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INTERNATIONAL STANDARD

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Field device integration (FDI) – Part 7: ~~FDI~~ Communication devices

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FIELD DEVICE INTEGRATION (FDI) –

Part 7: ~~FDI~~ Communication devices

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International Standard IEC 62769-7 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 2015. This edition constitutes a technical revision.

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

a) support for generic protocol extension for faster adoption of other technologies;
b) support of new protocols;
c) generic protocol extension to allow adoption of other communication protocols;
d) based on generic protocol extension: Modbus RTU.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
65E/764/FDIS	65E/774/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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~~b) Method and device for accessing a functional module of automation system, see Patent Family EP2182418;~~

~~c) Methods and apparatus to reduce memory requirements for process control system software applications, see Patent Family US2013232186;~~

~~d) Extensible Device Object Model, see Patent Family US12/893,680.~~

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– Part 1: Overview
– Part 2: FDI Client
– Part 3: FDI Server
– Part 4: FDI Packages
– Part 5: FDI Information Model
– Part 6: FDI Technology Mapping
– Part 7: FDI Communication Devices

- Part 100: Profiles – Generic Protocol Extensions
- Part 101-1: Profiles – Foundation Fieldbus H1
- Part 101-2: Profiles – Foundation Fieldbus HSE
- Part 103-1: Profiles – PROFIBUS
- Part 103-4: Profiles – PROFINET
- Part 109-1: Profiles – HART and WirelessHART
- Part 115-2: Profiles – Protocol-specific Definitions for Modbus RTU
- Part 150-1: Profiles – ISA 100.11a

FIELD DEVICE INTEGRATION (FDI) –

Part 7: ~~FDI~~ Communication devices

1 Scope

This part of IEC 62769 specifies the elements implementing communication capabilities called Communication Devices (IEC 62769-5).

The overall FDI architecture is illustrated in Figure 1. The architectural components that are within the scope of this document have been highlighted in this illustration. The document scope with respect to FDI Packages is limited to Communication Devices. The Communication Server shown in Figure 1 is an example of a specific Communication Device.

