



SLOVENSKI STANDARD
oSIST prEN 62769-150-1:2018
01-junij-2018

Vključitev procesne naprave (FDI) - 150. del: Profili - ISA100.11a

Field device Integration (FDI) - Part 150-1: Profiles - ISA100.11a

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ICS:

25.040.40	Merjenje in krmiljenje industrijskih postopkov	Industrial process measurement and control
35.240.50	Uporabniške rešitve IT v industriji	IT applications in industry

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65E/584/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: IEC 62769-150-1 ED1	
DATE OF CIRCULATION: 2018-03-30	CLOSING DATE FOR VOTING: 2018-06-22
SUPERSEDES DOCUMENTS: 65E/547/NP,65E/571/RVN	

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: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
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TITLE:

FIELD DEVICE INTEGRATION (FDI) – PART 150-1: Profiles – ISA100.11a

PROPOSED STABILITY DATE: 2020

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIELD DEVICE INTEGRATION (FDI) – PART 150-1: Profiles – ISA100.11a

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- 2043 International Standard IEC 62769-100 has been prepared by subcommittee 65E: Devices and
2044 integration in enterprise systems, of IEC technical committee 65: Industrial-process
2045 measurement, control and automation.

2046 This document is based on FCG_TS62769-150-1_Profiles - ISA100_1.1.0.3, a specification of the
2047 FieldComm Group, PROFIBUS Nutzerorganisation e. V., OPC Foundation and FDT Group.

2048 The text of this International Standard is based on the following documents:

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

2049

2050 Full information on the voting for the approval of this International Standard can be found in
2051 the report on voting indicated in the above table.

2052 This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

2053 A list of all parts in the IEC 62769 series, published under the general title *Field Device*
2054 *Integration (FDI)*, can be found on the IEC website.

2055 The committee has decided that the contents of this document will remain unchanged until the
2056 stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to
2057 the specific document. At this date, the document will be

- 2058 • reconfirmed,
2059 • withdrawn,
2060 • replaced by a revised edition, or
2061 • amended.

2062

2063 The National Committees are requested to note that for this document the stability date
2064 is 2023.

2065 THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE
2066 DELETED AT THE PUBLICATION STAGE.

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FIELD DEVICE INTEGRATION (FDI) – Part 150-1: Profiles – ISA100.11a

2072 **1 Scope**

2073 This International Standard IEC 62769-150-1 specifies an FDI profile for IEC 62734.

2074 **2 Normative References**

2075 The following documents are referred to in the text in such a way that some or all of their
2076 content constitutes requirements of this document. For dated references, only the edition
2077 cited applies. For undated references, the latest edition of the referenced document (including
2078 any amendments) applies.

2079 IEC 62734:2014, *Industrial networks - Wireless communication network and*
2080 *communication profiles - ISA 100.11a*

2081 IEC 61804 (all parts), *Function blocks (FB) for process control and Electronic Device*
2082 *Description Language (EDDL)*

2083 IEC 62541-100:–, *OPC Unified Architecture – Part 100: OPC UA for Devices*

2084 IEC 62769-2, *Field Device Integration (FDI) – Part 2: FDI Client*

2085 IEC 62769-4, *Field Device Integration (FDI) – Part 4: FDI Packages*

2086 IEC 62769-5, *Field Device Integration (FDI) – Part 5: FDI Information Model*

2087 IEC 62769-6, *Field Device Integration (FDI) – Part 6: FDI Technology Mapping*

2088 IEC 62769-7, *Field Device Integration (FDI) – Part 7: FDI Communication Devices*

2089 **3 Terms, definitions, abbreviated terms and acronyms**

2090 **3.1 Terms and definitions**

2091 For the purposes of this document, the terms and definitions given in IEC 62734, IEC 61804
2092 series, IEC 62541-100, IEC 62769-4, IEC 62769-5, and IEC 62769-7 and the following apply.

2093 ISO and IEC maintain terminological databases for use in standardization at the following
2094 addresses:

- 2095 • IEC Electropedia: available at <http://www.electropedia.org/>
- 2096 • ISO Online browsing platform: available at <http://www.iso.org/obp>

2097 **3.1.1** 2098 **object**

2099 basic entity which defines standardized behavior and features in a ISA100.11a wireless
2100 device

2101 **3.2 Abbreviated terms and acronyms**

2102 For the purposes of this document, the following abbreviated terms and acronyms apply.

2103	EDD	Electronic Device Description
2104	EDDL	Electronic Device Description Language (see IEC 61804)
2105	FDI	Field Device Integration
2106	FCG	FieldComm Group
2107	XML	Extensible markup language (see REC-xml-20081126)
2108	CFF	Common file format
2109	UAP	User Application Process
2110	UAPMO	User Application Process Management Object
2111	DMO	Device Management Object
2112	IM	Information Model

2113 SM System Manager
 2114 WCI Wireless Compliance Institute

2115 4 Conventions

2116 4.1 EDDL syntax

2117 This document specifies content for the EDD component that is part of FDI Communication
 2118 Packages. The content using EDDL syntax uses the font `Courier New`. The EDDL syntax is
 2119 used for method signature, variable, data structure and component declarations.

