

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Devices and integration in enterprise systems – Function blocks (FB) for process control and electronic device description language (EDDL) – Part 4: EDD interpretation**

**Les dispositifs et leur intégration dans les systèmes de l'entreprise – Blocs fonctionnels (FB) pour les procédés industriels et le langage de description électronique de produit (EDDL) – Partie 4: Interprétation EDD**



## THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2020 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](mailto:info@iec.ch)  
[www.iec.ch](http://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](http://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](http://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](http://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](mailto:sales@iec.ch).

#### Electropedia - [www.electropedia.org](http://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 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

#### IEC Glossary - [std.iec.ch/glossary](http://std.iec.ch/glossary)

67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

---

### 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](http://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](http://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](http://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](mailto:sales@iec.ch).

#### Electropedia - [www.electropedia.org](http://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.

#### Glossaire IEC - [std.iec.ch/glossary](http://std.iec.ch/glossary)

67 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Devices and integration in enterprise systems – Function blocks (FB) for process control and electronic device description language (EDDL) – Part 4: EDD interpretation**

**Les dispositifs et leur intégration dans les systèmes de l'entreprise – Blocs fonctionnels (FB) pour les procédés industriels et le langage de description électronique de produit (EDDL) – Partie 4: Interprétation EDD**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 25.040.40; 35.240.50

ISBN 978-2-8322-8445-2

**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.....	8
INTRODUCTION.....	11
1 Scope.....	12
2 Normative references .....	12
3 Terms, definitions, abbreviated terms acronyms and conventions.....	12
3.1 General terms and definitions .....	12
3.2 Terms and definitions related to modular devices.....	13
3.3 Abbreviated terms and acronyms .....	14
3.4 Conventions.....	14
4 EDDL user interface description .....	15
4.1 Overview.....	15
4.2 Menu conventions for handheld applications.....	15
4.3 Menu conventions for PC-based applications.....	16
4.3.1 Overview .....	16
4.3.2 Online root menus .....	16
4.3.3 Offline root menu.....	17
4.3.4 Example of EDD menu structure.....	17
4.3.5 User interface.....	22
4.4 Label concatenation for indirect variable references.....	25
4.4.1 General .....	25
4.4.2 Simple variable references .....	26
4.4.3 Complex variable references .....	26
4.5 Help concatenation .....	28
4.5.1 General .....	28
4.5.2 Simple variable references.....	28
4.5.3 Complex variable references .....	29
4.6 Containers and contained items.....	30
4.6.1 Overview .....	30
4.6.2 Permitted and default STYLES.....	30
4.6.3 Containers.....	32
4.6.4 Containers and items.....	34
4.7 Layout rules.....	40
4.7.1 Overview.....	40
4.7.2 Controlling the layout by LAYOUT_TYPE attribute.....	41
4.7.3 Layout rules for WIDTH and HEIGHT.....	45
4.7.4 Layout rules for COLUMNBREAK and ROWBREAK.....	48
4.7.5 Layout examples .....	54
4.7.6 Conditional user interface.....	69
4.8 Graphical elements.....	75
5 EDDL data description.....	79
5.1 EDDL application stored device data.....	79
5.1.1 Overview .....	79
5.1.2 FILE .....	79
5.1.3 LIST .....	81
5.2 Exposing data items outside the EDD application.....	88
5.3 Initialization of EDD instances.....	88

