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TECHNICAL REPORT

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Field device tool (FDT) interface specification – Part 502: Communication implementation for common object model – IEC 61784 CPF 2

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CONTENTS

FOREWORD 3
INTRODUCTION 5
1 Scope 6
2 Normative references 6
3 Terms, definitions, symbols, abbreviated terms and conventions 7
3.1 Terms and definitions 7
3.2 Symbols and abbreviated terms 7
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 8
5 Access to instance and device data 8
6 Protocol specific behavior 8
7 Protocol specific usage of general data types 8
8 Protocol specific common data types – DTMCIPDataTypeSchema 8
9 Network management data types 11
9.1 General 11
9.2 Node address 11
9.3 Scanner/Master – Bus Parameter Set (CIP) – FDTCIPDTMParameterSchema 11
10 Communication data types 16
11 Channel parameter data types 17
12 Device identification 19
12.1 Device type identification data types – FDTCIPIdentSchema 19
12.2 Topology scan data types 19
12.3 Scan identification data types – FDTCIPScanIdentSchema 19
12.4 Device type identification data types – FDTCIPDeviceTypeIdentSchema 20
Annex A (informative) Implementation hints 21
Bibliography 22

Figure 1 – Part 502 of the IEC 62453 series 5

Table 1 – Protocol specific usage of general attributes 8

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIELD DEVICE TOOL (FDT) INTERFACE SPECIFICATION –

Part 502: Communication implementation for common object model – IEC 61784 CPF 2

FOREWORD

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IEC/TR 62453-502, 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/66/DTR	65E/115/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.

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 62453-502 is aligned in the structure of IEC 62453 series.

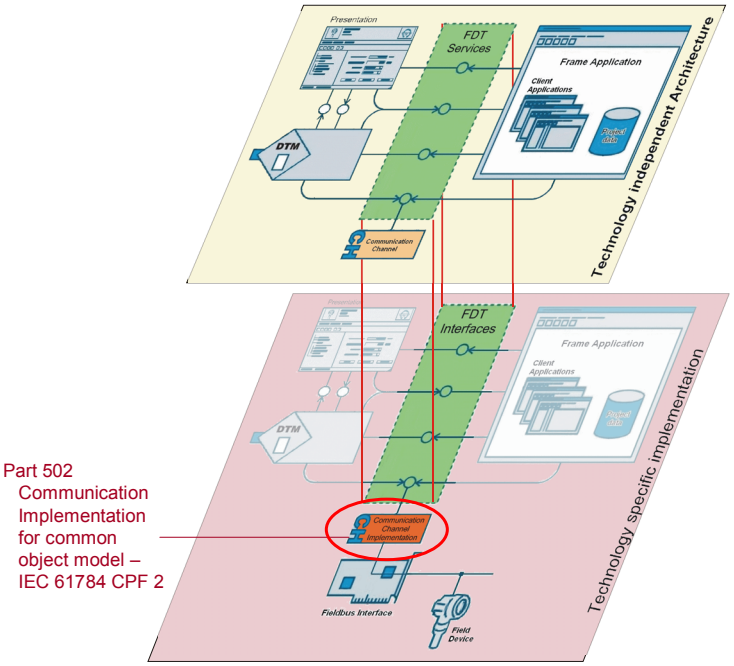


Figure 1 – Part 502 of the IEC 62453 series

FIELD DEVICE TOOL (FDT) INTERFACE SPECIFICATION –

Part 502: Communication implementation for common object model – IEC 61784 CPF 2

1 Scope

IEC/TR 62453-502, which is a technical report, provides information for integrating the CIP™ technology into the COM based implementation of FDT interface specification (IEC/TR 62453-5).

Communication Profile Family 2 (commonly known as CIP™[1]) defines communication profiles based on IEC 61158-2 Type 2, IEC 61158-3-2, IEC 61158-4-2, IEC 61158-5-2, and IEC 61158-6-2, IEC 62026-3. The basic profiles CP 2/1 (ControlNet™[2]), CP 2/2 (EtherNet/IP™[3]), and CP 2/3 (DeviceNet™[1]) are defined in IEC 61784-1 and IEC 61784-2. An additional communication profile (CompoNet™),also based on CIP™, is defined in [13].

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 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.

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

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1 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 International Standard 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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IEC 61158-6-2, *Industrial communication networks – Fieldbus specifications – Part 6-2: Application layer protocol specification – Type 2 elements*

IEC 61784-1, *Industrial communication networks – Profiles – Part 1: Fieldbus profiles*

IEC 61784-2, *Industrial communication networks – Profiles – Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC 8802-3*

IEC 62026-3, *Low-voltage switchgear and controlgear – Controller-device interfaces (CDIs) – Part 3: DeviceNet*

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

IEC 62453-302:2009, *Field Device Tool (FDT) interface specification – Part 302: Communication profile integration – IEC 61784 CPF 2*