



SLOVENSKI STANDARD
oSIST prEN IEC 62769-6-200:2022
01-maj-2022

Integracija procesne naprave (FDI) - 6-200. del: Načrtovanje tehnologije - HTML5

Field Device Integration (FDI) - Part 6-200: Technology Mapping -HTML5

Intégration des appareils de terrain (FDI) - Partie 6-200: Mapping de technologies - HTML5

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35.240.50	Uporabniške rešitve IT v industriji	IT applications in industry

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65E/870/CDV

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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.
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TITLE:

Field Device Integration (FDI) - Part 6-200: Technology Mapping - HTML5

PROPOSED STABILITY DATE: 2025

NOTE FROM TC/SC OFFICERS:

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FIELD DEVICE INTEGRATION (FDI) –

Part 6-200: Technology Mapping – HTML5

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IEC 62769-6-200 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.

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

Draft	Report on voting
XX/XX/FDIS	XX/XX/RVD

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.

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

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

- 120 • reconfirmed,
- 121 • withdrawn,
- 122 • replaced by a revised edition, or
- 123 • amended.

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FIELD DEVICE INTEGRATION (FDI) –

Part 6-200: Technology Mapping – HTML5

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132 **1 Scope**

133 This part of IEC 62769 specifies the technology mapping for the concepts described in the Field Device
134 Integration (FDI) standard. The technology mapping focuses on implementation regarding the components
135 FDI Client and User Interface Plug-in (UIP) for the Runtime HTML5.

136 **2 Normative references**

137 The following documents, in whole or in part, are normatively referenced in this document and are
138 indispensable for its application. For dated references, only the edition cited applies. For undated
139 references, the edition of the referenced document (including any amendments), which applies for a
140 specific FDI Technology Version is defined within the FDI Technology Management Document
141 (FCG TS10099) and on the support portals of FieldComm Group and PI International.

142 FCG TS10099, *Field Device Integration (FDI) – Technology Management*

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

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

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

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

148 W3C HTML5.0, W3C Recommendation HTML5 – A vocabulary and associated APIs for HTML and XHTML

149 ECMA-262, ECMAScript® Language Specification

150 W3C CSP2, W3C Recommendation Content Security Policy Level 2

151 **3 Terms, definitions, abbreviated terms, acronyms and conventions**

152 **3.1 Terms and definitions**

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

155 **7.1.1 HTML5 runtime**

156 Functional component of the FDI Client, which executes the HTML5-based UIP. In principle, it provides
157 the functionality of a web browser (HTML rendering, JavaScript execution engine).

158 **7.1.2 FDI Type Library**

159 Typescript file that contains the interfaces and data types that are used for the data exchange and
160 interaction between a UIP and an FDI Client.

161 **7.1.3 FDI Host Type Library**

162 Host specific implementation of FDI Type Library which consists of host.js and fdi.js. FDI Host Type Library
163 is provided by the host vendors and will be deployed together with the UIP on UIP startup.

164 **3.2 Abbreviated terms and acronyms**

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

UML Unified Modeling Language

167

168 **3.3 Symbols**

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

170 **4 Technical concepts**

171 **4.1 General**

172 **4.1.1 Overview**

173 In 4.1.2, this document describes the technology base for UIP implementation based on HTML5, the
174 software environment including the related implementation rules. Clause 4 follows a life-cycle (use case)
175 oriented approach.