5.3.1	Overview .....	88
5.3.2	Initialization support .....	88
5.3.3	TEMPLATE .....	88
5.4	Device model mapping .....	89
5.4.1	BLOCK_A .....	89
5.4.2	BLOCK_B .....	89
6	EDDL METHOD programming and usage of builtins .....	90
6.1	Method environment .....	90
6.1.1	General .....	90
6.1.2	Security .....	90
6.1.3	Device data .....	90
6.1.4	Method TYPE and parameters .....	91
6.1.5	Abort processing .....	91
6.2	Implementation requirements .....	92
6.3	Builtin MenuDisplay .....	92
6.4	Division by zero and undetermined floating values .....	95
6.4.1	Integer and unsigned integer values .....	95
6.4.2	Floating-point values .....	95
7	Modular devices .....	96
7.1	Overview .....	96
7.2	EDD identification .....	96
7.3	Instance object model .....	96
7.4	Offline configuration .....	97
7.5	Online configuration .....	97
7.6	Simple modular device example .....	97
7.6.1	General .....	97
7.6.2	Separate EDD file example with direct EDD referencing .....	98
7.6.3	Separate EDD file example with classification EDD referencing and interfaces .....	100
7.6.4	One EDD file example .....	102
7.6.5	Combination of single and separate modular device example .....	104
7.7	Upload and download for modular devices .....	104
7.8	Diagnostic .....	104
7.9	Reading modular device topology .....	105
7.9.1	SCAN .....	105
7.9.2	Detect module type .....	107
7.10	Configuration check .....	107
8	Session management .....	108
8.1	Overview .....	108
8.2	Data management .....	108
8.2.1	Overview .....	108
8.2.2	Caching for online session .....	109
8.2.3	Caching for offline session .....	110
8.2.4	Caching for dialogs and windows .....	111
8.2.5	Caching for METHODS .....	112
8.3	UI aspects of editing sessions .....	115
8.4	User roles .....	116
9	Offline and online configuration .....	116
9.1	Overview .....	116

9.2	Offline dataset .....	116
9.3	Offline configuration.....	116
9.4	Online dataset .....	116
9.5	Online configuration.....	116
9.6	Upload and download .....	117
9.6.1	Overview .....	117
9.6.2	Error recovery.....	118
9.6.3	Upload procedure .....	118
9.6.4	Download procedure.....	120
10	EDDL communication description .....	122
10.1	General.....	122
10.2	Parsing data received from the device .....	123
10.3	Parsing complex data items .....	123
10.4	Foundation Fieldbus .....	123
10.5	ISA100_Wireless communication model.....	127
Annex A	(normative) Device simulation.....	131
Annex B	(informative) Predefined identifiers .....	132
Annex C	(informative) Description of EDDL profiles .....	135
C.1	Communication Server (CS).....	135
C.2	Foundation Fieldbus (FF).....	135
C.3	Generic Protocol Extension (GPE) .....	135
C.4	HART.....	135
C.5	ISA100.....	135
C.6	PROFIBUS (PB).....	135
C.7	PROFINET (PN).....	136
Annex D	(normative) Upload/download caching model.....	137
Bibliography	.....	139
Figure 1	– EDD example of root elements.....	22
Figure 2	– Example of an EDD application for diagnostics .....	22
Figure 3	– Example of an EDD application for process variables.....	23
Figure 4	– Example of an EDD application for primary variables .....	23
Figure 5	– Example of an EDD application for process-related device features .....	24
Figure 6	– Example of an EDD application for device features .....	24
Figure 7	– Example of an EDD application for maintenance features .....	25
Figure 8	– Usage of COLLECTION MEMBERS in MENUs of STYLE GROUP.....	33
Figure 9	– Displaying single bits of BIT_ENUMERATED .....	35
Figure 10	– Displaying multiple bits of BIT_ENUMERATED.....	36
Figure 11	– Example of an EDD application for a variable of type BIT_ENUMERATED .....	36
Figure 12	– EDD example with a "write-only" variable (HANDLING WRITE).....	37
Figure 13	– Basic layout elements .....	40
Figure 14	– Example of layout with equal column width.....	42
Figure 15	– Example of layout with optimized column width .....	42
Figure 16	– Cell body in a layout with optimized column width (label to the left).....	43
Figure 17	– Cell body in a layout with optimized column width (label on top).....	43
Figure 18	– EDD source code for a layout with VARIABLEs spanning columns .....	47

