SLOVENSKI STANDARD
oSIST prEN 62769-100:2018

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Vključitev procesne naprave (FDI) - 100. del: Profili - Splošni protokoli

Field device integration (FDI) - Part 100: Profiles - Generic protocols

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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 65C	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY	
☐ SUBMITTED FOR CENELEC PARALLEL VOTING	☒ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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TITLE:

FIELD DEVICE INTEGRATION (FDI) – PART 100: Profiles – Generic protocols

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FIELD DEVICE INTEGRATION (FDI) –

PART 100: Profiles – Generic protocols

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International Standard IEC 62769-100 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

This document is based on FCG_TS62769-100_Profiles_Generic Protocols_1.1.0.4, a specification of the FieldComm Group, PROFIBUS Nutzerorganisation e. V., OPC Foundation and FDT Group.

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

FDIS	Report on voting
65E/XX/FDIS	65E/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.

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53 This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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

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

59 • reconfirmed,
60 • withdrawn,
61 • replaced by a revised edition, or
62 • amended.

63

64 The National Committees are requested to note that for this document the stability date
65 is 2023.

66 THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE
67 DELETED AT THE PUBLICATION STAGE.

68

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FIELD DEVICE INTEGRATION (FDI) – Part 100: Profiles – Generic protocols

1 Scope

This International Standard IEC 62769-100 specifies an FDI profile of IEC 62769 for Generic Protocols. That means that all interfaces are defined and a host can add support for more protocols without changing its implementation. Nevertheless, there are some protocol-specific definitions (PSD) that need to be specified per protocol using this profile. Annex C specifies what PSD need to be defined per protocol so that FDI Device Packages, FDI Communication Packages for Gateways and FDI Communication Servers, FDI Communication Server, Gateways and Devices supporting such a protocol can work together in a host not aware about this specific protocol.

NOTE A host not using FDI communication server but a proprietary mechanism for communication needs to define its own means to deal with this profile to support several protocols without changing its implementation. This is specific to the proprietary way how the communication driver is bound to the host.

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

IEC 61804-3[1], *Function blocks (FB) for process control and Electronic Device Description Language (EDDL) – Part 3: EDDL syntax and semantics*

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

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

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

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

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

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3 Terms, definitions, abbreviated terms and acronyms

For the purposes of this document, the terms and definitions given in IEC 61804 series, IEC 6541-100, IEC 62769-2, IEC 62769-4, IEC 62769-5 and IEC 62769-7 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1 Abbreviated terms and acronyms

EDD	Electronic Device Description
EDDL	Electronic Device Description Language (see IEC 61804)
FDI	Field Device Integration
FCG	FieldComm Group
XML	Extensible markup language (see REC-xml-20081126)

[1] To be published.

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4 Conventions

4.1 EDDL syntax

This document 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 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 use capitalized terms to emphasize that these terms have a 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
- Profile Package.

Parameter names or attributes are concatenated to a single term, where the original terms start in this term with a capital letter such as:

- ProtocolSupportFile or
- ProtocolType.

Parameter names or attributes can also be constructed by using an underscore character to concatenate two or more terms such as:

- DEVICE_REV or
- DEVICE_MODEL

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5 Profile for Generic Protocols

5.1 General

This profile document to the FDI specification in IEC 62769 specifies the protocol specifics needed for FDI Packages describing Communication Servers, Gateways and Devices.

For Communication Servers this document defines also protocol specifics as these need to be considered in the Communication Servers hosted Information Model.

5.2 Catalog profile

5.2.1 Protocol support file

5.2.1.1 FDI Device Package

Protocol specific attachments are mentioned in the Package Catalog as defined in IEC 62769-5. As this annex defines a profile generically suitable for many protocols it does not define requirements for any protocol specific attachments. However, it does also not prevent the usage of protocol specific attachments. The PSD (see Annex C) define the requirements on the need of ProtocolSupportFiles for a specific protocol. However, the configuration of a device using an FDI Device Package shall not require the usage of a

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protocol specific attachment. Table 1 specifies the parameters of the ProtocolSupportFile in the FDI Device Package in case one or many are provided.

Table 1 – ProtocolSupportFile for FDI Device Packages

Parameter	Description
Content Type	text/plain
Root Namespace	empty
Source Relationship	http://fdi-cooperation.com/2010/relationship/attachment-protocol
Filename	Not defined

5.2.1.2 FDI Communication Packages

The same rules as for FDI Device Packages applies.

5.2.2 CommunicationProfile definition

IEC 62769-4 defines a CommunicationProfileT string for the Catalog XML schema. The string is protocol specific and defined as ProfileIdentifier in the PSD (see Annex C).

5.2.3 Profile device

A Profile Package shall provide the catalog values for profile devices, enabling the FDI Server to leverage a generic device description, if a specific one is not available. The definitions in Table 2 focus on catalog content that is vendor independent.

Table 2 – Catalog values for profile devices

Element	Attribute	Content
PackageType	—	Profile
Manufacturer	—	Empty
DeviceModel	—	The format of the DeviceModel is protocol specific and details on the format are defined in the PSD (see Annex C). In order to assign a scan result with a profile package the ProfileId of the scan result shall be mapped to the DeviceModel of the profile package.

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5.2.4 Protocol version information

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IEC 62769-4 defines an element type named InterfaceT for the Catalog XML schema. The element type InterfaceT contains an element named Version which is supposed to provide version information about the applied communication protocol profile. The value has to follow the IEC 62769-4 defined version information schema defined in the element type VersionT. The PSD (see Annex C) define the mapping of versions of a specific protocol to this field.

5.3 Associating a Package with a device

5.3.1 Device type identification mapping

The purpose of device type identification mapping is to enable FDI host systems to compare the scan result against the topology representation in the Information Model. FDI host systems shall also be enabled to determine the FDI Device Package that fits for a device entry contained in the scan result. This will enable the user of an FDI host system to synchronize the Information Model with the actual installation.

The Communication Server implemented scan service (defined in 5.6.1.7) provides the scan result through an XML document (the schema is defined in Clause A.5).

The Gateway implemented scan service (defined in 5.6.2.7) provides the scan result by means of the Information Model that contains data structures created from EDD content as specified in 5.6.2.7.

Common for both ways of presenting the scan result is that scan results contain device type identification and device instance identification.