Field Device Integration (FDI) - Part 103-4: Profiles - PROFINET

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 62769-103-4:2015 sisaldab Euroopa standardi EN 62769-103-4:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 62769-103-4:2015 consists of the English text of the European standard EN 62769-103-4:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 19.06.2015.	Date of Availability of the European standard is 19.06.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 25.040.40, 35.100

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62769-103-4

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ICS 25.040.40; 35.100

English Version

Field Device Integration (FDI) - Part 103-4: Profiles - PROFINET (IEC 62769-103-4:2015)

Intégration des appareils de terrain (FDI) - Partie 103-4: Profils - PROFINET (IEC 62769-103-4:2015)

Feldgeräteintegration (FDI) - Profile - Teil 103-4: PROFINET (IEC 62769-103-4:2015)

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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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 62769-103-4:2015 E

European foreword

The text of document 65E/355/CDV, future edition 1 of IEC 62769-103-4, 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 62769-103-4:2015.

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) 2016-03-16
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-06-16

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62769-103-4:2015 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated :

IEC 61158	NOTE	Harmonized in EN 61158 series.
IEC 61784-1	NOTE	Harmonized as EN 61784-1.
IEC 61804-4	NOTE	Harmonized as EN 61804-4 [1)] (not modified).

1) To be published.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 When 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 61158-5-10	-	Industrial communication networks - Fieldbus specifications - Part 5-10: Application layer service definition - Type 10 elements	EN 61158-5-10	-
IEC 61784-2	-	Industrial communication networks - Profiles - Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC 8802-3	EN 61784-2	-
IEC 61804	series	Function blocks (FB) for process control - Electronic device description language (EDDL)	EN 61804	series
IEC 62541-100	2015	OPC unified architecture - Part 100: Device Interface	EN 62541-100	2015
IEC 62769-2	-	Field Device Integration (FDI) - Part 2: FDI Client	EN 62769-2 [2)]	-
IEC 62769-4	-	Field Device Integration (FDI) - Part 4: FDI Packages	EN 62769-4 [2)]	-
IEC 62769-5	-	Field Device Integration (FDI) - Part 5: FDI Information Model	EN 62769-5 [2)]	-
IEC 62769-6	-	Field Device Integration (FDI) - Part 6: FDI Technology Mapping	EN 62769-6 [2)]	-
IEC 62769-7	-	Field Device Integration (FDI) - Part 7: FDI Communication Devices	EN 62769-7 [2)]	-

2) To be published.

CONTENTS

INTRODUCTION

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of patents concerning

a) method for the supplying and installation of device-specific functionalities, see Patent Family DE10357276;

b) method and device for accessing a functional module of automation system, see Patent Family EP2182418;

c) methods and apparatus to reduce memory requirements for process control system software applications, see Patent Family US2013232186;

d) extensible device object model, see Patent Family US12/893,680;

IEC takes no position concerning the evidence, validity and scope of this patent right.

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a) ABB Research Ltd
Claes Rytoft
Affolterstrasse 4
Zurich, 8050
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b) Phoenix Contact GmbH & Co KG
Intellectual Property, Licenses & Standards
Flachsmarktstrasse 8, 32825 Blomberg
Germany

c) Fisher Controls International LLC
John Dilger, Emerson Process Management LLLP
301 S. 1st Avenue, Marshaltown, Iowa 50158
USA

d) Rockwell Automation Technologies, Inc.
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ISO (www.iso.org/patents) and IEC (http://patents.iec.ch) maintain on-line data bases of patents relevant to their standards. Users are encouraged to consult the data bases for the most up to date information concerning patents.

FIELD DEVICE INTEGRATION (FDI) –

Part 103-4: Profiles – PROFINET

1 Scope

This part of IEC 62769 specifies an FDI profile of IEC 62769 for IEC 61784-2_CP 3/4, IEC 61784-2_CP3/5 and IEC 61784-2_CP3/6 (PROFINET[1]).

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 61158-5-10, *Industrial communication networks – Fieldbus specifications – Part 5-10: Application layer service definition – Type 10 elements*

IEC 61784-2, *Industrial communication networks – Profiles – Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC 8802*-3

IEC 61804 (all parts), *Function blocks (FB) for process control and Electronic Device Description Language (EDDL)*

IEC 62541-100:2015, *OPC Unified Architecture – Part 100: OPC UA for Devices*

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

NOTE 1 IEC 62769-2 is technically identical to FDI-2022.

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

NOTE 2 IEC 62769-4 is technically identical to FDI-2024.

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

NOTE 3 IEC 62769-5 is technically identical to FDI-2025.

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

NOTE 4 IEC 62769-6 is technically identical to FDI-2026.

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

NOTE 5 IEC 62769-7 is technically identical to FDI-2027.

PI Order No.: 2.122:2008, *Specification for PROFIBUS – Device Description and Device Integration – Volume 1: GSD, V5.1, July 2008: GSD;* available at <www.PROFIBUS.com>

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[1] PROFINET is the trade name of the non-profit consortium PROFIBUS & PROFINET International. This information is given for the convenience of users of this technical report 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.

PI Order No.: 2.352:2014, *GSDML Specification for PROFINET IO;* available at <www.PROFIBUS.com>

3 Terms, definitions, abbreviated terms and acronyms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61158-5-10, IEC 61784-2, IEC 61804, IEC 62541-100, IEC 62769-2, IEC 62769-4, IEC 62769-5, IEC 62769-6, IEC 62769-7 and PI Order No.: 2.352:2014 apply.

3.2 Abbreviated terms and acronyms

For the purposes of this document, the following abbreviated terms and acronyms apply:

DCP Discovery and basic configuration protocol (according to IEC 61158-5-10)
DNS Domain name system
EDD Electronic Device Description
EDDL Electronic Device Description Language (see IEC 61804)
GSD General station description (see PI Order No.: 2.122:2008)
GSDML GSD markup language (see PI Order No.: 2.352:2014)
IP Internet protocol (RFC 791)
UIP User Interface plug-in
UUID Universal unique identifier (see ISO/IEC 11578)
XML Extensible markup language (see REC-xml-20081126)

4 Conventions

4.1 EDDL syntax

This part of IEC 62769 specifies content for the EDD component that is part of FDI Communication Packages. The specification content using EDDL syntax uses the font `Courier New`. The EDDL syntax is used for method signature, variable, data structure and component declarations.

4.2 XML syntax

XML syntax examples use the font `Courier New`. The XML syntax is used to describe XML document schema.

EXAMPLE: `<xs:simpleType name="ExampleType">`

4.3 Capitalizations

The IEC 62769 series uses capitalized terms to emphasize that these terms have an FDI specific meaning.

Some of these terms using an acronym as a prefix for example

- FDI Client, or
- FDI Server.

Some of these terms are compound terms such as:

- Communication Servers, or