SS IEC 62541-9 : 2019
IEC 62541-9:2015, IDT
(ICS 25.040.40; 35.100)

SINGAPORE STANDARD

OPC unified architecture

– Part 9 : Alarms and conditions

Singapore Standards Council

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OPC unified architecture

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The Technical Committee sets up the Working Group on Smart Manufacturing Readiness Level to prepare this standard. The Working Group consists of the following experts who contribute in their *individual capacity*:

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Advanced Remanufacturing Technology Centre
Beckhoff Automation Pte Ltd
INTECH Process Automation Pte Ltd
Nanyang Technological University
Rockwell Automation Southeast Asia Pte Ltd
SESTO Robotics Pte Ltd
Singapore Industrial Automation Association
Singapore Institute of Manufacturing Technology
TÜV SÜD Asia Pacific Pte Ltd

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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 62541-9:2015, “OPC unified architecture – Part 9: Alarms and conditions”, published by the International Electrotechnical Commission.

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

This standard is expected to be used by system integrators, government agencies, testing, inspection and certification bodies, professional institutions, institutes of higher learning and training providers.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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 second edition cancels and replaces the first edition published in 2012. This edition constitutes a technical revision.

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

a) added section to describe expect behaviour for A&C servers and the associated information model in the case of redundancy or communication faults, see 5.14 for additional details.[ref 698 & 967];

b) changed the DialogConditionType to be not abstract since it is expect that instance of this type will exist in the system, see Table 19 for additonal details [ref 1622];

c) updated ConditionRefresh Method to allow the use of the well know NodeIds associated with the types for the MethodId and ConditionId instead of requiring the call to use only the MethodId and ConditionId that is part of an instance. Without this change, servers that do not expose instance may have problems with ConditionRefresh, see 5.5.7 for additional details [ref 2091];

d) Fixed ExclusiveLimitStateMachineType and ShelvedStatemachineType to be sub-types of FinitStateMachineType not StateMachineType. See 5.8.3 and 5.8.5.2 for additional details [ref 2091].

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

CDV	Report on voting
65E/382/CDV	65E/408/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 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.

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 62541-3, *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 62541-8, *OPC Unified Architecture – Part 8: Data Access*

EEMUA: 2nd Edition EEMUA 191 – *Alarm System – A guide to design, management and procurement (Appendixes 6, 7, 8, 9)*, available at http://www.eemua.co.uk/