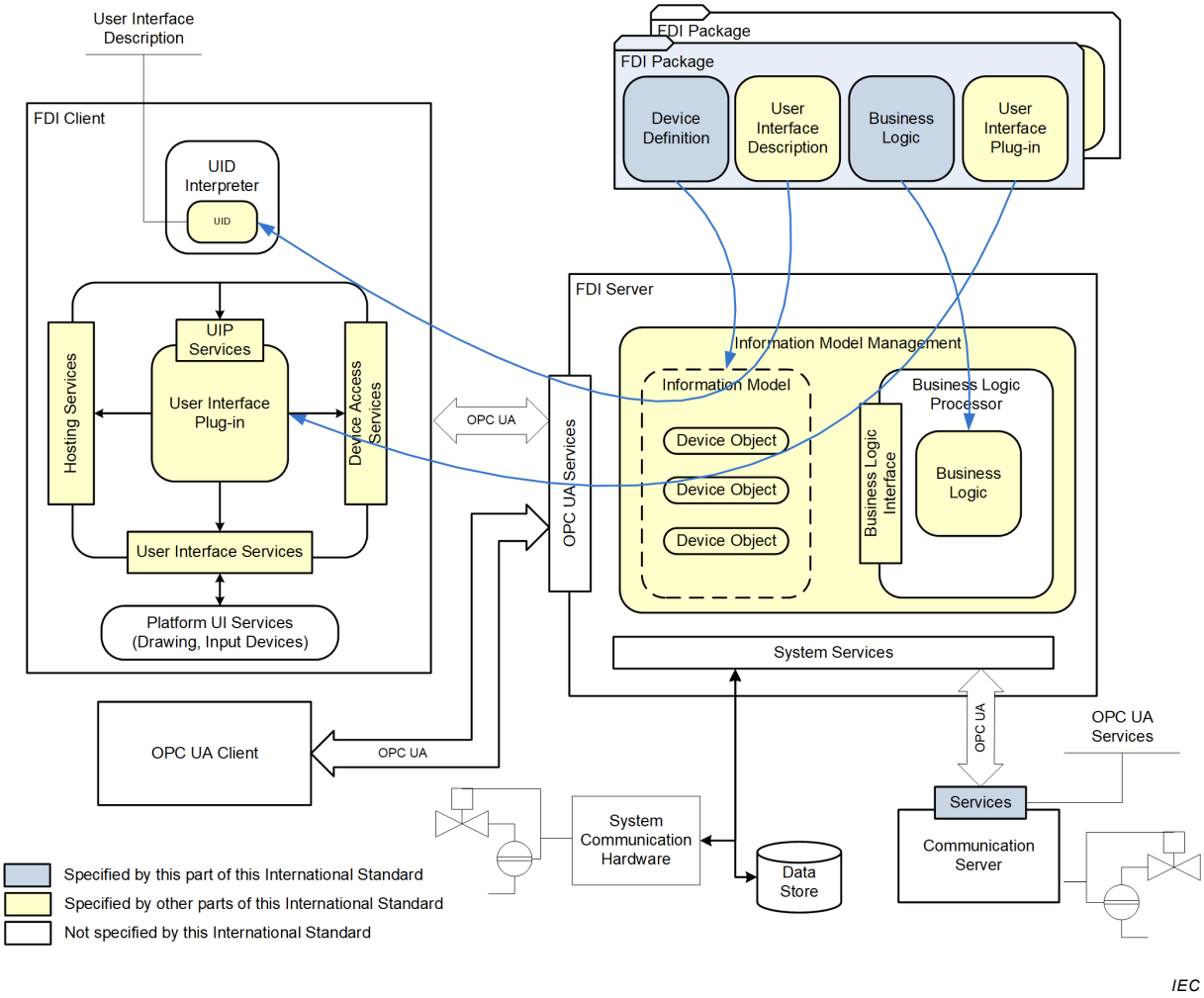

Figure 1 – FDI architecture diagram

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 61804-3, *Function blocks (FB) for process control and Electronic Device Description Language (EDDL) – Part 3: EDDL syntax and semantics*

IEC 61804-4, *Function blocks (FB) for process control and Electronic Device Description Language (EDDL) – Part 4: EDD interpretation*

IEC 62541 (all parts), *OPC Unified Architecture*

~~IEC TR 62541-1, *OPC Unified Architecture – Part 1: Overview and Concepts*~~

~~IEC 62541-4, *OPC Unified Architecture – Part 4: Services*~~

~~IEC 62541-6, *OPC Unified Architecture – Part 6: Mappings*~~

~~IEC 62541-7, *OPC Unified Architecture – Part 7: Profiles*~~

~~IEC 62541-100, *OPC Unified Architecture – Part 100: OPC UA for Devices*~~

IEC 62769-1, *Field Device Integration (FDI) – Part 1: Overview*

~~NOTE IEC 62769-1 is technically identical to FDI-2021.~~

IEC 62769-2, *Field Device Integration (FDI) – Part 2: FDI Client*

~~NOTE IEC 62769-2 is technically identical to FDI-2022.~~

IEC 62769-3, *Field Device Integration (FDI) – Part 3: FDI Server*

~~NOTE IEC 62769-3 is technically identical to FDI-2023.~~

IEC 62769-4:~~2015~~2020, *Field Device Integration (FDI) – Part 4: FDI Packages*

~~NOTE IEC 62769-4 is technically identical to FDI-2024.~~

IEC 62769-5, *Field Device Integration (FDI) – Part 5: FDI Information Model*

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Intégration des appareils de terrain (FDI) – Partie 7: Appareils de communication

IEC 62769-7:2021-02(en-fr)

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Part 7: Communication devices

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– Part 150-1: Profiles – ISA 100.11a

