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Field Device Integration (FDI) - Part 5: Information Model

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/21

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English Version

Field Device Integration (FDI) - Part 5: Information Model (IEC 62769-5:2021)

Intégration des appareils de terrain (FDI) - Partie 5: Modèle d'Information (IEC 62769-5:2021)

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EN IEC 62769-5:2021 (E)

European foreword

The text of document 65E/762(F)/FDIS, future edition 2 of IEC 62769-5, 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 62769-5:2021.

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) 2021-12-12
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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 62541-7 NOTE Harmonized as EN IEC 62541-7

IEC 62769-1 NOTE Harmonized as EN 62769-1

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.

Publication	Year	Title	EN/HD	Year
IEC 61784-1	-	Industrial communication networks - Profiles Part 1: Fieldbus profiles	EN IEC 61784-1	-
IEC 61804-3	-	Devices and integration in enterprise systems - Function blocks (FB) for process control and electronic device description language (EDDL) - Part 3: EDDL syntax and semantics	EN IEC 61804-3	-
IEC 61804-4	-	Devices and integration in enterprise systems - Function blocks (FB) for process control and electronic device description language (EDDL) - Part 4: EDD interpretation	EN IEC 61804-4	-
IEC 62541-3	-	OPC Unified Architecture - Part 3: Address Space Model	EN IEC 62541-3	-
IEC 62541-4	-	OPC Unified Architecture - Part 4: Services	EN IEC 62541-4	-
IEC 62541-5	-	OPC Unified Architecture - Part 5: Information Model	EN IEC 62541-5	-
IEC 62541-6	-	OPC Unified Architecture - Part 6: Mappings	EN IEC 62541-6	-
IEC 62541-8	-	OPC Unified Architecture - Part 8: Data Access	EN IEC 62541-8	-
IEC 62541-100	-	OPC Unified Architecture - Part 100: Device Interface	EN 62541-100	-
IEC 62769-1	-	Field Device Integration (FDI) - Part 1: Overview	EN IEC 62769-1	-
IEC 62769-2	-	Field Device Integration (FDI) - Part 2: FDI Client	EN IEC 62769-2	-
IEC 62769-4	-	Field Device Integration (FDI) - Part 4: FDI Packages	EN IEC 62769-4	-

IEC 62769-7	-	Field Device Integration (FDI) - Part 7: Communication Devices	EN IEC 62769-7 -

IEC 62769-5

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Field device integration (FDI) – Part 5: Information Model

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IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
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Field device integration (FDI) – Part 5: Information Model

Intégration des appareils de terrain (FDI) – Partie 5: Modèle d'Information

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FIELD DEVICE INTEGRATION (FDI) –

Part 5: Information Model

FOREWORD

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International Standard IEC 62769-5 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 2015. This edition constitutes a technical revision.

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

a) support for generic protocol extension for faster adoption of other technologies;
b) support of new protocols;
c) generic protocol extension to allow adoption of other communication protocols;
d) based on generic protocol extension: Modbus RTU.

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

FDIS	Report on voting
65E/762/FDIS	65E/772/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.

A list of all parts in the IEC 62769 series, published under the general title *Field Device Integration (FDI)*, can be found on the IEC website.

This standard contains attached files in the form of XML schema. These files are intended to be used as a complement and do not form an integral part of the standard.

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

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- withdrawn,
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INTRODUCTION

The IEC 62769 series has the general title *Field Device Integration (FDI)* and the following parts:

– Part 1: Overview
– Part 2: FDI Client
– Part 3: FDI Server
– Part 4: FDI Packages
– Part 5: FDI Information Model
– Part 6: FDI Technology Mapping
– Part 7: FDI Communication Devices
– Part 100: Profiles – Generic Protocol Extensions
– Part 101-1: Profiles – Foundation Fieldbus H1
– Part 101-2: Profiles – Foundation Fieldbus HSE
– Part 103-1: Profiles – PROFIBUS
– Part 103-4: Profiles – PROFINET
– Part 109-1: Profiles – HART and WirelessHART
– Part 115-2: Profiles – Protocol-specific Definitions for Modbus RTU
– Part 150-1: Profiles – ISA 100.11a

FIELD DEVICE INTEGRATION (FDI) –

Part 5: Information Model

1 Scope

This part of IEC 62769 defines the FDI Information Model. One of the main tasks of the Information Model is to reflect the topology of the automation system. Therefore, it represents the devices of the automation system as well as the connecting communication networks including their properties, relationships, and the operations that can be performed on them. The types in the AddressSpace of the FDI Server constitute a catalogue, which is built from *FDI Packages*.