Figure 19 – Layout with VARIABLES spanning multiple columns .....	47
Figure 20 – EDD source code for layout for protruding elements example.....	49
Figure 21 – Layout for protruding elements .....	49
Figure 22 – EDD source code for layout for partially filled rows example.....	50
Figure 23 – Layout for partially filled rows .....	50
Figure 24 – EDD source code for layout for partially filled rows example.....	51
Figure 25 – Layout for partially filled rows .....	51
Figure 26 – EDD source code for layout for oversized elements example.....	52
Figure 27 – Oversized element in a layout with equal column width .....	52
Figure 28 – Oversized element in a layout with optimized column width.....	52
Figure 29 – EDD source code example for a layout for columns in stacked group .....	53
Figure 30 – Layout for columns in stacked group .....	53
Figure 31 – EDD source code for layout for columns with GRAPHS in stacked group example .....	54
Figure 32 – Layout for columns with GRAPHS in stacked group .....	54
Figure 33 – Example of an EDD for an overview menu.....	55
Figure 34 – Example of an EDD application for an overview window .....	55
Figure 35 – EDD source code for a layout with menu items spanning a single column .....	55
Figure 36 – Example of a layout with menu items spanning a single column .....	56
Figure 37 – Example of an EDD using COLUMNBREAK .....	56
Figure 38 – Example of an EDD application for an overview window .....	57
Figure 39 – EDD example for an overview window .....	57
Figure 40 – Example of an EDD application for an overview window .....	58
Figure 41 – EDD source code for a layout with small in-line images.....	58
Figure 42 – Example of a layout with small in-line images.....	59
Figure 43 – EDD source code for a multi-column layout with GROUP .....	60
Figure 44 – Example of a multi-column layout with GROUP .....	61
Figure 45 – Example of an EDD for in-line graphs and charts .....	61
Figure 46 – Example of an EDD application for an in-line graph.....	62
Figure 47 – Example of an EDD for full-width graphs and charts .....	62
Figure 48 – Example of an EDD application for a full-width graph in a layout with equal column width.....	63
Figure 49 – Example of an EDD application for a full-width graph in a layout with optimized column width.....	64
Figure 50 – Example of an EDD for nested containers .....	65
Figure 51 – Example of an EDD application for nested containers .....	65
Figure 52 – Example of an EDD for EDIT_DISPLAYS .....	66
Figure 53 – Example of an EDD application for EDIT_DISPLAYS.....	67
Figure 54 – Example of an EDD for images.....	67
Figure 55 – Example of an EDD application for images.....	68
Figure 56 – Example of an EDD for large inline-images .....	68
Figure 57 – Example of layout with a large inline-image.....	69
Figure 58 – EDD example for VALIDITY in online session.....	70
Figure 59 – Example of an EDD application for a gauge with limit regions .....	76

Figure 60 – Example of an EDD for a gauge with limit regions .....	78
Figure 61 – Example of a file declaration .....	80
Figure 62 – Example of comparing valve signatures.....	81
Figure 63 – Example of more complex file declaration .....	82
Figure 64 – Example of reviewing the stored radar signals.....	83
Figure 65 – Example of an EDD that inserts, replaces, or compares radar signals .....	88
Figure 66 – Example of a BLOCK_A .....	89
Figure 67 – Example of a wizard .....	94
Figure 68 – The different relations of a module .....	97
Figure 69 – Components and possible configuration of the modular devices .....	98
Figure 70 – Separate EDD file example with direct EDD referencing.....	99
Figure 71 – EDD example for module1.....	99
Figure 72 – EDD example for module2.....	100
Figure 73 – EDD example for modular device .....	101
Figure 74 – EDD example for module1.....	102
Figure 75 – EDD example for module2.....	102
Figure 76 – EDD example for module2.....	103
Figure 77 – Upload/download order of a modular device.....	104
Figure 78 – Example of a SCAN METHOD.....	106
Figure 79 – Example of a DETECT METHOD.....	107
Figure 80 – Example of a CHECK_CONFIGURATION METHOD .....	108
Figure 81 – Data caching for an online session.....	110
Figure 82 – Data caching for an offline session.....	111
Figure 83 – Sub dialogs or windows using a shared edit cache .....	111
Figure 84 – Sub dialogs or windows using separate edit caches .....	112
Figure 85 – Data caching for nested METHODS .....	112
Figure 86 – Data caching for a METHOD invoked within a dialog or window .....	113
Figure 87 – Data caching for a METHOD invoking a dialog using an edit cache .....	113
Figure 88 – Data caching for a METHOD invoking a dialog .....	113
Figure 89 – Data flow for download to the device .....	117
Figure 90 – Data flow for upload from the device .....	118
Figure 91 – Example device with 2 unique BLOCK_A definitions.....	124
Figure 92 – Example EDD for a device with 2 unique BLOCK_A definitions .....	125
Figure 93 – BLOCK_A example with PARAMETER_LISTS.....	126
Figure 94 – Example EDD for a BLOCK_A with PARAMETER_LISTS .....	127
Figure 95 – Example ISA100_Wireless device objects representation.....	128
Figure 96 – Example EDD for a ISA100_Wireless device with 2 unique BLOCK_A definitions .....	129
Figure 97 – BLOCK_A example with PARAMETER_LISTS.....	129
Figure 98 – Example EDD for a BLOCK_A with PARAMETER_LISTS .....	130
Figure D.1 – Upload caching model .....	137
Figure D.2 – Download caching model .....	138
Table 1 – List of defined root menu identifiers for handhelds.....	15