FIELD DEVICE INTEGRATION (FDI) –

Part 7: Communication devices

1 Scope

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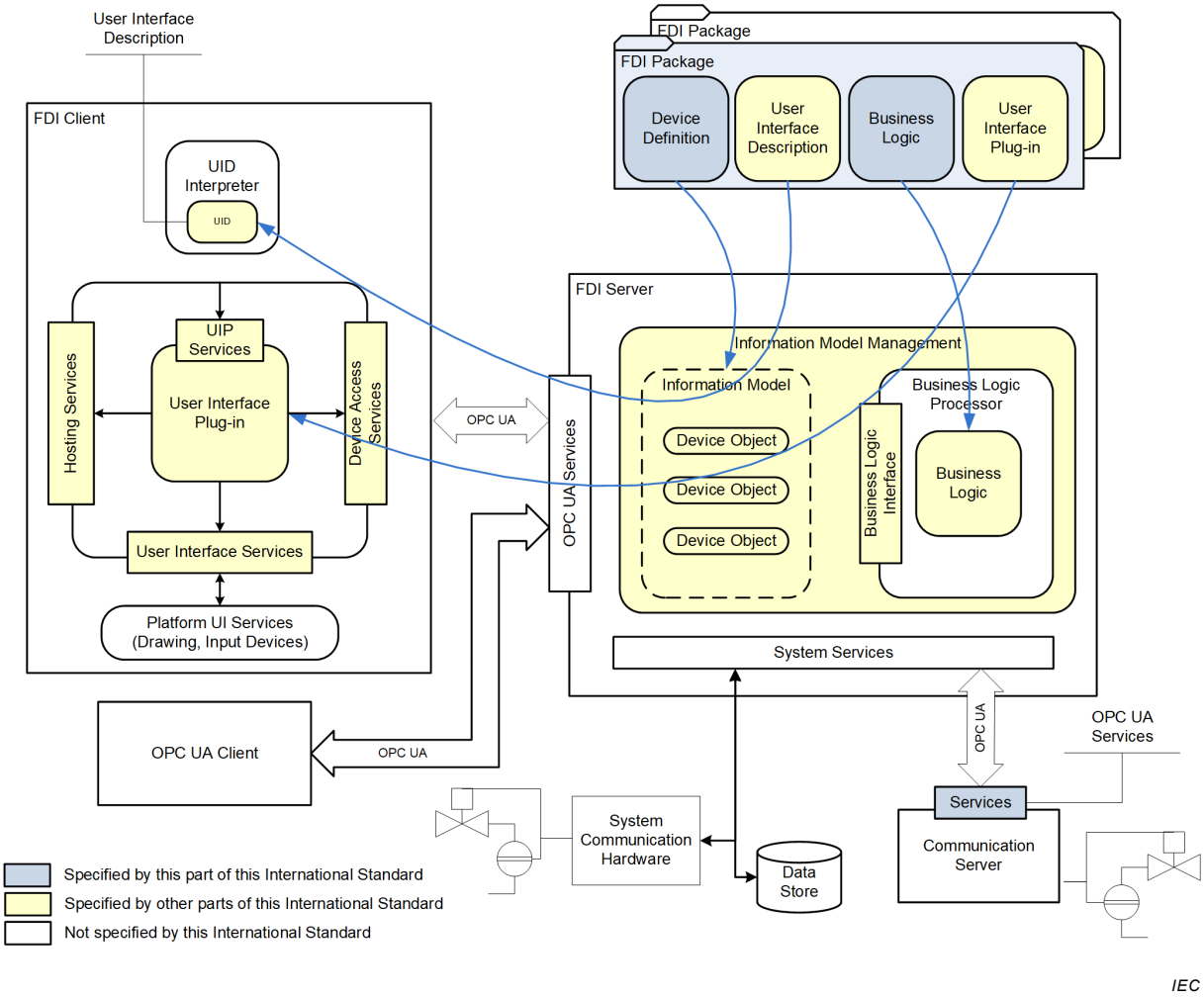

