

OCF Resource to OneM2M Module Class Mapping Specification

VERSION 2.2.1 | December 2020



OPEN CONNECTIVITY
FOUNDATION™

Legal Disclaimer

NOTHING CONTAINED IN THIS DOCUMENT SHALL BE DEEMED AS GRANTING YOU ANY KIND OF LICENSE IN ITS CONTENT, EITHER EXPRESSLY OR IMPLIEDLY, OR TO ANY INTELLECTUAL PROPERTY OWNED OR CONTROLLED BY ANY OF THE AUTHORS OR DEVELOPERS OF THIS DOCUMENT. THE INFORMATION CONTAINED HEREIN IS PROVIDED ON AN "AS IS" BASIS, AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THE AUTHORS AND DEVELOPERS OF THIS SPECIFICATION HEREBY DISCLAIM ALL OTHER WARRANTIES AND CONDITIONS, EITHER EXPRESS OR IMPLIED, STATUTORY OR AT COMMON LAW, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. OPEN CONNECTIVITY FOUNDATION, INC. FURTHER DISCLAIMS ANY AND ALL WARRANTIES OF NON-INFRINGEMENT, ACCURACY OR LACK OF VIRUSES.

The OCF logo is a trademark of Open Connectivity Foundation, Inc. in the United States or other countries. *Other names and brands may be claimed as the property of others.

Copyright © 2018-2020 Open Connectivity Foundation, Inc. All rights reserved.

Copying or other form of reproduction and/or distribution of these works are strictly prohibited.

CONTENTS

21		
22	1	Scope 1
23	2	Normative references 1
24	3	Terms and definitions 1
25	3.1	Terms and definitions 1
26	4	Document conventions and organization 2
27	4.1	Conventions 2
28	4.2	Notation 2
29	5	Theory of Operation 3
30	5.1	Interworking Approach 3
31	5.2	Mapping Syntax 3
32	5.2.1	Introduction 3
33	5.2.2	General 3
34	5.2.3	Value Assignment 3
35	5.2.4	Property Naming 3
36	5.2.5	Arrays 3
37	5.2.6	Conditional Mapping 3
38	6	oneM2M Translation 3
39	6.1	Operational Scenarios 3
40	6.2	Enabling oneM2M Application access to OCF Servers 4
41	6.3	Enabling OCF Client access to oneM2M Devices 4
42	6.4	On-the-fly Translation 4
43	7	Device Type Mapping 4
44	7.1	Introduction 4
45	7.2	oneM2M Device Types to OCF Device Types 4
46	8	Resource to oneM2M Module Class Equivalence 6
47	8.1	Introduction 6
48	8.2	oneM2M Module Classes to OCF Resources 6
49	9	Detailed Mapping APIs 9
50	9.1	Introduction 9
51	9.2	3D Printer 9
52	9.2.1	Derived model 9
53	9.2.2	Property definition 9
54	9.2.3	Derived model definition 10
55	9.3	Acoustic Sensor 11
56	9.3.1	Derived model 11
57	9.3.2	Property definition 11
58	9.3.3	Derived model definition 12
59	9.4	AirCon Job Mode 13
60	9.4.1	Derived model 13
61	9.4.2	Property definition 13
62	9.4.3	Derived model definition 15
63	9.5	Airflow 17

64	9.5.1	Derived model	17
65	9.5.2	Property definition	17
66	9.5.3	Derived model definition	19
67	9.6	Air Purifier Job Mode	21
68	9.6.1	Derived model	21
69	9.6.2	Property definition	21
70	9.6.3	Derived model definition	23
71	9.7	Air Quality Sensor	24
72	9.7.1	Derived model	24
73	9.7.2	Property definition	24
74	9.7.3	Derived model definition	27
75	9.8	Alarm Speaker	29
76	9.8.1	Derived model	29
77	9.8.2	Property definition	30
78	9.8.3	Derived model definition	30
79	9.9	Audio Volume	31
80	9.9.1	Derived model	31
81	9.9.2	Property definition	31
82	9.9.3	Derived model definition	32
83	9.10	Auto Document Feeder	33
84	9.10.1	Derived model	33
85	9.10.2	Property definition	33
86	9.10.3	Derived model definition	34
87	9.11	Battery	35
88	9.11.1	Derived model	35
89	9.11.2	Property definition	35
90	9.11.3	Derived model definition	37
91	9.12	Binary Object	39
92	9.12.1	Derived model	39
93	9.12.2	Property definition	39
94	9.12.3	Derived model definition	40
95	9.13	Binary Switch	41
96	9.13.1	Derived model	41
97	9.13.2	Property definition	41
98	9.13.3	Derived model definition	42
99	9.14	Boiler	42
100	9.14.1	Derived model	42
101	9.14.2	Property definition	42
102	9.14.3	Derived model definition	43
103	9.15	Brewing	43
104	9.15.1	Derived model	43
105	9.15.2	Property definition	43
106	9.15.3	Derived model definition	44
107	9.16	Brightness	45

108	9.16.1	Derived model	45
109	9.16.2	Property definition	45
110	9.16.3	Derived model definition	45
111	9.17	Clock	46
112	9.17.1	Derived model	46
113	9.17.2	Property definition	46
114	9.17.3	Derived model definition	47
115	9.18	Clothes Dryer Job Mode	48
116	9.18.1	Derived model	48
117	9.18.2	Property definition	48
118	9.18.3	Derived model definition	50
119	9.19	Colour	52
120	9.19.1	Derived model	52
121	9.19.2	Property definition	52
122	9.19.3	Derived model definition	52
123	9.20	Colour Saturation	53
124	9.20.1	Derived model	53
125	9.20.2	Property definition	53
126	9.20.3	Derived model definition	54
127	9.21	Credentials	54
128	9.21.1	Derived model	54
129	9.21.2	Property definition	54
130	9.21.3	Derived model definition	55
131	9.22	Dehumidifer Job Mode	56
132	9.22.1	Derived model	56
133	9.22.2	Property definition	56
134	9.22.3	Derived model definition	58
135	9.23	Door Status	59
136	9.23.1	Derived model	59
137	9.23.2	Property definition	59
138	9.23.3	Derived model definition	60
139	9.24	Electric Vehicle Connector	61
140	9.24.1	Derived model	61
141	9.24.2	Property definition	61
142	9.24.3	Derived model definition	62
143	9.25	Energy Consumption	63
144	9.25.1	Derived model	63
145	9.25.2	Property definition	63
146	9.25.3	Derived model definition	65
147	9.26	Energy Generation	66
148	9.26.1	Derived model	66
149	9.26.2	Property definition	66
150	9.26.3	Derived model definition	68
151	9.27	Filter Info	69

152	9.27.1	Derived model	69
153	9.27.2	Property definition	69
154	9.27.3	Derived model definition	69
155	9.28	Foaming	70
156	9.28.1	Derived model	70
157	9.28.2	Property definition	70
158	9.28.3	Derived model definition	71
159	9.29	Grinder	71
160	9.29.1	Derived model	71
161	9.29.2	Property definition	71
162	9.29.3	Derived model definition	72
163	9.30	Heating Zone	73
164	9.30.1	Derived model	73
165	9.30.2	Property definition	73
166	9.30.3	Derived model definition	74
167	9.31	Height	75
168	9.31.1	Derived model	75
169	9.31.2	Property definition	75
170	9.31.3	Derived model definition	75
171	9.32	Hot Water Supply	76
172	9.32.1	Derived model	76
173	9.32.2	Property definition	76
174	9.32.3	Derived model definition	77
175	9.33	Impact Sensor	78
176	9.33.1	Derived model	78
177	9.33.2	Property definition	78
178	9.33.3	Derived model definition	79
179	9.34	Keep Warm	80
180	9.34.1	Derived model	80
181	9.34.2	Property definition	80
182	9.34.3	Derived model definition	81
183	9.35	Keypad	81
184	9.35.1	Derived model	81
185	9.35.2	Property definition	81
186	9.35.3	Derived model definition	82
187	9.36	Liquid Level	83
188	9.36.1	Derived model	83
189	9.36.2	Property definition	83
190	9.36.3	Derived model definition	83
191	9.37	Liquid Remaining	84
192	9.37.1	Derived model	84
193	9.37.2	Property definition	84
194	9.37.3	Derived model definition	85
195	9.38	Lock	85

196	9.38.1	Derived model	85
197	9.38.2	Property definition	85
198	9.38.3	Derived model definition	86
199	9.39	Motion Sensor	86
200	9.39.1	Derived model	86
201	9.39.2	Property definition	86
202	9.39.3	Derived model definition	87
203	9.40	Open Level	88
204	9.40.1	Derived model	88
205	9.40.2	Property definition	88
206	9.40.3	Derived model definition	89
207	9.41	Operation Mode	90
208	9.41.1	Derived model	90
209	9.41.2	Property definition	90
210	9.41.3	Derived model definition	91
211	9.42	Overcurrent Sensor	91
212	9.42.1	Derived model	91
213	9.42.2	Property definition	91
214	9.42.3	Derived model definition	92
215	9.43	Power Save	93
216	9.43.1	Derived model	93
217	9.43.2	Property definition	93
218	9.43.3	Derived model definition	94
219	9.44	Print Queue	94
220	9.44.1	Derived model	94
221	9.44.2	Property definition	94
222	9.44.3	Derived model definition	95
223	9.45	Push Button	96
224	9.45.1	Derived model	96
225	9.45.2	Property definition	96
226	9.45.3	Derived model definition	96
227	9.46	Refrigeration	97
228	9.46.1	Derived model	97
229	9.46.2	Property definition	97
230	9.46.3	Derived model definition	98
231	9.47	Relative Humidity	99
232	9.47.1	Derived model	99
233	9.47.2	Property definition	99
234	9.47.3	Derived model definition	99
235	9.48	Robot Cleaner Job Mode	100
236	9.48.1	Derived model	100
237	9.48.2	Property definition	100
238	9.48.3	Derived model definition	101
239	9.49	Steam Closet Job Mode	103

240	9.49.1	Derived model	103
241	9.49.2	Property definition	103
242	9.49.3	Derived model definition	104
243	9.50	Temperature	106
244	9.50.1	Derived model	106
245	9.50.2	Property definition	106
246	9.50.3	Derived model definition	107
247	9.51	UV Sensor	109
248	9.51.1	Derived model	109
249	9.51.2	Property definition	109
250	9.51.3	Derived model definition	110
251	9.52	Water Sensor	111
252	9.52.1	Derived model	111
253	9.52.2	Property definition	111
254	9.52.3	Derived model definition	111
255	9.53	Weight	112
256	9.53.1	Derived model	112
257	9.53.2	Property definition	112
258	9.53.3	Derived model definition	112
259			
260			

261

Figures

262

No table of figures entries found.

