

**Field device tool (FDT) interface specification -
Part 506: Communication implementation for common object model -
IEC 61784 CPF 6
(IEC/TR 62453-506:2009)**

Spécification des interfaces des outils
des dispositifs de terrain (FDT) -
Partie 506: Implémentation
des communications
pour le modèle objet commun -
CEI 61784 CPF 6
(CEI/TR 62453-506:2009)

Field Device Tool (FDT)-
Schnittstellenspezifikation -
Teil 506: Kommunikationsimplementierung
mit dem allgemeinen Objektmodell (COM) -
Kommunikationsprofilfamilie (CPF) 6
nach IEC 61784
(IEC/TR 62453-506:2009)

This Technical Report was approved by CENELEC on 2009-10-01.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 65E/69/CDV, future edition 1 of IEC/TR 62453-506, 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 was approved by CENELEC as CLC/TR 62453-506 on 2009-10-01.

This standard is to be used in conjunction with EN 62453-3xy series.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the Technical Report IEC/TR 62453-506:2009 was approved by CENELEC as a Technical Report without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61784-1

NOTE Harmonized as EN 61784-1:2008 (not modified).

This document is a preview generated by EVS

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62453-1	2009	Field device tool (FDT) interface specification - Part 1: Overview and guidance	EN 62453-1	2009
IEC 62453-2	2009	Field device tool (FDT) interface specification - Part 2: Concepts and detailed description	EN 62453-2	2009
IEC/TR 62453-41	2009	Field device tool (FDT) interface specification - Part 41: Object model integration profile - Common object model	CLC/TR 62453-41	2009
IEC 62453-306	2009	Field device tool (FDT) interface specification - Part 306: Communication profile integration - IEC 61784 CPF 6	EN 62453-306	2009

This document is a preview generated by EVS

CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms, definitions, symbols, abbreviated terms and conventions	6
3.1 Terms and definitions	6
3.2 Symbols and abbreviated terms.....	6
3.3 Conventions	7
3.3.1 Data type names and references to data types	7
3.3.2 Vocabulary for requirements	7
4 Bus category	7
5 Access to instance and device data	7
6 Protocol specific behavior	7
7 Protocol specific usage of general data types	8
8 Network management data types	8
8.1 General.....	8
8.2 Interbus Device Address	8
9 Communication data types – FDTInterbusPCPCCommunicationSchema	8
10 Channel parameter data types – FDTInterbusChannelParameterSchema	11
11 Device identification	12
11.1 Device type identification data types – FDTInterbusIdentSchema	12
11.2 Topology scan data types – DTMInterbusDeviceSchema	13
11.3 Scan identification data types – FDTInterbusScanIdentSchema	14
11.4 Device type identification data types – FDTInterbusDeviceIdentSchema	16
11.5 XSLT Transformation	18
Bibliography.....	28
Figure 1 – Part 506 of the IEC 62453 series	5
Table 1 – Protocol specific usage of general data types.....	8

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIELD DEVICE TOOL (FDT) INTERFACE SPECIFICATION –

**Part 506: Communication implementation for common object model –
IEC 61784 CPF 6**

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC/TR 62453-506, 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 part, in conjunction with the other parts of the first edition of the IEC 62453 series cancels and replaces IEC/PAS 62453-1, IEC/PAS 62453-2, IEC/PAS 62453-3, IEC/PAS 62453-4 and IEC/PAS 62453-5 published in 2006, and constitutes a technical revision.

Each part of the IEC/TR 62453-5xy series is intended to be read in conjunction with its corresponding part in the IEC 62453-3xy series.

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

Enquiry draft	Report on voting
65E/69/DTR	65E/118/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.

The 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 maintenance result 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 publication using a colour printer.

generated by EVS

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 kind of fieldbusses and thus meets the requirements for integrating different kinds of devices into heterogeneous control systems.

Figure 1 shows how IEC/TR 62453-506 is aligned in the structure of IEC 62453 series.