Figure 1 – FDI architecture diagram

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IEC 62769-4:2020, *Field Device Integration (FDI) – Part 4: FDI Packages*

IEC 62769-5, *Field Device Integration (FDI) – Part 5: FDI Information Model*

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INTÉGRATION DES APPAREILS DE TERRAIN (FDI) –

Partie 7: Appareils de communication

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Cette deuxième édition annule et remplace la première édition parue en 2015. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) prise en charge de l'extension de protocoles génériques qui visent à accélérer l'adoption d'autres technologies;

b) prise en charge de nouveaux protocoles;

c) extension de protocoles génériques qui permettent l'adoption d'autres protocoles de communication;

d) d'après l'extension de protocoles génériques: Modbus RTU.

Le texte de cette Norme internationale est issu des documents suivants:

FDIS	Rapport de vote
65E/764/FDIS	65E/774/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette Norme internationale.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

Une liste de toutes les parties de la série 62769, publiées sous le titre général *Intégration des appareils de terrain (FDI),* peut être consultée sur le site web de l'IEC.

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INTRODUCTION

La série IEC 62769 est publiée sous le titre général "*Intégration des appareils de terrain (FDI)*" et comporte les parties suivantes:

– Partie 1: Vue d'ensemble
– Partie 2: Client FDI
– Partie 3: Serveur FDI
– Partie 4: Paquetages FDI
– Partie 5: Modèle d'Information FDI
– Partie 6: Mapping de technologies FDI
– Partie 7: Appareils de Communication FDI
– Partie 100: Profils – Extensions de protocoles génériques
– Partie 101-1: Profils – Foundation Fieldbus H1
– Partie 101-2: Profils – Foundation Fieldbus HSE
– Partie 103-1: Profils – PROFIBUS
– Partie 103-4: Profils – PROFINET
– Partie 109-1: Profils – HART et WirelessHART
– Partie 115-2: Profils – Définitions spécifiques au protocole pour Modbus-RTU
– Partie 150-1: Profils – ISA 100.11a

INTÉGRATION DES APPAREILS DE TERRAIN (FDI) –

Partie 7: Appareils de communication

1 Domaine d'application

La présente partie de l'IEC 62769 spécifie les éléments de mise en œuvre des fonctions de communication, appelés Appareils de Communication (IEC 62769-5).

L'architecture FDI complète est représentée à la Figure 1. Les composants architecturaux qui relèvent du domaine d'application du présent document ont été mis en évidence dans cette représentation. Le domaine d'application du document relatif aux Paquetages FDI est limité aux Appareils de Communication. Le Serveur de communication représenté à la Figure 1 est un exemple d'Appareil de Communication spécifique.