Tables

264	Table 1 – oneM2M Device Type to OCF Device Type Mapping	4
265	Table 2 – oneM2M Module Classes to OCF Resource Type Mapping	6
266	Table 3 – The property mapping for "onem2m.3Dprinter".....	9
267	Table 4 – The properties of "onem2m.3Dprinter".	10
268	Table 5 – The property mapping for "onem2m.acousticsensor".....	12
269	Table 6 – The properties of "onem2m.acousticsensor".....	12
270	Table 7 – The property mapping for "onem2m.airconjobmode".	13
271	Table 8 – The properties of "onem2m.airconjobmode".	15
272	Table 9 – The property mapping for "onem2m.airflow".....	17
273	Table 10 – The properties of "onem2m.airflow".....	18
274	Table 11 – The property mapping for "onem2m.airpurifierjobmode".	21
275	Table 12 – The properties of "onem2m.airpurifierjobmode".	22
276	Table 13 – The property mapping for "onem2m.airqualitysensor".....	24
277	Table 14 – The properties of "onem2m.airqualitysensor".	26
278	Table 15 – The property mapping for "onem2m.alarmspeaker".	30
279	Table 16 – The properties of "onem2m.alarmspeaker".....	30
280	Table 17 – The property mapping for "onem2m.audioVolume".	31
281	Table 18 – The properties of "onem2m.audioVolume".....	32
282	Table 19 – The property mapping for "onem2m.autodocumentfeeder".	33
283	Table 20 – The properties of "onem2m.m.autodocumentfeeder".	34
284	Table 21 – The property mapping for "onem2m.m.battery".....	35
285	Table 22 – The properties of "onem2m.m.battery".	36
286	Table 23 – The property mapping for "onem2m.m.binaryobject".	39
287	Table 24 – The properties of "onem2m.m.binaryobject".	40
288	Table 25 – The property mapping for "onem2m.m.binaryswitch".	41
289	Table 26 – The properties of "onem2m.m.binaryswitch.	42
290	Table 27 – The property mapping for "onem2m.m.boiler".....	42
291	Table 28 – The properties of "onem2m.m.boiler".	43
292	Table 29 – The property mapping for "onem2m.m.brewing".	43
293	Table 30 – The properties of "onem2m.m.brewing".....	44
294	Table 31 – The property mapping for "onem2m.m.brightness".	45
295	Table 32 – The properties of "onem2m.m.brightness".	45
296	Table 33 – The property mapping for "onem2m.m.clock".	46
297	Table 34 – The properties of "onem2m.m.clock".	47
298	Table 35 – The property mapping for "onem2m.m.clothesdryerjobmode".	48
299	Table 36 – The properties of "onem2m.m.clothesdryerjobmode".	50
300	Table 37 – The property mapping for "onem2m.m.colour".	52
301	Table 38 – The properties of "onem2m.m.colour".	52

302	Table 39 – The property mapping for "onem2m.m.coloursaturation".	53
303	Table 40 – The properties of "onem2m.m.coloursaturation".	54
304	Table 41 – The property mapping for "onem2m.m.credentials".	55
305	Table 42 – The properties of "onem2m.m.credentials".	55
306	Table 43 – The property mapping for "onem2m.m.dehumidiifierjobmode".	56
307	Table 44 – The properties of "onem2m.m.dehumidiifierjobmode".	57
308	Table 45 – The property mapping for "onem2m.m.doorStatus".	59
309	Table 46 – The properties of "onem2m.m.doorStatus".	60
310	Table 47 – The property mapping for "onem2m.m.electricvehicleconnector".	61
311	Table 48 – The properties of "onem2m.m.electricvehicleconnector".	62
312	Table 49 – The property mapping for "onem2m.m.energyconsumption".	63
313	Table 50 – The properties of "onem2m.m.energyconsumption".	64
314	Table 51 – The property mapping for "onem2m.m.energygeneration".	67
315	Table 52 – The properties of "onem2m.m.energygeneration".	67
316	Table 53 – The property mapping for "onem2m.m.filterinfo".	69
317	Table 54 – The properties of "onem2m.m.filterinfo".	69
318	Table 55 – The property mapping for "onem2m.m.foaming".	70
319	Table 56 – The properties of "onem2m.m.foaming".	71
320	Table 57 – The property mapping for "onem2m.m.grinder".	72
321	Table 58 – The properties of "onem2m.m.grinder".	72
322	Table 59 – The property mapping for "onem2m.m.heatingzone".	73
323	Table 60 – The properties of "onem2m.m.heatingzone".	74
324	Table 61 – The property mapping for "onem2m.m.height".	75
325	Table 62 – The properties of "onem2m.m.height".	75
326	Table 63 – The property mapping for "onem2m.m.hotwatersupply".	76
327	Table 64 – The properties of "onem2m.m.hotwatersupply".	77
328	Table 65 – The property mapping for "onem2m.m.impactsensor".	78
329	Table 66 – The properties of "onem2m.m.impactsensor".	78
330	Table 67 – The property mapping for "onem2m.m.keepwarm".	80
331	Table 68 – The properties of "onem2m.m.keepwarm".	80
332	Table 69 – The property mapping for "onem2m.m.keypad".	81
333	Table 70 – The properties of "onem2m.m.keypad".	82
334	Table 71 – The property mapping for "onem2m.m.liquidlevel".	83
335	Table 72 – The properties of "onem2m.m.liquidlevel".	83
336	Table 73 – The property mapping for "onem2m.m.liquidremaining".	84
337	Table 74 – The properties of "onem2m.m.liquidremaining".	84
338	Table 75 – The property mapping for "onem2m.m.lock".	85
339	Table 76 – The properties of "onem2m.m.lock".	86
340	Table 77 – The property mapping for "onem2m.m.motionSensor".	86

341	Table 78 – The properties of "onem2m.m.motionSensor"	87
342	Table 79 – The property mapping for "onem2m.m.openlevel".	88
343	Table 80 – The properties of "onem2m.m.openlevel".	89
344	Table 81 – The property mapping for "onem2m.m.operationmode".	90
345	Table 82 – The properties of "onem2m.m.operationmode"	91
346	Table 83 – The property mapping for "onem2m.m.overcurrentsensor".	91
347	Table 84 – The properties of "onem2m.m.overcurrentsensor".	92
348	Table 85 – The property mapping for "onem2m.m.powersave".....	93
349	Table 86 – The properties of "onem2m.m.powersave".	93
350	Table 87 – The property mapping for "onem2m.m.printqueue".	94
351	Table 88 – The properties of "onem2m.m.printqueue".	95
352	Table 89 – The property mapping for "onem2m.m.pushbutton".	96
353	Table 90 – The properties of "onem2m.m.pushbutton"	96
354	Table 91 – The property mapping for "onem2m.m.refrigeration"	97
355	Table 92 – The properties of "onem2m.m.refrigeration".	97
356	Table 93 – The property mapping for "onem2m.m.relativeHumidity".	99
357	Table 94 – The properties of "onem2m.m.relativeHumidity".	99
358	Table 95 – The property mapping for "onem2m.m.robotcleanerjobmode".....	100
359	Table 96 – The properties of "onem2m.m.robotcleanerjobmode".	101
360	Table 97 – The property mapping for "onem2m.m.steamclosetjobmode".....	103
361	Table 98 – The properties of "onem2m.m.steamclosetjobmode".	104
362	Table 99 – The property mapping for "onem2m.m.temperature".....	106
363	Table 100 – The properties of "onem2m.m.temperature".	107
364	Table 101 – The property mapping for "onem2m.m.uvsensor".	109
365	Table 102 – The properties of "onem2m.m.uvsensor".	110
366	Table 103 – The property mapping for "onem2m.m.watersensor".....	111
367	Table 104 – The properties of "onem2m.m.watersensor".	111
368	Table 105 – The property mapping for "onem2m.m.weight".	112
369	Table 106 – The properties of "onem2m.m.weight".	112
370		

1 Scope

This document provides detailed mapping information to provide equivalency between oneM2M defined Module Classes and OCF defined Resources.

A oneM2M Bridge is Asymmetric Client Bridge, therefore this document provides unidirectional mapping for Device Types (oneM2M Devices to OCF Devices), identifies equivalent OCF Resources for specific oneM2M Module Classes, and defines the detailed Property by Property mapping using OCF defined extensions to JSON schema to programmatically define the mappings.

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 30118-1:2018 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 30118-2:2019, 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 30118-3:2019, 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 30118-4:2019, 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 30118-5:2019, Information technology – Open Connectivity Foundation (OCF) Specification – Part 5: Smart home device specification
<https://www.iso.org/standard/74242.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

3 Terms and definitions

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 30118-1:2018, ISO/IEC 30118-2:2019, and ISO/IEC 30118-3:2019 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>

414 – IEC Electropedia: available at <http://www.electropedia.org/>

415 **3.1.1 oneM2M Application**

416 In an OCF-oneM2M asymmetric bridge environment, the oneM2M application represents the
417 oneM2M control point (i.e. client) being mapped to a virtual OCF client.

418 **4 Document conventions and organization**

419 **4.1 Conventions**

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

424 **4.2 Notation**

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

427 Required (or shall or mandatory).

428 – These basic features shall be implemented to comply with OIC Core Architecture. The phrases
429 "shall not", and "PROHIBITED" indicate behaviour that is prohibited, i.e. that if performed
430 means the implementation is not in compliance.

431 Recommended (or should).

432 – These features add functionality supported by OIC Core Architecture and should be
433 implemented. Recommended features take advantage of the capabilities OIC Core Architecture,
434 usually without imposing major increase of complexity. Notice that for compliance testing, if a
435 recommended feature is implemented, it shall meet the specified requirements to be in
436 compliance with these guidelines. Some recommended features could become requirements
437 in the future. The phrase "should not" indicates behaviour that is permitted but not
438 recommended.

439 Allowed (or allowed).

440 – These features are neither required nor recommended by OIC Core Architecture, but if the
441 feature is implemented, it shall meet the specified requirements to be in compliance with these
442 guidelines.

443 – Conditionally allowed (CA) The definition or behaviour depends on a condition. If the specified
444 condition is met, then the definition or behaviour is allowed, otherwise it is not allowed.

445 Conditionally required (CR)

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

449 DEPRECATED

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

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

Words that are emphasized are printed in *italic*.

5 Theory of Operation

5.1 Interworking Approach

The interworking between oneM2M defined Module Classes and OCF defined Resource Types is modelled using the derived model syntax described in Derived Models for Interoperability.