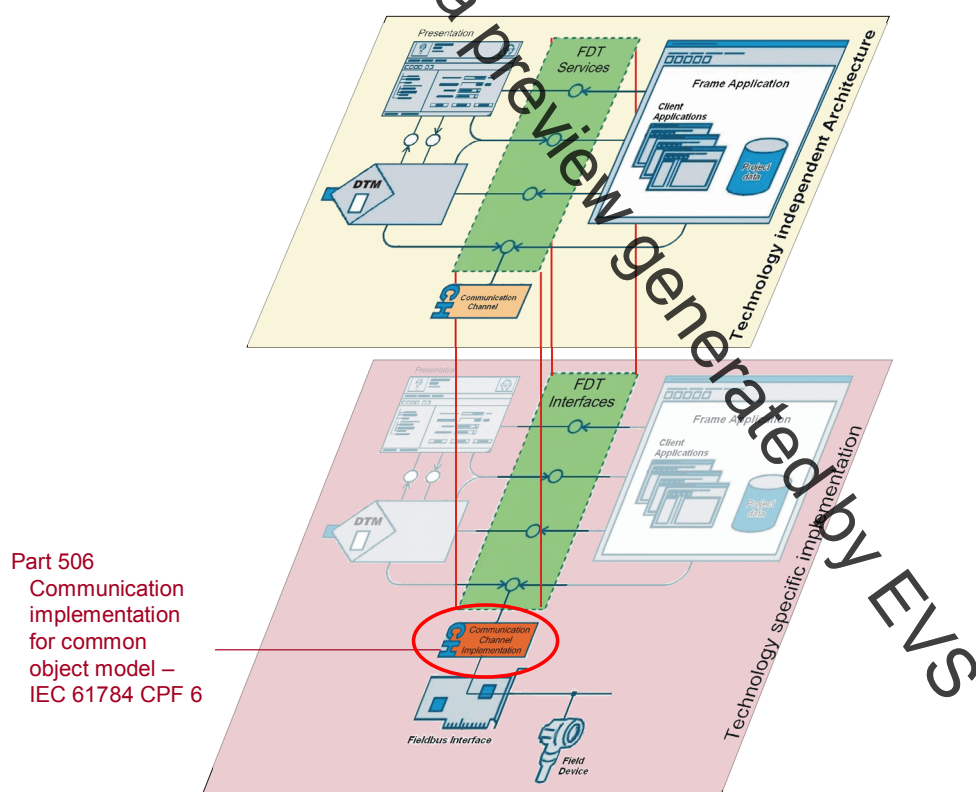


Figure 1 – Part 506 of the IEC 62453 series

FIELD DEVICE TOOL (FDT) INTERFACE SPECIFICATION –

Part 506: Communication implementation for common object model – IEC 61784 CPF 6

1 Scope

IEC/TR 62453-506, which is a technical report, provides information for integrating the INTERBUS®¹ technology into the COM based implementation of FDT interface specification (IEC 62453-41).

This part of the IEC 62453 specifies communication and other services.

This specification neither contains the FDT specification nor modifies it.

2 Normative references

The following referenced documents are indispensable for the application of this specification. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62453-1:2009, *Field Device Tool (FDT) interface specification – Part 1: Overview and guidance*

IEC 62453-2:2009, *Field Device Tool (FDT) interface specification – Part 2: Concepts and detailed description*

IEC 62453-41:2009, *Field Device Tool (FDT) interface specification – Part 41: Object model integration profile – Common object model*

IEC 62453-306:2009, *Field Device Tool (FDT) interface specification – Part 306: Communication profile integration – IEC 61784 CPF 6*

3 Terms, definitions, symbols, abbreviated terms and conventions

3.1 Terms and definitions

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

3.2 Symbols and abbreviated terms

For the purpose of this document, the symbols and abbreviations given in IEC 62453-1, IEC 62453-2 apply.

¹ INTERBUS® is the trade name of Phoenix Contact GmbH & Co. KG., control of trade name use is given to the non profit organisation INTERBUS Club. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by IEC of the trademark holder or any of its products. Compliance to this profile does not require use of the trade name INTERBUS. Use of the trade name INTERBUS requires permission of the INTERBUS Club.