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

**Part 4:
Resource type specification**

*Technologies de l'information — Spécification de la Fondation pour la
connectivité ouverte (Fondation OCF) —*

Partie 4: Spécification des types de ressources

Withdrawing

Withdrawn



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2018

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
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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).

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).

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.

This document was prepared by the Open Connectivity Foundation (OCF) (as the OCF Resource Type Specification, Version 1.0.0) 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*.

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

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.

CONTENTS

1	Scope	29
2	Normative references	29
3	Terms, definitions, symbols and abbreviations	29
3.1	Terms and definitions	29
3.2	Symbols and abbreviations	30
3.3	Conventions	30
4	Document conventions and organization	30
4.1	Notation.....	30
4.2	Data types	31
5	Baseline Model Constructs.....	31
5.1	URI.....	31
5.2	Interfaces	32
5.3	RAML definition	32
5.4	Property definition	33
5.4.1	Common Properties.....	33
5.4.2	Resource Properties.....	33
5.4.3	Basic Resource Schema.....	34
5.4.4	CRUDN Operation Response Codes	34
5.5	Example Resource Definitions.....	35
5.6	Observable Resource Types.....	38
5.6.1	Conditional Notification	38
5.7	Composite Resource Types	41
5.8	Specification Version.....	43
6	Resource Type definitions.....	43
6.1	Introduction	43
6.2	Air Flow.....	47
6.2.1	Introduction.....	47
6.2.2	Example URI.....	47
6.2.3	Resource Type.....	47
6.2.4	RAML Definition	47
6.2.5	Property Definition	51
6.2.6	CRUDN behavior.....	52
6.3	Air Flow Control.....	52
6.3.1	Introduction	52
6.3.2	Example URI	52
6.3.3	Resource Type.....	52
6.3.4	RAML Definition	52
6.3.5	Property Definition	56
6.3.6	CRUDN behavior.....	56

6.4	Battery	56
6.4.1	Introduction	56
6.4.2	Example URI	56
6.4.3	Resource Type	56
6.4.4	RAML Definition	56
6.4.5	Property Definition	57
6.4.6	CRUDN behavior	57
6.5	Binary Switch	57
6.5.1	Introduction	57
6.5.2	Example URI	57
6.5.3	Resource Type	57
6.5.4	RAML Definition	57
6.5.5	Property Definition	59
6.5.6	CRUDN behavior	60
6.6	Brightness	60
6.6.1	Introduction	60
6.6.2	Example URI	60
6.6.3	Resource Type	60
6.6.4	RAML Definition	60
6.6.5	Property Definition	62
6.6.6	CRUDN behavior	62
6.7	Colour Chroma	63
6.7.1	Introduction	63
6.7.2	Example URI	63
6.7.3	Resource Type	63
6.7.4	RAML Definition	63
6.7.5	Property Definition	66
6.7.6	CRUDN behavior	66
6.8	Colour RGB	66
6.8.1	Introduction	66
6.8.2	Example URI	67
6.8.3	Resource Type	67
6.8.4	RAML Definition	67
6.8.5	Property Definition	69
6.8.6	CRUDN behavior	69
6.9	Dimming	69
6.9.1	Introduction	69
6.9.2	Example URI	69
6.9.3	Resource Type	69
6.9.4	RAML Definition	70
6.9.5	Property Definition	72
6.9.6	CRUDN behavior	73
6.10	Door	73
6.10.1	Introduction	73

6.10.2	Example URI	73
6.10.3	Resource Type	73
6.10.4	RAML Definition	73
6.10.5	Property Definition	75
6.10.6	CRUDN behavior	76
6.11	Energy Consumption	76
6.11.1	Introduction	76
6.11.2	Example URI	76
6.11.3	Resource Type	76
6.11.4	RAML Definition	76
6.11.5	Property Definition	77
6.11.6	CRUDN behavior	77
6.12	Energy Usage	77
6.12.1	Introduction	77
6.12.2	Example URI	77
6.12.3	Resource Type	77
6.12.4	RAML Definition	77
6.12.5	CRUDN behavior	79
6.13	Humidity	79
6.13.1	Introduction	79
6.13.2	Example URI	79
6.13.3	Resource Type	79
6.13.4	RAML Definition	79
6.13.5	Property Definition	81
6.13.6	CRUDN behavior	81
6.14	Ice Maker	81
6.14.1	Introduction	81
6.14.2	Example URI	81
6.14.3	Resource Type	82
6.14.4	RAML Definition	82
6.14.5	Property Definition	84
6.14.6	CRUDN behavior	85
6.15	Lock	85
6.15.1	Introduction	85
6.15.2	Example URI	85
6.15.3	Resource Type	85
6.15.4	RAML Definition	85
6.15.5	Property Definition	88
6.15.6	CRUDN behavior	88
6.16	Lock Code	88
6.16.1	Introduction	88
6.16.2	Example URI	88
6.16.3	Resource Type	88
6.16.4	RAML Definition	88