5.2 Mapping Syntax

5.2.1 Introduction

Within the defined syntax for derived modelling used by this document there are two blocks that define the actual Property-Property equivalence or mapping. These blocks are identified by the keywords "x-to-ocf" and "x-from-ocf". Derived Models for Interoperability does not define a rigid syntax for these blocks; they are free form string arrays that contain pseudo-coded mapping logic.

Within this document we apply the rules defined in clause 5.2 to these blocks to ensure consistency and re-usability and extensibility of the mapping logic that is defined.

5.2.2 General

All statements are terminated with a carriage return.

5.2.3 Value Assignment

The equals sign (=) is used to assign one value to another. The assignee is on the left of the operator; the value being assigned on the right.

5.2.4 Property Naming

All Property names are identical to the name used by the original model; for example, from the OCF Temperature Resource the Property name "temperature" is used whereas when referred to the derived ecosystem then the semantically equivalent Property name is used.

5.2.5 Arrays

An array element is indicated by the use of square brackets "[]" with the index of the element contained therein, e.g. range[1]. All arrays start at an index of 0. If an entire array is being referenced, then no index is included.

5.2.6 Conditional Mapping

When a mapping is dependent on the meeting of other conditions then the syntax:

if "condition", "mapping".

is applied.

6 oneM2M Translation

6.1 Operational Scenarios

The purpose of the oneM2M Bridge Platform is to enable access by the oneM2M ecosystem to select OCF Servers. This is accomplished by creating Virtual OCF Clients to represent the necessary access levels to the OCF servers that are exposed to the oneM2M ecosystem. The oneM2M Bridge Platform then exposes native oneM2M entities that map to those Virtual OCF Clients.

The oneM2M Bridge Platform is an Asymmetric Client Bridge.

The mapping between the OCF data models and the oneM2M data models is specified in 9. Programmatic (i.e. On-the-fly) data model translation is not supported.

6.2 Enabling oneM2M Application access to OCF Servers

Each level of oneM2M application access for OCF servers is modelled as a Virtual OCF Client. In this way, oneM2M application access can be appropriately restricted and enforced by the OCF security capabilities.

6.3 Enabling OCF Client access to oneM2M Devices

This capability is not supported.

6.4 On-the-fly Translation

All devices and resources have been aligned between the OCF and oneM2M ecosystems, so on-the-fly translation is not required.

If new OCF devices are not reflected into the oneM2M ecosystem by updates to the oneM2M specifications, the Bridge Platform will not provide a successful translation of those devices.

7 Device Type Mapping

7.1 Introduction

This clause contains the mappings to/from Device Types.

7.2 oneM2M Device Types to OCF Device Types

Table 1 captures the equivalency mapping between oneM2M defined Device Types and OCF defined Device Types. The minimum Resource sets for each OCF Device is provided in ISO/IEC 30118-5:2019.

Table 1 – oneM2M Device Type to OCF Device Type Mapping

oneM2M Device Type	OCF Device Type
device3DPrinter	oic.d.3dprinter
deviceAirConditioner	oic.d.airconditioner
deviceAirPurifier	oic.d.airpurifier
deviceAirQualityMonitor	oic.d.airqualitymonitor
deviceAudioReceiver	oic.d.receiver
deviceBloodPressureMonitor	oic.d.bloodpressuremonitor
deviceCamera	oic.d.camera
deviceClothesDryer	oic.d.dryer
deviceClothesWasher	oic.d.washer
deviceCoffeeMachine	oic.d.coffeemachine
deviceCookerHood	oic.d.cookerhood

deviceCooktop	oic.d.cooktop
deviceDehumidifier	oic.d.dehumidifier
deviceDishWasher	oic.d.dishwasher
deviceDoor	oic.d.door
deviceDoorLock	oic.d.smartlock
deviceElectricVehicleCharger	oic.d.electricvehiclecharger
deviceFan	oic.d.fan
deviceFoodProbe	oic.d.foodprobe
deviceFreezer	oic.d.freezer
deviceGlucosemeter	oic.d.glucosemeter
deviceHumidifier	oic.d.humidifier
deviceKettle	oic.d.kettle
deviceLight	oic.d.light
deviceMicrogeneration	oic.d.energygenerator
deviceMultiFunctionPrinter	oic.d.multifunctionprinter
deviceOutdoorLamp	oic.d.light
deviceOven	oic.d.oven
devicePrinter	oic.d.printer
deviceRefrigerator	oic.d.refrigerator
deviceRobotCleaner	oic.d.robotcleaner
deviceScanner	oic.d.scanner
deviceSecurityPanel	oic.d.securitypanel
deviceSetTopBox	oic.d.stb

deviceSmartElectricMeter	oic.d.electricmeter
deviceSmartPlug	oic.d.smartplug
deviceSteamCloset	oic.d.steamcloset
deviceStorageBattery	oic.d.battery
deviceSwitch	oic.d.switch
deviceTelevision	oic.d.tv
deviceThermostat	oic.d.thermostat
deviceWaterHeater	oic.d.waterheater
deviceWaterValve	oic.d.watervalue
deviceWeightScaleAndBodyCompositionAnalyzer	oic.d.bodyscale
deviceWindowShade	oic.d.blind
deviceThermometer	oic.d.bodythermometer

8 Resource to oneM2M Module Class Equivalence

8.1 Introduction

This clause lists the complete set of applicable oneM2M Module Classes and provides the equivalent OCF Resource Type(s) to which the Module Classes map.

8.2 oneM2M Module Classes to OCF Resources

Table 2 captures the equivalency mapping between oneM2M defined Module Classes and OCF defined Resource Types (see ISO/IEC 30118-4:2019). Detailed Property by Property mappings are provided in clause 9.

Table 2 – oneM2M Module Classes to OCF Resource Type Mapping

oneM2M Module Class	OCF Resource Type
3Dprinter	oic.r.3dprinter
acousticsensor	oic.r.soundpressure
airconjobmode	oic.r.operational.state
airflow	oic.r.airflow

airpurifierjobmode	oic.r.operational.state
airqualitysensor	oic.r.airquality oic.r.switch.binary oic.r.humidity
alarmspeaker	oic.r.audiovolume oic.r.switch.binary oic.r.light.dimming
audioVolume	oic.r.audio
autodocumentfeeder	oic.r.operational.state
battery	oic.r.energy.battery
binaryswitch	oic.r.switch.binary
boiler	oic.r.sensor
brewing	oic.r.brewing
brightness	oic.r.light.brightness
clock	oic.r.clock
clothesdryerjobmode	oic.r.operational.state
colour	oic.r.colour
coloursaturation	oic.r.colour.saturation
credentials	oic.r.userinfo
dehumidifierjobmode	oic.r.operational.state
doorStatus	oic.r.door
electricvehicleconnector	oic.r.vehicle.connector
energyconsumption	oic.r.energy.electrical oic.r.energy.consumption
energygeneration	oic.r.energy.generation
filterinfo	oic.r.consumable oic.r.sensor

foaming	oic.r.foaming
grinder	oic.r.grinder oic.r.switch.binary
heatingzone	oic.r.heatingzone
height	oic.r.height
hotwatersupply	oic.r.switch.binary oic.r.sensor
impactsensor	oic.r.impactsensor
keepwarm	oic.r.time.period
Keypad	oic.r.keypadchar
liquidlevel	oic.r.liquid.level
liquidremaining	oic.r.liquid.level
lock	oic.r.lock
motionSensor	oic.r.sensor.motion oic.r.sensor.props
openlevel	oic.r.openlevel
operationmode	oic.r.switch.binary
overcurrentsensor	oic.r.time.period oic.r.sensor
powersave	oic.r.switch.binary
printqueue	oic.r.printer.queue
pushbutton	oic.r.button
refrigeration	oic.r.refrigeration
relativeHumidity	oic.r.humidity
robotcleanerjobmode	oic.r.operational.state
steamclosetjobmode	oic.r.operational.state

temperature	oic.r.temperature
uvsensor	oic.r.sensor.radiation.uv
watersensor	oic.r.sensor.water
weight	oic.r.weight

9 Detailed Mapping APIs

9.1 Introduction

This clause provides an API and mapping description that aligns with the Derived Modelling syntax described in Derived Models for Interoperability for all Module Classes and Resources that are within scope.

The derived model definitions presented in clause 9 are formatted for readability, and so may appear to have extra line breaks.

9.2 3D Printer

9.2.1 Derived model

The derived model: "onem2m.m.3Dprinter".

9.2.2 Property definition

Table 3 provides the detailed per Property mapping for "onem2m.m.3Dprinter".

Table 3 – The property mapping for "onem2m.3Dprinter".

oneM2M Property name	OCF Resource	To OCF	From OCF
memorySize	oic.r.3dprinter	oic.r.3dprinter.memorysize = memorySize	memorySize = oic.r.3dprinter.memorysize
printType	oic.r.3dprinter	oic.r.3dprinter.3dprinttype = printType	printType = oic.r.3dprinter.3dprinttype
printSizeX	oic.r.3dprinter	oic.r.3dprinter.printsizeX = printSizeX	printSizeX = oic.r.3dprinter.printsizeX
printSizeZ	oic.r.3dprinter	oic.r.3dprinter.printsizeZ = printSizeZ	printSizeZ = oic.r.3dprinter.printsizeZ
network	oic.r.3dprinter	oic.r.3dprinter.wanconnected = network	network = oic.r.3dprinter.wanconnected
printSizeY	oic.r.3dprinter	oic.r.3dprinter.printsizeY = printSizeY	printSizeY = oic.r.3dprinter.printsizeY

Table 4 provides the details of the Properties that are part of "onem2m.m.3Dprinter".