Table 2 – List of defined root menu identifiers for PC-based devices .....	16
Table 3 – Fall back alternatives for online root menus.....	16
Table 4 – Fall back alternatives for offline root menus .....	17
Table 5 – Label rule summary for simple variable references .....	26
Table 6 – Label rule summary for simple variable references .....	26
Table 7 – Prefix rule summary for complex variable references.....	27
Table 8 – Prefix rule summary for complex variable references.....	27
Table 9 – Body rule summary for complex variable references .....	27
Table 10 – Body rule summary for complex variable references .....	27
Table 11 – Suffix rule summary for complex variable references .....	28
Table 12 – Suffix rule summary for complex variable references .....	28
Table 13 – Help rule summary for simple variable references .....	28
Table 14 – Help rule summary for simple variable references .....	28
Table 15 – Help prefix rule summary for complex variable references .....	29
Table 16 – Help prefix rule summary for complex variable references .....	29
Table 17 – Help suffix rule summary for complex variable references .....	29
Table 18 – Help suffix rule summary for complex variable references .....	29
Table 19 – Permitted contained items and default STYLES.....	31
Table 20 – Uninitialized state of VARIABLES on user interface .....	34
Table 21 – Example of "write-only" variable in an online dialog .....	38
Table 22 – Description of layout content .....	41
Table 23 – Minimum and maximum width for input fields spanning one column .....	43
Table 24 – WIDTH and HEIGHT span and applicability .....	45
Table 25 – Example 1 VALIDITY in an online session .....	71
Table 26 – Example 2 VALIDITY in an online session .....	72
Table 27 – Example 3 VALIDITY in an online session .....	73
Table 28 – Example 4 VALIDITY in an offline session .....	74
Table 29 – Examples of floating-point results .....	95
Table 30 – Usages of COMPONENT_PATH.....	96
Table 31 – Diagnostic classifications .....	105
Table 32 – Terminology for session management .....	108
Table 33 – Terminology used in data management .....	109
Table 34 – Builtins for method cache controlling .....	114
Table 35 – List of defined upload menu identifiers .....	118
Table 36 – List of defined download menu identifiers .....	120
Table B.1 – ARRAY predefined identifiers.....	132
Table B.2 – COLLECTION predefined identifiers.....	132
Table B.3 – COMMAND predefined identifiers.....	132
Table B.4 – IMAGE predefined identifiers .....	133
Table B.5 – MENU predefined identifiers .....	133
Table B.6 – METHOD predefined identifiers.....	134
Table B.7 – VARIABLE predefined identifiers.....	134

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**DEVICES AND INTEGRATION IN ENTERPRISE SYSTEMS –  
FUNCTION BLOCKS (FB) FOR PROCESS CONTROL AND  
ELECTRONIC DEVICE DESCRIPTION LANGUAGE (EDDL) –****Part 4: EDD interpretation**