6.16.5	Property Definition	90
6.16.6	CRUDN behavior.....	90
6.17	Mode	90
6.17.1	Introduction	90
6.17.2	Example URI	90
6.17.3	Resource Type	91
6.17.4	RAML Definition	91
6.17.5	Property Definition	94
6.17.6	CRUDN behavior.....	94
6.18	Open Level.....	94
6.18.1	Introduction	94
6.18.2	Example URI	94
6.18.3	Resource Type	94
6.18.4	RAML Definition	94
6.18.5	Property Definition	97
6.18.6	CRUDN behavior.....	98
6.19	Operational State	98
6.19.1	Introduction	98
6.19.2	Example URI	98
6.19.3	Resource Type	98
6.19.4	RAML Definition	98
6.19.5	Property Definition	102
6.19.6	CRUDN behavior.....	103
6.20	Ramp Time.....	103
6.20.1	Introduction	103
6.20.2	Example URI	103
6.20.3	Resource Type	103
6.20.4	RAML Definition	103
6.20.5	Property Definition	106
6.20.6	CRUDN behavior.....	106
6.21	Refrigeration.....	106
6.21.1	Introduction.....	106
6.21.2	Example URI.....	106
6.21.3	Resource Type.....	106
6.21.4	RAML Definition	106
6.21.5	Property Definition	109
6.21.6	CRUDN behavior.....	110
6.22	Temperature.....	110
6.22.1	Introduction	110
6.22.2	Example URI	110
6.22.3	Resource Type	110
6.22.4	RAML Definition	110
6.22.5	Property Definition	114
6.22.6	CRUDN behavior.....	114

6.23	Time Period	114
6.23.1	Introduction	114
6.23.2	Example URI	114
6.23.3	Resource Type	114
6.23.4	RAML Definition	114
6.23.5	Property Definition	117
6.23.6	CRUDN behavior	117
6.24	Activity Count	118
6.24.1	Introduction	118
6.24.2	Example URI	118
6.24.3	Resource Type	118
6.24.4	RAML Definition	118
6.24.5	Property Definition	120
6.24.6	CRUDN behavior	120
6.25	Atmospheric Pressure Sensor	120
6.25.1	Introduction	120
6.25.2	Example URI	120
6.25.3	Resource Type	120
6.25.4	RAML Definition	120
6.25.5	Property Definition	121
6.25.6	CRUDN behavior	121
6.26	Audio Controls	121
6.26.1	Introduction	121
6.26.2	Example URI	122
6.26.3	Resource Type	122
6.26.4	RAML Definition	122
6.26.5	Property Definition	124
6.26.6	CRUDN behavior	124
6.27	Auto Focus	124
6.27.1	Introduction	124
6.27.2	Example URI	124
6.27.3	Resource Type	124
6.27.4	RAML Definition	124
6.27.5	Property Definition	127
6.27.6	CRUDN behavior	127
6.28	Automatic Document Feeder	127
6.28.1	Introduction	127
6.28.2	Example URI	127
6.28.3	Resource Type	127
6.28.4	RAML Definition	127
6.28.5	Property Definition	128
6.28.6	CRUDN behavior	128
6.29	Button Switch	128
6.29.1	Introduction	128

6.29.2	Example URI	128
6.29.3	Resource Type	129
6.29.4	RAML Definition	129
6.29.5	Property Definition	130
6.29.6	CRUDN behavior.....	130
6.30	Carbon Dioxide Sensor.....	130
6.30.1	Introduction	130
6.30.2	Example URI	130
6.30.3	Resource Type.....	130
6.30.4	RAML Definition	130
6.30.5	Property Definition	131
6.30.6	CRUDN behavior.....	131
6.31	Carbon Monoxide Sensor	131
6.31.1	Introduction	131
6.31.2	Example URI	131
6.31.3	Resource Type.....	131
6.31.4	RAML Definition	131
6.31.5	Property Definition	132
6.31.6	CRUDN behavior.....	132
6.32	Auto White Balance	132
6.32.1	Introduction.....	132
6.32.2	Example URI	132
6.32.3	Resource Type.....	132
6.32.4	RAML Definition	132
6.32.5	Property Definition	135
6.32.6	CRUDN behavior.....	135
6.33	Colour Saturation	135
6.33.1	Introduction.....	135
6.33.2	Example URI	135
6.33.3	Resource Type.....	135
6.33.4	RAML Definition	135
6.33.5	Property Definition	137
6.33.6	CRUDN behavior.....	137
6.34	Contact Sensor.....	137
6.34.1	Introduction	137
6.34.2	Example URI	137
6.34.3	Resource Type.....	137
6.34.4	RAML Definition	138
6.34.5	Property Definition	138
6.34.6	CRUDN behavior.....	139
6.35	Demand Response Load Control (DRLC).....	139
6.35.1	Introduction	139
6.35.2	Example URI	139
6.35.3	Resource Type.....	139

6.35.4	RAML Definition	139
6.35.5	Property Definition	142
6.35.6	CRUDN behavior.....	142
6.36	Energy Overload/Circuit Breaker	143
6.36.1	Introduction	143
6.36.2	Example URI	143
6.36.3	Resource Type	143
6.36.4	RAML Definition	143
6.36.5	Property Definition	144
6.36.6	CRUDN behavior.....	144
6.37	Generic Sensor	144
6.37.1	Introduction	144
6.37.2	Example URI	144
6.37.3	Resource Type	144
6.37.4	RAML Definition	144
6.37.5	Property Definition	145
6.37.6	CRUDN behavior.....	145
6.38	Glass Break Sensor.....	145
6.38.1	Introduction	145
6.38.2	Example URI	145
6.38.3	Resource Type	145
6.38.4	RAML Definition	145
6.38.5	Property Definition	146
6.38.6	CRUDN behavior.....	146
6.39	Heart Rate Zone	146
6.39.1	Introduction	146
6.39.2	Example URI	147
6.39.3	Resource Type	147
6.39.4	RAML Definition	147
6.39.5	Property Definition	148
6.39.6	CRUDN behavior.....	148
6.40	Illuminance Sensor	148
6.40.1	Introduction	148
6.40.2	Example URI	148
6.40.3	Resource Type	148
6.40.4	RAML Definition	148
6.40.5	Property Definition	149
6.40.6	CRUDN behavior.....	149
6.41	Magnetic Field Direction Sensor	149
6.41.1	Introduction	149
6.41.2	Example URI	149
6.41.3	Resource Type	149
6.41.4	RAML Definition	149
6.41.5	Property Definition	150