Table 4 – The properties of "onem2m.3Dprinter".

oneM2M name	Property	Type	Required	Description
memorySize		number	yes	Memory Size
printType		string	yes	3D Printer Type
printSizeX		number	yes	Print Size X
printSizeZ		number	yes	Print Size Z
network		boolean	yes	WAN Connected
printSizeY		number	yes	Print Size Y

9.2.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.3Dprinter.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "3D Printer",
  "definitions": {
    "onem2m.m.3Dprinter": {
      "type": "object",
      "properties": {
        "printType": {
          "type": "string",
          "description": "3D Printer Type",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.3dprinter",
            "x-to-ocf": [
              "oic.r.3dprinter.3dprinttype = printType"
            ],
            "x-from-ocf": [
              "printType = oic.r.3dprinter.3dprinttype"
            ]
          }
        },
        "printSizeX": {
          "type": "number",
          "description": "Print Size X",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.3dprinter",
            "x-to-ocf": [
              "oic.r.3dprinter.printsizeX = printSizeX"
            ],
            "x-from-ocf": [
              "printSizeX = oic.r.3dprinter.printsizeX"
            ]
          }
        },
        "printSizeY": {
          "type": "number",
          "description": "Print Size Y",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.3dprinter",
            "x-to-ocf": [
              "oic.r.3dprinter.printsizeY = printSizeY"
            ]
          }
        }
      }
    }
  }
}
```

```

584         ],
585         "x-from-ocf": [
586             "printSizeY = oic.r.3dprinter.printsizey"
587         ]
588     },
589 },
590 "printSizeZ": {
591     "type": "number",
592     "description": "Print Size Z",
593     "x-ocf-conversion": {
594         "x-ocf-alias": "oic.r.3dprinter",
595         "x-to-ocf": [
596             "oic.r.3dprinter.printsizez = printSizeZ"
597         ],
598         "x-from-ocf": [
599             "printSizeZ = oic.r.3dprinter.printsizez"
600         ]
601     }
602 },
603 "network": {
604     "type": "boolean",
605     "description": "WAN Connected",
606     "x-ocf-conversion": {
607         "x-ocf-alias": "oic.r.3dprinter",
608         "x-to-ocf": [
609             "oic.r.3dprinter.wanconnected = network"
610         ],
611         "x-from-ocf": [
612             "network = oic.r.3dprinter.wanconnected"
613         ]
614     }
615 },
616 "memorySize": {
617     "type": "number",
618     "description": "Memory Size",
619     "x-ocf-conversion": {
620         "x-ocf-alias": "oic.r.3dprinter",
621         "x-to-ocf": [
622             "oic.r.3dprinter.memorysize = memorySize"
623         ],
624         "x-from-ocf": [
625             "memorySize = oic.r.3dprinter.memorysize"
626         ]
627     }
628 }
629 }
630 }
631 },
632 "type": "object",
633 "allOf": [
634     {"$ref": "#/definitions/onem2m.m.3Dprinter"}
635 ],
636 "required": [ "printType", "printSizeX", "printSizeY", "printSizeZ", "network", "memorySize" ]
637 }

```

638 9.3 Acoustic Sensor

639 9.3.1 Derived model

640 The derived model: "onem2m.m.acousticsensor".

641 9.3.2 Property definition

642 Table 5 provides the detailed per Property mapping for "onem2m.m.acousticsensor".

Table 5 – The property mapping for "onem2m.acousticsensor".

oneM2M Property name	OCF Resource	To OCF	From OCF
loudness	oic.r.soundpressure	oic.r.soundpressure.dba = loudness	loudness = oic.r.soundpressure.dba
acousticStatus	oic.r.soundpressure	oic.r.soundpressure.percent age = acousticStatus	acousticStatus = oic.r.soundpressure.percent age

644 Table 6 provides the details of the Properties that are part of "onem2m.m.acousticsensor".

Table 6 – The properties of "onem2m.acousticsensor".

oneM2M Property name	Type	Required	Description
loudness	number	yes	The common unit of the sound pressure in dBa.
acousticStatus	integer	no	The rounded percentage of the current sound pressure as compared to the sensitivity range of the sensor. The acousticStatus indicates as follows: (0) No sound ~ (100) Most noisy.

9.3.3 Derived model definition

```

648 {
649   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.acousticsensor.json#",
650   "$schema": "http://json-schema.org/draft-04/schema#",
651   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
652   "title": "Acoustic Sensor",
653   "definitions": {
654     "onem2m.m.acousticsensor": {
655       "type": "object",
656       "properties": {
657         "loudness": {
658           "type": "number",
659           "description": "The common unit of the sound pressure in dBa.",
660           "x-ocf-conversion": {
661             "x-ocf-alias": "oic.r.soundpressure",
662             "x-to-ocf": [
663               "oic.r.soundpressure.dba = loudness"
664             ],
665             "x-from-ocf": [
666               "loudness = oic.r.soundpressure.dba"
667             ]
668           }
669         }
670       }
671     }
672   }

```



```

668     },
669     "acousticStatus": {
670       "type": "integer",
671       "description": "The rounded percentage of the current sound pressure as compared to the
672 sensitivity range of the sensor. The acousticStatus indicates as follows: (0) No sound ~ (100) Most
673 noisy.",
674       "x-ocf-conversion": {
675         "x-ocf-alias": "oic.r.soundpressure",
676         "x-to-ocf": [
677           "oic.r.soundpressure.percentage = acousticStatus"
678         ],
679         "x-from-ocf": [
680           "acousticStatus = oic.r.soundpressure.percentage"
681         ]
682       }
683     }
684   }
685 },
686 "type": "object",
687 "allOf": [
688   { "$ref": "#/definitions/onem2m.m.acousticsensor" }
689 ],
690 "required": [ "loudness" ]
691 }
692
693

```

9.4 AirCon Job Mode

9.4.1 Derived model

The derived model: "onem2m.m.airconjobmode".

9.4.2 Property definition

Table 7 provides the detailed per Property mapping for "onem2m.m.airconjobmode".

Table 7 – The property mapping for "onem2m.m.airconjobmode".

oneM2M Property name	OCF Resource	To OCF	From OCF
jobModes	oic.r.operation al.state	This does not exist in OCF as all possible operational states are available.	This is an array of integers in oneM2M defined by the current version of the specification as follows: jobModes[1] = 1jobModes[2] = 2jobModes[3] = 3jobModes[4] = 4jobModes[5] = 5jobModes[6] = 6jobModes[7] = 7jobModes[8] = 8
currentJobMod eName	oic.r.operation al.state	This value does not exist in OCF as it is already accommodated in the currentJobMode property.	Need to translate between the OCF operational state enumerated string and the oneM2M string value if (oic.r.operational.state.curr entJobState == "cooling") { currentJobModeName = "cool"; }if

			<pre> (oic.r.operational.state.currentJobState == "airDry") { currentJobModeName = "airDry"; }if (oic.r.operational.state.currentJobState == "fan") { currentJobModeName = "fan"; }if (oic.r.operational.state.currentJobState == "artificialintelligence") { currentJobModeName = "AI"; }if (oic.r.operational.state.currentJobState == "heating") { currentJobModeName = "heat"; }if (oic.r.operational.state.currentJobState == "cleaning") { currentJobModeName = "airClean"; }if (oic.r.operational.state.currentJobState == "auto") { currentJobModeName = "ACO"; }if (oic.r.operational.state.currentJobState == "aroma") { currentJobModeName = "aroma"; }else { currentJobModeName = ""; } </pre>
currentJobMode	oic.r.operational.state	<p>Need to translate between the oneM2M integer value and the OCF operational state enumerated string</p> <pre> if (currentJobMode == 1) { oic.r.operational.state.currentJobState == "cooling"; }if if (currentJobMode == 2) { oic.r.operational.state.currentJobState == "airDry"; }if if (currentJobMode == 3) { oic.r.operational.state.currentJobState == "fan"; }if if (currentJobMode == 4) { oic.r.operational.state.currentJobState == "artificialintelligence"; }if if (currentJobMode == 5) { oic.r.operational.state.currentJobState == "heating"; }if if (currentJobMode == 6) { oic.r.operational.state.currentJobState == </pre>	<p>Need to translate between the OCF operational state enumerated string and the oneM2M integer value</p> <pre> if (oic.r.operational.state.currentJobState == "cooling") { currentJobMode = 1; }if if (oic.r.operational.state.currentJobState == "airDry") { currentJobMode = 2; }if if (oic.r.operational.state.currentJobState == "fan") { currentJobMode = 3; }if if (oic.r.operational.state.currentJobState == "artificialintelligence") { currentJobMode = 4; }if if (oic.r.operational.state.currentJobState == "heating") { currentJobMode = 5; }if if (oic.r.operational.state.currentJobState == "cleaning") { currentJobMode = 6; }if </pre>

		<pre> "cleaning"; }if (currentJobMode == 7) { oic.r.operational.state.curr entJobState == "auto"; }if (currentJobMode == 8) { oic.r.operational.state.curr entJobState == "aroma"; }else { oic.r.operational.state.curr entJobState == "unknown"; } </pre>	<pre> (oic.r.operational.state.curr entJobState == "auto") { currentJobMode = 7; }if (oic.r.operational.state.curr entJobState == "aroma") { currentJobMode = 8; }else { currentJobMode = 0; } </pre>
--	--	--	---

Table 8 provides the details of the Properties that are part of "onem2m.m.airconjobmode".

Table 8 – The properties of "onem2m.airconjobmode".

oneM2M name	Property	Type	Required	Description
jobModes		array	yes	List of possible job states the device supports
currentJobModeName		string	no	Name of current job mode in string. This can be used when currentJobMode is vendor-specific.
currentJobMode		integer	yes	Currently active job mode.

9.4.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.airconjobmode.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "AirCon Job Mode",
  "definitions": {
    "onem2m.m.airconjobmode": {
      "type": "object",
      "properties": {
        "currentJobMode": {
          "type": "integer",
          "description": "Currently active job mode.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.operational.state",
            "x-to-ocf": [
              "Need to translate between the oneM2M integer value and the OCF operational state
enumerated string",
              "if ( currentJobMode == 1 ) { oic.r.operational.state.currentJobState ==
\"cooling\"; }",
              "if ( currentJobMode == 2 ) { oic.r.operational.state.currentJobState ==
\"airDry\"; }",
              "if ( currentJobMode == 3 ) { oic.r.operational.state.currentJobState == \"fan\"; }",
              "if ( currentJobMode == 4 ) { oic.r.operational.state.currentJobState ==
\"artificialintelligence\"; }",
              "if ( currentJobMode == 5 ) { oic.r.operational.state.currentJobState ==
\"heating\"; }",
              "if ( currentJobMode == 6 ) { oic.r.operational.state.currentJobState ==

