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SINGAPORE STANDARD

OPC unified architecture

– Part 3 : Address space model



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CONTENTS

NATIONAL FOREWORD	13
FOREWORD	14
1 Scope	16
2 Normative references	16
3 Terms, definitions, abbreviations and conventions	16
3.1 Terms and definitions	16
3.2 Abbreviations	18
3.3 Conventions	18
3.3.1 Conventions for AddressSpace figures	18
3.3.2 Conventions for defining NodeClasses	18
4 AddressSpace concepts	19
4.1 Overview	19
4.2 Object Model	20
4.3 Node Model	20
4.3.1 General	20
4.3.2 NodeClasses	21
4.3.3 Attributes	21
4.3.4 References	21
4.4 Variables	22
4.4.1 General	22
4.4.2 Properties	22
4.4.3 DataVariables	22
4.5 TypeDefinitionNodes	22
4.5.1 General	22
4.5.2 Complex TypeDefinitionNodes and their InstanceDeclarations	23
4.5.3 Subtyping	24
4.5.4 Instantiation of complex TypeDefinitionNodes	24
4.6 Event Model	25
4.6.1 General	25
4.6.2 EventTypes	26
4.6.3 Event Categorization	26
4.7 Methods	27
5 Standard NodeClasses	27
5.1 Overview	27
5.2 Base NodeClass	27
5.2.1 General	27
5.2.2 NodeId	28
5.2.3 NodeClass	28
5.2.4 BrowseName	28
5.2.5 DisplayName	28
5.2.6 Description	29
5.2.7 WriteMask	29
5.2.8 UserWriteMask	29

5.3	ReferenceType NodeClass	30
5.3.1	General	30
5.3.2	Attributes	30
5.3.3	References.....	32
5.4	View NodeClass	32
5.5	Objects.....	34
5.5.1	Object NodeClass	34
5.5.2	ObjectType NodeClass	36
5.5.3	Standard ObjectType FolderType	38
5.5.4	Client-side creation of Objects of an ObjectType	38
5.6	Variables	38
5.6.1	General	38
5.6.2	Variable NodeClass.....	38
5.6.3	Properties	42
5.6.4	DataVariable	42
5.6.5	VariableType NodeClass	43
5.6.6	Client-side creation of Variables of an VariableType.....	45
5.7	Method NodeClass	45
5.8	DataTypes	47
5.8.1	DataType Model.....	47
5.8.2	Encoding Rules for different kinds of DataTypes	49
5.8.3	DataType NodeClass	50
5.8.4	DataTypeDictionary, DataTypeDescription, DataTypeEncoding and DataTypeSystem	51
5.9	Summary of Attributes of the NodeClasses	53
6	Type Model for ObjectTypes and VariableTypes	54
6.1	Overview	54
6.2	Definitions	54
6.2.1	InstanceDeclaration	54
6.2.2	Instances without ModellingRules.....	54
6.2.3	InstanceDeclarationHierarchy.....	54
6.2.4	Similar Node of InstanceDeclaration.....	55
6.2.5	BrowsePath.....	55
6.2.6	Attribute Handling of InstanceDeclarations	55
6.2.7	Attribute Handling of Variable and VariableTypes	55
6.2.8	NodeIds of InstanceDeclarations	55
6.3	Subtyping of ObjectTypes and VariableTypes	55
6.3.1	Overview	55
6.3.2	Attributes	56
6.3.3	InstanceDeclarations.....	56
6.4	Instances of ObjectTypes and VariableTypes	59
6.4.1	Overview	59
6.4.2	Creating an Instance	60
6.4.3	Constraints on an Instance	60
6.4.4	ModellingRules.....	61
6.5	Changing Type Definitions that are already used	69