6.41.6	CRUDN behavior.....	150
6.42	Media.....	151
6.42.1	Introduction.....	151
6.42.2	Example URI.....	151
6.42.3	Resource Type.....	151
6.42.4	RAML Definition.....	151
6.42.5	Property Definition.....	152
6.42.6	CRUDN behavior.....	153
6.43	Media Source.....	153
6.43.1	Introduction.....	153
6.43.2	Example URI.....	153
6.43.3	Resource Type.....	153
6.43.4	RAML Definition.....	153
6.43.5	Property Definition.....	156
6.43.6	CRUDN behavior.....	156
6.44	Media Source List.....	156
6.44.1	Introduction.....	156
6.44.2	Example URI.....	156
6.44.3	Resource Type.....	156
6.44.4	RAML Definition.....	156
6.44.5	Property Definition.....	159
6.44.6	CRUDN behavior.....	159
6.44.7	Referenced JSON schemas.....	160
6.45	Media Source Input.....	160
6.45.1	Introduction.....	160
6.45.2	Example URI.....	160
6.45.3	Resource Type.....	160
6.45.4	RAML Definition.....	160
6.45.5	Property Definition.....	163
6.45.6	CRUDN behavior.....	163
6.46	Media Source Output.....	163
6.46.1	Introduction.....	163
6.46.2	Example URI.....	163
6.46.3	Resource Type.....	163
6.46.4	RAML Definition.....	163
6.46.5	Property Definition.....	166
6.46.6	CRUDN behavior.....	166
6.47	Motion Sensor.....	166
6.47.1	Introduction.....	166
6.47.2	Example URI.....	166
6.47.3	Resource Type.....	166
6.47.4	RAML Definition.....	166
6.47.5	Property Definition.....	167
6.47.6	CRUDN behavior.....	167

6.48	Night Mode	167
6.48.1	Introduction	167
6.48.2	Example URI	167
6.48.3	Resource Type	167
6.48.4	RAML Definition	167
6.48.5	Property Definition	169
6.48.6	CRUDN behavior	170
6.49	Presence Sensor	170
6.49.1	Introduction	170
6.49.2	Example URI	170
6.49.3	Resource Type	170
6.49.4	RAML Definition	170
6.49.5	Property Definition	171
6.49.6	CRUDN behavior	171
6.50	Pan Tilt Zoom Movement	171
6.50.1	Introduction	171
6.50.2	Example URI	171
6.50.3	Resource Type	171
6.50.4	RAML Definition	171
6.50.5	Property Definition	175
6.50.6	CRUDN behavior	176
6.51	Signal Strength	176
6.51.1	Introduction	176
6.51.2	Example URI	176
6.51.3	Resource Type	176
6.51.4	RAML Definition	176
6.51.5	Property Definition	177
6.51.6	CRUDN behavior	177
6.52	Speech Synthesis-TTS	177
6.52.1	Introduction	177
6.52.2	Example URI	177
6.52.3	Resource Type	177
6.52.4	RAML Definition	177
6.52.5	Property Definition	180
6.52.6	CRUDN behavior	181
6.53	Touch Sensor	181
6.53.1	Introduction	181
6.53.2	Example URI	181
6.53.3	Resource Type	181
6.53.4	RAML Definition	181
6.53.5	Property Definition	182
6.53.6	CRUDN behavior	182
6.54	UV Radiation	182
6.54.1	Introduction	182

6.54.2	Example URI	182
6.54.3	Resource Type	182
6.54.4	RAML Definition	182
6.54.5	Property Definition	183
6.54.6	CRUDN behavior.....	183
6.55	Water Sensor	183
6.55.1	Introduction	183
6.55.2	Example URI	183
6.55.3	Resource Type.....	183
6.55.4	RAML Definition	183
6.55.5	Property Definition	184
6.55.6	CRUDN behavior.....	184
6.56	Acceleration Sensor	185
6.56.1	Introduction	185
6.56.2	Example URI	185
6.56.3	Resource Type.....	185
6.56.4	RAML Definition	185
6.56.5	Property Definition	186
6.56.6	CRUDN behavior.....	186
6.57	Movement.....	186
6.57.1	Introduction.....	186
6.57.2	Example URI.....	186
6.57.3	Resource Type.....	186
6.57.4	RAML Definition.....	186
6.57.5	Property Definition	189
6.57.6	CRUDN behavior.....	189
6.58	Sleep Sensor.....	189
6.58.1	Introduction.....	189
6.58.2	Example URI.....	189
6.58.3	Resource Type.....	189
6.58.4	RAML Definition.....	189
6.58.5	Property Definition	190
6.58.6	CRUDN behavior.....	190
6.59	Smoke Sensor.....	190
6.59.1	Introduction.....	190
6.59.2	Example URI.....	190
6.59.3	Resource Type.....	191
6.59.4	RAML Definition.....	191
6.59.5	Property Definition	191
6.59.6	CRUDN behavior.....	192
6.60	Three Axis Sensor.....	192
6.60.1	Introduction.....	192
6.60.2	Example URI.....	192
6.60.3	Resource Type.....	192

