



# **FDI Technical Specification ERRATA**

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Please contact the FDI Cooperation at the address shown below.

FDI Cooperation, LLC  
9005 Mountain Ridge Drive  
Bowie Building - Suite 200  
Austin, Texas 78759-5316

Email: [fdi@fdi-cooperation.com](mailto:fdi@fdi-cooperation.com)

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**Revision Log**

Version	Originator	Date	Change Note / History / Reason
1.0.1	Specification Team	1 Dec 2014	First Release

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## INTRODUCTION

The IEC 62657 series has the general title "Field device integration (FDI)" and the following parts:

- Part 1: Overview
- Part 2: FDI Client
- Part 3: FDI Server
- Part 4: FDI Packages
- Part 5: FDI Information Model
- Part 6: FDI Technology Mapping
- Part 7: FDI Communication Devices
- Part 101-1: Profiles – Foundation Fieldbus H1
- Part 101-2: Profiles – Foundation Fieldbus HSE
- Part 103-1: Profiles – PROFIBUS
- Part 103-4: Profiles – PROFINET
- Part 109-1: Profiles – HART and WirelessHART

# FIELD DEVICE INTEGRATION (FDI) –

## Errata

### 1 Scope

This Errata document contains all of the known corrections to FDI Specification (all Parts) for version 1.0. This document is updated regularly when issues are found between major releases of the Specification.

### 2 FDI Specification: Part 3 – Server

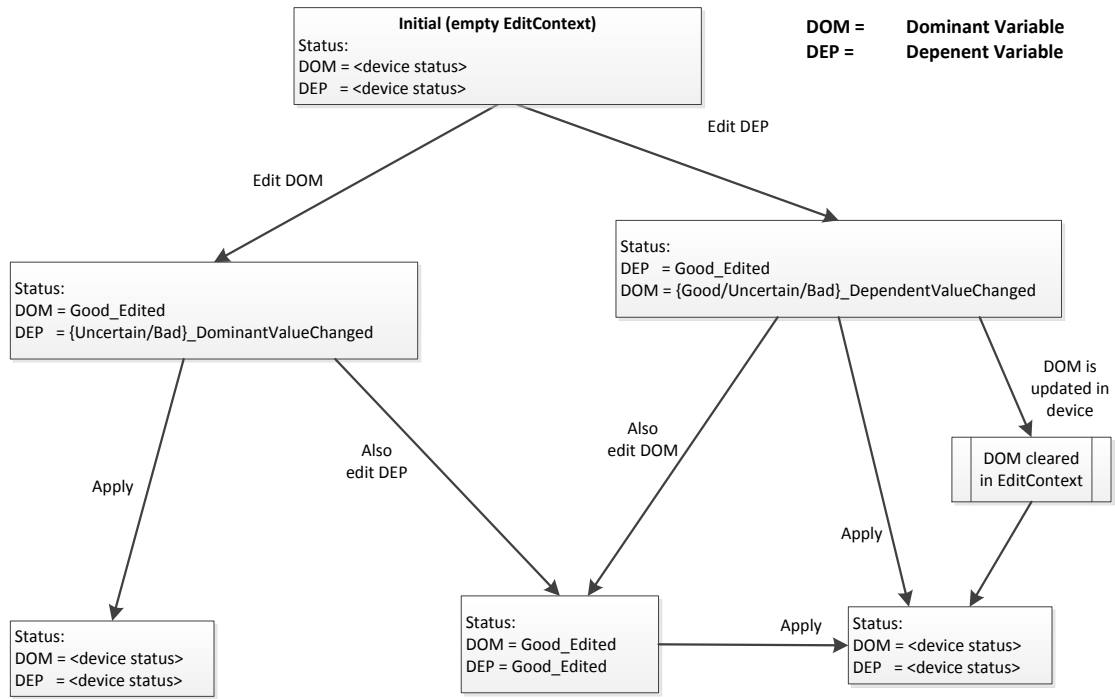
#### 2.1 EditContext behaviour for dominant and dependent Variables

<b>Errata Version</b>	1.0
<b>Spec Reference</b>	FDI_2023 Server V1.0.3
<b>FDI Issue #</b>	5814
<b>Problem Statement</b>	Section 5.6.6 specifies the behaviour and status changes when dominant and dependent Variables are managed in an EditContext. This description is lacking specific cases where the device status of these variables is Uncertain or Bad. Furthermore, the textual description is hard to follow.
<b>Solution</b>	Add new status codes for cases where the device status is Uncertain or Bad. Use graphics to illustrate the states and transitions.  The new text for section 5.6.6 follows this table.

