



IEC 62769-101-1

Edition 2.0 2020-11  
REDLINE VERSION

# INTERNATIONAL STANDARD



---

**Field device integration (FDI) –  
Part 101-1: Profiles – Foundation Fieldbus H1**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

---

ICS 25.040.40; 35.100.05

ISBN 978-2-8322-9104-7

**Warning! Make sure that you obtained this publication from an authorized distributor.**

## CONTENTS

FOREWORD.....	4
<b>INTRODUCTION.....</b>	<b>4</b>
1 Scope.....	7
2 Normative references .....	7
3 Terms, definitions, abbreviated terms and conventions.....	8
3.1 Terms and definitions.....	8
3.2 Abbreviated terms.....	8
3.3 Conventions.....	8
3.3.1 EDDL syntax.....	8
3.3.2 XML syntax.....	8
3.3.3 Capitalizations.....	8
4 Profile for CP 1/1 (FOUNDATION™ H1).....	9
4.1 General.....	9
4.2 Catalog profile .....	9
4.2.1 Protocol support file.....	9
4.2.2 CommunicationProfile definition.....	9
4.2.3 Profile device.....	10
4.2.4 Protocol version information .....	10
4.3 Associating a Package with a CP 1/1 device.....	10
4.3.1 Device type identification mapping.....	10
4.3.2 Device type revision mapping .....	10
4.4 Information Model mapping.....	10
4.4.1 ProtocolType definition .....	10
4.4.2 DeviceType mapping .....	11
4.4.3 FunctionalGroup Identification definition .....	11
4.4.4 BlockType property mapping .....	12
4.4.5 Mapping to Block ParameterSet.....	12
4.5 Topology elements.....	12
4.5.1 ConnectionPoint definition .....	12
4.5.2 Communication Device definition .....	14
4.5.3 Communication service provider definition.....	16
4.5.4 Network definition .....	16
4.6 Methods.....	17
4.6.1 Methods for FDI Communication Servers.....	17
4.6.2 Methods for Gateways .....	24
Annex A (normative) Topology scan schema.....	25
A.1 General.....	25
A.2 FoundationH1AddressT .....	25
A.3 FoundationH1ConnectionPointT.....	25
A.4 FoundationH1NetworkT .....	26
A.5 Network .....	26
A.6 FoundationBlockIdentificationT .....	27
A.7 FoundationIdentificationT.....	27
Annex B (normative) Transfer service parameters.....	29
B.1 General.....	29
B.2 receiveData .....	29

B.3	sendData .....	29
B.4	OperationT.....	30
B.5	ResponseCodeT .....	30
B.6	TransferResultDataT.....	30
B.7	TransferSendDataT.....	31
Annex C (informative) Communication service arguments for Transfer Method .....		32
Bibliography.....		33
Table 1	– Capability File part .....	9
Table 2	– CommunicationProfile definition .....	10
Table 3	– Device type catalog mapping.....	10
Table 4	– ProtocolType Foundation_H1 definition .....	11
Table 5	– Inherited DeviceType Property mapping .....	11
Table 6	– Identification Parameters.....	11
Table 7	– Inherited BlockType property mapping.....	12
Table 8	– ConnectionPointType ConnectionPoint_Foundation_H1 definition .....	13
Table 9	– Communication device ParameterSet definition .....	15
Table 10	– Method Connect arguments.....	18
Table 11	– Method Disconnect arguments .....	19
Table 12	– Method Transfer arguments.....	19
Table 13	– Method GetPublishedData arguments.....	21
Table 14	– Method SetAddress arguments.....	23
Table A.1	– Attributes of FoundationH1ConnectionPointT .....	26
Table A.2	– Elements of FoundationH1ConnectionPointT .....	26
Table A.3	– Elements of FoundationH1NetworkT .....	26
Table A.4	– Attributes of FoundationBlockIdentificationT.....	27
Table A.5	– Attributes of FoundationIdentificationT .....	28
Table B.1	– Elements of receiveData .....	29
Table B.2	– Enumerations of OperationT .....	30
Table B.3	– Attributes of ResponseCodeT .....	30
Table B.4	– Attributes of TransferResultDataT .....	31
Table B.5	– Attributes of TransferSendDataT.....	31

# INTERNATIONAL ELECTROTECHNICAL COMMISSION

---

## FIELD DEVICE INTEGRATION (FDI) –

### Part 101-1: Profiles – Foundation Fieldbus H1

#### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

**This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.**

International Standard IEC 62769-101-1 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 for Package developers to build EDDs targeted for today's EDD bases system under a single development tool.

