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OPC unified architecture – Del 9: Larm och villkor

*OPC unified architecture –
Part 9: Alarms and Conditions*

Som svensk standard gäller europastandarden EN IEC 62541-9:2020. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 62541-9:2020.

Nationellt förord

Europastandarden EN IEC 62541-9:2020

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 62541-9, Third edition, 2020 - OPC unified architecture - Part 9: Alarms and Conditions**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 62541-9, utgåva 2, 2015, gäller ej fr o m 2023-07-23.

ICS 25.040.40; 35.100.05

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EUROPEAN STANDARD

EN IEC 62541-9

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2020

ICS 35.100.05; 25.040.40

Supersedes EN 62541-9:2015 and all of its amendments
and corrigenda (if any)

English Version

OPC Unified Architecture - Part 9: Alarms and Conditions (IEC 62541-9:2020)

Architecture unifiée OPC - Partie 9: Alarmes et Conditions
(IEC 62541-9:2020)

OPC Unified Architecture - Teil 9: Alarme und Zustände
(IEC 62541-9:2020)

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Ref. No. EN IEC 62541-9:2020 E

SEK Svensk Elstandard

SS-EN IEC 62541-9, utg 3:2020

European foreword

The text of document 65E/709/FDIS, future edition 3 of IEC 62541-9, prepared by SC 65E "Devices and integration in enterprise systems" of IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62541-9:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-04-23
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-07-23

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This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

Endorsement notice

The text of the International Standard IEC 62541-9:2020 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC/TR 62541-1	-	OPC unified architecture - Part 1: Overview and concepts	CLC/TR 62541-1	-
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 62541-11	-	OPC Unified Architecture - Part 11: Historical Access	-	-
IEC 62682	-	Management of alarms systems for the process industries	-	-
EEMUA 191	-	Alarm systems - A guide to design, management and procurement	-	-

CONTENTS

FOREWORD	10
1 Scope	12
2 Normative references	12
3 Terms, definitions, abbreviated terms and data types used	12
3.1 Terms and definitions	12
3.2 Abbreviated terms	15
3.3 Data types used	15
4 Concepts	15
4.1 General	15
4.2 Conditions	15
4.3 Acknowledgeable Conditions	17
4.4 Previous states of Conditions	18
4.5 Condition state synchronization	19
4.6 Severity, quality, and comment	19
4.7 Dialogs	20
4.8 Alarms	20
4.9 Multiple active states	22
4.10 Condition instances in the AddressSpace	23
4.11 Alarm and Condition auditing	24
5 Model	24
5.1 General	24
5.2 Two-state state machines	25
5.3 ConditionVariable	27
5.4 ReferenceTypes	27
5.4.1 General	27
5.4.2 HasTrueSubState ReferenceType	27
5.4.3 HasFalseSubState ReferenceType	28
5.4.4 HasAlarmSuppressionGroup ReferenceType	28
5.4.5 AlarmGroupMember ReferenceType	29
5.5 Condition Model	29
5.5.1 General	29
5.5.2 ConditionType	30
5.5.3 Condition and branch instances	34
5.5.4 Disable Method	34
5.5.5 Enable Method	35
5.5.6 AddComment Method	35
5.5.7 ConditionRefresh Method	36
5.5.8 ConditionRefresh2 Method	38
5.6 Dialog Model	40
5.6.1 General	40
5.6.2 DialogConditionType	40
5.6.3 Respond Method	42
5.7 Acknowledgeable Condition Model	42
5.7.1 General	42
5.7.2 AcknowledgeableConditionType	43
5.7.3 Acknowledge Method	44

