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Edition 2.0 2016-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Field device tool (FDT) interface specification – Part 2: Concepts and detailed description

Spécification des interfaces des outils des dispositifs de terrain (FDT) – Partie 2: Concepts et description détaillée

IEC 62453-2:2016-12(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FIELD DEVICE TOOL (FDT) INTERFACE SPECIFICATION –

Part 2: Concepts and detailed description

FOREWORD

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International Standard IEC 62453-2 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. This edition constitutes a technical revision.

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

- Clarification for categories of DTMs (e.g. new category 'Composite Device DTM')
- Clarification: Command functions
- New concept: Static function
- Clarification for Communication Channel and communication
- Clarifications for identification

- Clarifications for scanning and DTM assignment
- New concept: PLC tool support

The text of this standard is based on the following documents:

CDV	Report on voting
65E/334/CDV	65E/334/RVC

Full information on the voting for the approval of this standard 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- withdrawn,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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours wich 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 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 fieldbuses 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 created according to this standard is called Device Type Manager (DTM). It integrates all device-specific data, functions and business rules into the system via the FDT services defined herein.

The FDT/DTM approach is open for all kind of fieldbuses and enables integration variety of devices into heterogeneous systems.

Figure 1 shows how this part of IEC 62453 is aligned in the structure of the IEC 62453 series.

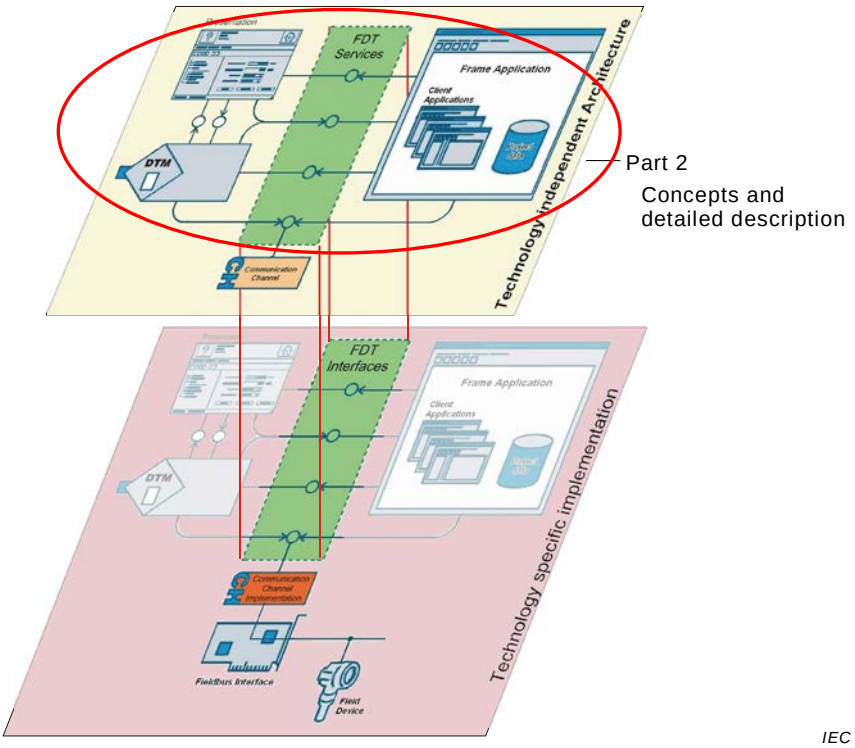

Figure 1 – Part 2 of the IEC 62453 series

FIELD DEVICE TOOL (FDT) INTERFACE SPECIFICATION –

Part 2: Concepts and detailed description

1 Scope

This part of IEC 62453 explains the common principles of the field device tool concept. These principles can be used in various industrial applications such as engineering systems, configuration programs and monitoring and diagnostic applications.

This standard specifies the general objects, general object behavior and general object interactions that provide the base of FDT.

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 61131 (all parts), *Programmable controllers*

IEC/TR 62390:2005, *Common automation device – Profile guideline*

IEC 62453-1:2016, *Field Device Tool (FDT) interface specification – Part 1: Overview and guidance*

IEC 62453-3xy (all parts), *Field Device Tool (FDT) interface specification – Part 3xy: Communication profile integration*

3 Terms, definitions, symbols, abbreviated terms and conventions

3.1 Terms and definitions

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

3.1.1
Child DTM
DTM instance in an FDT Project, which is classified by its relation to a Parent DTM

Note 1 to entry: Any DTM which uses FDT communication may be classified as Child DTM (i.e. Device DTM, Gateway DTM, Module DTM and BTM)

3.1.2
FDT version
implementation version defined by the related technology specific organization

Note 1 to entry: The FDT version is specified in IEC TR 62453-41 or in IEC TR 62453-42.

3.1.3
monolithic DTM
one single DTM that represents the complete device with all its modules