7	Standard ReferenceTypes	69
7.1	General	69
7.2	References ReferenceType	70
7.3	HierarchicalReferences ReferenceType	70
7.4	NonHierarchicalReferences ReferenceType	71
7.5	HasChild ReferenceType	71
7.6	Aggregates ReferenceType	71
7.7	HasComponent ReferenceType	71
7.8	HasProperty ReferenceType	72
7.9	HasOrderedComponent ReferenceType	72
7.10	HasSubtype ReferenceType	72
7.11	Organizes ReferenceType	72
7.12	HasModellingRule ReferenceType	72
7.13	HasTypeDefinition ReferenceType	73
7.14	HasEncoding ReferenceType	73
7.15	HasDescription ReferenceType	73
7.16	GeneratesEvent	73
7.17	AlwaysGeneratesEvent	73
7.18	HasEventSource	74
7.19	HasNotifier	74
8	Standard DataTypes	76
8.1	General	76
8.2	NodeId	76
8.2.1	General	76
8.2.2	NamespaceIndex	76
8.2.3	IdentifierType	76
8.2.4	Identifier value	77
8.3	QualifiedName	77
8.4	LocaleId	78
8.5	LocalizedText	78
8.6	Argument	78
8.7	BaseDataType	79
8.8	Boolean	79
8.9	Byte	79
8.10	ByteString	79
8.11	DateTime	79
8.12	Double	79
8.13	Duration	79
8.14	Enumeration	79
8.15	Float	80
8.16	Guid	80
8.17	SByte	80
8.18	IdType	80
8.19	Image	80
8.20	ImageBMP	80
8.21	ImageGIF	80

8.22	ImageJPG	80
8.23	ImagePNG.....	80
8.24	Integer.....	80
8.25	Int16.....	80
8.26	Int32.....	80
8.27	Int64.....	80
8.28	TimeZoneDataType	81
8.29	NamingRuleType	81
8.30	NodeClass.....	81
8.31	Number	81
8.32	String	81
8.33	Structure	81
8.34	UInteger	82
8.35	UInt16	82
8.36	UInt32	82
8.37	UInt64	82
8.38	UtcTime.....	82
8.39	XmlElement.....	82
8.40	EnumValueType	82
9	Standard EventTypes	83
9.1	General	83
9.2	BaseEventType	83
9.3	SystemEventType.....	83
9.4	ProgressEventType	84
9.5	AuditEventType	84
9.6	AuditSecurityEventType	85
9.7	AuditChannelEventType	85
9.8	AuditOpenSecureChannelEventType	85
9.9	AuditSessionEventType	86
9.10	AuditCreateSessionEventType	86
9.11	AuditUriMismatchEventType	86
9.12	AuditActivateSessionEventType	86
9.13	AuditCancelEventType	86
9.14	AuditCertificateEventType	86
9.15	AuditCertificateDataMismatchEventType	86
9.16	AuditCertificateExpiredEventType.....	86
9.17	AuditCertificateInvalidEventType	86
9.18	AuditCertificateUntrustedEventType	86
9.19	AuditCertificateRevokedEventType.....	86
9.20	AuditCertificateMismatchEventType.....	87
9.21	AuditNodeManagementEventType	87
9.22	AuditAddNodesEventType	87
9.23	AuditDeleteNodesEventType	87
9.24	AuditAddReferencesEventType	87
9.25	AuditDeleteReferencesEventType	87
9.26	AuditUpdateEventType	87

9.27	AuditWriteUpdateEventType	87
9.28	AuditHistoryUpdateEventType	87
9.29	AuditUpdateMethodEventType	87
9.30	DeviceFailureEventType	87
9.31	SystemStatusChangeEventType	87
9.32	ModelChangeEvents	88
9.32.1	General	88
9.32.2	NodeVersion Property	88
9.32.3	Views	88
9.32.4	Event Compression	88
9.32.5	BaseModelChangeEvent	88
9.32.6	GeneralModelChangeEvent	88
9.32.7	Guidelines for ModelChangeEvents	89
9.33	SemanticChangeEvent	89
9.33.1	General	89
9.33.2	ViewVersion and NodeVersion Properties	89
9.33.3	Views	89
9.33.4	Event Compression	89
Annex A	(informative) How to use the Address Space Model	90
A.1	Overview	90
A.2	Type definitions	90
A.3	ObjectTypes	90
A.4	VariableTypes	91
A.4.1	General	91
A.4.2	Properties or DataVariables	91
A.4.3	Many Variables and / or structured DataTypes	91
A.5	Views	92
A.6	Methods	92
A.7	Defining ReferenceTypes	92
A.8	Defining ModellingRules	92
Annex B	(informative) OPC UA Meta Model in UML	93
B.1	Background	93
B.2	Notation	93
B.3	Meta Model	94
B.3.1	Base	95
B.3.2	ReferenceType	95
B.3.3	Predefined ReferenceTypes	96
B.3.4	Attributes	97
B.3.5	Object and ObjectType	98
B.3.6	EventNotifier	98
B.3.7	Variable and VariableType	99
B.3.8	Method	100
B.3.9	DataTypes	101
B.3.10	View	101
Annex C	(normative) OPC Binary Type Description System	102
C.1	Concepts	102