5.7.4	Confirm Method	45
5.8	Alarm model.....	46
5.8.1	General	46
5.8.2	AlarmConditionType	47
5.8.3	AlarmGroupType	52
5.8.4	Reset Method	52
5.8.5	Silence Method.....	53
5.8.6	Suppress Method.....	54
5.8.7	Unsuppress Method.....	55
5.8.8	RemoveFromService Method.....	56
5.8.9	PlaceInService Method	56
5.8.10	ShelvedStateMachineType	57
5.8.11	LimitAlarmType.....	62
5.8.12	Exclusive limit types	64
5.8.13	NonExclusiveLimitAlarmType.....	67
5.8.14	Level Alarm	68
5.8.15	Deviation Alarm	69
5.8.16	Rate of change Alarms	70
5.8.17	Discrete Alarms	71
5.8.18	DiscrepancyAlarmType	75
5.9	ConditionClasses	75
5.9.1	Overview	75
5.9.2	BaseConditionClassType	76
5.9.3	ProcessConditionClassType	76
5.9.4	MaintenanceConditionClassType	77
5.9.5	SystemConditionClassType	77
5.9.6	SafetyConditionClassType.....	77
5.9.7	HighlyManagedAlarmConditionClassType.....	78
5.9.8	TrainingConditionClassType	78
5.9.9	StatisticalConditionClassType.....	78
5.9.10	TestingConditionSubClassType	79
5.10	Audit Events	79
5.10.1	Overview	79
5.10.2	AuditConditionEventType.....	80
5.10.3	AuditConditionEnableEventType.....	80
5.10.4	AuditConditionCommentEventType.....	80
5.10.5	AuditConditionRespondEventType.....	81
5.10.6	AuditConditionAcknowledgeEventType.....	81
5.10.7	AuditConditionConfirmEventType	82
5.10.8	AuditConditionShelvingEventType	82
5.10.9	AuditConditionSuppressionEventType	82
5.10.10	AuditConditionSilenceEventType	83
5.10.11	AuditConditionResetEventType	83
5.10.12	AuditConditionOutOfServiceEventType.....	83
5.11	Condition Refresh related Events.....	84
5.11.1	Overview	84
5.11.2	RefreshStartEventType.....	84
5.11.3	RefreshEndEventType.....	84
5.11.4	RefreshRequiredEventType	85

5.12	HasCondition Reference type.....	85
5.13	Alarm and Condition status codes.....	86
5.14	Expected A&C server behaviours.....	86
5.14.1	General.....	86
5.14.2	Communication problems.....	86
5.14.3	Redundant A&C servers.....	87
6	AddressSpace organisation.....	87
6.1	General.....	87
6.2	EventNotifier and source hierarchy.....	87
6.3	Adding Conditions to the hierarchy.....	88
6.4	Conditions in InstanceDeclarations.....	89
6.5	Conditions in a VariableType.....	90
7	System State and alarms.....	90
7.1	Overview.....	90
7.2	HasEffectDisable.....	90
7.3	HasEffectEnable.....	91
7.4	HasEffectSuppress.....	91
7.5	HasEffectUnsuppressed.....	92
8	Alarm metrics.....	93
8.1	Overview.....	93
8.2	AlarmMetricsType.....	93
8.3	AlarmRateVariableType.....	94
8.4	Reset Method.....	94
Annex A	(informative) Recommended localized names.....	96
A.1	Recommended state names for TwoState variables.....	96
A.1.1	LocaleId "en".....	96
A.1.2	LocaleId "de".....	96
A.1.3	LocaleId "fr".....	97
A.2	Recommended dialog response options.....	98
Annex B	(informative) Examples.....	99
B.1	Examples for Event sequences from Condition instances.....	99
B.1.1	Overview.....	99
B.1.2	Server maintains current state only.....	99
B.1.3	Server maintains previous states.....	100
B.2	AddressSpace examples.....	101
Annex C	(informative) Mapping to EEMUA.....	104
Annex D	(informative) Mapping from OPC A&E to OPC UA A&C.....	105
D.1	Overview.....	105
D.2	Alarms and Events COM UA wrapper.....	105
D.2.1	Event Areas.....	105
D.2.2	Event sources.....	106
D.2.3	Event categories.....	106
D.2.4	Event attributes.....	107
D.2.5	Event subscriptions.....	107
D.2.6	Condition instances.....	109
D.2.7	Condition Refresh.....	110
D.3	Alarms and Events COM UA proxy.....	110
D.3.1	General.....	110

