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OPC unified architecture - Part 2: Security model

(IEC/TR 62541-2:2010)

Architecture unifiée OPC -
Partie 2: Modèle de sécurité
(CEI/TR 62541-2:2010)

OPC Unified Architecture -
Teil 2: Modell für die IT-Sicherheit
(IEC/TR 62541-2:2010)

This Technical Report was approved by CENELEC on 2010-06-25.

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CENELEC
European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
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Foreword

The text of the Technical Report IEC/TR 62541-2:2010, prepared by SC 65E, Devices and integration in enterprise systems, of IEC TC 65, Industrial-process measurement, control and automation, was submitted to vote and was approved by CENELEC as CLC/TR 62541-2 on 2010-06-25.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the Technical Report IEC/TR 62541-2:2010 was approved by CENELEC as a Technical Report without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 62541-3	NOTE Harmonized as EN 62541-3.
IEC 62541-4	NOTE Harmonized as EN 62541-4.
IEC 62541-5	NOTE Harmonized as EN 62541-5.
IEC 62541-6	NOTE Harmonized as EN 62541-6.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC/TR 62541-1	2010	OPC unified architecture - Part 1: Overview and concepts	CLC/TR 62541-1	2010
IEC 62541	Series	OPC unified architecture	EN 62541	Series

CONTENTS

INTRODUCTION

This technical report introduces security concepts for OPC Unified Architecture as specified by IEC 62541. This technical report and specification are a result of an analysis and design process to develop a standard interface to facilitate the development of applications by multiple vendors that inter-operate seamlessly together.

OPC UNIFIED ARCHITECTURE –

Part 2: Security Model

1 Scope

This part of IEC 62541 describes the OPC Unified Architecture (OPC UA) security model. It describes the security threats of the physical, hardware and software environments in which OPC UA is expected to run. It describes how OPC UA relies upon other standards for security. It gives an overview of the security features that are specified in other parts of the OPC UA specification. It references services, mappings, and profiles that are specified normatively in other parts of this series of standards.

Note that there are many different aspects of security that have to be addressed when developing applications. However since OPC UA specifies a communication protocol, the focus is on securing the data exchanged between applications.

This does not mean that an application developer can ignore the other aspects of security like protecting persistent data against tampering. It is important that the developer look into all aspects of security and decide how they can be addressed in the application.

This part of IEC 62541 is directed to readers who will develop OPC UA client or server applications or implement the OPC UA services layer.

It is assumed that the reader is familiar with Web Services and XML/SOAP. Information on these technologies can be found in SOAP Part 1 and SOAP Part 2.

2 Normative references

The following referenced documents are indispensable for the application 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 62541 (all parts), *OPC Unified Architecture*

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

3 Terms, definitions, abbreviations and conventions

3.1 Terms and definitions

For the purposes of this document the following terms and definitions as well as the terms and definitions given in IEC 62541-1 apply.

3.1.1
Application Instance
individual installation of a program running on one computer

NOTE There can be several *Application Instances* of the same application running at the same time on several computers or possibly the same computer.