PD CLC/TR IEC 62453-41:2019

BSI Standards Publication

Field device tool (FDT) interface specification

Part 41: Object model integration profile – Common object model (IEC TR 62453-41:2016)

bsi.

National foreword

This Published Document is the UK implementation of CLC/TR IEC 62453-41:2019. It is identical to IEC TR 62453-41:2016. It supersedes PD CLC/TR 62453-41:2009, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/65/3, Industrial communications: process measurement and control, including fieldbus.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Published by BSI Standards Limited 2019

ISBN 978 0 539 02869 0

ICS 25.040.40; 35.100.05; 35.110

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 30 April 2019.

Amendments/corrigenda issued since publication

Date	Text affected

TECHNICAL REPORT

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

CLC/TR IEC 62453-41

April 2019

ICS 25.040.40; 35.100.05; 35.110

Supersedes CLC/TR 62453-41:2009

English Version

Field device tool (FDT) interface specification - Part 41: Object model integration profile - Common object model (IEC TR 62453-41:2016)

Spécification des interfaces des outils des dispositifs de terrain (FDT) - Partie 41: Profil d'intégration des modèles objet - Modèle objet commun
(IEC TR 62453-41:2016)

Field Device Tool (FDT)-Schnittstellenspezifikation - Teil 41: Profil zur Integration des Objektmodells - Allgemeines Objektmodell (COM)
(IEC TR 62453-41:2016)

This Technical Report was approved by CENELEC on 2019-03-18.

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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

European foreword

This document (CLC/TR IEC 62453-41:2019) consists of the text of the IEC TR 62453-41:2016 prepared by 65E: "Devices and integration in enterprise systems", of IEC technical committee 65: "Industrial process measurement, control and automation".

This document supersedes CLC/TR 62453-41:2009.

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.

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 61784	series	Industrial communication networks - Profiles	EN 61784	series
IEC 62453-1	2016	Field device tool (FDT) interface specification - Part 1: Overview and guidance	EN 62453-1	2017
IEC 62453-2	2016	Field device tool (FDT) interface specification - Part 2: Concepts and detailed description	EN 62453-2	2017

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FIELD DEVICE TOOL (FDT) INTERFACE SPECIFICATION –

Part 41: Object model integration profile – Common object model

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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IEC TR 62453-41, which is a technical report, 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 2009, and constitutes a technical revision.

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

a) correction of specification for bus master configuration;

b) correction of specification for propagation of changes;

c) correction of description of DTM services for online operation.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
65E/437/DTR	65E/485/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

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

A list of all parts of the IEC 62453 series, under the general title *Field Device Tool (FDT) interface specification*, can be found on the IEC website.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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.

INTRODUCTION

This Part of IEC 62453, which is a technical report, 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 kind of fieldbusses and thus meets the requirements for integrating different kinds of devices into heterogeneous control systems.

Figure 1 shows how IEC TR 62453-41 is incorporated in the structure of the IEC 62453 series.

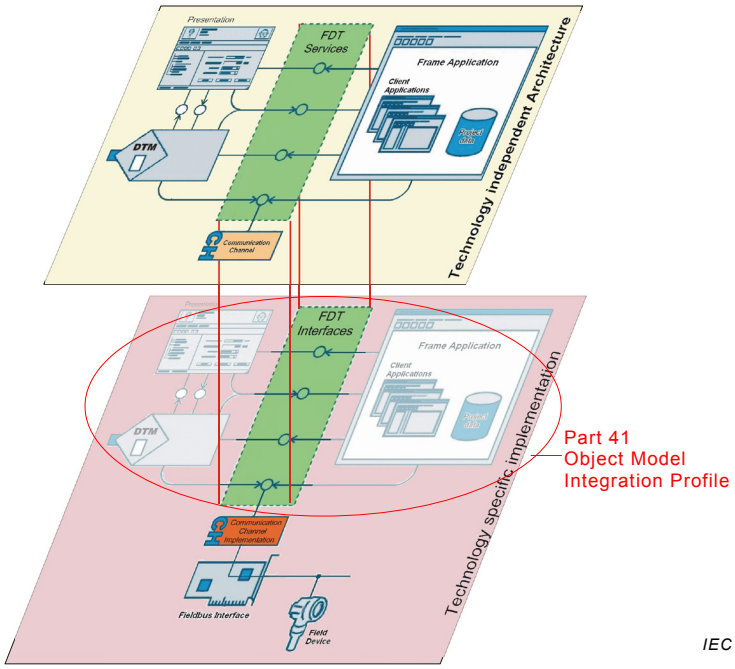

Figure 1 – Part 41 of the IEC 62453 series

FIELD DEVICE TOOL (FDT) INTERFACE SPECIFICATION –

Part 41: Object model integration profile – Common object model

1 Scope

This part of IEC 62453, which is a technical report, defines how the common FDT principles are implemented based on the Microsoft[1] COM technology, including the object behavior and object interaction via COM interfaces.

This part specifies the technology-specific implementation of the protocol-specific functionality and communication services.

This part of IEC 62453 is informative, however when this part is applied its requirements need to be implemented as specified.

This part specifies FDT version 1.2.1.

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 61784 (all parts*), Industrial communication networks – Profiles*

IEC 62453-1:—[2], *Field Device Tool (FDT) interface specification – Part 1: Overview and guidance*

IEC 62453-2:—[2], *Field Device Tool (FDT) interface specification – Part 2: Concepts and detailed description*

3 Terms, definitions, abbreviations and conventions

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62453-1, IEC 62453-2 as well as the following apply.

3.1.1
ActiveX®[3]
GUI component technology based on the Microsoft Component Object Model (COM/DCOM)

Note 1 to entry: Former standard was OLE controls (OCX).

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1 See Annex I.

2 To be published concurrently with this technical report.

3 See Annex I.