D.3.2	Server status mapping	110
D.3.3	Event Type mapping	110
D.3.4	Event category mapping	111
D.3.5	Event Category attribute mapping	112
D.3.6	Event Condition mapping	115
D.3.7	Browse mapping	115
D.3.8	Qualified names	116
D.3.9	Subscription filters	117
Annex E (informative)	IEC 62682 Mapping	119
E.1	Overview	119
E.2	Terms	119
E.3	Alarm records and State indications	125
Annex F (informative)	System State	126
F.1	Overview	126
F.2	SystemStateStateMachineType	127
Bibliography	131
Figure 1	– Base Condition state model	16
Figure 2	– AcknowledgeableConditions state model	17
Figure 3	– Acknowledge state model	18
Figure 4	– Confirmed Acknowledge state model	18
Figure 5	– Alarm state machine model	21
Figure 6	– Typical Alarm Timeline example	22
Figure 7	– Multiple active states example	23
Figure 8	– ConditionType hierarchy	25
Figure 9	– Condition model	30
Figure 10	– DialogConditionType overview	40
Figure 11	– AcknowledgeableConditionType overview	43
Figure 12	– AlarmConditionType Hierarchy Model	47
Figure 13	– Alarm Model	48
Figure 14	– Shelve state transitions	58
Figure 15	– ShelvedStateMachineType model	58
Figure 16	– LimitAlarmType	63
Figure 17	– ExclusiveLimitStateMachineType	64
Figure 18	– ExclusiveLimitAlarmType	66
Figure 19	– NonExclusiveLimitAlarmType	67
Figure 20	– DiscreteAlarmType Hierarchy	72
Figure 21	– ConditionClass type hierarchy	76
Figure 22	– AuditEvent hierarchy	79
Figure 23	– Refresh Related Event Hierarchy	84
Figure 24	– Typical HasNotifier Hierarchy	88
Figure 25	– Use of HasCondition in a HasNotifier hierarchy	89
Figure 26	– Use of HasCondition in an InstanceDeclaration	89
Figure 27	– Use of HasCondition in a VariableType	90
Figure B.1	– Single state example	99

Figure B.2 – Previous state example.....	100
Figure B.3 – HasCondition used with Condition instances.....	102
Figure B.4 – HasCondition reference to a Condition type.....	103
Figure B.5 – HasCondition used with an instance declaration.....	103
Figure D.1 – The type model of a wrapped COM A&E server.....	107
Figure D.2 – Mapping UA Event Types to COM A&E Event Types.....	111
Figure D.3 – Example mapping of UA Event Types to COM A&E categories.....	112
Figure D.4 – Example mapping of UA Event Types to A&E categories with attributes.....	115
Figure F.1 – SystemState transitions.....	127
Figure F.2 – SystemStateStateMachineType Model.....	128
Table 1 – Parameter types defined in IEC 62541-3.....	15
Table 2 – Parameter types defined in IEC 62541-4.....	15
Table 3 – TwoStateVariableType definition.....	26
Table 4 – ConditionVariableType definition.....	27
Table 5 – HasTrueSubState ReferenceType.....	28
Table 6 – HasFalseSubState ReferenceType.....	28
Table 7 – HasAlarmSuppressionGroup ReferenceType.....	29
Table 8 – AlarmGroupMember ReferenceType.....	29
Table 9 – ConditionType definition.....	31
Table 10 – SimpleAttributeOperand.....	34
Table 11 – Disable result codes.....	34
Table 12 – Disable Method AddressSpace definition.....	35
Table 13 – Enable result codes.....	35
Table 14 – Enable Method AddressSpace definition.....	35
Table 15 – AddComment arguments.....	36
Table 16 – AddComment result codes.....	36
Table 17 – AddComment Method AddressSpace definition.....	36
Table 18 – ConditionRefresh parameters.....	37
Table 19 – ConditionRefresh result codes.....	37
Table 20 – ConditionRefresh Method AddressSpace definition.....	38
Table 21 – ConditionRefresh2 parameters.....	38
Table 22 – ConditionRefresh2 result codes.....	39
Table 23 – ConditionRefresh2 Method AddressSpace definition.....	40
Table 24 – DialogConditionType definition.....	41
Table 25 – Respond parameters.....	42
Table 26 – Respond Result Codes.....	42
Table 27 – Respond Method AddressSpace definition.....	42
Table 28 – AcknowledgeableConditionType definition.....	43
Table 29 – Acknowledge parameters.....	44
Table 30 – Acknowledge result codes.....	44
Table 31 – Acknowledge Method AddressSpace definition.....	45
Table 32 – Confirm Method parameters.....	45