6.60.4	RAML Definition	192
6.60.5	Property Definition	193
6.60.6	CRUDN behavior.....	193
6.61	Altimeter.....	193
6.61.1	Introduction	193
6.61.2	Example URI	193
6.61.3	Resource Type	193
6.61.4	RAML Definition	193
6.61.5	Property Definition	194
6.61.6	CRUDN behavior.....	194
6.62	Clock.....	195
6.62.1	Introduction	195
6.62.2	Example URI	195
6.62.3	Resource Type	195
6.62.4	RAML Definition	195
6.62.5	Property Definition	198
6.62.6	CRUDN behavior.....	198
6.63	Geolocation	198
6.63.1	Introduction	198
6.63.2	Example URI	198
6.63.3	Resource Type	198
6.63.4	RAML Definition	199
6.63.5	Property Definition	200
6.63.6	CRUDN behavior.....	201
6.64	Height	201
6.64.1	Introduction	201
6.64.2	Example URI	201
6.64.3	Resource Type	201
6.64.4	RAML Definition	201
6.64.5	Property Definition	204
6.64.6	CRUDN behavior.....	204
6.65	Weight.....	204
6.65.1	Introduction	204
6.65.2	Example URI	204
6.65.3	Resource Type	204
6.65.4	RAML Definition	204
6.65.5	Property Definition	205
6.65.6	CRUDN behavior.....	205
6.66	Air Quality	205
6.66.1	Introduction	205
6.66.2	Example URI	206
6.66.3	Resource Type	206
6.66.4	RAML Definition	206
6.66.5	Property Definition	207

6.66.6	CRUDN behavior.....	207
6.67	Air Quality Collection.....	207
6.67.1	Introduction.....	207
6.67.2	Example URI.....	208
6.67.3	Resource Type.....	208
6.67.4	RAML Definition.....	208
6.67.5	Property Definition.....	209
6.67.6	CRUDN behavior.....	210
6.67.7	Referenced JSON schemas.....	210
6.68	Consumable.....	211
6.68.1	Introduction.....	211
6.68.2	Example URI.....	211
6.68.3	Resource Type.....	211
6.68.4	RAML Definition.....	211
6.68.5	Property Definition.....	213
6.68.6	CRUDN behavior.....	213
6.69	Consumable Collection.....	213
6.69.1	Introduction.....	213
6.69.2	Example URI.....	213
6.69.3	Resource Type.....	213
6.69.4	RAML Definition.....	213
6.69.5	Property Definition.....	215
6.69.6	CRUDN behavior.....	216
6.69.7	Referenced JSON schemas.....	216
6.70	Delay Defrost.....	217
6.70.1	Introduction.....	217
6.70.2	Example URI.....	217
6.70.3	Resource Type.....	217
6.70.4	RAML Definition.....	217
6.70.5	Property Definition.....	221
6.70.6	CRUDN behavior.....	222
6.70.7	Referenced JSON schemas.....	222
6.71	Eco Mode.....	222
6.71.1	Introduction.....	222
6.71.2	Example URI.....	223
6.71.3	Resource Type.....	223
6.71.4	RAML Definition.....	223
6.71.5	Property Definition.....	225
6.71.6	CRUDN behavior.....	225
6.71.7	Referenced JSON schemas.....	225
6.72	Heating Zone.....	226
6.72.1	Introduction.....	226
6.72.2	Example URI.....	226
6.72.3	Resource Type.....	226

6.72.4	RAML Definition	226
6.72.5	Property Definition	227
6.72.6	CRUDN behavior.....	227
6.73	Heating Zone Collection	227
6.73.1	Introduction	227
6.73.2	Example URI	227
6.73.3	Resource Type	227
6.73.4	RAML Definition	228
6.73.5	Property Definition	229
6.73.6	CRUDN behavior.....	230
6.73.7	Referenced JSON schemas.....	230
6.74	Selectable Levels	231
6.74.1	Introduction	231
6.74.2	Example URI	231
6.74.3	Resource Type	231
6.74.4	RAML Definition	231
6.74.5	Property Definition	235
6.74.6	CRUDN behavior.....	235
6.75	Value Conditional	235
6.75.1	Introduction	235
6.75.2	Example URI	235
6.75.3	Resource Type	235
6.75.4	RAML Definition	235
6.75.5	Property Definition	238
6.75.6	CRUDN behavior.....	238
Annex A	Base Resource	239
A.1	Base Resource Schema	239
A.1.1	Introduction	239
A.1.2	Example URI	239
A.1.3	Resource Type	239
A.1.4	RAML Definition	239
A.1.5	Property Definition	242
A.1.6	CRUDN behavior.....	243
A.1.7	Referenced JSON schemas.....	243
A.1.8	oic.core.json.....	243
Annex B	Swagger 2.0	245
B.1	245	
B.2	Acceleration Sensor	245
B.2.1	Introduction	245
B.2.2	Example URI	245
B.2.3	Resource Type	245
B.2.4	Swagger2.0 Definition	245
B.2.5	Property Definition	247
B.2.6	CRUDN behaviour.....	248