The fundamental types for the FDI Information Model are well defined in OPC UA for Devices (IEC 62541-100). The FDI Information Model specifies extensions for a few special cases and otherwise explains how these types are used and how the contents are built from elements of DevicePackages.

The overall FDI architecture is illustrated in Figure 1. The architectural components that are within the scope of this document have been highlighted in this illustration.

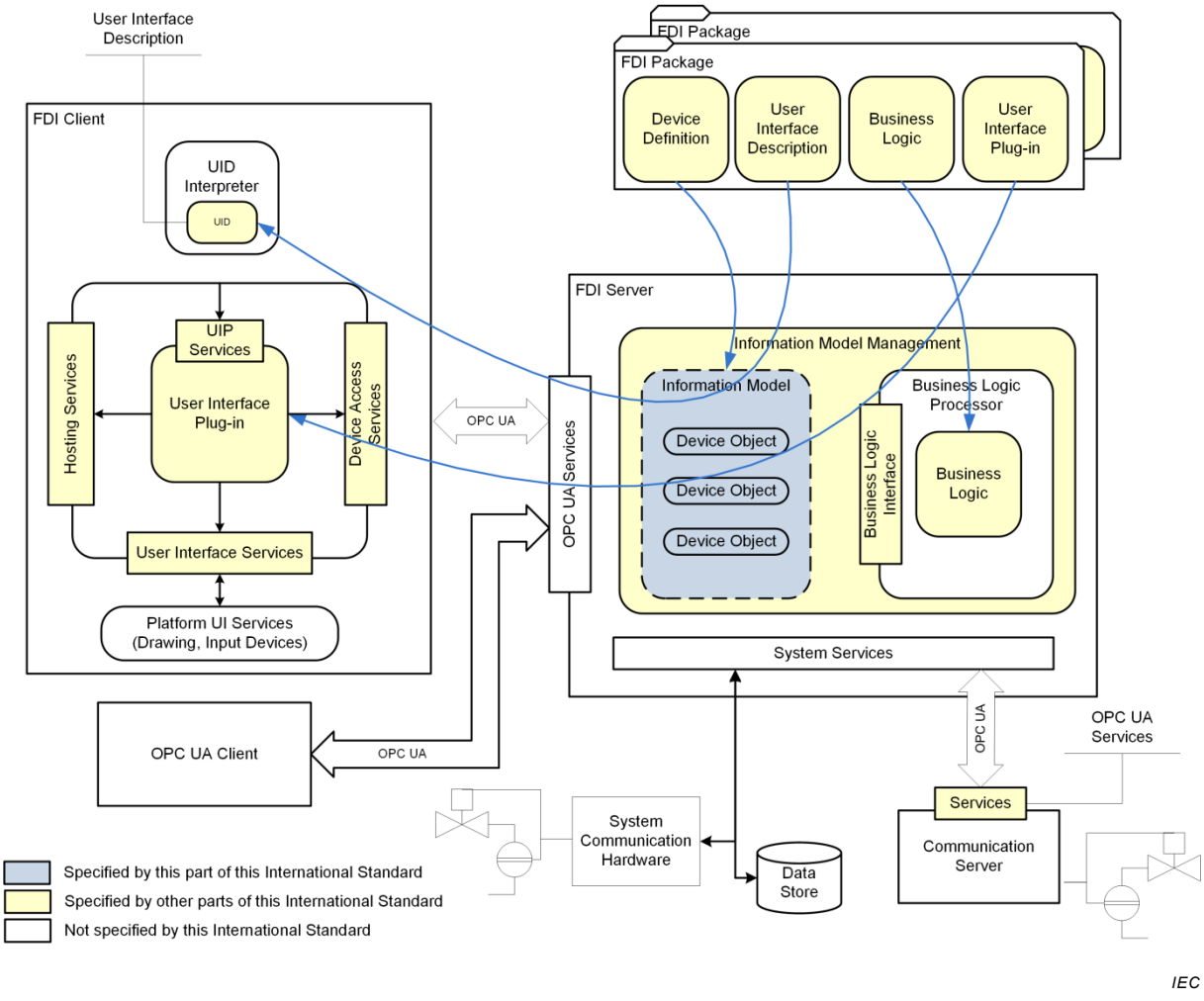

Figure 1 – FDI architecture diagram

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.

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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 62541-100, *OPC unified architecture – Part 100: OPC UA for Devices*

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