

Field device integration (FDI) - Part 150-1: Profiles -
ISA100 WIRELESS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 62769-150-1:2021 sisaldab Euroopa standardi EN IEC 62769-150-1:2021 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62769-150-1:2021 consists of the English text of the European standard EN IEC 62769-150-1:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.03.2021.	Date of Availability of the European standard is 12.03.2021.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 25.040.40, 35.100.05, 35.240.50

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis-ja Akrediteerimiskeskuse kirjaliku loata on keelatud

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis-ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

ICS 35.100.05; 25.040.40; 35.240.50

English Version

**Field device integration (FDI) - Part 150-1: Profiles - ISA100
WIRELESS
(IEC 62769-150-1:2021)**

Intégration des appareils de terrain (FDI) - Partie 150-1:
Profils - ISA100 WIRELESS
(IEC 62769-150-1:2021)

Feldgeräteintegration (FDI) - Teil 150-1: Profile - ISA100
WIRELESS
(IEC 62769-150-1:2021)

This European Standard was approved by CENELEC on 2021-03-11. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 65E/765/FDIS, future edition 1 of IEC 62769-150-1, prepared by SC 65E "Devices and integration in enterprise systems" of IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62769-150-1:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-12-11
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-03-11

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62769-150-1:2021 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62734	2014	Industrial networks - Wireless communication network and communication profiles - ISA 100.11a	EN 62734	2015
IEC 61804	series	Function Blocks (FB) for process control and electronic device description language (EDDL)	EN IEC 61804	series
IEC 62541-6	-	OPC Unified Architecture - Part 6: Mappings	EN IEC 62541-6	-
IEC 62541-100	2015	OPC Unified Architecture - Part 100: Device Interface	EN 62541-100	2015
IEC 62769-2	-	Field Device Integration (FDI) - Part 2: FDI Client	EN 62769-2	-
IEC 62769-4	-	Field Device Integration (FDI) - Part 4: FDI Packages	EN 62769-4	-
IEC 62769-5	-	Field Device Integration (FDI) - Part 5: Information Model	EN 62769-5	-
IEC 62769-6	-	Field Device Integration (FDI) - Part 6: Technology Mapping	EN 62769-6	-
IEC 62769-7	-	Field Device Integration (FDI) - Part 7: FDI Communication Devices	EN 62769-7	-

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Field device integration (FDI) –
Part 150-1: Profiles – ISA100 WIRELESS**

**Intégration des appareils de terrain (FDI) –
Partie 150-1: Profils – ISA100 WIRELESS**



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2021 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

IEC online collection - oc.iec.ch

Discover our powerful search engine and read freely all the publications previews. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 18 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC -

webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, ...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

IEC online collection - oc.iec.ch

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 000 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Field device integration (FDI) –
Part 150-1: Profiles – ISA100 WIRELESS**

**Intégration des appareils de terrain (FDI) –
Partie 150-1: Profils – ISA100 WIRELESS**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 25.040.40; 35.100.05; 35.240.50

ISBN 978-2-8322-9308-9

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD	4
1 Scope	6
2 Normative references	6
3 Terms, definitions, abbreviated terms and acronyms	6
3.1 Terms and definitions	6
3.2 Abbreviated terms and acronyms	7
4 Conventions	7
4.1 EDDL syntax	7
4.2 Capitalizations	7
5 Profile for ISA100 WIRELESS	8
5.1 General	8
5.2 Catalog profile	8
5.2.1 Protocol support file	8
5.2.2 CommunicationProfile definition	8
5.2.3 Profile device	8
5.2.4 Protocol version information	8
5.3 Associating a Package with a device	9
5.3.1 Device type identification mapping	9
5.3.2 Device type revision mapping	10
5.4 Information Model mapping	10
5.4.1 ProtocolType definition	10
5.4.2 DeviceType mapping	10
5.4.3 FunctionalGroup identification definition	11
5.4.4 BlockType property mapping	11
5.4.5 Mapping to Object ParameterSet	12
5.5 Topology elements	12
5.5.1 ConnectionPoint definition	12
5.5.2 Communication Device definition	14
5.5.3 Communication service provider definition	15
5.5.4 Network definition	16
5.6 Methods	17
5.6.1 Methods for FDI Communication Servers	17
5.6.2 Methods for Gateways	22
Annex A (normative) Topology scan result schema	23
A.1 General	23
A.2 Network	23
A.3 ISA100_WirelessNetworkT	23
A.4 ISA100_WirelessConnectionPointT	24
A.5 ISA100_WirelessIdentificationT	24
A.6 ISA100_WirelessAddressT	25
A.7 ISA_WirelessObjIdentificationT	26
Annex B (normative) Transfer service parameters	27
B.1 General	27
B.2 sendData	27
B.3 receiveData	27

B.4	TransferSendDataT.....	27
B.5	OperationT.....	28
B.6	TransferResultDataT.....	28
	Bibliography.....	30
	Table 1 – Capability file part	8
	Table 2 – Protocol Version Information	9
	Table 3 – Device identification information mapping.....	10
	Table 4 – Device type catalog mapping.....	10
	Table 5 – Protocol type ISA100 WIRELESS	10
	Table 6 – Inherited DeviceType property mapping	11
	Table 7 – ISA100 WIRELESS device types identification attributes	11
	Table 8 – Inherited BlockType property mapping.....	12
	Table 9 – ConnectionPointType ConnectionPoint_ISA100_Wireless definition	13
	Table 10 – Method Connect arguments.....	18
	Table 11 – Method Disconnect arguments	19
	Table 12 – Method Transfer arguments.....	20
	Table 13 – Method GetPublishedData arguments.....	21
	Table A.1 – Elements of ISA100_WirelessNetworkT	23
	Table A.2 – Elements of ISA100_WirelessConnectionPointT.....	24
	Table A.3 – Attributes of ISA100_WirelessIdentificationT	25
	Table A.4 – Attributes of ISA100_WirelessObjIdentificationT	26
	Table B.1 – Attributes of TransferSendDataT.....	28
	Table B.2 – Enumerations of OperationT	28
	Table B.3 – Attributes of TransferResultDataT	29

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIELD DEVICE INTEGRATION (FDI) –

Part 150-1: Profiles – ISA100 WIRELESS

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 62769-150-1 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

This document is based on FCG_TS62769-150-1_Profiles – ISA100_1.1.0.3, a specification of the FieldComm Group, PROFIBUS Nutzerorganisation e. V., OPC Foundation and FDT Group.

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

FDIS	Report on voting
65E/765/FDIS	65E/775/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.

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.