Field device tool (FDT) interface specification - Part 302: Communication profile integration - IEC 61784 CPF 2

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NATIONAL FOREWORD

See Eesti standard EVS-EN 62453-302:2017 sisaldab Euroopa standardi EN 62453-302:2017 ingliskeelset teksti.	This Estonian standard EVS-EN 62453-302:2017 consists of the English text of the European standard EN 62453-302:2017.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 08.12.2017.	Date of Availability of the European standard is 08.12.2017.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 25.040.40, 35.100.05, 35.110

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62453-302

December 2017

ICS 25.040.40; 35.100.05; 35.110

Supersedes EN 62453-302:2009

English Version

Field device tool (FDT) interface specification - Part 302: Communication profile integration - IEC 61784 CPF 2 (IEC 62453-302:2016)

Spécification des interfaces des outils des dispositifs de terrain (FDT) - Partie 302: Intégration des profils de communication - CPF 2 de l'IEC 61784 (IEC 62453-302:2016)

Field Device Tool (FDT)-Schnittstellenspezifikation - Teil 302: Integration von Kommunikationsprofilen - Kommunikationsprofilfamilie (CPF) 2 nach IEC 61784 (IEC 62453-302:2016)

This European Standard was approved by CENELEC on 2016-07-19. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN 62453-302:2017 E

European foreword

The text of document 65E/336/CDV, future edition 1 of IEC 62453-302:2016, prepared by SC 65E "Devices and integration in enterprise systems", of IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62453-302:2017.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2018-06-08
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2020-12-08

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62453-302:2016 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61131-3:2013	NOTE Harmonized as EN 61131-3:2013
IEC 62453-1:2009	NOTE Harmonized as EN 62453-1:2009
IEC/TR 62453-41:2009	NOTE Harmonized as CLC/TR 62453-41:2009
IEC/TR 62453-502:2009	NOTE Harmonized as CLC/TR 62453-502:2009

Annex ZA
(normative)
Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 61158-2	-	Industrial communication networks - Fieldbus specifications - Part 2: Physical layer specification and service definition	EN 61158-2	-
IEC 61158-3-2	-	Industrial communication networks - Fieldbus specifications - Part 3-2: Data-link layer service definition - Type 2 elements	EN 61158-3-2	-
IEC 61158-4-2	-	Industrial communication networks - Fieldbus specifications - Part 4-2: Data-link layer protocol specification - Type 2 elements	EN 61158-4-2	-
IEC 61158-5-2	2014	Industrial communication networks - Fieldbus specifications -- Part 5-2: Application layer service definition - Type 2 elements	EN 61158-5-2	2014
IEC 61158-6-2	2014	Industrial communication networks - Fieldbus specifications - Part 6-2: Application layer protocol specification - Type 2 elements	EN 61158-6-2	2014
IEC 61784-1	-	Industrial communication networks - Profiles -- Part 1: Fieldbus profiles	EN 61784-1	-
IEC 61784-2	-	Industrial communication networks - Profiles - Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC 8802-3	EN 61784-2	-
IEC 61784-3-2	2010	Industrial communication networks - Profiles -- Part 3-2: Functional safety fieldbuses - Additional specifications for CPF 2	EN 61784-3-2	2010
IEC 62026-3	-	Low-voltage switchgear and controlgear - Controller-device interfaces (CDIs) -- Part 3: DeviceNet	-	-
IEC 62453-1	-	Field Device Tool (FDT) interface specification -- Part 1: Overwiew and guidance	EN 62453-1	-
IEC 62453-2	-	Field Device Tool (FDT) Interface Specification - Part 2: Concepts and detailed Description	EN 62453-2	-
ISO 15745-2	2003	Industrial automation systems and integration -- Open systems application integration framework -- Part 2: Reference description for ISO 11898-based control systems	-	-
ISO 15745-3	2003	Industrial automation systems and integration - Open systems application integration framework -- Part 3: Reference description for IEC 61158 based control systems	-	-

CONTENTS

INTRODUCTION

This part of IEC 62453 is an interface specification for developers of FDT (Field Device Tool) components for function control and data access within a client/server architecture. The specification is a result of an analysis and design process to develop standard interfaces to facilitate the development of servers and clients by multiple vendors that need to interoperate seamlessly.