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

CDV	Report on voting
65E/620/CDV	65E/683/RVC

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.

A list of all parts in the IEC 62769 series, published under the general title *Field device integration (FDI)*, 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 "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document 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 which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

## INTRODUCTION

~~The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of patents concerning~~

- ~~a) Method for the Supplying and Installation of Device-Specific Functionalities, see Patent Family DE10357276;~~
- ~~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.~~

~~IEC takes no position concerning the evidence, validity and scope of this patent right.~~

~~The holders of these patent rights have assured the IEC that he/she is willing to negotiate licences either free of charge or under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with IEC. Information may be obtained from:~~

- ~~a) ABB Research Ltd  
Claes Rytteft  
Affolterstrasse 4  
Zurich, 8050  
Switzerland~~
- ~~b) Phoenix Contact GmbH & Co KG  
Intellectual Property, Licenses & Standards  
Flachsmarktstrasse 8, 32825 Blomberg  
Germany~~
- ~~c) Fisher Controls International LLC  
John Dilger, Emerson Process Management LLLP  
301 S. 1<sup>st</sup> Avenue, Marshalltown, Iowa 50158  
USA~~
- ~~d) Rockwell Automation Technologies, Inc.  
1 Allen Bradley Drive  
Mayfield Heights, Ohio 44124  
USA~~

~~Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. IEC shall not be held responsible for identifying any or all such patent rights.~~

~~ISO ([www.iso.org/patents](http://www.iso.org/patents)) and IEC (<http://patents.iec.ch>) maintain on-line data bases of patents relevant to their standards. Users are encouraged to consult the data bases for the most up to date information concerning patents.~~

## FIELD DEVICE INTEGRATION (FDI) –

### Part 101-1: Profiles – Foundation Fieldbus H1

#### 1 Scope

This part of IEC 62769 specifies ~~an FDI profile of~~ the IEC 62769 profile for IEC 61784-1\_CP 1/1 (FOUNDATION™ Fieldbus H1)<sup>1</sup>.

#### 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 61158-5-9:2014, *Industrial communication networks – Fieldbus specifications – Part 5-9: Application layer service definition – Type 9 elements*

IEC 61784-1, *Industrial communication networks – Profiles – Part 1: Fieldbus Profiles*

IEC 61784-2, *Industrial communication networks – Profiles – Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC/IEEE 8802-3*

IEC 61784-3:~~2010~~2016, *Industrial communication networks – Profiles – Part 3: Functional safety fieldbuses – General rules and profile definitions*

IEC 61804 (all parts), *Function blocks (FB) for process control and electronic device description language (EDDL)*

IEC 62541-6, *OPC unified architecture – Part 6: Mappings*

IEC 62541-100:2015, *OPC Unified Architecture – Part 100: ~~OPC UA for Devices~~ Device Interface*

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

IEC 62769-1, *Field device integration (FDI) – Part 1: Overview*

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

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

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

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

IEC 62769-5:~~2015~~, *Field Device Integration (FDI) – Part 5: FDI Information Model*

<sup>1</sup> FOUNDATION™ Fieldbus is the trade name of the non-profit consortium Fieldbus Foundation. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the trademark holder or any of its products. Compliance does not require use of the trade name. Use of the trade name requires permission of the trade name holder.

