
**Information technology — Open
Connectivity Foundation (OCF)
Specification —**

**Part 15:
OCF resource to EnOcean mapping
specification**

iTeh STANDARD PREVIEW

(standards.iteh.ai)
*Technologies de l'information — Specification de la Fondation pour la
connectivité ouverte (Fondation OCF) —*

*Partie 15: Spécification du mapping entre les ressources OCF et
EnOcean*

<https://standards.iteh.ai/catalog/standards/sist/90836822-c95f-499f-b562-0322cb60c652/iso-iec-30118-15-2021>



iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO/IEC 30118-15:2021](https://standards.iteh.ai/catalog/standards/sist/90836822-c95f-499f-b562-0322cb60c652/iso-iec-30118-15-2021)

<https://standards.iteh.ai/catalog/standards/sist/90836822-c95f-499f-b562-0322cb60c652/iso-iec-30118-15-2021>



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	ix
Introduction	x
1 Scope	1
2 Normative references	1
3 Terms, definitions, symbols and abbreviated terms	2
3.1 Terms and definitions	2
3.2 Symbols and abbreviated terms	2
4 Document conventions and organization	3
4.1 Conventions	3
4.2 Notation	3
5 Theory of operation	4
5.1 Interworking approach	4
5.2 General	4
5.2.1 Value assignment	4
5.2.2 Property naming	4
5.2.3 Range	4
5.2.4 Arrays	4
5.2.5 Default mapping	4
5.2.6 Conditional mapping	4
5.2.7 Method invocation	5
6 EnOcean translation	5
6.1 Operational scenarios	5
6.1.1 Use case for enocean bridging	5
6.2 Requirements specific to enocean bridging function	6
6.2.1 Introduction	6
6.2.2 Exposing enocean devices to OCF clients	6
6.2.3 Protocol translation between enocean and OCF	12
7 Device type mapping	14
7.1 Introduction	14
7.2 EnOcean equipment profiles to OCF device types and OCF resource types	14
7.3 Telegram parameters	15
7.3.1 Push button	15
7.3.2 Rocker 1 st action	15
7.3.3 Key card	15
7.3.4 Alert signals	16
7.3.5 Open/closed	16
7.3.6 Temperature	16
7.3.7 Barometer	16
7.3.8 Illumination	16
7.3.9 Humidity	16
7.3.10 PIR/occupancy	16
7.4 Indirect parameters through enocean equipment profile	16
7.4.1 Introduction	16
7.4.2 Range	16
7.4.3 Unit	17

8	Detailed mapping APIs	17
8.1	Introduction	17
8.2	Barometric sensor EEP A5-05-01	17
8.2.1	Derived model	17
8.2.2	Property definition	17
8.2.3	Derived model definition	17
8.3	Key card switch, EEP F6-04-01	18
8.3.1	Derived model	18
8.3.2	Property definition	18
8.3.3	Derived model definition	18
8.4	Key card switch, EEP F6-04-02	19
8.4.1	Derived model	19
8.4.2	Property definition	19
8.4.3	Derived model definition	19
8.5	Light sensor EEP A5-06-01	20
8.5.1	Derived model	20
8.5.2	Property definition	20
8.5.3	Derived model definition	21
8.6	Light sensor EEP A5-06-02	21
8.6.1	Derived model	21
8.6.2	Property definition	21
8.6.3	Derived model definition	22
8.7	Light sensor EEP A5-06-03	22
8.7.1	Derived model	22
8.7.2	Property definition	22
8.7.3	Derived model definition	23
8.8	Light sensor EEP A5-06-04	23
8.8.1	Derived model	23
8.8.2	Property definition	23
8.8.3	Derived model definition	24
8.9	Light Sensor EEP A5-06-05	24
8.9.1	Derived model	24
8.9.2	Property definition	24
8.9.3	Derived model definition	25
8.10	Light, temperature and occupancy sensor EEP A5-08-01	25
8.10.1	Derived model	25
8.10.2	Property definition	25
8.10.3	Derived model definition	26
8.11	Light, temperature and occupancy sensor EEP A5-08-02	27
8.11.1	Derived model	27
8.11.2	Property definition	27
8.11.3	Derived model definition	27
8.12	Light, temperature and occupancy sensor EEP A5-08-03	28
8.12.1	Derived model	28
8.12.2	Property definition	28
8.12.3	Derived model definition	29
8.13	Liquid leakage detector (water) EEP F6-05-01	30
8.13.1	Derived model	30