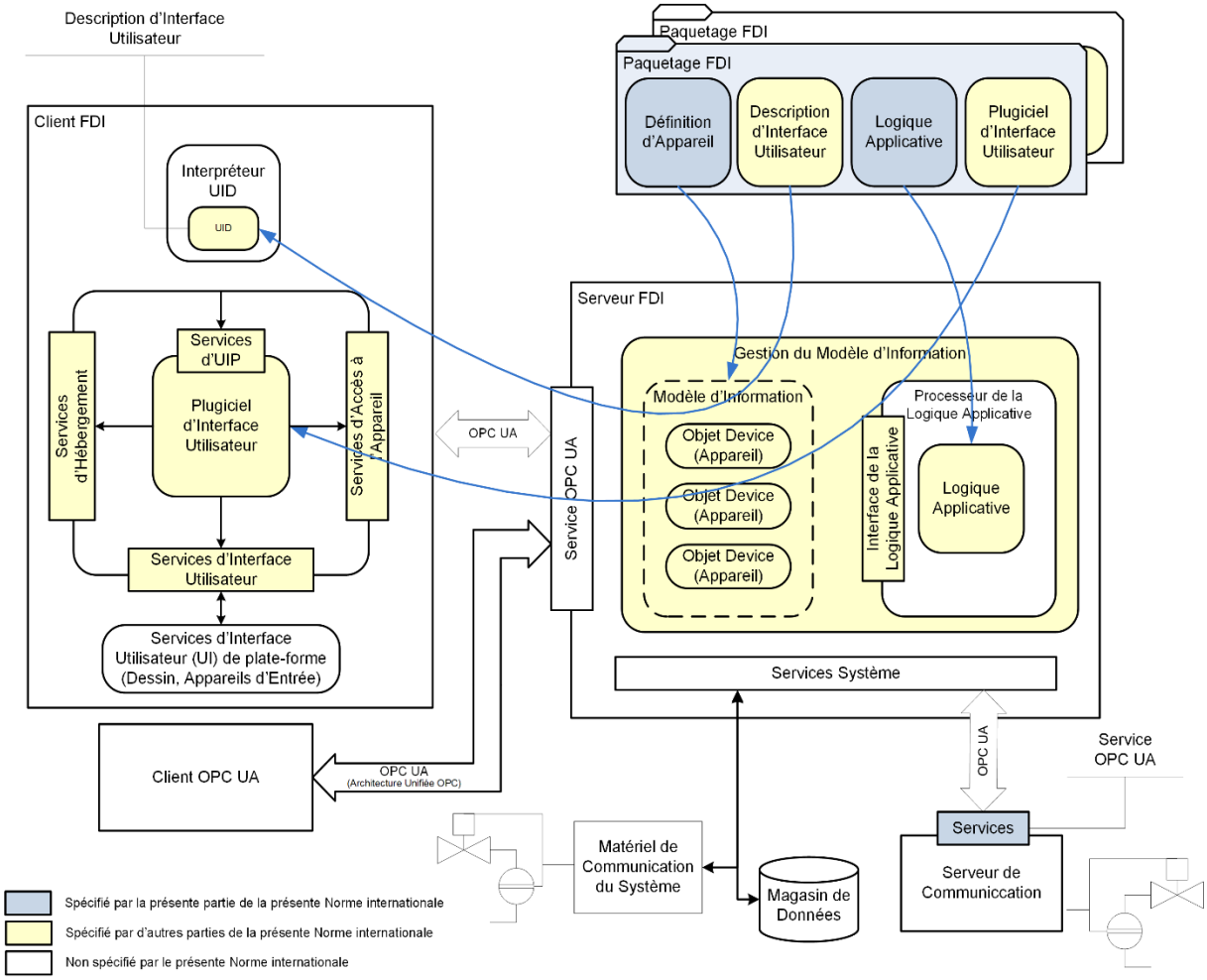

Figure 1 – Diagramme de l'architecture FDI

2 Références normatives

Les documents ci-après, dans leur intégralité ou non, sont des références normatives indispensables à l'application du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 61804-3, *Blocs Fonctionnels (FB) pour les procédés industriels et le Langage de Description Electronique de Produit (EDDL) – Partie 3: Sémantique et syntaxe EDDL*

IEC 61804-4, *Blocs fonctionnels (FB) pour les procédés industriels et le langage de description électronique de produit (EDDL) – Partie 4: Interprétation EDD*

IEC 62541 (toutes les parties), *Architecture unifiée OPC*

IEC 62769-1, *Intégration des appareils de terrain (FDI) – Partie 1: Vue d'ensemble*

IEC 62769-2, *Intégration des appareils de terrain (FDI) – Partie 2: Client FDI*

IEC 62769-3, *Intégration des appareils de terrain (FDI) – Partie 3: Serveur FDI*

IEC 62769-4:2020, *Intégration des appareils de terrain (FDI) – Partie 4: Paquetages FDI*

IEC 62769-5, *Intégration des appareils de terrain (FDI) – Partie 5: Modèle d'Information FDI*