~~NOTE—IEC 62769-5 is technically identical to FDI-2025.~~

IEC 62769-6, *Field Device Integration (FDI) – Part 6: FDI Technology Mapping*

~~NOTE—IEC 62769-6 is technically identical to FDI-2026.~~

IEC 62769-7:~~42015~~, *Field Device Integration (FDI) – Part 7: FDI Communication Devices*

~~NOTE—IEC 62769-7 is technically identical to FDI-2027.~~



# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

---

**Field device integration (FDI) –  
Part 101-1: Profiles – Foundation Fieldbus H1**

**Intégration des appareils de terrain (FDI) –  
Partie 101-1: Profils – Foundation Fieldbus H1**



## CONTENTS

FOREWORD .....	4
1 Scope .....	6
2 Normative references .....	6
3 Terms, definitions, abbreviated terms and conventions .....	7
3.1 Terms and definitions .....	7
3.2 Abbreviated terms .....	7
3.3 Conventions .....	7
3.3.1 EDDL syntax .....	7
3.3.2 XML syntax .....	7
3.3.3 Capitalizations .....	7
4 Profile for CP 1/1 (FOUNDATION™ H1) .....	8
4.1 General .....	8
4.2 Catalog profile .....	8
4.2.1 Protocol support file .....	8
4.2.2 CommunicationProfile definition .....	8
4.2.3 Profile device .....	8
4.2.4 Protocol version information .....	8
4.3 Associating a Package with a CP 1/1 device .....	9
4.3.1 Device type identification mapping .....	9
4.3.2 Device type revision mapping .....	9
4.4 Information Model mapping .....	9
4.4.1 ProtocolType definition .....	9
4.4.2 DeviceType mapping .....	9
4.4.3 FunctionalGroup Identification definition .....	10
4.4.4 BlockType property mapping .....	10
4.4.5 Mapping to Block ParameterSet .....	11
4.5 Topology elements .....	11
4.5.1 ConnectionPoint definition .....	11
4.5.2 Communication Device definition .....	13
4.5.3 Communication service provider definition .....	14
4.5.4 Network definition .....	15
4.6 Methods .....	16
4.6.1 Methods for FDI Communication Servers .....	16
4.6.2 Methods for Gateways .....	21
Annex A (normative) Topology scan schema .....	22
A.1 General .....	22
A.2 FoundationH1AddressT .....	22
A.3 FoundationH1ConnectionPointT .....	22
A.4 FoundationH1NetworkT .....	23
A.5 Network .....	23
A.6 FoundationBlockIdentificationT .....	24
A.7 FoundationIdentificationT .....	24
Annex B (normative) Transfer service parameters .....	26
B.1 General .....	26
B.2 receiveData .....	26
B.3 sendData .....	26

B.4	OperationT.....	27
B.5	ResponseCodeT.....	27
B.6	TransferResultDataT.....	27
B.7	TransferSendDataT.....	28
Annex C (informative) Communication service arguments for Transfer Method .....		29
Bibliography.....		30
Table 1 – Capability File part .....		8
Table 2 – CommunicationProfile definition .....		8
Table 3 – Device type catalog mapping.....		9
Table 4 – ProtocolType Foundation_H1 definition .....		9
Table 5 – Inherited DeviceType Property mapping .....		10
Table 6 – Identification Parameters.....		10
Table 7 – Inherited BlockType property mapping.....		11
Table 8 – ConnectionPointType ConnectionPoint_Foundation_H1 definition .....		11
Table 9 – Communication device ParameterSet definition.....		14
Table 10 – Method Connect arguments.....		16
Table 11 – Method Disconnect arguments .....		17
Table 12 – Method Transfer arguments.....		18
Table 13 – Method GetPublishedData arguments.....		19
Table 14 – Method SetAddress arguments.....		21
Table A.1 – Attributes of FoundationH1ConnectionPointT.....		23
Table A.2 – Elements of FoundationH1ConnectionPointT .....		23
Table A.3 – Elements of FoundationH1NetworkT .....		23
Table A.4 – Attributes of FoundationBlockIdentificationT.....		24
Table A.5 – Attributes of FoundationIdentificationT .....		25
Table B.1 – Elements of receiveData .....		26
Table B.2 – Enumerations of OperationT .....		27
Table B.3 – Attributes of ResponseCodeT .....		27
Table B.4 – Attributes of TransferResultDataT.....		28
Table B.5 – Attributes of TransferSendDataT.....		28

# INTERNATIONAL ELECTROTECHNICAL COMMISSION

---

## FIELD DEVICE INTEGRATION (FDI) –

### Part 101-1: Profiles – Foundation Fieldbus H1

#### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62769-101-1 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 for Package developers to build EDDs targeted for today's EDD bases system under a single development tool.