```

```

730  \ "cleaning\"; }",
731      "if ( currentJobMode == 7 ) { oic.r.operational.state.currentJobState ==
732  \ "auto\"; }",
733      "if ( currentJobMode == 8 ) { oic.r.operational.state.currentJobState ==
734  \ "aroma\"; }",
735      "else { oic.r.operational.state.currentJobState == \ "unknown\"; }"
736  ],
737      "x-from-ocf": [
738      "Need to translate between the OCF operational state enumerated string and the oneM2M
739  integer value",
740      "if (oic.r.operational.state.currentJobState == \ "cooling\ " ) { currentJobMode =
741  1; }",
742      "if (oic.r.operational.state.currentJobState == \ "airDry\ " ) { currentJobMode =
743  2; }",
744      "if (oic.r.operational.state.currentJobState == \ "fan\ " { currentJobMode = 3; }",
745      "if (oic.r.operational.state.currentJobState == \ "artificialintelligence\ " )
746  { currentJobMode = 4; }",
747      "if (oic.r.operational.state.currentJobState == \ "heating\ " ) { currentJobMode =
748  5; }",
749      "if (oic.r.operational.state.currentJobState == \ "cleaning\ " ) { currentJobMode =
750  6; }",
751      "if (oic.r.operational.state.currentJobState == \ "auto\ " ) { currentJobMode = 7; }",
752      "if (oic.r.operational.state.currentJobState == \ "aroma\ " ) { currentJobMode = 8; }",
753      "else { currentJobMode = 0; }"
754  ]
755  },
756  },
757  "currentJobModeName": {
758      "type": "string",
759      "description": "Name of current job mode in string. This can be used when currentJobMode
760  is vendor-specific.",
761      "x-ocf-conversion": {
762          "x-ocf-alias": "oic.r.operational.state",
763          "x-to-ocf": [
764          "This value does not exist in OCF as it is already accommodated in the currentJobMode
765  property."
766          ],
767          "x-from-ocf": [
768          "Need to translate between the OCF operational state enumerated string and the oneM2M
769  string value",
770          "if (oic.r.operational.state.currentJobState == \ "cooling\ " ) { currentJobModeName =
771  \ "cool\"; }",
772          "if (oic.r.operational.state.currentJobState == \ "airDry\ " ) { currentJobModeName =
773  \ "airDry\"; }",
774          "if (oic.r.operational.state.currentJobState == \ "fan\ " { currentJobModeName =
775  \ "fan\"; }",
776          "if (oic.r.operational.state.currentJobState == \ "artificialintelligence\ " )
777  { currentJobModeName = \ "AI\"; }",
778          "if (oic.r.operational.state.currentJobState == \ "heating\ " ) { currentJobModeName =
779  \ "heat\"; }",
780          "if (oic.r.operational.state.currentJobState == \ "cleaning\ " ) { currentJobModeName =
781  \ "airClean\"; }",
782          "if (oic.r.operational.state.currentJobState == \ "auto\ " ) { currentJobModeName =
783  \ "ACO\"; }",
784          "if (oic.r.operational.state.currentJobState == \ "aroma\ " ) { currentJobModeName =
785  \ "aroma\"; }",
786          "else { currentJobModeName = \ "\"; }"
787          ]
788      }
789  },
790  "jobModes": {
791      "type": "array",
792      "description": "List of possible job states the device supports",
793      "x-ocf-conversion": {
794          "x-ocf-alias": "oic.r.operational.state",
795          "x-to-ocf": [
796          "This does not exist in OCF as all possible operational states are available."
797          ],
798          "x-from-ocf": [
799          "This is an array of integers in oneM2M defined by the current version of the
800  specification as follows:",

```

```

801         "jobModes[1] = 1",
802         "jobModes[2] = 2",
803         "jobModes[3] = 3",
804         "jobModes[4] = 4",
805         "jobModes[5] = 5",
806         "jobModes[6] = 6",
807         "jobModes[7] = 7",
808         "jobModes[8] = 8"
809     ]
810 }
811 }
812 }
813 }
814 },
815 "type": "object",
816 "allOf": [
817     { "$ref": "#/definitions/onem2m.m.airconjobmode" }
818 ],
819 "required": [ "currentJobMode", "jobModes" ]
820 }

```

821 9.5 Airflow

822 9.5.1 Derived model

823 The derived model: "onem2m.m.airflow".

824 9.5.2 Property definition

825 Table 9 provides the detailed per Property mapping for "onem2m.m.airflow".

826 **Table 9 – The property mapping for "onem2m.m.airflow".**

oneM2M Property name	OCF Resource	To OCF	From OCF
minSpeed	oic.r.airflow	range[0] = minSpeed	minSpeed = range[0] otherwise: minSpeed = 0
supportedVerticalDirection	oic.r.airflow	supporteddirections = supportedVerticalDirection	supportedVerticalDirection = supporteddirections
maxSpeed	oic.r.airflow	range[1] = maxSpeed	maxSpeed = range[1] otherwise: maxSpeed = 100
horizontalDirection	oic.r.airflow	direction = horizontalDirection	horizontalDirection = direction
autoMode	oic.r.airflow	if autoMode = true, ocf.autoMode = On if autoMode = false, ocf.autoMode = Off_comment: is is correct way to map boolean to enum?	if ocf.autoMode = On, autoMode = true if ocf.autoMode = Off, autoMode = false

speed	oic.r.airflow	ocf.speed = speed	speed = ocf.speed
verticalDirection	oic.r.airflow	direction = verticalDirection	verticalDirection = direction comment: Is 1-to-1 mapping possible from string to enum? what if enum doesn't contain the converted string from OCF?
supportedhorizontalDirection	oic.r.airflow	supporteddirections = supportedhorizontalDirection	supportedhorizontalDirection = supporteddirections

827 Table 10 provides the details of the Properties that are part of "onem2m.m.airflow".

828 **Table 10 – The properties of "onem2m.airflow".**

oneM2M Property name	Type	Required	Description
minSpeed	integer	no	Min value for the speed level. If not present, the default is 0.
supportedVerticalDirection	array	no	List of supported vertical direction.
maxSpeed	integer	no	Max value for the speed level. If not present, the default is 100.
horizontalDirection		no	The horizontal directionality of the air flow.
autoMode	boolean	no	Status of the automode feature. If on speed is set by the device.
speed	integer	yes	current speed level in the range of [minSpeed, maxSpeed]
verticalDirection		no	The vertical directionality of the air flow.

supportedhorizontalDirection	array	no	List of supported horizontal direction.
------------------------------	-------	----	---

9.5.3 Derived model definition

```

829
830 {
831   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.airflow.json#",
832   "$schema": "http://json-schema.org/draft-04/schema#",
833   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
834   "title": "Airflow",
835   "definitions": {
836     "onem2m.m.airflow": {
837       "type": "object",
838       "properties": {
839         "speed": {
840           "type": "integer",
841           "description": "current speed level in the range of [minSpeed, maxSpeed]",
842           "x-ocf-conversion": {
843             "x-ocf-alias": "oic.r.airflow",
844             "x-to-ocf": [
845               "ocf.speed = speed"
846             ],
847             "x-from-ocf": [
848               "speed = ocf.speed"
849             ]
850           }
851         },
852         "minSpeed": {
853           "type": "integer",
854           "description": "Min value for the speed level. If not present, the default is 0.",
855           "x-ocf-conversion": {
856             "x-ocf-alias": "oic.r.airflow",
857             "x-to-ocf": [
858               "range[0] = minSpeed"
859             ],
860             "x-from-ocf": [
861               "minSpeed = range[0]",
862               "otherwise: minSpeed = 0"
863             ]
864           }
865         },
866         "maxSpeed": {
867           "type": "integer",
868           "description": "Max value for the speed level. If not present, the default is 100.",
869           "x-ocf-conversion": {
870             "x-ocf-alias": "oic.r.airflow",
871             "x-to-ocf": [
872               "range[1] = maxSpeed"
873             ],
874             "x-from-ocf": [
875               "maxSpeed = range[1]",
876               "otherwise: maxSpeed = 100"
877             ]
878           }
879         },
880         "verticalDirection": {
881           "enum": ["auto", "center", "up", "down"],
882           "description": "The vertical directionality of the air flow.",
883           "x-ocf-conversion": {
884             "x-ocf-alias": "oic.r.airflow",
885             "x-to-ocf": [
886               "direction = verticalDirection"
887             ],
888             "x-from-ocf": [
889               "verticalDirection = direction",
890               "_comment: Is 1-to-1 mapping possible from string to enum? what if
891 enum doesn't contain the converted string from OCF?"
892             ]
893           }
894         }
895       }
896     }

```

```

884     },
885     "supportedVerticalDirection": {
886       "type": "array",
887       "items": {
888         "enum": ["auto", "center", "up", "down"]
889       },
890       "description": "List of supported vertical direction.",
891       "readOnly": true,
892       "x-ocf-conversion": {
893         "x-ocf-alias": "oic.r.airflow",
894         "x-to-ocf": [
895           "supporteddirections = supportedVerticalDirection"
896         ],
897         "x-from-ocf": [
898           "supportedVerticalDirection = supporteddirections"
899         ]
900       }
901     },
902     "horizontalDirection": {
903       "enum": ["auto", "center", "left", "right"],
904       "description": "The horizontal directionality of the air flow.",
905       "x-ocf-conversion": {
906         "x-ocf-alias": "oic.r.airflow",
907         "x-to-ocf": [
908           "direction = horizontalDirection"
909         ],
910         "x-from-ocf": [
911           "horizontalDirection = direction"
912         ]
913       }
914     },
915     "supportedhorizontalDirection": {
916       "type": "array",
917       "items": {
918         "enum": ["auto", "center", "left", "right"]
919       },
920       "description": "List of supported horizontal direction.",
921       "readOnly": true,
922       "x-ocf-conversion": {
923         "x-ocf-alias": "oic.r.airflow",
924         "x-to-ocf": [
925           "supporteddirections = supportedhorizontalDirection"
926         ],
927         "x-from-ocf": [
928           "supportedhorizontalDirection = supporteddirections"
929         ]
930       }
931     },
932     "autoMode": {
933       "type": "boolean",
934       "description": "Status of the automode feature. If on speed is set by the device.",
935       "x-ocf-conversion": {
936         "x-ocf-alias": "oic.r.airflow",
937         "x-to-ocf": [
938           "if autoMode = true, ocf.automode = On",
939           "if autoMode = false, ocf.automode = Off",
940           "_comment: is is correct way to map boolean to enum?"
941         ],
942         "x-from-ocf": [
943           "if ocf.automode = On, autoMode = true",
944           "if ocf.automode = Off, autoMode = false"
945         ]
946       }
947     }
948   }
949 }
950 }
951 }
952 }
953 }
954 }
955 }
956 }
957 }
958 }
959 }
960 },
961 "type": "object",
962 "allOf": [
963   {"$ref": "#/definitions/onem2m.m.airflow"}
964 ],