#### Writing dominant and dependent variables (replaces section 5.6.6 in Part 3)

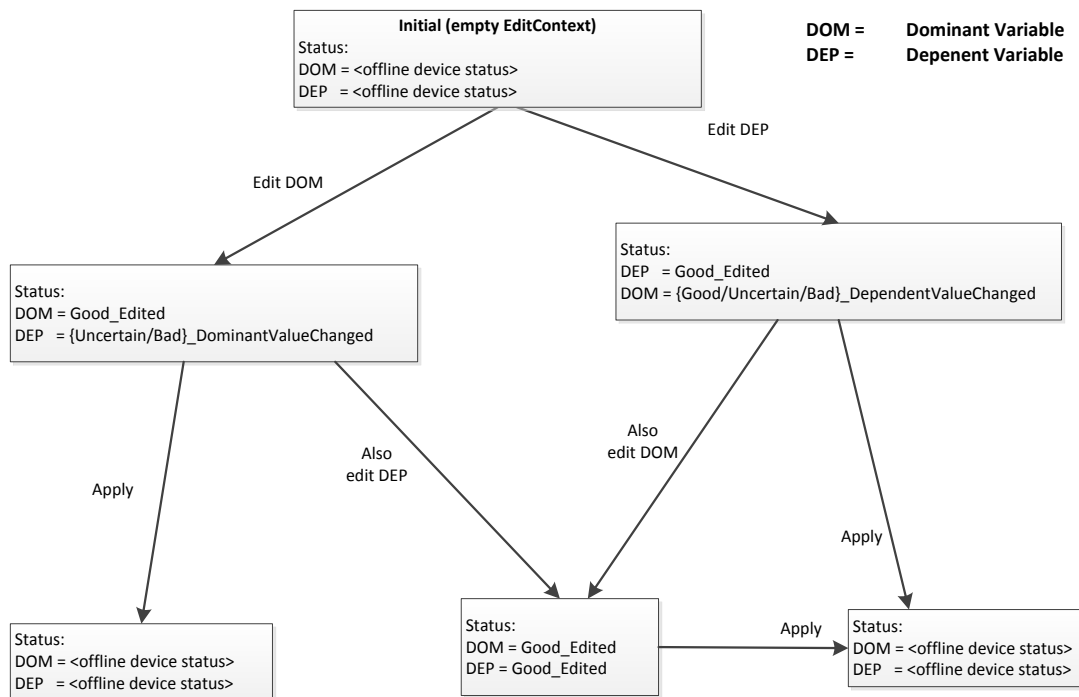
In some cases the value of a Variable depends on the value of another Variable. An example is a Variable that represents a temperature measurement and a second Variable that specifies the unit (e.g. Celsius or Fahrenheit). For this specification we call these “dominant” Variable (in the example the Unit) and “dependent” Variables (the temperature measurement). Dependencies between dominant and dependent Variables are only evaluated when writing to the online Device, not in the EditContext. For the example above it means that changes to the engineering unit cause a recalculation of the temperature measurement by the online device.

When such Variables are edited, the FDI Server shall follow the state diagrams specified in Figure for “Online” and Figure for Offline. These diagrams specify the states and transitions during the editing process of this kind of Variables. Status is the StatusCode that FDI Clients will receive with the Value when monitoring or reading these Variables with the ContextNodeld. For dependent Variables any Good or Uncertain StatusCode transfers to an Uncertain\_DominantValueChanged and a Bad to Bad\_DominantValueChanged. For dominant Variables a Good transfers into Good\_DependentValueChanged, an Uncertain into Uncertain\_DependentValueChanged and a Bad to Bad\_DependentValueChanged.



**Figure – Online EditContext state diagram for dominant and dependent Variables**

NOTE If both the dominant and the dependent Variable are to be changed, it is highly recommended for the online case to make these changes in subsequent editing sessions. Systems may enforce this.



**Figure – Offline EditContext state diagram for dominant and dependent Variables**

## 2.2 Variables that become invalid in EditContext

<b>Errata Version</b>	1.0
<b>Spec Reference</b>	FDI_2023 Server V1.0.3
<b>FDI Issue #</b>	5812
<b>Problem Statement</b>	The handling Variables that become invalid while they are managed in an EditContext is not defined.
<b>Solution</b>	<p>Add the following behavior as new sub clause to Part 3, section 5.6.:</p> <p>When a Variable becomes invalid that is edited and managed in an EditContext and not already applied to the Online Device or the Offline data set, the Variable is removed from the EditContext. That means that the edited value shall neither be applied when the EditContext gets applied nor shall the EditContext restore the edited value when the Variable becomes valid again.</p>

## 3 FDI Specification: Part 5 – Information Model

### 3.1 Additional Status Codes for EditContext

<b>Errata Version</b>	1.0
<b>Spec Reference</b>	FDI_2025 InformationModel V1.0.2
<b>FDI Issue #</b>	5814
<b>Problem Statement</b>	<p>See clause 2.1.</p> <p>The Information Model has to fulfil the model described in Part 3 – Server.</p>
<b>Solution</b>	<p>Add new status codes for cases where the device status is Uncertain or Bad.</p> <ul style="list-style-type: none"><li>• Bad_DominantValueChanged</li><li>• Uncertain_DependentValueChanged</li><li>• Bad_DependentValueChanged</li></ul>