C.2	Schema Description.....	103
C.2.1	TypeDictionary	103
C.2.2	TypeDescription	103
C.2.3	OpaqueType	104
C.2.4	EnumeratedType.....	104
C.2.5	StructuredType.....	105
C.2.6	FieldType	105
C.2.7	EnumeratedValue.....	107
C.2.8	ByteOrder	107
C.2.9	ImportDirective.....	107
C.3	Standard Type Descriptions.....	107
C.4	Type Description Examples	108
C.5	OPC Binary XML Schema.....	110
C.6	OPC Binary Standard TypeDictionary	111
Annex D (normative)	Graphical Notation	114
D.1	General	114
D.2	Notation.....	114
D.2.1	Overview	114
D.2.2	Simple Notation.....	114
D.2.3	Extended Notation	116
Figure 1	– AddressSpace Node diagrams	18
Figure 2	– OPC UA Object Model	20
Figure 3	– AddressSpace Node Model	20
Figure 4	– Reference Model	21
Figure 5	– Example of a Variable defined by a VariableType	23
Figure 6	– Example of a Complex TypeDefinition.....	24
Figure 7	– Object and its Components defined by an ObjectType	25
Figure 8	– Symmetric and Non-Symmetric References	31
Figure 9	– Variables, VariableTypes and their DataTypes	47
Figure 10	– DataType Model	48
Figure 11	– Example of DataType Modelling.....	53
Figure 12	– Subtyping TypeDefinitionNodes	56
Figure 13	– The Fully-Inherited InstanceDeclarationHierarchy for BetaType	58
Figure 14	– An Instance and its TypeDefinitionNode	60
Figure 15	– Example for several References between InstanceDeclarations	61
Figure 16	– Example on changing instances based on InstanceDeclarations	63
Figure 17	– Example on changing InstanceDeclarations based on an InstanceDeclaration	64
Figure 18	– Use of the Standard ModellingRule New	65
Figure 19	– Example using the Standard ModellingRules Optional and Mandatory	66
Figure 20	– Example on using ExposesItsArray	67
Figure 21	– Complex example on using ExposesItsArray.....	67
Figure 22	– Example on using OptionalPlaceholder	68

Figure 23 – Example on using MandatoryPlaceholder	69
Figure 24 – Standard ReferenceType Hierarchy	70
Figure 25 – Event Reference Example	75
Figure 26 – Complex Event Reference Example	75
Figure 27 – Standard EventType Hierarchy	83
Figure 28 – Audit Behaviour of a Server	84
Figure 29 – Audit Behaviour of an Aggregating Server	85
Figure B.1 – Background of OPC UA Meta Model	93
Figure B.2 – Notation (I)	94
Figure B.3 – Notation (II)	94
Figure B.4 – Base	95
Figure B.5 – Reference and ReferenceType	95
Figure B.6 – Predefined ReferenceTypes	96
Figure B.7 – Attributes	97
Figure B.8 – Object and ObjectType	98
Figure B.9 – EventNotifier	98
Figure B.10 – Variable and VariableType	99
Figure B.11 – Method	100
Figure B.12 – DataType	101
Figure B.13 – View	101
Figure C.1 – OPC Binary Dictionary Structure	102
Figure D.1 – Example of a Reference connecting two Nodes	115
Figure D.2 – Example of using a TypeDefinition inside a Node	117
Figure D.3 – Example of exposing Attributes	117
Figure D.4 – Example of exposing Properties inline	118
Table 1 – NodeClass Table Conventions	19
Table 2 – Base NodeClass	28
Table 3 – Bit mask for WriteMask and UserWriteMask	29
Table 4 – ReferenceType NodeClass	30
Table 5 – View NodeClass	33
Table 6 – Object NodeClass	35
Table 7 – ObjectType NodeClass	37
Table 8 – Variable NodeClass	39
Table 9 – VariableType NodeClass	44
Table 10 – Method NodeClass	46
Table 11 – DataType NodeClass	50
Table 12 – Overview of Attributes	54
Table 13 – The InstanceDeclarationHierarchy for BetaType	57
Table 14 – The Fully-Inherited InstanceDeclarationHierarchy for BetaType	58