```



```

965     "required": [ "speed" ]
966 }
967

```

968 9.6 Air Purifier Job Mode

969 9.6.1 Derived model

970 The derived model: "onem2m.m.airpurifierjobmode".

971 9.6.2 Property definition

972 Table 11 provides the detailed per Property mapping for "onem2m.m.airpurifierjobmode".

973 **Table 11 – The property mapping for "onem2m.airpurifierjobmode".**

oneM2M Property name	OCF Resource	To OCF	From OCF
currentJobMode	oic.r.operational.state	Need to translate between the oneM2M integer value and the OCF operational state enumerated stringif (currentJobMode == 1) { oic.r.operational.state.currentJobState == "normal"; }if (currentJobMode == 2) { oic.r.operational.state.currentJobState == "sleeping"; }if (currentJobMode == 3) { oic.r.operational.state.currentJobState == "silent"; }if (currentJobMode == 4) { oic.r.operational.state.currentJobState == "wet"; }if (currentJobMode == 5) { oic.r.operational.state.currentJobState == "circulating"; }if (currentJobMode == 6) { oic.r.operational.state.currentJobState == "dual"; }if (currentJobMode == 7) { oic.r.operational.state.currentJobState == "auto"; }else { oic.r.operational.state.currentJobState == "unknown"; }	Need to translate between the OCF operational state enumerated string and the oneM2M integer valueif (oic.r.operational.state.currentJobState == "normal") { currentJobMode = 1; }if (oic.r.operational.state.currentJobState == "sleeping") { currentJobMode = 2; }if (oic.r.operational.state.currentJobState == "silent") { currentJobMode = 3; }if (oic.r.operational.state.currentJobState == "wet") { currentJobMode = 4; }if (oic.r.operational.state.currentJobState == "circulating") { currentJobMode = 5; }if (oic.r.operational.state.currentJobState == "dual") { currentJobMode = 6; }if (oic.r.operational.state.currentJobState == "auto") { currentJobMode = 7; }else { currentJobMode = 0; }
jobModes	oic.r.operational.state	This does not exist in OCF as all possible operational states are available.	This is an array of integers in oneM2M defined by the current version of the specification as follows:jobModes[1] = 1jobModes[2] = 2jobModes[3] = 3jobModes[4] = 4jobModes[5] = 5

			5jobModes[6] = 6jobModes[7] = 7
currentJobModeName	oic.r.operational.state	This value does not exist in OCF as it is already accommodated in the currentJobMode property.	Need to translate between the OCF operational state enumerated string and the oneM2M string value if (oic.r.operational.state.currentJobState == "normal") { currentJobModeName = "normalClean"; } if (oic.r.operational.state.currentJobState == "sleeping") { currentJobModeName = "sleep"; } if (oic.r.operational.state.currentJobState == "silent") { currentJobModeName = "silent"; } if (oic.r.operational.state.currentJobState == "wet") { currentJobModeName = "wet"; } if (oic.r.operational.state.currentJobState == "circulating") { currentJobModeName = "circulate"; } if (oic.r.operational.state.currentJobState == "dual") { currentJobModeName = "dual"; } if (oic.r.operational.state.currentJobState == "auto") { currentJobModeName = "auto"; } else { currentJobModeName = ""; }

974 Table 12 provides the details of the Properties that are part of "onem2m.m.airpurifierjobmode".

975 **Table 12 – The properties of "onem2m.m.airpurifierjobmode".**

oneM2M name	Property	Type	Required	Description
currentJobMode		integer	yes	Currently active job mode.
jobModes		array	yes	List of possible job states the device supports

currentJobModeName	string	no	Name of current job mode in string. This can be used when currentJobMode is vendor-specific.
--------------------	--------	----	--

9.6.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/oneM2Mmapping/schemas/oneM2M.airpurifierjobmode.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Air Purifier Job Mode",
  "definitions": {
    "oneM2M.airpurifierjobmode": {
      "type": "object",
      "properties": {
        "currentJobMode": {
          "type": "integer",
          "description": "Currently active job mode.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.operational.state",
            "x-to-ocf": [
              "Need to translate between the oneM2M integer value and the OCF operational state
enumerated string",
              "if ( currentJobMode == 1 ) { oic.r.operational.state.currentJobState ==
\"normal\"; }",
              "if ( currentJobMode == 2 ) { oic.r.operational.state.currentJobState ==
\"sleeping\"; }",
              "if ( currentJobMode == 3 ) { oic.r.operational.state.currentJobState ==
\"silent\"; }",
              "if ( currentJobMode == 4 ) { oic.r.operational.state.currentJobState == \"wet\"; }",
              "if ( currentJobMode == 5 ) { oic.r.operational.state.currentJobState ==
\"circulating\"; }",
              "if ( currentJobMode == 6 ) { oic.r.operational.state.currentJobState ==
\"dual\"; }",
              "if ( currentJobMode == 7 ) { oic.r.operational.state.currentJobState ==
\"auto\"; }",
              "else { oic.r.operational.state.currentJobState == \"unknown\"; }"
            ],
            "x-from-ocf": [
              "Need to translate between the OCF operational state enumerated string and the oneM2M
integer value",
              "if (oic.r.operational.state.currentJobState == \"normal\" ) { currentJobMode =
1; }",
              "if (oic.r.operational.state.currentJobState == \"sleeping\" ) { currentJobMode =
2; }",
              "if (oic.r.operational.state.currentJobState == \"silent\" ) { currentJobMode = 3; }",
              "if (oic.r.operational.state.currentJobState == \"wet\" ) { currentJobMode = 4; }",
              "if (oic.r.operational.state.currentJobState == \"circulating\" ) { currentJobMode =
5; }",
              "if (oic.r.operational.state.currentJobState == \"dual\" ) { currentJobMode = 6; }",
              "if (oic.r.operational.state.currentJobState == \"auto\" ) { currentJobMode = 7; }",
              "else { currentJobMode = 0; }"
            ]
          }
        },
        "currentJobModeName": {
          "type": "string",
          "description": "Name of current job mode in string. This can be used when currentJobMode
is vendor-specific.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.operational.state",
            "x-to-ocf": [
              "This value does not exist in OCF as it is already accommodated in the currentJobMode
property."
            ],
            "x-from-ocf": [
              "Need to translate between the OCF operational state enumerated string and the oneM2M

```

```

1038 string value",
1039     "if (oic.r.operational.state.currentJobState == \"normal\" ) { currentJobModeName =
1040     \"normalClean\"; }",
1041     "if (oic.r.operational.state.currentJobState == \"sleeping\" ) { currentJobModeName =
1042     \"sleep\"; }",
1043     "if (oic.r.operational.state.currentJobState == \"silent\" ) { currentJobModeName =
1044     \"silent\"; }",
1045     "if (oic.r.operational.state.currentJobState == \"wet\" ) { currentJobModeName =
1046     \"wet\"; }",
1047     "if (oic.r.operational.state.currentJobState == \"circulating\" )
1048     { currentJobModeName = \"circulate\"; }",
1049     "if (oic.r.operational.state.currentJobState == \"dual\" ) { currentJobModeName =
1050     \"dual\"; }",
1051     "if (oic.r.operational.state.currentJobState == \"auto\" ) { currentJobModeName =
1052     \"auto\"; }",
1053     "else { currentJobModeName = \"\"; }"
1054 ]
1055 },
1056 "jobModes": {
1057     "type": "array",
1058     "description": "List of possible job states the device supports",
1059     "x-ocf-conversion": {
1060         "x-ocf-alias": "oic.r.operational.state",
1061         "x-to-ocf": [
1062             "This does not exist in OCF as all possible operational states are available."
1063         ],
1064         "x-from-ocf": [
1065             "This is an array of integers in oneM2M defined by the current version of the
1066             specification as follows:",
1067             "jobModes[1] = 1",
1068             "jobModes[2] = 2",
1069             "jobModes[3] = 3",
1070             "jobModes[4] = 4",
1071             "jobModes[5] = 5",
1072             "jobModes[6] = 6",
1073             "jobModes[7] = 7"
1074         ]
1075     }
1076 }
1077 }
1078 }
1079 },
1080 "type": "object",
1081 "allOf": [
1082     { "$ref": "#/definitions/onem2m.m.airconjobmode" }
1083 ],
1084 "required": [ "currentJobMode", "jobModes" ]
1085 }
1086 }

```

1087 9.7 Air Quality Sensor

1088 9.7.1 Derived model

1089 The derived model: "onem2m.m.airqualitysensor".

1090 9.7.2 Property definition

1091 Table 13 provides the detailed per Property mapping for "onem2m.m.airqualitysensor".

1092 **Table 13 – The property mapping for "onem2m.m.airqualitysensor".**

oneM2M Property name	OCF Resource	To OCF	From OCF

sensorOdor	oic.r.airquality	oic.r.airquality.contaminantvalue = sensorOdor oic.r.airquality.contaminanttype = "Odor" oic.r.airquality.valuetype = "Measured"	sensorOdor = oic.r.airquality.contaminantvalue
VOC	oic.r.airquality	oic.r.airquality.contaminantvalue = VOC oic.r.airquality.contaminanttype = "VOC" oic.r.airquality.valuetype = "Measured"	VOC = oic.r.airquality.contaminantvalue
monitoringEnabled	oic.r.switch.binary	if monitoringEnabled == 0 oic.r.switch.binary.value = false if monitoringEnabled == 1 oic.r.switch.binary.value = true	if oic.r.switch.binary.value == false monitoringEnabled = 0 if oic.r.switch.binary.value == true monitoringEnabled = 1
sensorHumidity	oic.r.humidity	oic.r.humidity.humidity = sensorHumidity	sensorHumidity = oic.r.humidity.humidity
sensorPM2	oic.r.airquality	oic.r.airquality.contaminantvalue = sensorPM2 oic.r.airquality.contaminanttype = "PM2.5" oic.r.airquality.valuetype = "Measured"	sensorPM2 = oic.r.airquality.contaminantvalue
sensorPM10	oic.r.airquality	oic.r.airquality.contaminantvalue = sensorPM10 oic.r.airquality.contaminanttype = "PM10" oic.r.airquality.valuetype = "Measured"	sensorPM10 = oic.r.airquality.contaminantvalue
CO	oic.r.airquality	oic.r.airquality.contaminantvalue = CO oic.r.airquality.contaminanttype = "CO" oic.r.airquality.valuetype = "Measured"	CO = oic.r.airquality.contaminantvalue
CH2O	oic.r.airquality	oic.r.airquality.contaminantvalue = CH2O oic.r.airquality.contaminanttype =	CH2O = oic.r.airquality.contaminantvalue

		"CH2O"oic.r.airquality.valuetype = "Measured"	
CO2	oic.r.airquality	oic.r.airquality.contaminantvalue = CO2oic.r.airquality.contaminanttype = "CO2"oic.r.airquality.valuetype = "Measured"	CO2 = oic.r.airquality.contaminantvalue
sensorPM1	oic.r.airquality	oic.r.airquality.contaminantvalue = sensorPM1oic.r.airquality.contaminanttype = "PM1"oic.r.airquality.valuetype = "Measured"	sensorPM1 = oic.r.airquality.contaminantvalue

1093 Table 14 provides the details of the Properties that are part of "onem2m.m.airqualitysensor".

1094 **Table 14 – The properties of "onem2m.airqualitysensor".**

oneM2M name	Property	Type	Required	Description
sensorOdor		integer	no	Concentration of odor that reflects air pollution. Minimum value is 0, and maximum is 1000.
VOC		integer	no	This value indicates VOC (Volatile Organic Compounds) in ppm (parts per million)
monitoringEnabled		boolean	no	1 allows monitoring this resource whereas 0 does not.
sensorHumidity		integer	no	Measured humidity. Minimum value is 0, and maximum is 100.
sensorPM2		integer	no	Concentration of Particle Matter under 2.5um. Minimum value is 0, and maximum is 1000.
sensorPM10		integer	no	Concentration of Particle Matter under 10um. Minimum value

			is 0, and maximum is 1000.
CO	integer	no	This value indicates CO in ppm (parts per million)
CH2O	integer	no	This value indicates CH2O in ppm (parts per million)
CO2	integer	no	This value indicates CO2 in ppm (parts per million)
sensorPM1	integer	no	Concentration of Particle Matter under 1um. Minimum value is 0, and maximum is 1000.

9.7.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.airqualitysensor.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Air Quality Sensor",
  "definitions": {
    "onem2m.m.airqualitysensor": {
      "type": "object",
      "properties": {
        "sensorPM1": {
          "type": "integer",
          "description": "Concentration of Particle Matter under 1um. Minimum value is 0, and
maximum is 1000.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.airquality",
            "x-to-ocf": [
              "oic.r.airquality.contaminantvalue = sensorPM1",
              "oic.r.airquality.contaminanttype = \"PM1\"",
              "oic.r.airquality.valuetype = \"Measured\""
            ],
            "x-from-ocf": [
              "sensorPM1 = oic.r.airquality.contaminantvalue"
            ]
          }
        },
        "sensorPM2": {
          "type": "integer",
          "description": "Concentration of Particle Matter under 2.5um. Minimum value is 0, and
maximum is 1000.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.airquality",
            "x-to-ocf": [
              "oic.r.airquality.contaminantvalue = sensorPM2",
              "oic.r.airquality.contaminanttype = \"PM2.5\"",
              "oic.r.airquality.valuetype = \"Measured\""
            ],
            "x-from-ocf": [
              "sensorPM2 = oic.r.airquality.contaminantvalue"
            ]
          }
        }
      }
    }
  }
}