8.13.2	Property definition	30
8.13.3	Derived model definition	30
8.14	Occupancy sensor EEP A5-07-01	31
8.14.1	Derived model	31
8.14.2	Property definition	31
8.14.3	Derived model definition	31
8.15	Occupancy sensor EEP A5-07-02	32
8.15.1	Derived model	32
8.15.2	Property definition	32
8.15.3	Derived model definition	32
8.16	Occupancy sensor EEP A5-07-03	33
8.16.1	Derived model	33
8.16.2	Property definition	33
8.16.3	Derived model definition	33
8.17	Push button, EEP F6-01-01	34
8.17.1	Derived model	34
8.17.2	Property definition	34
8.17.3	Derived model definition	34
8.18	Rocker switch, 2 rocker EEP F6-02-01	35
8.18.1	Derived model	35
8.18.2	Property definition	35
8.18.3	Derived model definition	36
8.19	Rocker switch, 2 rocker EEP F6-02-02	36
8.19.1	Derived model	36
8.19.2	Property definition	36
8.19.3	Derived model definition	37
8.20	Rocker switch, 2 rocker EEP F6-02-03	38
8.20.1	Derived model	38
8.20.2	Property definition	38
8.20.3	Derived model definition	38
8.21	Rocker switch, 2 rocker EEP F6-02-04	39
8.21.1	Derived model	39
8.21.2	Property definition	39
8.21.3	Derived model definition	39
8.22	Rocker switch, 4 rocker EEP F6-03-01	41
8.22.1	Derived model	41
8.22.2	Property definition	41
8.22.3	Derived model definition	41
8.23	Rocker switch, 4 rocker EEP F6-03-02	42
8.23.1	Derived model	42
8.23.2	Property definition	42
8.23.3	Derived model definition	43
8.24	Single input contact EEP D5-00-01	44
8.24.1	Derived model	44
8.24.2	Property definition	44
8.24.3	Derived model definition	44
8.25	Smoke detector EEP F6-05-02	45
8.25.1	Derived model	45

8.25.2	Property definition	45
8.25.3	Derived model definition	45
8.26	Temperature and humidity sensor EEP A5-04-01	46
8.26.1	Derived model	46
8.26.2	Property definition	46
8.26.3	Derived model definition	46
8.27	Temperature and humidity sensor EEP A5-04-02	47
8.27.1	Derived model	47
8.27.2	Property definition	47
8.27.3	Derived model definition	48
8.28	Temperature and humidity sensor EEP A5-04-03	48
8.28.1	Derived model	48
8.28.2	Property definition	48
8.28.3	Derived model definition	49
8.29	Temperature sensor EEP A5-02-01	50
8.29.1	Derived model	50
8.29.2	Property definition	50
8.29.3	Derived model definition	50
8.30	Temperature sensor EEP A5-02-02	51
8.30.1	Derived model	51
8.30.2	Property definition	51
8.30.3	Derived model definition	51
8.31	Temperature sensor EEP A5-02-03	52
8.31.1	Derived model	52
8.31.2	Property definition	52
8.31.3	Derived model definition	52
8.32	Temperature sensor EEP A5-02-04	53
8.32.1	Derived model	53
8.32.2	Property definition	53
8.32.3	Derived model definition	53
8.33	Temperature sensor EEP A5-02-05	54
8.33.1	Derived model	54
8.33.2	Property definition	54
8.33.3	Derived model definition	54
8.34	Temperature sensor EEP A5-02-06	55
8.34.1	Derived model	55
8.34.2	Property definition	55
8.34.3	Derived model definition	55
8.35	Temperature sensor EEP A5-02-07	56
8.35.1	Derived model	56
8.35.2	Property definition	56
8.35.3	Derived model definition	56
8.36	Temperature sensor EEP A5-02-08	57
8.36.1	Derived model	57
8.36.2	Property definition	57
8.36.3	Derived model definition	57
8.37	Temperature sensor EEP A5-02-09	58
8.37.1	Derived model	58

