

PRE-RELEASE VERSION (FDIS)



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

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 25.040.40; 35.100.05

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FINAL DRAFT INTERNATIONAL STANDARD (FDIS)

PROJECT NUMBER:

IEC 62769-5 ED2

DATE OF CIRCULATION:

2020-11-06

CLOSING DATE FOR VOTING:

2020-12-18

SUPERSEDES DOCUMENTS:

65E/592/CDV, 65E/642/RVC

IEC SC 65E : DEVICES AND INTEGRATION IN ENTERPRISE SYSTEMS

SECRETARIAT:

United States of America

SECRETARY:

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OF INTEREST TO THE FOLLOWING COMMITTEES:

SC 65B, SC 65C

HORIZONTAL STANDARD:

FUNCTIONS CONCERNED:

EMC

ENVIRONMENT

QUALITY ASSURANCE

SAFETY

SUBMITTED FOR CENELEC PARALLEL VOTING

NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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The CENELEC members are invited to vote through the CENELEC online voting system.

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TITLE:

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

PROPOSED STABILITY DATE: 2023

NOTE FROM TC/SC OFFICERS:

CONTENTS

FOREWORD	7
INTRODUCTION	9
1 Scope	10
2 Normative references	11
3 Terms, definitions, abbreviated terms and conventions	11
3.1 Terms and definitions	11
3.2 Abbreviated terms	11
3.3 Conventions	12
3.4 Conventions for graphical notation	12
4 Overview of OPC Unified Architecture	14
4.1 General	14
4.2 Overview of OPC UA Devices	14
5 Concepts	16
5.1 General	16
5.2 Device topology	16
5.3 Online/offline	18
5.4 Catalogue (Type Definitions)	19
5.5 Communication	19
6 AddressSpace organization	19
7 Device Model for FDI	20
7.1 General	20
7.2 Online/offline	20
7.3 Device health	21
7.3.1 DeviceHealth Mapping	21
7.3.2 DeviceHealth Diagnostics	22
7.4 User interface elements	23
7.4.1 General	23
7.4.2 UI Description Type	24
7.4.3 UI Plug-in Type	24
7.5 Type-specific support information	26
7.6 Actions	27
7.6.1 Overview	27
7.6.2 Action Type	27
7.6.3 ActionService Type	28
7.6.4 ActionService Object	28
7.6.5 InvokeAction Method	29
7.6.6 RespondAction Method	30
7.6.7 AbortAction Method	31
8 Network and connectivity	32
9 Utility functions	32
9.1 Overview	32
9.2 Locking	32
9.3 EditContext	33
9.3.1 Overview	33
9.3.2 EditContext Type	33

9.3.3	EditContext Object.....	33
9.3.4	GetEditContext Method.....	34
9.3.5	RegisterNodes Method	35
9.3.6	Apply Method	36
9.3.7	Reset Method	37
9.3.8	Discard Method	38
9.4	Direct Device Access	39
9.4.1	General	39
9.4.2	DirectDeviceAccess Type	39
9.4.3	DirectDeviceAccess Object.....	40
9.4.4	InitDirectAccess Method	41
9.4.5	EndDirectAccess Method	41
9.4.6	Transfer Method	42
10	Parameter Types	43
10.1	General.....	43
10.2	ScalingFactor Property	44
10.3	Min_Max_Values Property	44
11	FDI StatusCodes	45
12	Specialized topology elements.....	46
13	Auditing.....	47
13.1	General.....	47
13.2	FDI Client-provided context information	47
13.3	LogAuditTrailMessage Method	47
14	FDI Server Version	48
15	Mapping FDI Package information to the FDI Information Model.....	48
15.1	General.....	48
15.2	Localization	49
15.2.1	Localized text	49
15.2.2	Engineering units.....	49
15.3	Device	49
15.3.1	General	49
15.3.2	Mapping to Attributes to a specific DeviceType Node.....	49
15.3.3	Mapping to Properties.....	49
15.3.4	Mapping to ParameterSet	50
15.3.5	Mapping to Functional Groups	50
15.3.6	Mapping to DeviceTypeImage.....	50
15.3.7	Mapping to Documentation	50
15.3.8	Mapping to ProtocolSupport.....	50
15.3.9	Mapping to ImageSet.....	51
15.3.10	Mapping to ActionSet.....	51
15.3.11	Mapping to MethodSet.....	51
15.4	Modular Device.....	51
15.5	Block	51
15.5.1	General	51
15.5.2	Mapping to Attributes.....	51
15.5.3	Mapping to ParameterSet	52
15.5.4	Mapping to Functional Groups	52
15.5.5	Mapping to ActionSet.....	52