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

CDV	Report on voting
65E/620/CDV	65E/683/RVC

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.

A list of all parts in the IEC 62769 series, published under the general title *Field device integration (FDI)*, 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 "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

## FIELD DEVICE INTEGRATION (FDI) –

### Part 101-1: Profiles – Foundation Fieldbus H1

#### 1 Scope

This part of IEC 62769 specifies the IEC 62769 profile for IEC 61784-1\_CP 1/1 (FOUNDATION™ Fieldbus H1)<sup>1</sup>.

#### 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 61158-5-9:2014, *Industrial communication networks – Fieldbus specifications – Part 5-9: Application layer service definition – Type 9 elements*

IEC 61784-1, *Industrial communication networks – Profiles – Part 1: Fieldbus Profiles*

IEC 61784-2, *Industrial communication networks – Profiles – Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC/IEEE 8802-3*

IEC 61784-3:2016, *Industrial communication networks – Profiles – Part 3: Functional safety fieldbuses – General rules and profile definitions*

IEC 61804 (all parts), *Function blocks (FB) for process control and electronic device description language (EDDL)*

IEC 62541-6, *OPC unified architecture – Part 6: Mappings*

IEC 62541-100:2015, *OPC unified architecture – Part 100: Device Interface*

IEC 62769-1, *Field device integration (FDI) – Part 1: Overview*

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

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

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

IEC 62769-6, *Field Device Integration (FDI) – Part 6: FDI Technology Mapping*

IEC 62769-7, *Field Device Integration (FDI) – Part 7: FDI Communication Devices*

---

<sup>1</sup> FOUNDATION™ Fieldbus is the trade name of the non-profit consortium Fieldbus Foundation. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the trademark holder or any of its products. Compliance does not require use of the trade name. Use of the trade name requires permission of the trade name holder.

## SOMMAIRE

AVANT-PROPOS .....	34
1 Domaine d'application .....	36
2 Références normatives .....	36
3 Termes, définitions, termes abrégés et conventions .....	37
3.1 Termes et définitions .....	37
3.2 Termes abrégés .....	37
3.3 Conventions .....	37
3.3.1 Syntaxe EDDL .....	37
3.3.2 Syntaxe XML .....	37
3.3.3 Majuscules .....	37
4 Profil pour CP 1/1 (FOUNDATION™ H1) .....	38
4.1 Généralités .....	38
4.2 Profil de catalogue .....	38
4.2.1 Fichier de prise en charge de protocole .....	38
4.2.2 Définition de CommunicationProfile .....	38
4.2.3 Appareil de profil .....	38
4.2.4 Informations relatives à la version de protocole .....	39
4.3 Association d'un Paquetage avec un appareil CP 1/1 .....	39
4.3.1 Mapping d'identification du type d'appareil .....	39
4.3.2 Mapping des révisions de type d'appareil .....	39
4.4 Mapping du Modèle d'Information .....	39
4.4.1 Définition de ProtocolType .....	39
4.4.2 Mapping de DeviceType .....	40
4.4.3 Définition du FunctionalGroup «Identification» .....	40
4.4.4 Mapping des propriétés de BlockType .....	40
4.4.5 Mapping sur le ParameterSet du Bloc .....	41
4.5 Eléments de topologie .....	41
4.5.1 Définition de ConnectionPoint .....	41
4.5.2 Définition de l'Appareil de Communication .....	43
4.5.3 Définition du fournisseur de service de communication .....	45
4.5.4 Définition du Réseau .....	45
4.6 Méthodes .....	46
4.6.1 Méthodes pour les Serveurs de Communication FDI .....	46
4.6.2 Méthodes pour les Passerelles .....	52
Annexe A (normative) Schéma de balayage de la topologie .....	53
A.1 Généralités .....	53
A.2 FoundationH1AddressT .....	53
A.3 FoundationH1ConnectionPointT .....	53
A.4 FoundationH1NetworkT .....	54
A.5 Network .....	54
A.6 FoundationBlockIdentificationT .....	55
A.7 FoundationIdentificationT .....	55
Annexe B (normative) Paramètres du service Transfer .....	57
B.1 Généralités .....	57
B.2 receiveData .....	57
B.3 sendData .....	57