Table 15 – Rule for ModellingRules Properties when Subtyping	62
Table 16 – Properties of ModellingRules	64
Table 17 – NodeId Definition	76
Table 18 – IdentifierType Values	77
Table 19 – NodeId Null Values	77
Table 20 – QualifiedName Definition	77
Table 21 – LocaleId Examples	78
Table 22 – LocalizedText Definition	78
Table 23 – Argument Definition	79
Table 24 – TimeZoneDataType Definition	81
Table 25 – NamingRuleType Values	81
Table 26 – NodeClass Values	81
Table 27 – EnumValueType Definition	82
Table C.1 – TypeDictionary Components	103
Table C.2 – TypeDescription Components	104
Table C.3 – OpaqueType Components	104
Table C.4 – EnumeratedType Components	105
Table C.5 – StructuredType Components	105
Table C.6 – FieldType Components	106
Table C.7 – EnumeratedValue Components	107
Table C.8 – ImportDirective Components	107
Table C.9 – Standard Type Descriptions	108
Table D.1 – Notation of Nodes depending on the NodeClass	115
Table D.2 – Simple Notation of Nodes depending on the NodeClass	116

National Foreword

This Singapore Standard was prepared by the Working Group on Smart Manufacturing Readiness Level set up by the Technical Committee on Smart Manufacturing under the purview of MSC.

This standard is identical with IEC 62541-3:2015, “OPC unified architecture – Part 3 : Address space model”, published by the International Electrotechnical Commission.

NOTE 1 – Reference to International Standards are replaced by applicable Singapore Standards and Technical References.

NOTE 2 – Where numerical values are expressed as decimals, the comma is read as a full point.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPC UNIFIED ARCHITECTURE –

Part 3: Address Space Model

FOREWORD

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International Standard IEC 62541-3 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

This second edition cancels and replaces the first edition published in 2010. This edition constitutes a technical revision.

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

- a) Added rules for subtyping enumerations in 8.14 (issue number 0606);
- b) Added *Property EnumValues* in 5.8.3 to support integer representation of enumerations that are not zero-based or have gaps (issue number 0876);
- c) Added *Property ValueAsText* in 5.6.2 providing a localized text representation for enumeration values (issue number 0951);

- d) Added *EventType SystemStatusChangeEvent* in 9.31 that can be used to indicate connection to sub system is lost (issue number 1255);
- e) Added *Properties MaxArrayLength and MaxStringLength* in 5.6.2 to identify the maximum string length and array length for clients writing values (issue number 1547);
- f) Removed the concept of *ModelParent* from document as it is not that useful. The *NodeId* of the *ReferenceType* will be kept not breaking existing applications (issue number 1554).
- g) Added *EventType ProgressEventType* in 9.4 identifying the progress of an operation such as a service call (issue number 1557);
- h) Stated in 8.38 that it is allowed to use TAI in all places where UTC time is used to avoid problems with leap seconds (issue number 1563);
- i) Added *Property EngineeringUnits* in 5.6.2 as used in IEC 62541-8 (issue number 1749);
- j) Added *ModellingRules OptionalPlaceholder* and *MandatoryPlaceholder* in 6.4.4.5.5 and 6.4.4.5.6 (issue number 1804).

The text of this standard is based on the following documents:

CDV	Report on voting
65E/374/CDV	65E/402/RVC

Full information on the voting for the approval of this 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.

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 3: Address Space Model

1 Scope

This part of IEC 62541 describes the OPC Unified Architecture (OPC UA) *AddressSpace* and its *Objects*. This part of IEC 62541 is the OPC UA meta model on which OPC UA information models are based.

2 Normative references

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

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

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

IEC 62541-11, *OPC Unified Architecture – Part 11: Historical Access*

ISO/IEC 10918-1, *Information technology – Digital compression and coding of continuous-tone still images: Requirements and guidelines*

ISO/IEC 15948, *Information technology – Computer graphics and image processing – Portable Network Graphics (PNG): Functional specification*

ISO 639 (all parts), *Codes for the representation of names of languages*

ISO 3166 (all parts), *Codes for the representation of names of countries and their subdivisions*

IEEE 754-1985, *IEEE Standard for Binary Floating-Point Arithmetic*, <http://ieeexplore.ieee.org/servlet/opac?punumber=2355>

IETF RFC 3066, *Tags for the Identification of Languages*, <http://tools.ietf.org/html/rfc3066>

XML Schema Part 1: <http://www.w3.org/TR/xmlschema-1/>

XML Schema Part 2: <http://www.w3.org/TR/xmlschema-2/>

XPATH: <http://www.w3.org/TR/xpath/>