 k) Require that TAI times be converted to UTC.
- 349 l) Allow Symbol to be omitted if unknown in JSON encoding.
- 350 m) Added fields needed to support RolePermissions to the UANodeSet.

351

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

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

353

354 Full information on the voting for the approval of this International Standard can be found in the report
355 on voting indicated in the above table.

356 This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

357 Throughout this document and the other parts of the IEC 62541 series, certain document conventions
358 are used:

359 *Italics* are used to denote a defined term or definition that appears in the "Terms and definition" clause
360 in one of the parts of the IEC 62541 series.

361 *Italics* are also used to denote the name of a service input or output parameter or the name of a
362 structure or element of a structure that are usually defined in tables.

363 The *italicized terms and names* are, with a few exceptions, written in camel-case (the practice of
364 writing compound words or phrases in which the elements are joined without spaces, with each
365 element's initial letter capitalized within the compound). For example, the defined term is
366 *AddressSpace* instead of Address Space. This makes it easier to understand that there is a single
367 definition for *AddressSpace*, not separate definitions for Address and Space.

368 A list of all parts of the IEC 62541 series, published under the general title *OPC Unified Architecture*,
369 can be found on the IEC website.

370 The committee has decided that the contents of this document will remain unchanged until the stability
371 date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific
372 document. At this date, the document will be

- 373 • reconfirmed,
- 374 • withdrawn,
- 375 • replaced by a revised edition, or
- 376 • amended.

377

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378

OPC Unified Architecture Specification

Part 6: Mappings

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385 1. Scope

386 This part of OPC Unified Architecture (OPC UA) specifies the mapping between the security
387 model described in IEC 62541-2, the abstract service definitions specified in IEC 62541-4, the
388 data structures defined in IEC 62541-5 and the physical network protocols that can be used to
389 implement the OPC UA specification.

390 2. Normative references

391 The following documents, in whole or in part, are normatively referenced in this document and
392 are indispensable for its application. For dated references, only the edition cited applies. For
393 undated references, the latest edition of the referenced document (including any amendments)
394 applies.

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

396 IEC 62541-2, *OPC Unified Architecture - Part 2: Security Model*

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

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

399 IEC 62541-5, *OPC Unified Architecture - Part 5: Information Model*

400 IEC 62541-6, *OPC Unified Architecture - Part 6: Mappings*

401 IEC 62541-7, *OPC Unified Architecture - Part 7: Profiles*

402 IEC 62541-9, *OPC Unified Architecture - Part 9: Alarms and Conditions*

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

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

405 IEC 62541-21, *OPC Unified Architecture - Part 21: Device Onboarding*
406 *OPC Unified Architecture - Part 12: Discovery and Global Services*

407 XML Schema Part 2: XML Schema Part 2: Datatypes

408 <http://www.w3.org/TR/xmlschema-2/>

409 SOAP Part 1, SOAP Version 1.2 Part 1: Messaging Framework

410 <http://www.w3.org/TR/soap12-part1/>

411 WS Addressing, Web Services Addressing (WS-Addressing)

412 <http://www.w3.org/Submission/ws-addressing/>

413 TLS, RFC 8446 – The Transport Layer Security (TLS) Protocol Version 1.3

414 <https://datatracker.ietf.org/doc/html/rfc8446>

415 X.509 v3, ISO/IEC 9594-8 (ITU-T Rec. X.509), Information technology – Open Systems

416 Interconnection – The Directory: Public-key and attribute certificate frameworks

417 <https://www.iso.org/standard/72557.html>

418 HTTP, Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing

419 <https://datatracker.ietf.org/doc/html/rfc7230>

420 HTTPS, HTTP Over TLS

421 <http://www.ietf.org/rfc/rfc2818.txt>

422 Base64, The Base16, Base32, and Base64 Data Encodings