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FIELD DEVICE TOOL (FDT) INTERFACE SPECIFICATION –

Part 43: Object model integration profile – CLI and HTML

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IEC TS 62453-43 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation. It is a Technical Specification.

The text of this Technical Specification is based on the following documents:

Draft	Report on voting
65E/1115/DTS	65E/1146/RVDTS

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

The language used for the development of this Technical Specification is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 62543 series, published 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 document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

IMPORTANT – The "colour inside" logo on the cover page of this document 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.

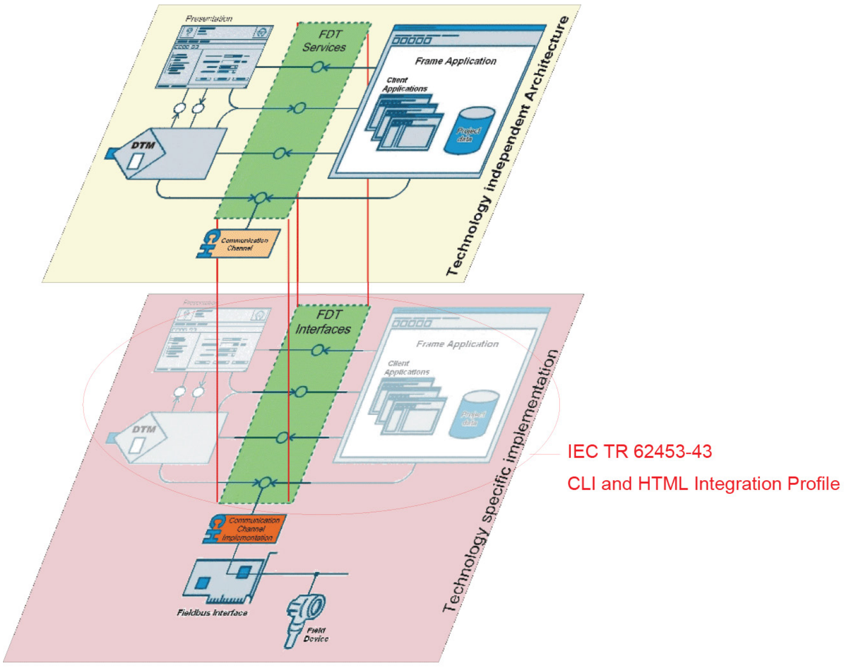
INTRODUCTION

This document 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-specific and device-specific tools, there is a need to integrate these tools into higher-level system-wide planning tools or engineering tools. In particular, for use in extensive and heterogeneous control systems, 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, in general, is open for all kind of fieldbuses and thus meets the requirements for integrating different kinds of devices into heterogeneous control systems.

Figure 1 shows how IEC TS 62453-43 is related to the IEC 62453 series.



IEC

Figure 1 – Relation of IEC TS 62453-43 to the IEC 62453 series

The document structure is:

- Clause 3 explains the used terms, definitions and conventions
- Clause 4 introduces the general concepts of IEC TS 62453-43
- Clause 5 describes the technical concepts used to implement IEC TS 62453-43 and how FDT concepts are mapped to .NET Standard
- Clause 6 provides an overview of the FDT Objects, their interfaces and behaviour
- Clause 7 presents an overview of the IEC TS 62453-43 datatypes
- Clause 8 shows the interaction of FDT Objects at runtime
- Clause 9 explains rules related to installation and deployment of DTMs
- Clause 10 explains how FDT life cycle concepts are implemented
- Clause 11 shows examples for Frame Application architectures

FIELD DEVICE TOOL (FDT) INTERFACE SPECIFICATION –

Part 43: Object model integration profile – CLI and HTML

1 Scope

This part of IEC 62453, which is a technical specification, specifies how the common FDT principles are implemented based on the CLI technology and web technologies for graphical user interfaces. The specification includes the object behaviour and object interaction via .NET Standard interfaces and JavaScript APIs. Emphasis has been placed on support of distributed Frame Application architectures.

This document specifies FDT version 3.0.

2 Normative references

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.

IEC 62453-1:2024, *Field Device Tool (FDT) interface specification – Part 1: Overview and guidance*

IEC 62453-2:2022, *Field Device Tool (FDT) interface specification – Part 2: Concepts and detailed description*