15.5.6	Mapping to MethodSet.....	52
15.5.7	Instantiation rules	52
15.6	Parameter.....	52
15.6.1	General	52
15.6.2	Private Parameters	56
15.6.3	MIN_Value and MAX_Value.....	57
15.6.4	Engineering units.....	57
15.6.5	Enumerated Parameters	57
15.6.6	Bit-enumerated Parameters	57
15.6.7	Representation of records.....	57
15.6.8	Representation of arrays, and lists of Parameters with simple data types	58
15.6.9	Representation of values arrays, and lists of RECORD Parameters	59
15.6.10	Representation of COLLECTION and REFERENCE ARRAY	59
15.6.11	SCALING_FACTOR.....	60
15.7	Functional Groups.....	60
15.8	AXIS elements in UIDs.....	61
15.9	Actions	61
15.10	UIPs	61
15.11	Protocols, Networks and Connection Points	61
16	Profiles.....	62
Annex A (normative) Namespace and Mappings		63
Bibliography.....		64
Figure 1 – FDI architecture diagram.....		10
Figure 2 – OPC UA Graphical Notation for NodeClasses.....		12
Figure 3 – OPC UA Graphical Notation for References		12
Figure 4 – OPC UA Graphical Notation Example.....		13
Figure 5 – Optimized Type Reference		13
Figure 6 – OPC UA Devices Example: Functional Groups		15
Figure 7 – OPC UA Devices example: Configurable components		16
Figure 8 – Example of an automation system.....		17
Figure 9 – Example of a Device topology		18
Figure 10 – Example Device Types representing a catalogue		19
Figure 11 – Online component for access to device data		21
Figure 12 – Hierarchy of user interface Types.....		24
Figure 13 – Integration of Actions within a TopologyElement		27
Figure 14 – Action Service		29
Figure 15 – EditContext type and instance.....		34
Figure 16 – DirectDeviceAccessType.....		39
Figure 17 – DirectDeviceAccess instance		40
Figure 18 – OPC UA VariableTypes including OPC UA DataAccess.....		44
Figure 19 – Example: Complex variable representing a RECORD		58
Figure 20 – Complex variable representing a VALUE_ARRAY of RECORDs		59
Table 1 – DeviceHealth Mapping		22

Table 2 – DeviceType definition (excerpt applicable to this clause)	22
Table 3 – DeviceType definition with DeviceHealth and DeviceHealthDiagnostics	23
Table 4 – UIDescriptionType Definition	24
Table 5 – UIPlugInType Definition	25
Table 6 – ActionType Definition	28
Table 7 – ActionServiceType Definition	28
Table 8 – InvokeAction Method Arguments	30
Table 9 – InvokeAction Method AddressSpace Definition	30
Table 10 – RespondAction Method Arguments	31
Table 11 – RespondAction Method AddressSpace Definition	31
Table 12 – AbortAction Method Arguments	31
Table 13 – AbortAction Method AddressSpace Definition	32
Table 14 – EditContextType Definition	33
Table 15 – GetEditContext Method Arguments	34
Table 16 – GetEditContext Method AddressSpace Definition	35
Table 17 – RegisterNodes Method Arguments	35
Table 18 – RegisterNodes Method AddressSpace Definition	35
Table 19 – RegistrationParameters DataType Structure	36
Table 20 – RegisterNodesResult DataType Structure	36
Table 21 – Apply Method Arguments	37
Table 22 – Apply Method AddressSpace Definition	37
Table 23 – ApplyResult DataType Structure	37
Table 24 – Reset Method Arguments	38
Table 25 – Reset Method AddressSpace Definition	38
Table 26 – Discard Method Arguments	38
Table 27 – Discard Method AddressSpace Definition	39
Table 28 – DirectDeviceAccessType Definition	40
Table 29 – DirectDeviceAccess Instance Definition	41
Table 30 – InitDirectAccess Method Arguments	41
Table 31 – InitDirectAccess Method AddressSpace Definition	41
Table 32 – EndDirectAccess Method Arguments	42
Table 33 – EndDirectAccess Method AddressSpace Definition	42
Table 34 – Transfer Method Arguments	42
Table 35 – Transfer Method AddressSpace Definition	43
Table 36 – ScalingFactor Property Definition	44
Table 37 – Min_Max_Values Property Definition	45
Table 38 – Variant_Range DataType Structure	45
Table 39 – Variant_Range Definition	45
Table 40 – Good operation level result codes	46
Table 41 – Uncertain operation level result codes	46
Table 42 – Bad operation level result codes	46
Table 43 – LogAuditTrailMessage Method Arguments	48
Table 44 – LogAuditTrailMessage Method AddressSpace Definition	48

Table 45 – FDIServerVersion Property Definition	48
Table 46 – DeviceType Property Mapping	50
Table 47 – Setting OPC UA Variable Attributes from EDDL variable attributes	53
Table 48 – Correspondence between EDDL and OPC UA standard data types	54
Table 49 – FDI Server Facet Definition	62
Table 50 – FDI Client Facet Definition.....	62

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIELD DEVICE INTEGRATION (FDI) –

Part 5: Information Model

FOREWORD

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International Standard IEC 62769 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
XX/XX/FDIS	XX/XX/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

- 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.

