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OPC Unified Architecture – Del 1: Översikt och koncept

*OPC unified architecture –
Part 1: Overview and concepts
(IEC Technical Report 62541-1:2020)*

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Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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CONTENTS

FOREWORD	4
1 Scope	6
2 Normative references	6
3 Terms, definitions, and abbreviated terms	7
3.1 Terms and definitions.....	7
3.2 Abbreviated terms.....	11
4 Structure of the OPC UA series	12
4.1 Specification organization	12
4.2 Core specification parts	12
4.3 Access Type specification parts	13
4.4 Utility specification parts	13
5 Overview	14
5.1 UA scope	14
5.2 General.....	14
5.3 Design goals	14
5.4 Integrated models and services.....	16
5.4.1 Security model.....	16
5.4.2 Integrated AddressSpace model	17
5.4.3 Integrated object model	18
5.4.4 Integrated services	18
5.5 Sessions	18
6 Systems concepts	19
6.1 Client Server Overview	19
6.2 OPC UA Clients	19
6.3 OPC UA Servers	20
6.3.1 General	20
6.3.2 Real objects	20
6.3.3 Server application.....	20
6.3.4 OPC UA AddressSpace	21
6.3.5 Subscription entities	21
6.3.6 OPC UA Service Interface	21
6.3.7 Server to Server interactions	22
6.4 Redundancy.....	23
6.5 Publish-Subscribe	23
6.6 Synergy of models	24
7 Service Sets	25
7.1 General.....	25
7.2 Discovery Service Set	25
7.3 SecureChannel Service Set	25
7.4 Session Service Set.....	26
7.5 NodeManagement Service Set.....	26
7.6 View Service Set.....	26
7.7 Query Service Set.....	26
7.8 Attribute Service Set.....	27
7.9 Method Service Set.....	27
7.10 MonitoredItem Service Set	27

- 7.11 Subscription Service Set 28

- Figure 1 – OPC UA specification organization 12
- Figure 2 – OPC UA target applications 15
- Figure 3 – OPC UA System architecture 19
- Figure 4 – OPC UA Client architecture 19
- Figure 5 – OPC UA Server architecture 20
- Figure 6 – Peer-to-peer interactions between Servers 22
- Figure 7 – Chained Server example 23
- Figure 8 – Integrated Client Server and PubSub models 24
- Figure 9 – SecureChannel and Session Services 26

INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPC UNIFIED ARCHITECTURE –

Part 1: Overview and concepts

FOREWORD

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The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC TR 62541-1, which is a Technical Report, has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

This third edition cancels and replaces the second edition of IEC TR 62541-1, published in 2016. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) added Subclauses 6.5 and 6.6 and other text throughout to include PubSub introduction;
- b) added new transports and encodings to existing overview sections;
- c) removed WS-SecureConversation example since this mapping has been deprecated;

d) improved the definition of Certificate.

The text of this Technical Report is based on the following documents:

Enquiry draft	Report on voting
65E/678/DTR	65E/702/RVDTR

Full information on the voting for the approval of this technical report 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 referenced 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, 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.

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 –

Part 1: Overview and concepts

1 Scope

This part of IEC 62541 presents the concepts and overview of the OPC Unified Architecture (OPC UA). Reading this document is helpful to understand the remaining parts of this multi-part document set. Each of the other parts of IEC 62541 is briefly explained along with a suggested reading order.

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 62541-2, *OPC unified architecture – Part 2: Security Model*

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 62541-6, *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 62541-10, *OPC unified architecture – Part 10: Programs*

IEC 62541-11, *OPC unified architecture – Part 11: Historical Access*

IEC 62541-12, *OPC unified architecture – Part 12: Discovery and global services*

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

IEC 62541-14, *OPC unified architecture – Part 14: PubSub*

ITU X.509, *Information technology – Open Systems Interconnection – The Directory: Public-key and attribute certificate frameworks*
<https://www.itu.int/rec/T-REC-X.509>