B.3	Activity Count	248
B.3.1	Introduction	248
B.3.2	Example URI	248
B.3.3	Resource Type	248
B.3.4	Swagger2.0 Definition	248
B.3.5	Property Definition	251
B.3.6	CRUDN behaviour	252
B.4	Air Flow	252
B.4.1	Introduction	252
B.4.2	Example URI	252
B.4.3	Resource Type	252
B.4.4	Swagger2.0 Definition	252
B.4.5	Property Definition	256
B.4.6	CRUDN behaviour	257
B.5	Air Flow Control	257
B.5.1	Introduction	257
B.5.2	Example URI	257
B.5.3	Resource Type	257
B.5.4	Swagger2.0 Definition	257
B.5.5	Property Definition	265
B.5.6	CRUDN behaviour	266
B.6	Air Quality	266
B.6.1	Introduction	266
B.6.2	Example URI	267
B.6.3	Resource Type	267
B.6.4	Swagger2.0 Definition	267
B.6.5	Property Definition	270
B.6.6	CRUDN behaviour	270
B.7	Air Quality Collection	271
B.7.1	Introduction	271
B.7.2	Example URI	271
B.7.3	Resource Type	271
B.7.4	Swagger2.0 Definition	271
B.7.5	Property Definition	278
B.7.6	CRUDN behaviour	280
B.8	Altimeter	280
B.8.1	Introduction	280
B.8.2	Example URI	280
B.8.3	Resource Type	280
B.8.4	Swagger2.0 Definition	280
B.8.5	Property Definition	283
B.8.6	CRUDN behaviour	283
B.9	Atmospheric Pressure Sensor	284
B.9.1	Introduction	284

B.9.2	Example URI	284
B.9.3	Resource Type	284
B.9.4	Swagger2.0 Definition	284
B.9.5	Property Definition	286
B.9.6	CRUDN behaviour	287
B.10	Audio Controls	287
B.10.1	Introduction	287
B.10.2	Example URI	287
B.10.3	Resource Type	287
B.10.4	Swagger2.0 Definition	287
B.10.5	Property Definition	290
B.10.6	CRUDN behaviour	291
B.11	Auto Focus	291
B.11.1	Introduction	291
B.11.2	Example URI	291
B.11.3	Resource Type	291
B.11.4	Swagger2.0 Definition	291
B.11.5	Property Definition	294
B.11.6	CRUDN behaviour	295
B.12	Automatic Document Feeder	295
B.12.1	Introduction	295
B.12.2	Example URI	295
B.12.3	Resource Type	295
B.12.4	Swagger2.0 Definition	295
B.12.5	Property Definition	298
B.12.6	CRUDN behaviour	298
B.13	Base Resource Schema	299
B.13.1	Introduction	299
B.13.2	Example URI	299
B.13.3	Resource Type	299
B.13.4	Swagger2.0 Definition	299
B.13.5	Property Definition	302
B.13.6	CRUDN behaviour	302
B.14	Battery	302
B.14.1	Introduction	302
B.14.2	Example URI	303
B.14.3	Resource Type	303
B.14.4	Swagger2.0 Definition	303
B.14.5	Property Definition	308
B.14.6	CRUDN behaviour	309
B.15	Binary Switch	309
B.15.1	Introduction	309
B.15.2	Example URI	309
B.15.3	Resource Type	309

B.15.4	Swagger2.0 Definition	309
B.15.5	Property Definition	312
B.15.6	CRUDN behaviour	312
B.16	Brightness	313
B.16.1	Introduction	313
B.16.2	Example URI	313
B.16.3	Resource Type	313
B.16.4	Swagger2.0 Definition	313
B.16.5	Property Definition	316
B.16.6	CRUDN behaviour	316
B.17	Button Switch	317
B.17.1	Introduction	317
B.17.2	Example URI	317
B.17.3	Resource Type	317
B.17.4	Swagger2.0 Definition	317
B.17.5	Property Definition	319
B.17.6	CRUDN behaviour	319
B.18	Carbon Dioxide Sensor	320
B.18.1	Introduction	320
B.18.2	Example URI	320
B.18.3	Resource Type	320
B.18.4	Swagger2.0 Definition	320
B.18.5	Property Definition	322
B.18.6	CRUDN behaviour	322
B.19	Carbon Monoxide Sensor	323
B.19.1	Introduction	323
B.19.2	Example URI	323
B.19.3	Resource Type	323
B.19.4	Swagger2.0 Definition	323
B.19.5	Property Definition	325
B.19.6	CRUDN behaviour	325
B.20	Clock	326
B.20.1	Introduction	326
B.20.2	Example URI	326
B.20.3	Resource Type	326
B.20.4	Swagger2.0 Definition	326
B.20.5	Property Definition	329
B.20.6	CRUDN behaviour	330
B.21	Auto White Balance	330
B.21.1	Introduction	330
B.21.2	Example URI	330
B.21.3	Resource Type	330
B.21.4	Swagger2.0 Definition	330
B.21.5	Property Definition	333