B.4	OperationT.....	58
B.5	ResponseCodeT.....	58
B.6	TransferResultDataT.....	58
B.7	TransferSendDataT.....	59
Annexe C (informative) Arguments du service de communication pour la Méthode Transfer.....		60
Bibliographie.....		61
Tableau 1 – Partie fichier de capacité .....		38
Tableau 2 – Définition de CommunicationProfile .....		38
Tableau 3 – Mapping dans le catalogue des types d'appareils .....		39
Tableau 4 – Définition de ProtocolType Foundation_H1 .....		39
Tableau 5 – Mapping des propriétés héritées du DeviceType.....		40
Tableau 6 – Paramètres du FunctionalGroup Identification .....		40
Tableau 7 – Mapping des propriétés héritées du BlockType.....		41
Tableau 8 – Définition du ConnectionPointType ConnectionPoint_Foundation_H1 .....		42
Tableau 9 – Définition du ParameterSet de l'Appareil de Communication.....		44
Tableau 10 – Arguments de la Méthode Connect .....		47
Tableau 11 – Arguments de la Méthode Disconnect.....		48
Tableau 12 – Arguments de la Méthode Transfer .....		48
Tableau 13 – Arguments de la Méthode GetPublishedData.....		50
Tableau 14 – Arguments de la Méthode SetAddress .....		52
Tableau A.1 – Attributs de FoundationH1ConnectionPointT .....		54
Tableau A.2 – Eléments de FoundationH1ConnectionPointT.....		54
Tableau A.3 – Eléments de FoundationH1NetworkT.....		54
Tableau A.4 – Attributs de FoundationBlockIdentificationT.....		55
Tableau A.5 – Attributs de FoundationIdentificationT .....		56
Tableau B.1 – Eléments de receiveData .....		57
Tableau B.2 – Enumérations d'OperationT.....		58
Tableau B.3 – Attributs de ResponseCodeT.....		58
Tableau B.4 – Attributs de TransferResultDataT .....		59
Tableau B.5 – Attributs de TransferSendDataT .....		59



## COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

---

### INTÉGRATION DES APPAREILS DE TERRAIN (FDI) –

#### Partie 101-1: Profils – Foundation Fieldbus H1

##### AVANT-PROPOS

- 1) La Commission Electrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. A cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
- 2) Les décisions ou accords officiels de l'IEC concernant les questions techniques représentent, dans la mesure du possible, un accord international sur les sujets étudiés, étant donné que les Comités nationaux de l'IEC intéressés sont représentés dans chaque comité d'études.
- 3) Les Publications de l'IEC se présentent sous la forme de recommandations internationales et sont agréées comme telles par les Comités nationaux de l'IEC. Tous les efforts raisonnables sont entrepris afin que l'IEC s'assure de l'exactitude du contenu technique de ses publications; l'IEC ne peut pas être tenue responsable de l'éventuelle mauvaise utilisation ou interprétation qui en est faite par un quelconque utilisateur final.
- 4) Dans le but d'encourager l'uniformité internationale, les Comités nationaux de l'IEC s'engagent, dans toute la mesure possible, à appliquer de façon transparente les Publications de l'IEC dans leurs publications nationales et régionales. Toutes divergences entre toutes Publications de l'IEC et toutes publications nationales ou régionales correspondantes doivent être indiquées en termes clairs dans ces dernières.
- 5) L'IEC elle-même ne fournit aucune attestation de conformité. Des organismes de certification indépendants fournissent des services d'évaluation de conformité et, dans certains secteurs, accèdent aux marques de conformité de l'IEC. L'IEC n'est responsable d'aucun des services effectués par les organismes de certification indépendants.
- 6) Tous les utilisateurs doivent s'assurer qu'ils sont en possession de la dernière édition de cette publication.
- 7) Aucune responsabilité ne doit être imputée à l'IEC, à ses administrateurs, employés, auxiliaires ou mandataires, y compris ses experts particuliers et les membres de ses comités d'études et des Comités nationaux de l'IEC, pour tout préjudice causé en cas de dommages corporels et matériels, ou de tout autre dommage de quelque nature que ce soit, directe ou indirecte, ou pour supporter les coûts (y compris les frais de justice) et les dépenses découlant de la publication ou de l'utilisation de cette Publication de l'IEC ou de toute autre Publication de l'IEC, ou au crédit qui lui est accordé.
- 8) L'attention est attirée sur les références normatives citées dans cette publication. L'utilisation de publications référencées est obligatoire pour une application correcte de la présente publication.
- 9) L'attention est attirée sur le fait que certains des éléments de la présente Publication de l'IEC peuvent faire l'objet de droits de brevet. L'IEC ne saurait être tenue pour responsable de ne pas avoir identifié de tels droits de brevets et de ne pas avoir signalé leur existence.

