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PUBLICLY AVAILABLE SPECIFICATION

IEC PAS 62453-1

Pre-Standard

First edition
2006-05

withdrawn

Field Device Tool (FDT) interface specification –

Part 1:
Concepts and detailed description

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Field Device Tool (FDT) interface specification –

Part 1: Concepts and detailed description

FOREWORD

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The text of this PAS is based on the following document:	This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document
Draft PAS	**Report on voting**
65C/398A/NP	65C/411/RVN

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IEC 62453 consists of the following parts under the general title *Field Device Tool (FDT) interface specification:*

Part 1: Concepts and detailed description

Part 2: INTERBUS communication

Part 3: PROFIBUS communication

Part 4: HART communication

Part 5: FOUNDATION FIELDBUS communication

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INTRODUCTION

This PAS is an interface specification for developers of FDT 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 shall inter-operate seamlessly.

With the integration of fieldbusses into control systems, there are a few other tasks which must be performed. This applies to fieldbusses in general. Although there are fieldbus- and device-specific tools, there is no unified way to integrate those 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.

The attention of the reader is drawn to the fact that, throughout this PAS, references to versions other than Version 1.2.1 (this PAS) relate to earlier versions of this document published by the FDT Group (http://www.fdt-jig.org). For a list of changes introduced between Version 1.2 and this PAS, see Annex F.

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Field Device Tool (FDT) interface specification –

Part 1: Concepts and detailed description

1 Scope

1.1 Performance

This part of IEC 62453 includes the engineering and commissioning of field devices. Functionality for documentation and audit trail support is also considered. Examples and use cases are mainly given for actors, sensors and remote I/Os. Of course, FDT is prepared to be used for devices like drives, analyzers, recorders, etc. as well.

The FDT interfaces are designed in such a way as to support all significant fieldbus protocols. The main focus of this version of FDT does not lie on any specific fieldbus protocol. Due to the scalable structure of FDT it will be easy to add new schemas in order to extend the scope to new protocols.

The FDT concept allows a device manufacturer to provide his device specific functionality within an engineering system. So the main capacity of FDT depends on the functionality of the devices and the according applications.

This PAS is intended for developers who want to implement FDT components.

The FDT concept does not claim to provide a solution for all engineering tasks and the associated tools. Therefore, the engineering subjects "electrical wiring planning, mechanical planning, etc." or the plant management subjects such as "maintenance, optimization, archiving, etc." do not form part of the current performance range of FDT. Some of these aspects may be included with future versions of FDT.

1.2 Audience

This PAS is intended as reference material for developers of FDT compliant Frame Applications and DTMs. It is assumed that the reader is familiar with Microsoft ActiveX[1] technology and the needs of the Process Control industry or of the field devices.

This PAS is intended to facilitate development of DTMs and Frame Applications in the language of choice that supports Microsoft ActiveX. Therefore, the developer of the respective component is expected to be familiar with the technology required for the specific component.

Remember, FDT is a client/server architecture implemented in a first step with Microsoft COM.[2]

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[1] Microsoft ActiveX is the trade name of the a product supplied by Microsoft. This information is given for convenience of users of this document and does not constitute an endorsment by IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

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2 Normative references

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

ISO/IEC 19501:2005 *Information technology – Open Distributed Processing – Unified Modeling Language (UML) Version 1.4.2*