B.21.6	CRUDN behaviour	333
B.22	Colour Saturation	334
B.22.1	Introduction	334
B.22.2	Example URI	334
B.22.3	Resource Type	334
B.22.4	Swagger2.0 Definition	334
B.22.5	Property Definition	337
B.22.6	CRUDN behaviour	337
B.23	Colour Chroma	337
B.23.1	Introduction	337
B.23.2	Example URI	338
B.23.3	Resource Type	338
B.23.4	Swagger2.0 Definition	338
B.23.5	Property Definition	341
B.23.6	CRUDN behaviour	342
B.24	Colour RGB	342
B.24.1	Introduction	342
B.24.2	Example URI	343
B.24.3	Resource Type	343
B.24.4	Swagger2.0 Definition	343
B.24.5	Property Definition	346
B.24.6	CRUDN behaviour	346
B.25	Consumable	346
B.25.1	Introduction	346
B.25.2	Example URI	347
B.25.3	Resource Type	347
B.25.4	Swagger2.0 Definition	347
B.25.5	Property Definition	350
B.25.6	CRUDN behaviour	350
B.26	Consumables	350
B.26.1	Introduction	350
B.26.2	Example URI	351
B.26.3	Resource Type	351
B.26.4	Swagger2.0 Definition	351
B.26.5	Property Definition	358
B.26.6	CRUDN behaviour	360
B.27	Contact Sensor	360
B.27.1	Introduction	360
B.27.2	Example URI	361
B.27.3	Resource Type	361
B.27.4	Swagger2.0 Definition	361
B.27.5	Property Definition	363
B.27.6	CRUDN behaviour	363
B.28	Delay Defrost	363

B.28.1	Introduction	363
B.28.2	Example URI	364
B.28.3	Resource Type	364
B.28.4	Swagger2.0 Definition	364
B.28.5	Property Definition	367
B.28.6	CRUDN behaviour	368
B.29	Dimming	368
B.29.1	Introduction	368
B.29.2	Example URI	368
B.29.3	Resource Type	368
B.29.4	Swagger2.0 Definition	369
B.29.5	Property Definition	372
B.29.6	CRUDN behaviour	372
B.30	Door	372
B.30.1	Introduction	372
B.30.2	Example URI	373
B.30.3	Resource Type	373
B.30.4	Swagger2.0 Definition	373
B.30.5	Property Definition	377
B.30.6	CRUDN behaviour	379
B.31	Demand Response Load Control (DRLC)	379
B.31.1	Introduction	379
B.31.2	Example URI	379
B.31.3	Resource Type	379
B.31.4	Swagger2.0 Definition	379
B.31.5	Property Definition	383
B.31.6	CRUDN behaviour	383
B.32	Eco Mode	383
B.32.1	Introduction	383
B.32.2	Example URI	384
B.32.3	Resource Type	384
B.32.4	Swagger2.0 Definition	384
B.32.5	Property Definition	389
B.32.6	CRUDN behaviour	390
B.33	Energy Consumption	390
B.33.1	Introduction	390
B.33.2	Example URI	390
B.33.3	Resource Type	390
B.33.4	Swagger2.0 Definition	390
B.33.5	Property Definition	393
B.33.6	CRUDN behaviour	393
B.34	Energy Overload/Circuit Breaker	393
B.34.1	Introduction	393
B.34.2	Example URI	393

B.34.3	Resource Type	394
B.34.4	Swagger2.0 Definition	394
B.34.5	Property Definition	396
B.34.6	CRUDN behaviour	396
B.35	Energy Usage	396
B.35.1	Introduction	396
B.35.2	Example URI	396
B.35.3	Resource Type	397
B.35.4	Swagger2.0 Definition	397
B.35.5	Property Definition	401
B.35.6	CRUDN behaviour	402
B.36	Generic Sensor	402
B.36.1	Introduction	402
B.36.2	Example URI	402
B.36.3	Resource Type	402
B.36.4	Swagger2.0 Definition	402
B.36.5	Property Definition	405
B.36.6	CRUDN behaviour	405
B.37	Geolocation	405
B.37.1	Introduction	405
B.37.2	Example URI	405
B.37.3	Resource Type	405
B.37.4	Swagger2.0 Definition	405
B.37.5	Property Definition	409
B.37.6	CRUDN behaviour	410
B.38	Glass Break Sensor	410
B.38.1	Introduction	410
B.38.2	Example URI	410
B.38.3	Resource Type	410
B.38.4	Swagger2.0 Definition	410
B.38.5	Property Definition	412
B.38.6	CRUDN behaviour	413
B.39	Heart Rate Zone	413
B.39.1	Introduction	413
B.39.2	Example URI	413
B.39.3	Resource Type	413
B.39.4	Swagger2.0 Definition	413
B.39.5	Property Definition	416
B.39.6	CRUDN behaviour	416
B.40	Heating Zone	416
B.40.1	Introduction	416
B.40.2	Example URI	416
B.40.3	Resource Type	417
B.40.4	Swagger2.0 Definition	417

B.40.5	Property Definition	419
B.40.6	CRUDN behaviour.....	420
B.41	Heating Zone Collection	420
B.41.1	Introduction	420
B.41.2	Example URI	420
B.41.3	Resource Type	420
B.41.4	Swagger2.0 Definition	420
B.41.5	Property Definition	428
B.41.6	CRUDN behaviour.....	430
B.42	Height	430
B.42.1	Introduction	430
B.42.2	Example URI	430
B.42.3	Resource Type	430
B.42.4	Swagger2.0 Definition	430
B.42.5	Property Definition	433
B.42.6	CRUDN behaviour.....	433
B.43	Humidity	434
B.43.1	Introduction	434
B.43.2	Example URI	434
B.43.3	Resource Type	434
B.43.4	Swagger2.0 Definition	434
B.43.5	Property Definition	438
B.43.6	CRUDN behaviour.....	439
B.44	Ice Maker	440
B.44.1	Introduction	440
B.44.2	Example URI	440
B.44.3	Resource Type	440
B.44.4	Swagger2.0 Definition	440
B.44.5	Property Definition	445
B.44.6	CRUDN behaviour.....	446
B.45	Illuminance Sensor.....	446
B.45.1	Introduction.....	446
B.45.2	Example URI.....	446
B.45.3	Resource Type.....	446
B.45.4	Swagger2.0 Definition	446
B.45.5	Property Definition	448
B.45.6	CRUDN behaviour.....	449
B.46	Lock Code	449
B.46.1	Introduction	449
B.46.2	Example URI	449
B.46.3	Resource Type	449
B.46.4	Swagger2.0 Definition	449
B.46.5	Property Definition	452
B.46.6	CRUDN behaviour.....	453