```

```

1136     },
1137     "sensorPM10": {
1138         "type": "integer",
1139         "description": "Concentration of Particle Matter under 10um. Minimum value is 0, and
1140 maximum is 1000.",
1141         "x-ocf-conversion": {
1142             "x-ocf-alias": "oic.r.airquality",
1143             "x-to-ocf": [
1144                 "oic.r.airquality.contaminantvalue = sensorPM10",
1145                 "oic.r.airquality.contaminanttype = \"PM10\"",
1146                 "oic.r.airquality.valuetype = \"Measured\""
1147             ],
1148             "x-from-ocf": [
1149                 "sensorPM10 = oic.r.airquality.contaminantvalue"
1150             ]
1151         }
1152     },
1153     "sensorOdor": {
1154         "type": "integer",
1155         "description": "Concentration of odor that reflects air pollution. Minimum value is 0,
1156 and maximum is 1000.",
1157         "x-ocf-conversion": {
1158             "x-ocf-alias": "oic.r.airquality",
1159             "x-to-ocf": [
1160                 "oic.r.airquality.contaminantvalue = sensorOdor",
1161                 "oic.r.airquality.contaminanttype = \"Odor\"",
1162                 "oic.r.airquality.valuetype = \"Measured\""
1163             ],
1164             "x-from-ocf": [
1165                 "sensorOdor = oic.r.airquality.contaminantvalue"
1166             ]
1167         }
1168     },
1169     "sensorHumidity": {
1170         "type": "integer",
1171         "description": "Measured humidity. Minimum value is 0, and maximum is 100.",
1172         "x-ocf-conversion": {
1173             "x-ocf-alias": "oic.r.humidity",
1174             "x-to-ocf": [
1175                 "oic.r.humidity.humidity = sensorHumidity"
1176             ],
1177             "x-from-ocf": [
1178                 "sensorHumidity = oic.r.humidity.humidity"
1179             ]
1180         }
1181     },
1182     "monitoringEnabled": {
1183         "type": "boolean",
1184         "description": "1 allows monitoring this resource whereas 0 does not.",
1185         "x-ocf-conversion": {
1186             "x-ocf-alias": "oic.r.switch.binary",
1187             "x-to-ocf": [
1188                 "if monitoringEnabled == 0",
1189                 "    oic.r.switch.binary.value = false",
1190                 "if monitoringEnabled == 1",
1191                 "    oic.r.switch.binary.value = true"
1192             ],
1193             "x-from-ocf": [
1194                 "if oic.r.switch.binary.value == false",
1195                 "    monitoringEnabled = 0",
1196                 "if oic.r.switch.binary.value == true",
1197                 "    monitoringEnabled = 1"
1198             ]
1199         }
1200     },
1201     "CO2": {
1202         "type": "integer",
1203         "description": "This value indicates CO2 in ppm (parts per million)",
1204         "x-ocf-conversion": {
1205             "x-ocf-alias": "oic.r.airquality",
1206             "x-to-ocf": [

```



```

1207         "oic.r.airquality.contaminantvalue = CO2",
1208         "oic.r.airquality.contaminanttype = \"CO2\"",
1209         "oic.r.airquality.valuetype = \"Measured\""
1210     ],
1211     "x-from-ocf": [
1212         "CO2 = oic.r.airquality.contaminantvalue"
1213     ]
1214 },
1215 },
1216 "CO": {
1217     "type": "integer",
1218     "description": "This value indicates CO in ppm (parts per million)",
1219     "x-ocf-conversion": {
1220         "x-ocf-alias": "oic.r.airquality",
1221         "x-to-ocf": [
1222             "oic.r.airquality.contaminantvalue = CO",
1223             "oic.r.airquality.contaminanttype = \"CO\"",
1224             "oic.r.airquality.valuetype = \"Measured\""
1225         ],
1226         "x-from-ocf": [
1227             "CO = oic.r.airquality.contaminantvalue"
1228         ]
1229     }
1230 },
1231 "CH2O": {
1232     "type": "integer",
1233     "description": "This value indicates CH2O in ppm (parts per million)",
1234     "x-ocf-conversion": {
1235         "x-ocf-alias": "oic.r.airquality",
1236         "x-to-ocf": [
1237             "oic.r.airquality.contaminantvalue = CH2O",
1238             "oic.r.airquality.contaminanttype = \"CH2O\"",
1239             "oic.r.airquality.valuetype = \"Measured\""
1240         ],
1241         "x-from-ocf": [
1242             "CH2O = oic.r.airquality.contaminantvalue"
1243         ]
1244     }
1245 },
1246 "VOC": {
1247     "type": "integer",
1248     "description": "This value indicates VOC (Volatile Organic Compounds) in ppm (parts per
1249 million)",
1250     "x-ocf-conversion": {
1251         "x-ocf-alias": "oic.r.airquality",
1252         "x-to-ocf": [
1253             "oic.r.airquality.contaminantvalue = VOC",
1254             "oic.r.airquality.contaminanttype = \"VOC\"",
1255             "oic.r.airquality.valuetype = \"Measured\""
1256         ],
1257         "x-from-ocf": [
1258             "VOC = oic.r.airquality.contaminantvalue"
1259         ]
1260     }
1261 }
1262 }
1263 }
1264 },
1265 "type": "object",
1266 "allof": [
1267     {"$ref": "#/definitions/onem2m.m.airqualitysensor"}
1268 ],
1269 "required": [ ]
1270 }
1271

```

9.8 Alarm Speaker

9.8.1 Derived model

The derived model: "onem2m.m.alarmspeaker".

9.8.2 Property definition

Table 15 provides the detailed per Property mapping for "onem2m.m.alarmspeaker".

Table 15 – The property mapping for "onem2m.m.alarmspeaker".

oneM2M Property name	OCF Resource	To OCF	From OCF
alarmStatus	oic.r.switch.binary	oic.r.switch.binary.value = alarmStatus	alarmStatus = oic.r.switch.binary.value
tone	oic.r.audiovolume	oic.r.audio.volume = tone * 20	tone = oic.r.audio.volume / 20
Light	oic.r.light.dimming	oic.r.light.dimming = Light	Light = oic.r.light.dimming

Table 16 provides the details of the Properties that are part of "onem2m.m.alarmspeaker".

Table 16 – The properties of "onem2m.m.alarmspeaker".

oneM2M Property name	Type	Required	Description
alarmStatus	boolean	yes	true indicates the alarm start while false indicates the alarm stop.
tone	integer	no	Representing the tones of the alarm
Light	integer	no	Representing the lighting mode of the alarm.

9.8.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.alarmspeaker.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Alarm Speaker",
  "definitions": {
    "onem2m.m.alarmspeaker": {
      "type": "object",
      "properties": {
        "tone": {
          "type": "integer",
          "description": "Representing the tones of the alarm",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.audiovolume",
            "x-to-ocf": [
              "oic.r.audio.volume = tone * 20"
            ],
            "x-from-ocf": [
              "tone = oic.r.audio.volume / 20"
            ]
          }
        }
      }
    }
  }
}
```