La Norme internationale IEC 62769-101-1 a été établie par le sous-comité 65E: Les dispositifs et leur intégration dans les systèmes de l'entreprise, du comité d'études 65 de l'IEC: Mesure, commande et automation dans les processus industriels.

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 d'extensions de protocoles génériques, pour une adoption plus rapide d'autres technologies;
- b) capacité offerte aux développeurs de Paquetages d'élaborer des EDD ciblant les systèmes actuels de bases EDD, en exploitant un seul outil de développement.

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

CDV	Rapport de vote
65E/620/CDV	65E/683/RVC

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 IEC 62769, publiées sous le titre général *Intégration des appareils de terrain (FDI)*, peut être consultée sur le site web de l'IEC.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous "<http://webstore.iec.ch>" dans les données relatives au document recherché. A cette date, le document sera

- reconduit,
- supprimé,
- remplacé par une édition révisée, ou
- amendé.

## INTÉGRATION DES APPAREILS DE TERRAIN (FDI) –

### Partie 101-1: Profils – Foundation Fieldbus H1

#### 1 Domaine d'application

La présente partie de l'IEC 62769 spécifie le profil de l'IEC 62769 pour le profil de communication CP 1/1 (FOUNDATION™ Fieldbus H1)<sup>1</sup> défini dans l'IEC 61784-1.

#### 2 Références normatives

Les documents suivants cités dans le texte constituent, pour tout ou partie de leur contenu, des exigences 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 61158-5-9:2014, *Réseaux de communication industriels – Spécifications des bus de terrain – Partie 5-9: Définition des services de la couche application – Eléments de type 9*

IEC 61784-1, *Réseaux de communication industriels – Profils – Partie 1: Profils de bus de terrain*

IEC 61784-2, *Réseaux de communication industriels – Profils – Partie 2: Profils de bus de terrain supplémentaires pour les réseaux en temps réel fondés sur l'ISO/IEC/IEEE 8802-3*

IEC 61784-3:2016, *Réseaux de communication industriels – Profils – Partie 3: Bus de terrain de sécurité fonctionnelle – Règles générales et définitions de profils*

IEC 61804 (toutes les parties), *Blocs fonctionnels (FB) pour les procédés industriels et langage de description électronique de produit (EDDL)*

IEC 62541-6, *Architecture unifiée OPC – Partie 6: Correspondances*

IEC 62541-100:2015, *Architecture unifiée OPC – Partie 100: Interface d'appareils*

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 62769-4, *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*

IEC 62769-6, *Intégration des appareils de terrain (FDI) – Partie 6: Mapping de technologies FDI*

---

<sup>1</sup> FOUNDATION™ Fieldbus est l'appellation commerciale du consortium Fieldbus Foundation, une organisation à but non lucratif. Cette information est donnée à l'intention des utilisateurs du présent document et ne signifie nullement que l'IEC approuve ou recommande l'organisation détentrice de l'appellation commerciale, ni un quelconque de ses produits. La conformité n'exige pas l'utilisation de l'appellation commerciale. L'utilisation de l'appellation commerciale exige l'autorisation du détenteur de l'appellation commerciale.

IEC 62769-7, *Intégration des appareils de terrain (FDI) – Partie 7: Appareils de communication FDI*