Tech STANDARD PREVIEW
(standards.iteh.ai)

ISO/IEC 30118-15:2021
<https://standards.iteh.ai/catalog/standards/sist/90836822-c951-499f-b562-0522cb00c052/iso-iec-30118-15-2021>

8.37.2	Property definition	58
8.37.3	Derived model definition	58
8.38	Temperature sensor EEP A5-02-0A	59
8.38.1	Derived model	59
8.38.2	Property definition	59
8.38.3	Derived model definition	59
8.39	Temperature sensor EEP A5-02-0B	60
8.39.1	Derived model	60
8.39.2	Property definition	60
8.39.3	Derived model definition	60
8.40	Temperature sensor EEP A5-02-10	61
8.40.1	Derived model	61
8.40.2	Property definition	61
8.40.3	Derived model definition	61
8.41	Temperature sensor EEP A5-02-11	62
8.41.1	Derived model	62
8.41.2	Property definition	62
8.41.3	Derived model definition	62
8.42	Temperature sensor EEP A5-02-12	63
8.42.1	Derived model	63
8.42.2	Property definition	63
8.42.3	Derived model definition	63
8.43	Temperature sensor EEP A5-02-13	64
8.43.1	Derived model	64
8.43.2	Property definition	64
8.43.3	Derived model definition	64
8.44	Temperature sensor EEP A5-02-14	65
8.44.1	Derived model	65
8.44.2	Property definition	65
8.44.3	Derived model definition	65
8.45	Temperature sensor EEP A5-02-15	66
8.45.1	Derived model	66
8.45.2	Property definition	66
8.45.3	Derived model definition	66
8.46	Temperature sensor EEP A5-02-16	67
8.46.1	Derived model	67
8.46.2	Property definition	67
8.46.3	Derived model definition	67
8.47	Temperature sensor EEP A5-02-17	68
8.47.1	Derived model	68
8.47.2	Property definition	68
8.47.3	Derived model definition	68
8.48	Temperature sensor EEP A5-02-18	69
8.48.1	Derived model	69
8.48.2	Property definition	69
8.48.3	Derived model definition	69
8.49	Temperature sensor EEP A5-02-19	70
8.49.1	Derived model	70

8.49.2	Property definition	70
8.49.3	Derived model definition	70
8.50	Temperature sensor EEP A5-02-1A.....	71
8.50.1	Derived model.....	71
8.50.2	Property definition.....	71
8.50.3	Derived model definition	71
8.51	Temperature sensor EEP A5-02-1B.....	72
8.51.1	Derived model.....	72
8.51.2	Property definition.....	72
8.51.3	Derived model definition	72
8.52	Temperature sensor EEP A5-02-20	73
8.52.1	Derived model.....	73
8.52.2	Property definition.....	73
8.52.3	Derived model definition	73
8.53	Temperature sensor EEP A5-02-30	74
8.53.1	Derived model.....	74
8.53.2	Property definition.....	74
8.53.3	Derived model definition	74

iTeh STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/90836822-c95f-499f-b562-0322cb60c652/iso-iec-30118-15-2021>

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see patents.iec.ch).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by the Open Connectivity Foundation (OCF) (as OCF Resource to EnOcean Mapping, version 2.2.0) and drafted in accordance with its editorial rules. It was adopted, under the JTC 1 PAS procedure, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

<https://standards.iteh.ai/catalog/standards/sist/90836822-c95f-499f-b562->

A list of all parts in the ISO/IEC 30118 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

This document, and all the other parts associated with this document, were developed in response to worldwide demand for smart home focused Internet of Things (IoT) devices, such as appliances, door locks, security cameras, sensors, and actuators; these to be modelled and securely controlled, locally and remotely, over an IP network.

While some inter-device communication existed, no universal language had been developed for the IoT. Device makers instead had to choose between disparate frameworks, limiting their market share, or developing across multiple ecosystems, increasing their costs. The burden then falls on end users to determine whether the products they want are compatible with the ecosystem they bought into, or find ways to integrate their devices into their network, and try to solve interoperability issues on their own.