Table 33 – Confirm result codes	45
Table 34 – Confirm Method AddressSpace definition	46
Table 35 – AlarmConditionType definition	49
Table 36 – AlarmGroupType definition	52
Table 37 – Silence result codes	53
Table 38 – Reset Method AddressSpace definition	53
Table 39 – Silence result codes	53
Table 40 – Silence Method AddressSpace definition	54
Table 41 – Suppress result codes	54
Table 42 – Suppress Method AddressSpace definition	55
Table 43 – Unsuppress result codes	55
Table 44 – Unsuppress Method AddressSpace definition	55
Table 45 – RemoveFromService result codes	56
Table 46 – RemoveFromService Method AddressSpace definition	56
Table 47 – PlaceInService result codes	57
Table 48 – PlaceInService Method AddressSpace definition	57
Table 49 – ShelvedStateMachineType definition	59
Table 50 – ShelvedStateMachineType transitions	60
Table 51 – Unshelve result codes	60
Table 52 – Unshelve Method AddressSpace definition	61
Table 53 – TimedShelve parameters	61
Table 54 – TimedShelve result codes	61
Table 55 – TimedShelve Method AddressSpace definition	62
Table 56 – OneShotShelve result codes	62
Table 57 – OneShotShelve Method AddressSpace definition	62
Table 58 – LimitAlarmType definition	63
Table 59 – ExclusiveLimitStateMachineType definition	65
Table 60 – ExclusiveLimitStateMachineType transitions	65
Table 61 – ExclusiveLimitAlarmType definition	66
Table 62 – NonExclusiveLimitAlarmType definition	68
Table 63 – NonExclusiveLevelAlarmType definition	68
Table 64 – ExclusiveLevelAlarmType definition	69
Table 65 – NonExclusiveDeviationAlarmType definition	69
Table 66 – ExclusiveDeviationAlarmType definition	70
Table 67 – NonExclusiveRateOfChangeAlarmType definition	71
Table 68 – ExclusiveRateOfChangeAlarmType definition	71
Table 69 – DiscreteAlarmType definition	72
Table 70 – OffNormalAlarmType Definition	72
Table 71 – SystemOffNormalAlarmType definition	73
Table 72 – TripAlarmType definition	73
Table 73 – InstrumentDiagnosticAlarmType definition	74
Table 74 – SystemDiagnosticAlarmType definition	74
Table 75 – CertificateExpirationAlarmType definition	74