## 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 61804-4 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 was developed by merging material from multiple variants of existing EDDL specifications including those from FieldComm Group (Foundation™ Fieldbus<sup>1</sup>, HART®<sup>2</sup>), PROFIBUS™<sup>3</sup> Nutzerorganisation e.V. (PNO), and ISA100\_Wireless™<sup>4</sup> Compliance Institute (ISA100 WCI). When a profile deviation exists, it is now indicated in the context where the related deviation is found. As a result, the formatting and numbering of this edition may be different from any of the individual specifications from which this edition was derived.

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

- communication profiles ISA100 and GPE were added;
- description of rules for optimized-column-width layout have been added;
- description of the concatenation of labels and help was added;
- color banding for meter type charts was added.

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

CDV	Report on voting
65E/633/CDV	65E/690/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 publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61804 series, published under the general title *Devices and integration in enterprise systems – Function blocks (FB) for process control and Electronic Device Description Language (EDDL)*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

---

<sup>1</sup> FOUNDATION™ Fieldbus is the trademark of FieldComm Group. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

<sup>2</sup> HART® is the registered trademark of FieldComm Group. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

<sup>3</sup> PROFIBUS and PROFINET are the trademarks of the PROFIBUS Nutzerorganisation e.V. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

<sup>4</sup> ISA100\_Wireless™ is the trademark of ISA100 Wireless Compliance Institute. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication 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

This part of IEC 61804

- contains an overview of the use of EDDL;
- provides examples demonstrating the use of the EDDL constructs;
- shows how the use cases are fulfilled; and
- shows the proper EDD application interpretation for each example.

This part of IEC 61804 is not an EDDL tutorial and is not intended to replace the EDDL specification.

Instructions are provided for the EDD application, which describe what will be performed without prescribing the technology used in the host implementation. For example, the FILE construct describes data that is stored by the EDD application on behalf of the EDD. The FILE construct does not specify how the data is stored. The EDD application can use a database, a flat file, or any other implementation it chooses.

EDDL features are limited by profile for each of the communication technologies. The descriptions in this part of IEC 61804 refer to these features in a general sense and not all communication technologies will support all of the features described. The profile definitions in IEC 61804-3 are referred to in order to understand the features supported by each communication technology.

# DEVICES AND INTEGRATION IN ENTERPRISE SYSTEMS – FUNCTION BLOCKS (FB) FOR PROCESS CONTROL AND ELECTRONIC DEVICE DESCRIPTION LANGUAGE (EDDL) –

## Part 4: EDD interpretation

### 1 Scope

This part of IEC 61804 specifies EDD interpretation for EDD applications and EDDs to support EDD interoperability. This document is intended to ensure that field device developers use the EDDL constructs consistently and that the EDD applications have the same interpretations of the EDD. It supplements the EDDL specification to promote EDDL application interoperability and improve EDD portability between EDDL applications.

### 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 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 61804-3, *Devices and integration in enterprise systems – Function blocks (FB) for process control and electronic device description language (EDDL) – Part 3: EDDL syntax and semantics*

IEC 61804-5, *Devices and integration in enterprise systems – Function blocks (FB) for process control and electronic device description language (EDDL) – Part 5: EDDL Built-in library*

IEC 62734, *Industrial networks – Wireless communication network and communication profiles – ISA 100.11a*

IEC 62769-4<sup>5</sup>, *Field Device Integration (FDI) – Part 4: FDI Packages*

IEC 62769-7<sup>6</sup>, *Field Device Integration (FDI) – Part 7: FDI Communication devices*

### 3 Terms, definitions, abbreviated terms acronyms and conventions

#### 3.1 General terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61804-3 and the following apply.

---

<sup>5</sup> Under preparation. Stage at the time of publication: IEC RFDIS 62769-4:2020.

<sup>6</sup> Under preparation. Stage at the time of publication: IEC RFDIS 62769-7:2020.