In addition to the smart home, IoT deployments in commercial environments are hampered by a lack of security. This issue can be avoided by having a secure IoT communication framework, which this standard solves.

The goal of these documents is then to connect the next 25 billion devices for the IoT, providing secure and reliable device discovery and connectivity across multiple OSs and platforms. There are multiple proposals and forums driving different approaches, but no single solution addresses the majority of key requirements. This document and the associated parts enable industry consolidation around a common, secure, interoperable approach.

ISO/IEC 30118 consists of eighteen parts, under the general title Information technology — Open Connectivity Foundation (OCF) Specification. The parts fall into logical groupings as described herein:

- Core framework
 - Part 1: Core Specification [ISO/IEC 30118-15:2021](https://standards.iteh.ai/catalog/standards/sist/90836822-c95f-499f-b562-0322cb60c652/iso-iec-30118-15-2021)
 - Part 2: Security Specification [0322cb60c652/iso-iec-30118-15-2021](https://standards.iteh.ai/catalog/standards/sist/90836822-c95f-499f-b562-0322cb60c652/iso-iec-30118-15-2021)
 - Part 13: Onboarding Tool Specification
- Bridging framework and bridges
 - Part 3: Bridging Specification
 - Part 6: Resource to Alljoyn Interface Mapping Specification
 - Part 8: OCF Resource to oneM2M Resource Mapping Specification
 - Part 14: OCF Resource to BLE Mapping Specification
 - Part 15: OCF Resource to EnOcean Mapping Specification
 - Part 16: OCF Resource to UPlus Mapping Specification
 - Part 17: OCF Resource to Zigbee Cluster Mapping Specification
 - Part 18: OCF Resource to Z-Wave Mapping Specification
- Resource and Device models
 - Part 4: Resource Type Specification
 - Part 5: Device Specification

- Core framework extensions
 - Part 7: Wi-Fi Easy Setup Specification
 - Part 9: Core Optional Specification
- OCF Cloud
 - Part 10: Cloud API for Cloud Services Specification
 - Part 11: Device to Cloud Services Specification
 - Part 12: Cloud Security Specification

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/IEC 30118-15:2021](https://standards.iteh.ai/catalog/standards/sist/90836822-c95f-499f-b562-0322cb60c652/iso-iec-30118-15-2021)

<https://standards.iteh.ai/catalog/standards/sist/90836822-c95f-499f-b562-0322cb60c652/iso-iec-30118-15-2021>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/IEC 30118-15:2021](https://standards.iteh.ai/catalog/standards/sist/90836822-c95f-499f-b562-0322cb60c652/iso-iec-30118-15-2021)

<https://standards.iteh.ai/catalog/standards/sist/90836822-c95f-499f-b562-0322cb60c652/iso-iec-30118-15-2021>

Information technology — Open Connectivity Foundation (OCF) Specification —

Part 15: OCF resource to EnOcean mapping specification

1 Scope

This document provides detailed mapping information between EnOcean defined EEPs and OCF defined Devices and Resources.

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.

ISO/IEC 30118-1 Information technology -- Open Connectivity Foundation (OCF) Specification -- Part 1: Core specification

<https://www.iso.org/standard/53238.html>

Latest version available at: https://openconnectivity.org/specs/OCF_Core_Specification.pdf

ISO/IEC 30118-2 Information technology – Open Connectivity Foundation (OCF) Specification – Part 2: Security specification

<https://www.iso.org/standard/74239.html>

Latest version available at: https://openconnectivity.org/specs/OCF_Security_Specification.pdf

ISO/IEC 30118-3 Information technology – Open Connectivity Foundation (OCF) Specification – Part 3: Bridging specification

<https://www.iso.org/standard/74240.html>

Latest version available at: https://openconnectivity.org/specs/OCF_Bridging_Specification.pdf

ISO/IEC 30118-4 Information technology – Open Connectivity Foundation (OCF) Specification – Part 4: Resource Type specification

<https://www.iso.org/standard/74241.html>

Latest version available at: https://openconnectivity.org/specs/OCF_Resource_Type_Specification.pdf

