



**SLOVENSKI STANDARD**  
**oSIST prEN IEC 62769-1:2022**  
**01-maj-2022**

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**Integracija procesne naprave (FDI) - 1. del: Pregled**

Field Device Integration (FDI) - Part 1: Overview

Feldgeräteintegration (FDI) - Teil 1: Überblick

Intégration des appareils de terrain (FDI) - Partie 1: Vue d'ensemble

Ta slovenski standard je istoveten z: **prEN IEC 62769-1:2022**

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**ICS:**

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35.240.50	Uporabniške rešitve IT v industriji	IT applications in industry

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# 65E/854/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

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IEC SC 65E : DEVICES AND INTEGRATION IN ENTERPRISE SYSTEMS	
SECRETARIAT: United States of America	SECRETARY: Mr Donald (Bob) Lattimer
OF INTEREST TO THE FOLLOWING COMMITTEES: SC 65B, SC 65C	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
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TITLE:

**Field Device Integration (FDI) - Part 1: Overview**

PROPOSED STABILITY DATE: 2025

NOTE FROM TC/SC OFFICERS:

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## INTRODUCTION

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

70 – Part 1: Overview

71 – Part 2: FDI Client

72 – Part 3: FDI Server

73 – Part 4: FDI Packages

74 – Part 5: FDI Information Model

75 – Part 6: FDI Technology Mapping

76 – Part 6-100: FDI Technology Mapping for .NET

77 – Part 6-200: FDI Technology Mapping for HTML5

78 – Part 7: FDI Communication Devices

79 – Part 8: EDDL to OPC UA Mapping

80 – Part 100: Profiles – Generic Protocol Extensions

81 – Part 101-1: Profiles – Foundation Fieldbus H1

82 – Part 101-2: Profiles – Foundation Fieldbus HSE

83 – Part 102-2: Profiles – Protocol-specific Definitions for EtherNet IP

84 – Part 103-1: Profiles – PROFIBUS

85 – Part 103-4: Profiles – PROFINET

86 – Part 109-1: Profiles – HART and WirelessHART

87 – Part 115-1: Profiles – Protocol-specific Definitions for OPC UA

88 – Part 115-2: Profiles – Protocol-specific Definitions for Modbus RTU

89 – Part 150-1: Profiles – ISA 100

90

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## FIELD DEVICE INTEGRATION (FDI) –

## Part 1: Overview

## FOREWORD

- 99 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national  
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102 publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and  
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- 127 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC  
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- 129 IEC 62769-1 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of  
130 IEC technical committee 65: Industrial-process measurement, control and automation. It is an International  
131 Standard.
- 132 This third edition cancels and replaces the second edition published in 2021. This edition constitutes a  
133 technical revision.
- 134 This edition includes the following significant technical changes with respect to the previous edition:
- 135 a) added references to part 6-100 and part 6-200 (technology mapping for .NET and HTML5);
- 136 b) updated sect. 8.3.1: major version, minor version and revision shall be written as two-digit numbers;
- 137 c) added reference to new part 8 and FDI OPC UA Server Facet.



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

Draft	Report on voting
85E/XX/FDIS	65E/XX/RVD

139

140 Full information on the voting for its approval can be found in the report on voting indicated in the above  
141 table.

142 The language used for the development of this International Standard is English.

143 This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance  
144 with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at  
145 [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in  
146 greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

147 The committee has decided that the contents of this document will remain unchanged until the stability  
148 date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific  
149 document. At this date, the document will be

- 150 • reconfirmed,
- 151 • withdrawn,
- 152 • replaced by a revised edition, or
- 153 • amended.

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## FIELD DEVICE INTEGRATION (FDI) –

### Part 1: Overview

#### 1 Scope

This part of IEC 62769 describes the concepts and overview of the Field Device Integration (FDI) specifications. The detailed motivation for the creation of this technology is also described (see 4.1). Reading this document is helpful to understand the other parts of this multi-part standard.