2120 4.2 Capitalizations

2121 The IEC 62769 series use capitalized terms to emphasize that these terms have a FDI
 2122 specific meaning.

2123 Some of these terms using an acronym as a prefix for example

- 2124 • FDI Client, or
- 2125 • FDI Server.

2126 Some of these terms are compound terms such as:

- 2127 • Communication Servers, or
- 2128 • Profile Package.

2129 Parameter names or attributes are concatenated to a single term, where the original terms
 2130 start in this term with a capital letter such as:

- 2131 • ProtocolSupportFile or
- 2132 • ProtocolType.

2133 Parameter names or attributes can also be constructed by using an underscore character to
 2134 concatenate two or more terms such as:

- 2135 • DEVICE_REV or
- 2136 • DEVICE_MODEL

2137 5 Profile for ISA100.11a

2138 5.1 General

2139 This profile specifies the protocol specifics needed for FDI Packages describing
 2140 communication servers, gateways and devices.

2141 5.2 Catalog profile

2142 5.2.1 Protocol support file

2143 5.2.1.1 Capability file

2144 Each ISA100.11a FDI Device Package shall contain a capability file. The capability file part is
 2145 described in Table 1.

2146

Table 1 – Capability file part

Parameter	Description
Content Type:	txt/plain
Root Namespace:	Not applicable
Source Relationship:	http://fdi-cooperation.com/2010/relationships/attachment-protocol
Filename:	Use file extension .CFF

2147

2148 5.2.1.2 FDI Communication Packages

2149 The same rules as for FDI Device Packages applies.

2150 5.2.2 CommunicationProfile definition

2151 IEC 62769-4 defines a CommunicationProfileT string for the Catalog XML schema. The
2152 ISA100.11a specific value shall be "ISA100_Wireless".

2153 5.2.3 Profile device

2154 Not supported in this standard.

2155 5.2.4 Protocol version information

2156 IEC 62769-4 defines an element type named InterfaceT for the Catalog XML schema. The
2157 element type InterfaceT contains an element named Version which is supposed to provide
2158 version information about the applied communication protocol profile. The value has to follow
2159 the IEC 62769-4 defined version information schema defined in the element type VersionT.

2160 ISA100.11a defines the version of the protocol as a value of the parameter
2161 DMO.Comm_SW_Minor_Version. A value of 0 indicates protocol version 2009 and a value of
2162 1 indicates protocol version 2011. The general rule is to use the value of
2163 DMO.Comm_SW_Minor_Version parameter as the major version part of VersionT and the
2164 value "0" for the minor version and build parts Table 2 shows the protocol version information:

2165

Table 2 – Protocol Version Information

Protocol Version	InterfaceT Version value
ISA100.11a 2009	1.0.0
ISA100.11a 2011	2.0.0
The Protocol Version defined in a package is provided for informational purposes only, and shall not be used to determine the compatibility or applicability of a package to a device.	

2166

2167 5.3 Associating a Package with a device

2168 5.3.1 Device type identification mapping

2169 The purpose of device type identification mapping is to enable FDI host systems to compare
2170 the scan result against the topology representation in the Information Model. FDI host
2171 systems shall also be enabled to determine the FDI Device Package that fits for a device
2172 entry contained in the scan result. This will enable the user of an FDI host system to
2173 synchronize the Information Model with the actual installation.

2174 The Communication Server implemented scan service (defined in 5.6.1.7 provides the scan
2175 result through an XML document (the schema is defined in Clause A.5).

2176 The scan result contains device type identification and device instance identification.

2177 FDI host systems comparing the actual network topology configuration against the topology
2178 representation in the Information Model shall be enabled to handle the following situations:

- 2179 a) The physical Device instance identified at a specific device address is not logically present
2180 in the Information Model (as Instance): Enable the FDI Host system to find the appropriate
2181 FDI Device Package according to the device catalog information.
- 2182 b) The physical Device instance identified by the device address is logically present in the
2183 Information Model (as Instance): Enable the FDI Host system to compare device type
2184 information presented in scan result (see the identification in Clause A.5) and the device
2185 type specific information of the Instance present in the Information Model.

2186 The FDI Device Package contains device type identification information that can be compared
2187 to scan result based on the Catalog Schema in IEC 62769-4 defining the XML (simple)
2188 element types "DeviceModel" and "Manufacturer".