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.

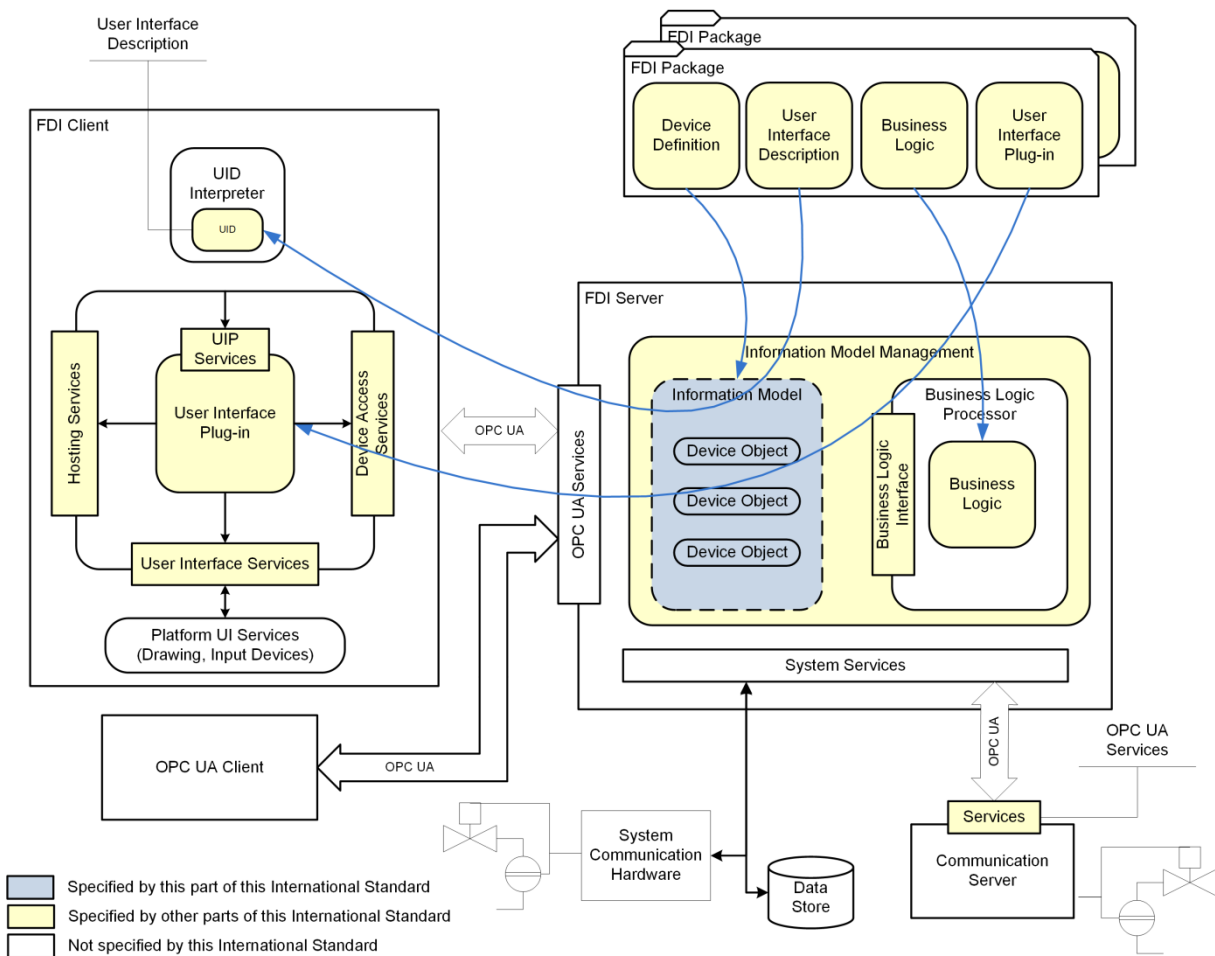


Figure 1 – FDI architecture diagram

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.

IEC 61784-1, *Industrial communication networks – Profiles – Part 1: Fieldbus profiles*

IEC 61804-3, *Function blocks (FB) for process control and Electronic Device Description Language (EDDL) – Part 3: EDDL syntax and semantics*

IEC 61804-4, *Function blocks (FB) for process control and electronic device description language (EDDL) – Part 4: EDD interpretation*

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*

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

IEC 62769-1, *Field Device Integration (FDI) – Part 1: Overview*

IEC 62769-2, *Field Device Integration (FDI) – Part 2: FDI Client*

IEC 62769-4, *Field Device Integration (FDI) – Part 4: FDI Packages*

IEC 62769-7, *Field Device Integration (FDI) – Part 7: FDI Communication Devices*