#### 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 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 62453 (*all parts*), *Field device tool (FDT®) interface specification*

IEC 62541 (*all parts*), *OPC Unified Architecture*

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 62541-100, *OPC Unified Architecture – Part 100: Device Interface*

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

IEC 62769-3, *Field Device Integration (FDI) – Part 3: FDI Server*

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

IEC 62769-5, *Field Device Integration (FDI) – Part 5: FDI Information Model*

IEC 62769-6, *Field Device Integration (FDI) – Part 6: FDI Technology Mappings*

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

IEC 62769-8, *Field Device Integration (FDI) – Part 8: EDDL to OPC UA Mapping*

ISO/IEC 11578, *Information technology – Open Systems Interconnection – Remote Procedure Call (RPC)*

## 187 3 Terms, definitions, abbreviated terms and acronyms

### 188 3.1 Terms and definitions

189 For the purposes of this document, the terms and definitions given in IEC TR 62541-1, IEC 62541-3,  
190 IEC 62541-4, IEC 62541-5, IEC 62541-100, as well as the following apply.

#### 191 3.1.1

#### 192 Field Device Integration

#### 193 FDI

194 Device Integration and Device Management Technology, combining base concepts and technology  
195 aspects of the Electronic Device Description Language (EDDL) according to IEC 61804 and Field Device  
196 Tool (FDT®) according to IEC 62453, as well as in IEC 62541-1 (OPC UA)

197 Note 1 to entry: The combination of those different proven technologies ensures a secure life-cycle and the ability to address all  
198 challenges of Device Integration and Device Management in a scalable manner.

#### 199 3.1.2

#### 200 Action

201 procedure that requires collaboration between an FDI Client and an FDI Server

#### 202 3.1.3

#### 203 Business Logic

204 descriptive element of an FDI Package that specifies the device specific behavior and/or mapping logic  
205 for a Nested Communication

#### 206 3.1.4

#### 207 Business Logic Interface

208 interface through which Business Logic is integrated with the Information Model

#### 209 3.1.5

#### 210 Communication Device

211 physical device that provides access to networks and devices

212 Note 1 to entry: Gateways and routers are examples of Communication Devices.

#### 213 3.1.6

#### 214 Connection Point

215 logical representation of a connection of a communication end point to a communication network

#### 216 3.1.7

#### 217 Device Access Services

218 set of services through which a User Interface Plug-in accesses the Information Model of an FDI Server

#### 219 3.1.8

#### 220 Device Definition

221 required element of an FDI Package that provides the core definition of a device

#### 222 3.1.9

#### 223 Device Instance

224 representation of a specific device in the Information Model of an FDI Server

#### 225 3.1.10

#### 226 Device Tool

227 standalone application that contains both an FDI Client and an FDI Server

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- 228 **3.1.11**  
 229 **Device Type**  
 230 representation of a type of device in the Information Model of an FDI Server
- 231 **3.1.12**  
 232 **FDI Client**  
 233 software component that uses the Information Model, interprets User Interface Descriptions, and hosts  
 234 User Interface Plug-ins
- 235 **3.1.13**  
 236 **FDI Communication Server**  
 237 OPC UA server that is used by an FDI Server to access non-native networks
- 238 **3.1.14**  
 239 **FDI Package**  
 240 collection of components that provide all the information necessary to integrate a type of device into a  
 241 system
- 242 **3.1.15**  
 243 **FDI Server**  
 244 software component that implements the Information Model, executes Business Logic, and communicates  
 245 with device via Native Communication and/or Nested Communication
- 246 **1.1.1**  
 247 **FDI Technology Version**  
 248 version number that identifies to a specific revision of the overall FDI technology
- 249 **3.1.16**  
 250 **Hosting Services**  
 251 set of services through which a User Interface Plug-in interacts with an FDI Client  
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- 252 **3.1.17**  
 253 **Information Model**  
 254 set of objects, variables, and methods exposed by an FDI Server  
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- 255 **3.1.18**  
 256 **Modular Device**  
 257 device that is composed of one or more subdevices
- 258 **3.1.19**  
 259 **Native Communication**  
 260 communication with devices that are an integral part of the system
- 261 **3.1.20**  
 262 **Nested Communication**  
 263 communication with devices through a series of Communication Devices
- 264 **3.1.21**  
 265 **User Interface Services**  
 266 **UI Services**  
 267 set of services through which a User Interface Plug-in accesses the operating system
- 268 **3.1.22**  
 269 **platform User Interface Services**  
 270 **platform UI Services**  
 271 user interface services provided natively by the operating system