B.47	Lock	453
B.47.1	Introduction	453
B.47.2	Example URI	453
B.47.3	Resource Type	453
B.47.4	Swagger2.0 Definition	453
B.47.5	Property Definition	456
B.47.6	CRUDN behaviour	457
B.48	Magnetic Field Direction Sensor	457
B.48.1	Introduction	457
B.48.2	Example URI	457
B.48.3	Resource Type	457
B.48.4	Swagger2.0 Definition	457
B.48.5	Property Definition	459
B.48.6	CRUDN behaviour	460
B.49	Media	460
B.49.1	Introduction	460
B.49.2	Example URI	460
B.49.3	Resource Type	460
B.49.4	Swagger2.0 Definition	460
B.49.5	Property Definition	463
B.49.6	CRUDN behaviour	464
B.50	Media Source	464
B.50.1	Introduction	464
B.50.2	Example URI	464
B.50.3	Resource Type	464
B.50.4	Swagger2.0 Definition	464
B.50.5	Property Definition	468
B.50.6	CRUDN behaviour	469
B.51	Media Source List	469
B.51.1	Introduction	469
B.51.2	Example URI	469
B.51.3	Resource Type	469
B.51.4	Swagger2.0 Definition	469
B.51.5	Property Definition	473
B.51.6	CRUDN behaviour	473
B.52	Media Source Input	473
B.52.1	Introduction	473
B.52.2	Example URI	474
B.52.3	Resource Type	474
B.52.4	Swagger2.0 Definition	474
B.52.5	Property Definition	477
B.52.6	CRUDN behaviour	478
B.53	Media Source Output	478
B.53.1	Introduction	478

B.53.2	Example URI	478
B.53.3	Resource Type	478
B.53.4	Swagger2.0 Definition	478
B.53.5	Property Definition	482
B.53.6	CRUDN behaviour	482
B.54	Mode	483
B.54.1	Introduction	483
B.54.2	Example URI	483
B.54.3	Resource Type	483
B.54.4	Swagger2.0 Definition	483
B.54.5	Property Definition	488
B.54.6	CRUDN behaviour	489
B.55	Motion Sensor	489
B.55.1	Introduction	489
B.55.2	Example URI	489
B.55.3	Resource Type	489
B.55.4	Swagger2.0 Definition	489
B.55.5	Property Definition	491
B.55.6	CRUDN behaviour	492
B.56	Movement	492
B.56.1	Introduction	492
B.56.2	Example URI	492
B.56.3	Resource Type	492
B.56.4	Swagger2.0 Definition	492
B.56.5	Property Definition	495
B.56.6	CRUDN behaviour	496
B.57	Night Mode	496
B.57.1	Introduction	496
B.57.2	Example URI	496
B.57.3	Resource Type	496
B.57.4	Swagger2.0 Definition	496
B.57.5	Property Definition	499
B.57.6	CRUDN behaviour	500
B.58	Open Level	500
B.58.1	Introduction	500
B.58.2	Example URI	500
B.58.3	Resource Type	500
B.58.4	Swagger2.0 Definition	500
B.58.5	Property Definition	504
B.58.6	CRUDN behaviour	504
B.59	Operational State	504
B.59.1	Introduction	504
B.59.2	Example URI	504
B.59.3	Resource Type	505

B.59.4	Swagger2.0 Definition	505
B.59.5	Property Definition	510
B.59.6	CRUDN behaviour	512
B.60	Presence Sensor	512
B.60.1	Introduction	512
B.60.2	Example URI	512
B.60.3	Resource Type	512
B.60.4	Swagger2.0 Definition	512
B.60.5	Property Definition	514
B.60.6	CRUDN behaviour	515
B.61	Pan Tilt Zoom Movement	515
B.61.1	Introduction	515
B.61.2	Example URI	515
B.61.3	Resource Type	515
B.61.4	Swagger2.0 Definition	515
B.61.5	Property Definition	519
B.61.6	CRUDN behaviour	520
B.62	Ramp Time	520
B.62.1	Introduction	520
B.62.2	Example URI	520
B.62.3	Resource Type	520
B.62.4	Swagger2.0 Definition	520
B.62.5	Property Definition	523
B.62.6	CRUDN behaviour	524
B.63	Refrigeration	524
B.63.1	Introduction	524
B.63.2	Example URI	524
B.63.3	Resource Type	524
B.63.4	Swagger2.0 Definition	524
B.63.5	Property Definition	530
B.63.6	CRUDN behaviour	531
B.64	Selectable Levels	531
B.64.1	Introduction	531
B.64.2	Example URI	531
B.64.3	Resource Type	531
B.64.4	Swagger2.0 Definition	531
B.64.5	Property Definition	537
B.64.6	CRUDN behaviour	538
B.65	Signal Strength	538
B.65.1	Introduction	538
B.65.2	Example URI	538
B.65.3	Resource Type	538
B.65.4	Swagger2.0 Definition	538
B.65.5	Property Definition	541