Table 76 – DiscrepancyAlarmType definition.....	75
Table 77 – BaseConditionClassType definition	76
Table 78 – ProcessConditionClassType definition	76
Table 79 – MaintenanceConditionClassType definition	77
Table 80 – SystemConditionClassType definition	77
Table 81 – SafetyConditionClassType definition	77
Table 82 – HighlyManagedAlarmConditionClassType definition	78
Table 83 – TrainingConditionClassType definition.....	78
Table 84 – StatisticalConditionClassType definition	78
Table 85 – TestingConditionSubClassType definition	79
Table 86 – AuditConditionEventType definition	80
Table 87 – AuditConditionEnableEventType definition	80
Table 88 – AuditConditionCommentEventType definition	81
Table 89 – AuditConditionRespondEventType definition	81
Table 90 – AuditConditionAcknowledgeEventType definition.....	81
Table 91 – AuditConditionConfirmEventType definition	82
Table 92 – AuditConditionShelvingEventType definition.....	82
Table 93 – AuditConditionSuppressionEventType definition.....	82
Table 94 – AuditConditionSilenceEventType definition.....	83
Table 95 – AuditConditionResetEventType definition	83
Table 96 – AuditConditionOutOfServiceEventType definition	83
Table 97 – RefreshStartEventType definition	84
Table 98 – RefreshEndEventType definition.....	84
Table 99 – RefreshRequiredEventType definition.....	85
Table 100 – HasCondition <i>ReferenceType</i>	85
Table 101 – Alarm & Condition result codes.....	86
Table 102 – HasEffectDisable ReferenceType	91
Table 103 – HasEffectEnable ReferenceType	91
Table 104 – HasEffectSuppress ReferenceType	92
Table 105 – HasEffectUnsuppress ReferenceType	92
Table 106 – AlarmMetricsType Definition.....	93
Table 107 – AlarmRateVariableType definition.....	94
Table 108 – Suppress result codes	94
Table 109 – Reset Method AddressSpace definition	95
Table A.1 – Recommended state names for LocaleId "en"	96
Table A.2 – Recommended display names for LocaleId "en"	96
Table A.3 – Recommended state names for LocaleId "de"	97
Table A.4 – Recommended display names for LocaleId "de"	97
Table A.5 – Recommended state names for LocaleId "fr".....	98
Table A.6 – Recommended display names for LocaleId "fr".....	98
Table A.7 – Recommended dialog response options	98
Table B.1 – Example of a Condition that only keeps the latest state.....	99
Table B.2 – Example of a <i>Condition</i> that maintains previous states via branches	101

Table C.1 – EEMUA Terms	104
Table D.1 – Mapping from standard Event categories to OPC UA Event types	106
Table D.2 – Mapping from ONEVENTSTRUCT fields to UA BaseEventType Variables.....	108
Table D.3 – Mapping from ONEVENTSTRUCT fields to UA AuditEventType Variables.....	108
Table D.4 – Mapping from ONEVENTSTRUCT fields to UA AlarmType Variables	109
Table D.5 – Event category attribute mapping table	113
Table E.1 – IEC 62682 Mapping.....	119
Table F.1 – SystemStateStateMachineType definition.....	129
Table F.2 – SystemStateStateMachineType transitions.....	130

INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPC UNIFIED ARCHITECTURE –**Part 9: Alarms and Conditions****FOREWORD**

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International standard IEC 62541-9 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 published in 2015. This edition constitutes a technical revision.

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

- a) added optional engineering units to the definition of RateOfChange alarms;
- b) to fulfill the IEC 62682 model, the following elements have been added:
 - AlarmConditionType States: Suppression, Silence, OutOfService, Latched;
 - AlarmConditionType Properties: OnDelay, OffDelay, FirstInGroup, ReAlarmTime;

- New alarm types: DiscrepancyAlarm, DeviationAlarm, InstrumentDiagnosticAlarm, SystemDiagnosticAlarm.
- c) added Annex that specifies how the concepts of this OPC UA part maps to IEC 62682 and ISA 18.2;
- d) added new ConditionClasses: Safety, HighlyManaged, Statistical, Testing, Training;
- e) added CertificateExpiration AlarmType;
- f) added Alarm Metrics model.

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

FDIS	Report on voting
65E/709/FDIS	65E/727/RVD

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

Throughout this document and the other parts of the IEC 62541 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 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 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 document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document 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 9: Alarms and Conditions

1 Scope

This part of IEC 62541 specifies the representation of *Alarms* and *Conditions* in the OPC Unified Architecture. Included is the *Information Model* representation of *Alarms* and *Conditions* in the OPC UA address space. Other aspects of alarm systems such as alarm philosophy, life cycle, alarm response times, alarm types and many other details are captured in documents such as IEC 62682 and ISA 18.2. The *Alarms and Conditions Information Model* in this specification is designed in accordance with IEC 62682 and ISA 18.2.

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 62541-1, *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 62541-6, *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 62541-11, *OPC unified architecture – Part 11: Historical Access*

IEC 62682: *Management of alarms systems for the process industries*

EEMUA: 2nd Edition EEMUA 191 – *Alarm System – A guide to design, management and procurement (Appendixes 6, 7, 8, 9)*, available at <https://www.eemua.org/Products/Publications/Print/EEMUA-Publication-191.aspx>