



SLOVENSKI STANDARD
oSIST prEN 62769-6:2018
01-julij-2018

Naprave in integracija v proizvodnih sistemih; integracija procesne naprave - 6.
del: Načrtovanje tehnologije (FDI)

Field Device Integration (FDI) - Part 6: FDI Technology Mapping

Feldgeräteintegration (FDI) - Teil 6: FDI-Technologieabbildungen

Intégration des dispositifs de terrain (FDI) - Partie 6: Mapping de technologies FDI

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35.240.50	Uporabniške rešitve IT v industriji	IT applications in industry

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65E/593/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:	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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This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

Field Device Integration (FDI) - Part 6: FDI Technology Mapping

PROPOSED STABILITY DATE: 2021

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIELD DEVICE INTEGRATION (FDI) –

Part 6: Technology Mapping

FOREWORD

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

This second edition cancels and replaces the first edition published in: 2015. This edition constitutes a technical revision.

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

- a) Support for generic protocol extension for faster adoption of other technologies
- b) Support for Package Developers to build EDDs targeted for today's EDD bases system under a single development tool.
- c) Digital signature now include trusted timestamping for long term validation of FDI Package

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- 58 d) Running UIPs in a sandbox
- 59 e) Time stamp for device package signature
- 60 f) Support of new protocols
- 61 g) Generic protocol extension to allow adoption of other communication protocols
- 62 h) Based on generic protocol extension: Modbus RTU;

63

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

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

65

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

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

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

- 72 • reconfirmed,
- 73 • withdrawn,
- 74 • replaced by a revised edition, or [kSIST FprEN 62769-6:2021](https://standards.iteh.ai/catalog/standards/sist/4c162724-ab6c-452f-a7c8-c9698c16cb2b/ksist-fpren-62769-6-2021)
- 75 • amended. <https://standards.iteh.ai/catalog/standards/sist/4c162724-ab6c-452f-a7c8-c9698c16cb2b/ksist-fpren-62769-6-2021>

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77 The National Committees are requested to note that for this document the stability date
78 is 2022.

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication 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.

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INTRODUCTION

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

86 – Part 1: Overview

87 – Part 2: FDI Client

88 – Part 3: FDI Server

89 – Part 4: FDI Packages

90 – Part 5: FDI Information Model

91 – Part 6: FDI Technology Mapping

92 – Part 7: FDI Communication Devices

93 – Part 100: Profiles – Generic Protocol Extensions

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

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

96 – Part 103-1: Profiles – PROFIBUS

97 – Part 103-4: Profiles – PROFINET

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

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

100 – Part 150-1: Profiles – ISA 100.11a

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FIELD DEVICE INTEGRATION (FDI) –

Part 6: Technology Mapping

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107 **1 Scope**

108 This part of IEC 62769 specifies the technology mapping for the concepts described in the
109 Field Device Integration (FDI) standard. The technology mapping focuses on implementation
110 regarding the components FDI Client and User Interface Plug-in (UIP) that are specific only to
111 the WORKSTATION platform / .NET as defined in IEC 62769-4.

112 **2 Normative references**

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

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

119 IEC 62769-1, *Field Device Integration (FDI) – Part 1: Overview*

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

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

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

123 IEC 62541 (all parts), *OPC Unified Architecture*
<https://standards.iteh.ai/catalog/standards/sist/4c162724-ab6c-452f-a7c8-c9698c16cb2b/ksist-pr-en-62769-6-2021>

124 ISO/IEC 19505-1, *Information technology – Object Management Group Unified Modeling*
125 *Language (OMG UML) – Part 1: Infrastructure*

126 ISO/IEC 29500, (all parts) *Information technology - Document description and processing*
127 *languages - Office Open XML File Formats*

128 **3 Terms, definitions, abbreviated terms, acronyms and conventions**

129 **3.1 Terms and definitions**

130 For the purposes of this document, the terms and definitions given in IEC 62769-1 as well as
131 the following apply.

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

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

136 **3.1.1**

137 **application domain**

138 isolated environment where applications execute

139 **3.1.2**

140 **assembly**

141 reusable, version information providing, and self-describing building block of a CLR
142 application

143 **3.1.3**
 144 **FDI type library**
 145 assembly that contains the interfaces and data types that are used for the data exchange and
 146 interaction between a UIP and an FDI Client

147 **3.1.4**
 148 **global assembly cache**
 149 machine-wide code cache that stores Assemblies specifically designated to be shared by
 150 several applications

151 **3.1.5**
 152 **windows registry**
 153 system-defined database in which applications and system components store and retrieve
 154 configuration data

155 **3.2 Abbreviated terms and acronyms**

156 For the purposes of this document, the abbreviated terms and acronyms given in IEC 62769-1
 157 as well as the following apply.

CLR	Common Language Run-time
MSI	Microsoft Installer
WPF	Windows Presentation Foundation
UML	Unified Modeling Language

158 **iTeh STANDARD PREVIEW**
 159 **3.3 Symbols**
 160 **(standards.iteh.ai)**

160 Figures in this document use the graphical symbols according to ISO/IEC 19505 (UML 2.0).

161 **4 Technical concepts** [kSIST FprEN 62769-6:2021](https://standards.iteh.ai/catalog/standards/sist/4c162724-ab6c-452f-a7c8-c9698c16cb2b/ksist-fpren-62769-6-2021)
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 162 **4.1 General** [c9698c16cb2b/ksist-fpren-62769-6-2021](https://standards.iteh.ai/catalog/standards/sist/4c162724-ab6c-452f-a7c8-c9698c16cb2b/ksist-fpren-62769-6-2021)

163 **4.1.1 Overview**

164 In 4.1.2, 4.2, 4.3, 4.4, and 4.5, this document describes first the technology base for UIP
 165 implementation, the hardware and software environment including the related implementation
 166 rules. Clause 4 follows a life-cycle (use case) oriented approach.

167 Subclause 4.6 describes the copy deployment procedures and related implementation rules
 168 for the UIP and the FDI Client. UIP executable instantiation and termination is described in
 169 4.7. Subclause 4.8 defines the rules about interaction between the FDI Client and the UIP.
 170 Security related definitions are written in 4.9. The service interface definitions for the FDI
 171 Client and the UIP are found in Clause 5.

172 **4.1.2 Platforms**

173 The UIP and FDI Client shall be built upon the Microsoft .NET Framework and executed in
 174 the .NET Common Language Run-time.

175 The minimum set of workstation supported I/O devices is: mouse, keyboard, and color screen
 176 resolution of 1024 x 768 pixels.

177 The following Table 1 lists all the technologies and their editions that are consistent with FDI
 178 components.