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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 41771.1-2022

Field device integration - Part 1: Overview

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foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1.Structure and Drafting Rules of Standardization Documents" drafted.

This document is part 1 of GB/T 41771 "Field Device Integration". GB/T 41771 has published the following parts.

--- Part 1.Overview;

--- Part 2.Client;

--- Part 3.Server;

--- Part 4.Packages;

--- Part 5.Information model.

This document is equivalent to IEC 62769-1.2021 "Field Device Integration (FDI) Part 1.Overview".

The following editorial changes have been made to this document.

--- Modify the name of this document to "Field Device Integration Part 1.Overview";

--- Delete the informative Appendix B problem report.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

Field device integration series standards are important technical standards to guide related activities such as industrial process measurement and control. GB/T 41771 aims to

To establish the normative criteria applicable to equipment integration, it is proposed to consist of fifteen parts.

--- Part 1.Overview. The purpose is to specify basic concepts such as the architecture of field device integration.

--- Part 2.Client. The purpose is to specify device access services, host services, user interface plug-in services for field device integration clients.

related requirements such as software and user interface description.

--- Part 3.Server. The purpose is to specify the information model of the field device integration server, OPCUA services, communication, etc.

Require.

--- Part 4.Packages. The purpose is to build a field device integration package model that provides the integration of devices, network components and communication servers into

All elements required by the system.

--- Part 5.Information model. The purpose is to specify the topology of the automation system, which is used to describe the equipment and communication of the automation system.

Connect Network.

--- Part 6.Technical mapping. The purpose is to specify a technical mapping of the concepts described in Field Device Integration.

--- Part 7.Communication equipment. The purpose is to specify the elements that enable communication capabilities.

--- Part 8.Profile General Agreement. The purpose is to specify the required communication servers, gateways and devices described in the Field Device Integration Package.

Details of the general protocol.

--- Part 9.Profile FOUNDATION Fieldbus H1.The purpose is to specify the integrated communication of field devices for H1 fieldbus technology

regulation.

--- Part 10.Profile Foundation Fieldbus HSE. The purpose is to specify the field device integration communication of HSE fieldbus technology.

Belief rules.

--- Part 11.Profile PROFIBUS. The purpose is to define the field device integrated communication profile of PROFIBUS technology.

--- Part 12.Profile PROFINET. The purpose is to define the field device integration communication profile of PROFINET technology.

--- Part 13.Profile HART and WirelessHART. The purpose is to specify the characteristics of HART and WirelessHART technologies

Field device integration communication profile.

--- Part 14.Profile Modbus-RTU. The purpose is to specify the field device integration communication profile of Modbus-RTU technology.

--- Part 15.Profile ISA100.The purpose is to specify the field device integrated communication profile of ISA100 technology.

Field Device Integration Part 1.Overview

1 Scope

This document specifies the concepts and overview of the Field Device Integration (FDI) specification.

This document applies to the integration of field devices in automation systems.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to

this document.

Overview and concepts)

Note. GB/T 33863.1-2017 OPC Unified Architecture Part 1.Overview and Concepts (IEC 62541-1.2010, IDT)

dressSpaceModel)

Note. GB/T 33863.3-2017 OPC Unified Architecture Part 3.Address Space Model (IEC 62541-3.2010, IDT)

Note. GB/T 33863.4-2017 OPC Unified Architecture Part 4.Services (IEC 62541-4.2011, IDT)

tionModel)

Note. GB/T 33863.5-2017 OPC Unified Architecture Part 5.Information Model (IEC 62541-5.2010, IDT)

DeviceInterface)

3.1 Terms and Definitions

IEC TR62541-1, IEC 62541-3, IEC 62541-4, IEC 62541-5, IEC 62541-100 and the following terms and

Definitions apply to this document.

3.1.1

Field device integration and device management technology, combining basic concepts with the technical content of the electronic device description language of IEC 61804,

IEC 62453 combined with FDT, see also IEC TR62541-1.

NOTE. The combination of those proven technologies ensures a secure lifecycle and the ability to handle device integration and device management challenges in a scalable model.

3.1.2

action action

A process that requires an FDI client to cooperate with an FDI server.

3.1.3

business logic

Description element of an FDI package that specifies device-specific behavior and/or mapping logic for nested communications.