With the integration of fieldbusses into control systems, there are a few other tasks which need to be performed. In addition to fieldbus- and device-specific tools, there is a need to integrate these tools into higher-level system-wide planning or engineering tools. In particular, for use in extensive and heterogeneous control systems, typically in the area of the process industry, the unambiguous definition of engineering interfaces that are easy to use for all those involved is of great importance.

A device-specific software component, called DTM (Device Type Manager), is supplied by the field device manufacturer with its device. The DTM is integrated into engineering tools via the FDT interfaces defined in this specification. The approach to integration is in general open for all kinds of fieldbusses and thus meets the requirements for integrating different kinds of devices into heterogeneous control systems.

Figure 1 shows how IEC 62453-302 is aligned in the structure of the IEC 62453 series.

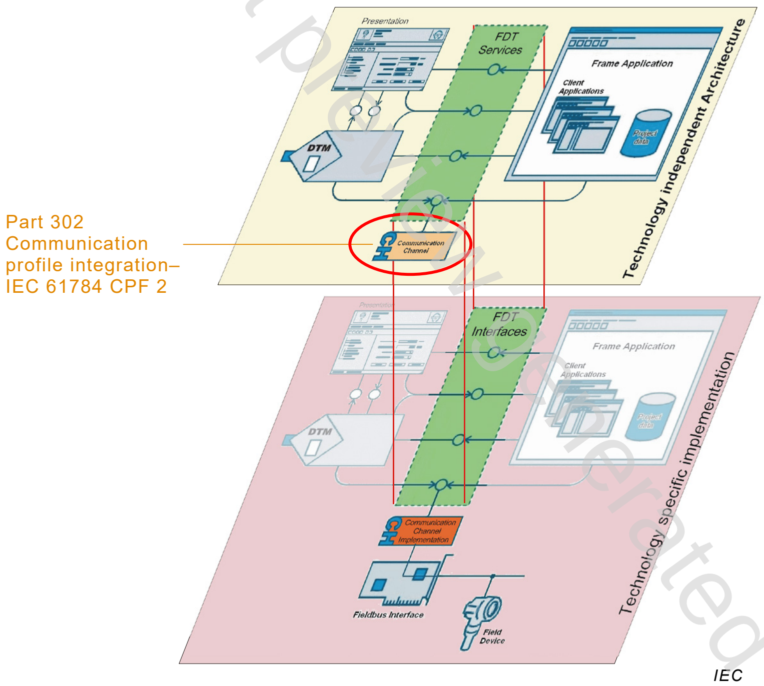

Figure 1 – Part 302 of the IEC 62453 series

FIELD DEVICE TOOL (FDT) INTERFACE SPECIFICATION –

Part 302: Communication profile integration – IEC 61784 CPF 2

1 Scope

Communication Profile Family 2 (commonly known as CIP™[2]) defines communication profiles based on IEC 61158-2 Type 2, IEC 61158-3-2, IEC 61158-4-2, IEC 61158-5-2, IEC 61158-6-2, and IEC 62026-3. The basic profiles CP 2/1 (ControlNet™[3]), CP 2/2 (EtherNet/IP™[4]), and CP 2/3 (DeviceNet™[2]) are defined in IEC 61784-1 and IEC 61784-2. An additional communication profile (CompoNet™[2]), also based on CIP™, is defined in [15].

This part of IEC 62453 provides information for integrating the CIP™ technology into the FDT interface specification (IEC 62453-2).

This part of IEC 62453 specifies communication and other services.

This specification neither contains the FDT specification nor modifies it.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61158-2, *Industrial communication networks – Fieldbus specifications – Part 2: Physical layer specification and service definition*

IEC 61158-3-2, *Industrial communication networks – Fieldbus specifications – Part 3-2: Data-link layer service definition – Type 2 elements*

IEC 61158-4-2, *Industrial communication networks – Fieldbus specifications – Part 4-2: Data-link layer protocol specification – Type 2 elements*

IEC 61158-5-2:2014, *Industrial communication networks – Fieldbus specifications – Part 5-2: Application layer service definition – Type 2 elements*

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2 CIP™ (Common Industrial Protocol), DeviceNet™ and CompoNet™ are trade names of Open DeviceNet Vendor Association, Inc (ODVA). This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the trade name holder or any of its products. Compliance to this standard does not require use of the trade names CIP™, DeviceNet™ or CompoNet™. Use of the trade names CIP™, DeviceNet™ or CompoNet™ requires permission of Open DeviceNet Vendor Association, Inc.

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