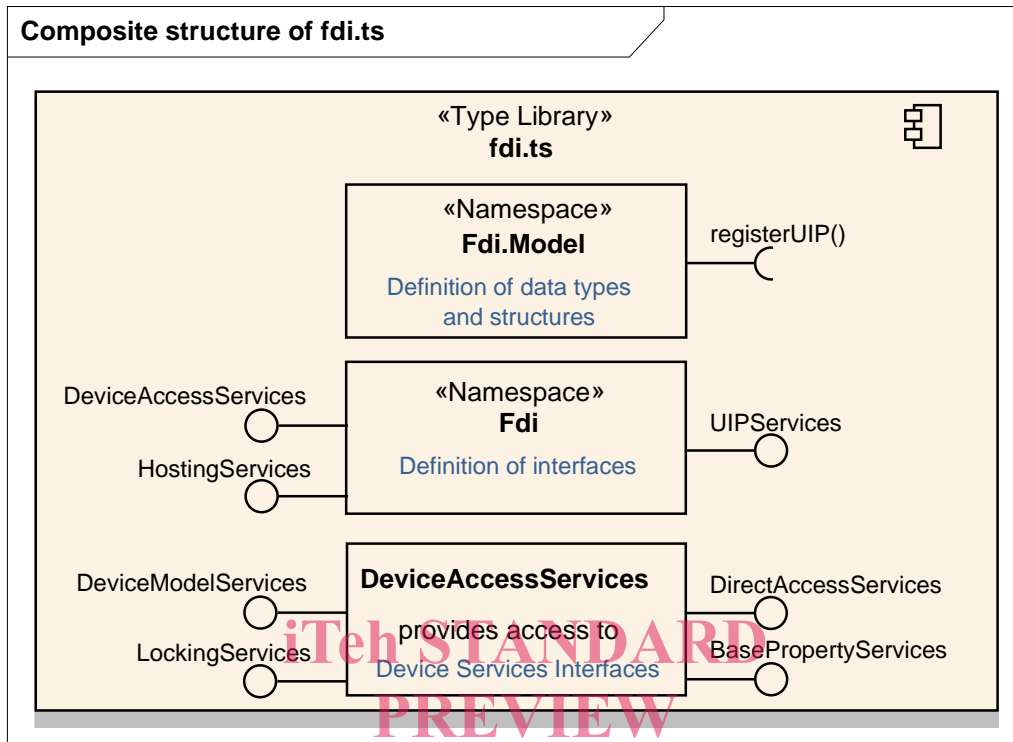
176 Subclause 4.3.4 describes the copy deployment procedures and related implementation rules for the UIP
177 and the FDI Client. UIP instantiation and termination is described in 4.5. Subclause 4.6 defines the rules
178 about interaction between the FDI Client and the UIP. Security related definitions are written in 4.7. The
179 service interface definitions for the FDI Client and the UIP are found in Clause 5.

180 **4.1.2 FDI Type Library**

181 The Device Access Services, the Hosting Services, and the UIP Services are modelled as TypeScript
182 interfaces passing TypeScript data type arguments. These interfaces and data types are used for the data
183 exchange and interaction between the UIP and the FDI Client. For runtime error handling purposes during
184 interface method calls TypeScript error objects are defined.

185 The FDI TypeScript interfaces, data types, and exception classes are defined in a single FDI Type Library.
186 The file name of the interface definition shall be 'fdi.ts'.

187 Figure 1 shows the FDI Type Library structure.



188 **Figure 1 – FDI Type Library structure**

189 NOTE: The composite structure diagram shows only the core interfaces that implement the interfaces defined in IEC 62769-2.

190 The interfaces shall be implemented by the FDI Client respectively the UIP using TypeScript. The
 191 TypeScript implementation files are transpiled to JavaScript using the feature set specified in the edition
 192 of ECMA-262, which corresponds to the RuntimeId of the UIP variant. The edition of ECMA-262 is
 193 unambiguously specified in the FCGTS10099 by the RuntimeId of the UIP variant.

194 The result of the transpilation of fdi.ts is fdi.js, which contains the function prototypes. The transpiled FDI
 195 Type Library, i.e. fdi.js, and the host specific implementation of the interfaces, i.e. host.js, is called FDI
 196 Host Type Library. The overall structure of FDI Type Library together with host and UIP specific
 197 implementations of the interfaces is shown in Figure 2.