## 4 FDI Specification: Part 6 – Technology Mapping

### 4.1 Define how to bind to the correct FDI Library version

<b>Errata Version</b>	1.0
<b>Spec Reference</b>	FDI_2026 TechnologyMapping V1.0.2
<b>FDI Issue #</b>	5813
<b>Problem Statement</b>	It is not well-defined how Client and UIP will be able to bind to the correct FDI Library version
<b>Solution</b>	<p>The FDI Type Library shall use the 'Microsoft .NET Publisher Policy' – Mechanism to handle minor and revision changes of the fdi.dll file that might be necessary over time to not break the strong name requirement and to ensure that binding is also possible for UIPs requiring older versions of the FDI Type Library.</p> <p>The new text for section 4.1.3 follows this table.</p>

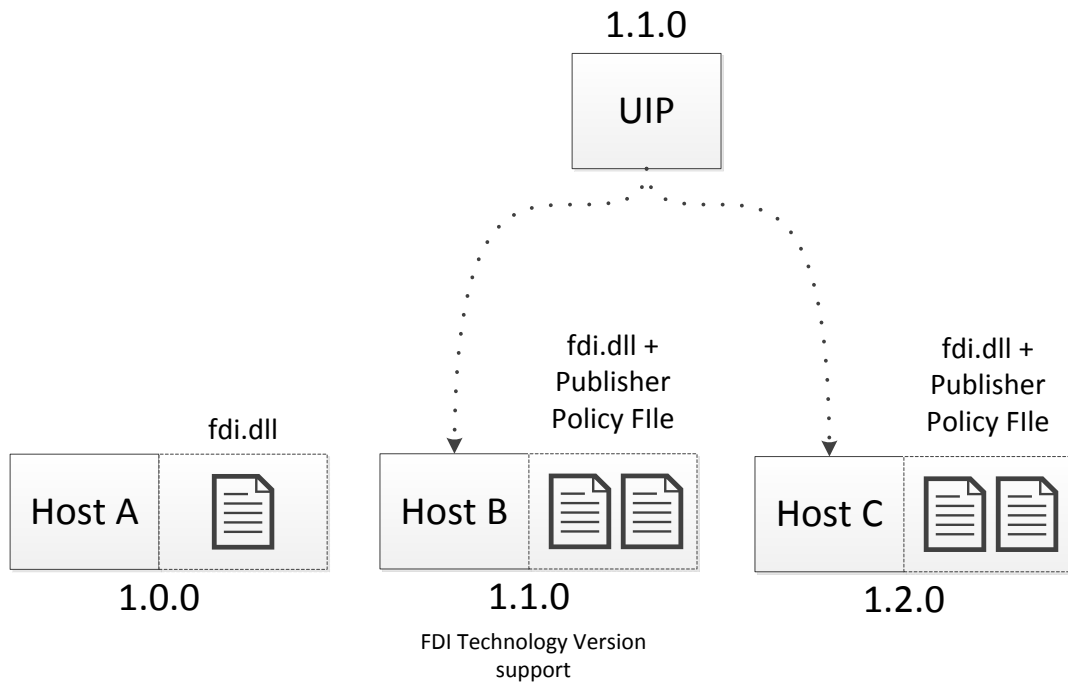
#### 4.1.3 FDI Type Library

The Device Access Services and the UIP Services can be modelled as .NET interfaces passing .NET data type arguments. These interfaces and data types are used for the data exchange and interaction between the UIP and the FDI Client. For runtime error handling purposes during interface method calls .NET exceptions classes are defined.

The FDI .NET interfaces, data types, and exception classes are defined in a single FDI Type Library. The FDI Type Library is a strong named Assembly. The file name of this Assembly shall be 'fdi.dll'. The fdi.dll shall be versioned as per *FDI2021 8.1*. The FDI Type Library is part of the FDI Core Technology as per *FDI2021 8.3.2.1*. and therefore directly influences the FDI Technology Version. All Compatible changes of the fdi.dll lead to an increase of the minor portion of the FDI Technology Version. Incompatible changes lead to an increase of the major portion of the FDI Technology Version (see *FDI2021 8.3.2.2*).

The FDI Type Library is signed with a single unique key by the issuer of the file. The FDI Type Library shall be installed separately as part of every FDI Client installation. User Interface Plug-Ins (UIP) and the FDI Client Application shall use this instance of the fdi.dll. UIPs shall not carry or deploy the FDI Type Library. The FDI Client is responsible to provide means to allow updates of this type library over time.





FDI Type Libraries shall not be registered within the Global Assembly Cache.

The FDI Client shall only install a single entity of the FDI Type Library per major FDI Technology Version. The FDI Type Library shall use the 'Microsoft .NET Publisher Policy' – Mechanism ([http://msdn.microsoft.com/en-us/library/06d2bae3\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/06d2bae3(v=vs.110).aspx)) to handle minor and revision changes of the fdi.dll file that might be necessary over time to not break the strong name requirement and to ensure that binding is also possible for UIPs requiring older versions of the FDI Type Library.

By using the mentioned mechanism an additional Publisher Policy File describes how the fdi.dll behaves when binding as a previous version is requested by a UIP. The Publisher Policy File shall be deployed into the same location than the FDI Type Library itself. The Publisher Policy File, handling all previously released minor versions and revisions shall be provided by the issuer of the FDI Type Library with every release (except the initial release since this version does not require a Publisher Policy File)..