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REDLINE VERSION

Industriell processtyrning – Integration av fältenheter (FDI®) – Del 1: Översikt

*Field device integration (FDI®) –
Part 1: Overview*

En så kallad ”Redline version” (RLV) innehåller både standarden som fastställts som SS och en ändringsmarkerad IEC-standard. Alla tillägg och borttagningar sedan den tidigare utgåvan av IEC-standarderna är markerade med färg. Med en RLV sparar du mycket tid när du ska identifiera och bedöma aktuella ändringar i standarderna. SEK Svensk Elstandard kan bara ge ut RLV i de fall den finns tillgänglig från IEC.



IEC 62769-1

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REDLINE VERSION

INTERNATIONAL STANDARD



Field device integration (FDI®) – Part 1: Overview

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 25.040.40; 35.100.05

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIELD DEVICE INTEGRATION (FDI®) –

Part 1: Overview

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 62769-1:2021. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 62769-1 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation. It is an International Standard.

This third edition cancels and replaces the second edition published in 2021. This edition constitutes a technical revision.

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

- a) added references to Part 6-100 and Part 6-200 (technology mapping for .NET and HTML5);
- b) updated Subclause 8.3.1: major version, minor version and revision shall be written as two-digit numbers;
- c) added reference to new Part 8 and FDI® OPC UA Server Facet.

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

Draft	Report on voting
65E/854/CDV	65E/927/RVC

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

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

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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.

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 document 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 1: Overview

1 Scope

This part of IEC 62769 describes the concepts and overview of the Field Device Integration (FDI®¹) 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 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 61804 (all parts), *Devices and integration in enterprise systems – Function Blocks (FB) for process control and Electronic Device Description Language (EDDL)*

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*

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*

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: Client*

¹ FDI® is a registered trademark of the non-profit organization Fieldbus Foundation, Inc. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the trademark holder or any of its products. Compliance does not require use of the trade name. Use of the trade name requires permission of the trade name holder.

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

IEC 62769-4:2023, *Field Device Integration (FDI®) – Part 4: FDI® Packages*

IEC 62769-5:2023, *Field Device Integration (FDI®) – Part 5: FDI® Information Model*

IEC 62769-6:2023, *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)*

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Industriell processtyrning – Integration av fältenheter (FDI®) – Del 1: Översikt

*Field device integration (FDI®) –
Part 1: Overview*

Som svensk standard gäller europastandarden EN IEC 62769-1:2023. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 62769-1:2023.

Nationellt förord

Europastandarden EN IEC 62769-1:2023

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 62769-1, Third edition, 2023 - Field device integration (FDI®) – Part 1: Overview**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN IEC 62769-1, utg 2:2021 med eventuella tillägg, ändringar och rättelser gäller ej fr o m 2026-05-09.

ICS 25.040.40; 35.100.05

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English Version

**Field Device Integration (FDI®) - Part 1: Overview
(IEC 62769-1:2023)**

Intégration des appareils de terrain (FDI®) - Partie 1: Vue
d'ensemble
(IEC 62769-1:2023)

Feldgeräteintegration (FDI®) - Teil 1: Überblick
(IEC 62769-1:2023)

This European Standard was approved by CENELEC on 2023-05-09. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 65E/854/CDV, future edition 3 of IEC 62769-1, 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 62769-1:2023.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2024-02-09 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2026-05-09 document have to be withdrawn

This document supersedes EN IEC 62769-1:2021 and all of its amendments and corrigenda (if any).

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Endorsement notice

The text of the International Standard IEC 62769-1:2023 was approved by CENELEC as a European Standard without any modification.

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

IEC 62453-1 NOTE Approved as EN 62453-1

IEC 62443 (series) NOTE Approved as EN IEC 62443 (series)

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.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61804	series	Function blocks (FB) for process control and electronic device description language (EDDL)	EN IEC 61804	series
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 62453	series	Field device tool (FDT) interface specification	EN 62453	series
IEC 62541	series	OPC Unified Architecture	EN IEC 62541	series
IEC/TR 62541-1	-	OPC Unified Architecture - Part 1: Overview CLC and concepts	IEC/TR 62541-1	-
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 62541-100	-	OPC Unified Architecture - Part 100: Device Interface	EN 62541-100	-
IEC 62769-2	-	Field Device Integration (FDI®) - Part 2: Client	-	-
IEC 62769-3	-	Field Device Integration (FDI®) - Part 3: Server	-	-
IEC 62769-4	2023	Field Device Integration (FDI®) - Part 4: FDI Packages	-	-

EN IEC 62769-1:2023 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62769-5	2023	Field Device Integration (FDI®) - Part 5: FDI Information Model	-	-
IEC 62769-6	2023	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:EDD to OPC-UA Mapping	-	-
ISO/IEC 11578	-	Information technology - Open Systems Interconnection - Remote Procedure Call (RPC)	-	-

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Field device integration (FDI®) –
Part 1: Overview**

**Intégration des appareils de terrain (FDI®) –
Partie 1: Vue d'ensemble**

INTERNATIONAL
ELECTROTECHNICAL
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ICS 25.040.40; 35.100.05

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This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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.

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.

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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®¹) 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 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 61804 (all parts), *Devices and integration in enterprise systems – Function Blocks (FB) for process control and Electronic Device Description Language (EDDL)*

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*

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*

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: Client*

¹ FDI® is a registered trademark of the non-profit organization Fieldbus Foundation, Inc. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the trademark holder or any of its products. Compliance does not require use of the trade name. Use of the trade name requires permission of the trade name holder.

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

IEC 62769-4:2023, *Field Device Integration (FDI®) – Part 4: FDI® Packages*

IEC 62769-5:2023, *Field Device Integration (FDI®) – Part 5: FDI® Information Model*

IEC 62769-6:2023, *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)*