ISO/IEC 30118-5 Information technology – Open Connectivity Foundation (OCF) Specification – Part 5: Device specification

<https://www.iso.org/standard/79389.html>

Latest version available at: https://openconnectivity.org/specs/OCF_Device_Specification.pdf

Derived Models for Interoperability between IoT Ecosystems, Stevens & Merriam, March 2016
https://www.iab.org/wp-content/IAB-uploads/2016/03/OCF-Derived-Models-for-Interoperability-Between-IoT-Ecosystems_v2-examples.pdf

IETF RFC 4122, *A Universally Unique IDentifier (UUID) URN Namespace*, July 2005

<https://www.rfc-editor.org/info/rfc4122>

3 Terms, definitions, symbols and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 30118-1, ISO/IEC 30118-2, and ISO/IEC 30118-3 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1.1

EnOcean Device

Device with Sensors and/or Actuators which communicates over ERP and uses a well-defined EEP.

3.1.2

EnOcean Shadow Device

virtual copy of an *EnOcean Device* (3.1.1) which contains the last values that have been sent over ERP from the actual *EnOcean Device* (3.1.1).

3.1.3

EnOcean Bridge Platform

Platform which contains an ERP transceiver and can communicate over various OCF relevant protocols. It implements the EnOcean bridging function and the *EnOcean Shadow Device* (3.1.2) list which translates well-defined *EnOcean Devices* (3.1.1) to Virtual OCF Servers.

3.1.4

EnOcean Telegram

telegram which can be sent over ERP and contains different Parameters. It contains the byte-representation of actual values, a RORG and an Identifier. It may contain Teach-In Information.

3.1.5

EnOcean Teach-In Information

EEP of a real device to identify the type.

3.1.6

EnOcean Transceiver

Hardware to communicate bi-directional in the ERP.

3.2 Symbols and abbreviated terms

ERP	EnOcean Radio Protocol
EEP	EnOcean Equipment Profile
RORG	Radio-Telegram types grouped Organizationally

4 Document conventions and organization

4.1 Conventions

In this document a number of terms, conditions, mechanisms, sequences, parameters, events, states, or similar terms are printed with the first letter of each word in uppercase and the rest lowercase (e.g., Network Architecture). Any lowercase uses of these words have the normal technical English meaning.

In this document, to be consistent with the IETF usages for RESTful operations, the RESTful operation words CRUDN, CREATE, RETRIVE, UPDATE, DELETE, and NOTIFY will have all letters capitalized. Any lowercase uses of these words have the normal technical English meaning.

4.2 Notation

In this document, features are described as required, recommended, allowed or DEPRECATED as follows:

Required (or shall or mandatory).

These basic features shall be implemented to comply with the Mapping Specification. The phrases "shall not", and "PROHIBITED" indicate behavior that is prohibited, i.e. that if performed means the implementation is not in compliance.

Recommended (or should).

These features add functionality supported by the Mapping Specification and should be implemented. Recommended features take advantage of the capabilities the Mapping Specification, usually without imposing major increase of complexity. Notice that for compliance testing, if a recommended feature is implemented, it shall meet the specified requirements to be in compliance with these guidelines. Some recommended features could become requirements in the future. The phrase "should not" indicates behavior that is permitted but not recommended.

Allowed (or allowed).

These features are neither required nor recommended by the Mapping Specification, but if the feature is implemented, it shall meet the specified requirements to be in compliance with these guidelines.

Conditionally allowed (CA)

The definition or behaviour depends on a condition. If the specified condition is met, then the definition or behaviour is allowed, otherwise it is not allowed.

Conditionally required (CR)

The definition or behaviour depends on a condition. If the specified condition is met, then the definition or behaviour is required. Otherwise the definition or behaviour is allowed as default unless specifically defined as not allowed.

DEPRECATED

Although these features are still described in this document, they should not be implemented except for backward compatibility. The occurrence of a deprecated feature during operation of an implementation compliant with the current document has no effect on the implementation's operation and does not produce any error conditions. Backward compatibility may require that a feature is implemented and functions as specified but it shall never be used by implementations compliant with this document.

Strings that are to be taken literally are enclosed in "double quotes".

Words that are emphasized are printed in *italic*.