B.65.6	CRUDN behaviour	541
B.66	Sleep Sensor	541
B.66.1	Introduction	541
B.66.2	Example URI	541
B.66.3	Resource Type	541
B.66.4	Swagger2.0 Definition	542
B.66.5	Property Definition	544
B.66.6	CRUDN behaviour	544
B.67	Smoke Sensor	544
B.67.1	Introduction	544
B.67.2	Example URI	544
B.67.3	Resource Type	544
B.67.4	Swagger2.0 Definition	545
B.67.5	Property Definition	547
B.67.6	CRUDN behaviour	547
B.68	Speech Synthesis-TTS	547
B.68.1	Introduction	547
B.68.2	Example URI	548
B.68.3	Resource Type	548
B.68.4	Swagger2.0 Definition	548
B.68.5	Property Definition	552
B.68.6	CRUDN behaviour	552
B.69	Temperature	552
B.69.1	Introduction	552
B.69.2	Example URI	553
B.69.3	Resource Type	553
B.69.4	Swagger2.0 Definition	553
B.69.5	Property Definition	556
B.69.6	CRUDN behaviour	557
B.70	Three Axis Sensor	557
B.70.1	Introduction	557
B.70.2	Example URI	557
B.70.3	Resource Type	557
B.70.4	Swagger2.0 Definition	557
B.70.5	Property Definition	560
B.70.6	CRUDN behaviour	560
B.71	Time Period	561
B.71.1	Introduction	561
B.71.2	Example URI	561
B.71.3	Resource Type	561
B.71.4	Swagger2.0 Definition	561
B.71.5	Property Definition	564
B.71.6	CRUDN behaviour	565
B.72	Touch Sensor	565

B.72.1	Introduction	565
B.72.2	Example URI	565
B.72.3	Resource Type	565
B.72.4	Swagger2.0 Definition	565
B.72.5	Property Definition	567
B.72.6	CRUDN behaviour	568
B.73	UV Radiation	568
B.73.1	Introduction	568
B.73.2	Example URI	568
B.73.3	Resource Type	568
B.73.4	Swagger2.0 Definition	568
B.73.5	Property Definition	571
B.73.6	CRUDN behaviour	571
B.74	Value Conditional	571
B.74.1	Introduction	571
B.74.2	Example URI	572
B.74.3	Resource Type	572
B.74.4	Swagger2.0 Definition	572
B.74.5	Property Definition	574
B.74.6	CRUDN behaviour	574
B.75	Water Sensor	574
B.75.1	Introduction	574
B.75.2	Example URI	574
B.75.3	Resource Type	574
B.75.4	Swagger2.0 Definition	574
B.75.5	Property Definition	576
B.75.6	CRUDN behaviour	577
B.76	Weight	577
B.76.1	Introduction	577
B.76.2	Example URI	577
B.76.3	Resource Type	577
B.76.4	Swagger2.0 Definition	577
B.76.5	Property Definition	580
B.76.6	CRUDN behaviour	580

Figures

Figure 1: Overall conditional notification logic.....	40
Figure 2: Conditional Notification Example Flow	41

Withdrawn

Tables

Table 5-1 Conversion between OCF CRUDN and RAML definitions.....	32
Table 5-2 Common Properties for OCF Resources	33
Table 5-3 Property definitions of a Resource Type in the JSON schema.....	33
Table 5-4 Return codes behaviour in RAML.....	34
Table 5-5 RAML example of an Resource representing an Actuator.....	35
Table 5-6 RAML example of an Resource specifying a Sensor	37
Table 5-7 Conditional Notification Properties	39
Table 5-8 RAML example of Composite Resource	42
Table 6-1 Alphabetical list of Resource Types	43

Withdrawing

1 Scope

The OCF Resource Type Specification specifies the Resources that have been defined by OCF that may be exposed by an OCF Device.

Application profile device specifications (for example those created for Smart Home or Healthcare) specify device types appropriate to the profile; such specifications use Resource Type definitions from this document.

This specification is built on top of the OCF Core Specification. The OCF Core Specification specifies the OCF Framework that enables the implementation of profiles for IoT usages and ecosystems. The OCF Core Framework is scalable to support simple devices (constrained device) and more capable devices (smart device).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

OCF Core Specification, *Open Connectivity Foundation Core Specification*, Version 1.0.0.

JSON SCHEMA, *JSON Schema: Core Definitions and Terminology*, Version 4.0,
<http://json-schema.org/latest/json-schema-core.html>.

RAML, *Restful API modelling language*, Version 0.8.
<https://github.com/raml-org/raml-spec/blob/master/versions/raml-08/raml-08.md>

ISO 8601:2004, *Data elements and interchange formats – information interchange – Representation of dates and times*.

CIE CIE159:2004, *A colour appearance model for colour management systems: CIECAM02*, January 19, 2004.

http://www.cie.co.at/index.php/Publications/index.php?i_ca_id=435

Swagger2.0, *Swagger RESTful API Documentation Specification*, Version 2.0
<http://swagger.io/specification/>

OCF Resource Type Definitions, *API Definition Language for OCF Resource Type Definitions*, Release OCF-v1.0.0

<https://github.com/OpenInterConnect/IoTDataModels>