```

1300     ]
1301   },
1302 },
1303 "Light": {
1304   "type": "integer",
1305   "description": "Representing the lighting mode of the alarm.",
1306   "x-ocf-conversion": {
1307     "x-ocf-alias": "oic.r.light.dimming",
1308     "x-to-ocf": [
1309       "oic.r.light.dimming = Light"
1310     ],
1311     "x-from-ocf": [
1312       "Light = oic.r.light.dimming"
1313     ]
1314   }
1315 },
1316 "alarmStatus": {
1317   "type": "boolean",
1318   "description": "true indicates the alarm start while false indicates the alarm stop.",
1319   "x-ocf-conversion": {
1320     "x-ocf-alias": "oic.r.switch.binary",
1321     "x-to-ocf": [
1322       "oic.r.switch.binary.value = alarmStatus"
1323     ],
1324     "x-from-ocf": [
1325       "alarmStatus = oic.r.switch.binary.value"
1326     ]
1327   }
1328 }
1329 }
1330 }
1331 },
1332 "type": "object",
1333 "allOf": [
1334   { "$ref": "#/definitions/onem2m.m.airqualitysensor" }
1335 ],
1336 "required": [ "alarmStatus" ]
1337 }
1338

```

1339 9.9 Audio Volume

1340 9.9.1 Derived model

1341 The derived model: "onem2m.m.audioVolume".

1342 9.9.2 Property definition

1343 Table 17 provides the detailed per Property mapping for "onem2m.m.audioVolume".

1344 **Table 17 – The property mapping for "onem2m.audioVolume".**

oneM2M Property name	OCF Resource	To OCF	From OCF
muteEnabled	oic.r.audio	oic.r.audio.mute = muteEnabled	muteEnabled = oic.r.audio.mute
stepValue	oic.r.audio	oic.r.audio.step = stepValue	stepValue = oic.r.audio.step
maxValue	oic.r.audio	oic.r.audio.range[0] = 0 oic.r.audio.range[1] = maxValue	maxValue = oic.r.audio.range[1] otherwise: maxvalue = 100

volumePercentage	oic.r.audio	oic.r.audio.volume = volumePercentage	volumePercentage = oic.r.audio.volume
------------------	-------------	---------------------------------------	---------------------------------------

Table 18 provides the details of the Properties that are part of "onem2m.m.audioVolume".

Table 18 – The properties of "onem2m.audioVolume".

oneM2M name	Property	Type	Required	Description
	muteEnabled	boolean	yes	The current status of the mute enablement
	stepValue	integer	no	Step value used by the 'UpVolume' and 'DownVolume' actions
	maxValue	integer	no	Maximum value allowed for Volume. maxValue is 100 by default if 'maxValue' is not provided
	volumePercentage	number	yes	The rounded percentage of the current volume

9.9.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.audioVolume.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Audio Volume",
  "definitions": {
    "onem2m.m.audioVolume": {
      "type": "object",
      "properties": {
        "volumePercentage": {
          "type": "number",
          "description": "The rounded percentage of the current volume",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.audio",
            "x-to-ocf": [
              "oic.r.audio.volume = volumePercentage"
            ],
            "x-from-ocf": [
              "volumePercentage = oic.r.audio.volume"
            ]
          }
        },
        "muteEnabled": {
          "type": "boolean",
          "description": "The current status of the mute enablement",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.audio",
            "x-to-ocf": [
              "oic.r.audio.mute = muteEnabled"
            ],
            "x-from-ocf": [

```

```

1379         "muteEnabled = oic.r.audio.mute"
1380     ]
1381 }
1382 },
1383 "stepValue": {
1384     "type": "integer",
1385     "description": "Step value used by the 'UpVolume' and 'DownVolume' actions",
1386     "x-ocf-conversion": {
1387         "x-ocf-alias": "oic.r.audio",
1388         "x-to-ocf": [
1389             "oic.r.audio.step = stepValue"
1390         ],
1391         "x-from-ocf": [
1392             "stepValue = oic.r.audio.step"
1393         ]
1394     }
1395 },
1396 "maxValue": {
1397     "type": "integer",
1398     "description": "Maximum value allowed for Volume. maxValue is 100 by default if
1399 'maxValue' is not provided",
1400     "x-ocf-conversion": {
1401         "x-ocf-alias": "oic.r.audio",
1402         "x-to-ocf": [
1403             "oic.r.audio.range[0] = 0",
1404             "oic.r.audio.range[1] = maxValue"
1405         ],
1406         "x-from-ocf": [
1407             "maxValue = oic.r.audio.range[1]",
1408             "otherwise: maxvalue = 100"
1409         ]
1410     }
1411 }
1412 }
1413 }
1414 },
1415 "type": "object",
1416 "allOf": [
1417     {"$ref": "#/definitions/oneM2M.audioVolume"}
1418 ],
1419 "required": [ "volumePercentage", "muteEnabled" ]
1420 }

```

9.10 Auto Document Feeder

9.10.1 Derived model

The derived model: "onem2m.m.autodocumentfeeder".

9.10.2 Property definition

Table 19 provides the detailed per Property mapping for "onem2m.m.autodocumentfeeder".

Table 19 – The property mapping for "onem2m.m.autodocumentfeeder".

oneM2M Property name	OCF Resource	To OCF	From OCF
adfStates	oic.r.operational.state	This is an array of strings in OCF and an array of integers in oneM2M. For each element in the source array, do the assignment into the same position in the destination	This is an array of strings in OCF and an array of integers in oneM2M. For each element in the source array, do the assignment into the same position in the destination array.adfStates[i] =

		array.oic.r.operational.state.jobStates[i] = adfStates[i]	oic.r.operational.state.jobStates[i]
currentAdfState	oic.r.operational.state	oic.r.operational.state.jobState = currentAdfState	currentAdfState = oic.r.operational.state.jobState

Table 20 provides the details of the Properties that are part of "onem2m.m.autodocumentfeeder".

Table 20 – The properties of "onem2m.m.autodocumentfeeder".

oneM2M name	Property	Type	Required	Description
adfStates		array	yes	List of possible adf states the device supports
currentAdfState		integer	yes	Currently active adf(auto document feeder) state.

9.10.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.autodocumentfeeder.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Auto Document Feeder",
  "definitions": {
    "onem2m.m.autodocumentfeeder": {
      "type": "object",
      "properties": {
        "currentAdfState": {
          "type": "integer",
          "description": "Currently active adf(auto document feeder) state.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.operational.state",
            "x-to-ocf": [
              "oic.r.operational.state.jobState = currentAdfState"
            ],
            "x-from-ocf": [
              "currentAdfState = oic.r.operational.state.jobState"
            ]
          }
        },
        "adfStates": {
          "type": "array",
          "description": "List of possible adf states the device supports",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.operational.state",
            "x-to-ocf": [
              "This is an array of strings in OCF and an array of integers in oneM2M. For each
element in the source array, do the assignment into the same position in the destination array.",
              "oic.r.operational.state.jobStates[i] = adfStates[i]"
            ],
            "x-from-ocf": [
              "This is an array of strings in OCF and an array of integers in oneM2M. For each
element in the source array, do the assignment into the same position in the destination array.",
              "adfStates[i] = oic.r.operational.state.jobStates[i]"
            ]
          }
        }
      }
    }
  }
}

```

```

1469     }
1470   }
1471 },
1472 "type": "object",
1473 "allOf": [
1474   { "$ref": "#/definitions/onem2m.m.autodocumentfeeder" }
1475 ],
1476 "required": [ "currentAdfState", "adfStates" ]
1477 }
1478

```

1479 9.11 Battery

1480 9.11.1 Derived model

1481 The derived model: "onem2m.m.battery".

1482 9.11.2 Property definition

1483 Table 21 provides the detailed per Property mapping for "onem2m.m.battery".

1484 **Table 21 – The property mapping for "onem2m.m.battery".**

oneM2M Property name	OCF Resource	To OCF	From OCF
material	oic.r.energy.battery	oic.r.batterymaterial.material = material Direct translation is difficult as OCF has declared an enumeration of strings where oneM2M has a free-form string. Translation code will need to determine which oneM2M strings can be mapped to the OCF enumerated values in oic.r.batterymaterial	material = oic.r.batterymaterial.material[INDEX]
electricEnergy	oic.r.energy.battery	oic.r.energy.electrical.current = electricEnergy	electricEnergy = oic.r.energy.electrical.current
charging	oic.r.energy.battery	oic.r.energy.battery.charging = charging	charging = oic.r.energy.battery.charging
discharging	oic.r.energy.battery	oic.r.energy.battery.discharging = discharging	discharging = oic.r.energy.battery.discharging
capacity	oic.r.energy.battery	oic.r.energy.battery.capacity = capacity / 1000	capacity = oic.r.energy.battery.capacity * 1000
level	oic.r.energy.battery	oic.r.energy.battery.charge = level	level = oic.r.energy.battery.charge

batteryThresh hold	oic.r.energy.bat tery	oic.r.energy.battery.batteryth reshold = batteryThreshold	batteryThreshold = oic.r.energy.battery.batteryth reshold
voltage	oic.r.energy.bat tery	oic.r.energy.electrical.voltage = voltage	voltage = oic.r.energy.electrical.voltage
lowBattery	oic.r.energy.bat tery	oic.r.energy.battery.lowbattery = lowBattery	lowBattery = oic.r.energy.battery.lowbattery

1485 Table 22 provides the details of the Properties that are part of "onem2m.m.battery".

1486

Table 22 – The properties of "onem2m.m.battery".

oneM2M name	Property	Type	Required	Description
material		string	no	The material of the cell (for example lithium ion, nickel and lead)
electricEnergy		integer	no	Rated electric energy. The unit of measure is ampere (A)
charging		boolean	no	The status of charging. 'True' indicates enabled, and 'False' indicates not enabled
discharging		boolean	no	The status of discharging. 'True' indicates charging, and 'False' indicates not charging
capacity		integer	no	The total capacity of battery in mAh
level		integer	yes	The rounded percentage of the current charging level of a battery in the range of [0, 100]
batteryThreshold		integer	no	When a battery's 'level' is less than 'batteryThreshold' then 'lowBattery' is set

			to 'True'. This datapoint can be used to raise an alarm, depending on the implementation
voltage	integer	no	Rated voltage. The unit of measure is volts (V)
lowBattery	boolean	no	To indicate that the battery is on a low charge level

9.11.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.battery.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Battery",
  "definitions": {
    "onem2m.m.battery": {
      "type": "object",
      "properties": {
        "level": {
          "type": "integer",
          "description": "The rounded percentage of the current charging level of a battery in the
range of [0, 100]",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.energy.battery",
            "x-to-ocf": [
              "oic.r.energy.battery.charge = level"
            ],
            "x-from-ocf": [
              "level = oic.r.energy.battery.charge"
            ]
          }
        },
        "capacity": {
          "type": "integer",
          "description": "The total capacity of battery in mAh",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.energy.battery",
            "x-to-ocf": [
              "oic.r.energy.battery.capacity = capacity / 1000"
            ],
            "x-from-ocf": [
              "capacity = oic.r.energy.battery.capacity * 1000"
            ]
          }
        },
        "charging": {
          "type": "boolean",
          "description": "The status of charging. 'True' indicates enabled, and 'False' indicates
not enabled",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.energy.battery",
            "x-to-ocf": [
              "oic.r.energy.battery.charging = charging"
            ],
            "x-from-ocf": [
              "charging = oic.r.energy.battery.charging"
            ]
          }
        }
      }
    }
  }
}

```

```

1538         "discharging": {
1539             "type": "boolean",
1540             "description": "The status of discharging. 'True' indicates charging, and 'False'
1541 indicates not charging",
1542             "x-ocf-conversion": {
1543                 "x-ocf-alias": "oic.r.energy.battery",
1544                 "x-to-ocf": [
1545                     "oic.r.energy.battery.discharging = discharging"
1546                 ],
1547                 "x-from-ocf": [
1548                     "discharging = oic.r.energy.battery.discharging"
1549                 ]
1550             }
1551         },
1552         "lowBattery": {
1553             "type": "boolean",
1554             "description": "To indicate that the battery is on a low charge level",
1555             "x-ocf-conversion": {
1556                 "x-ocf-alias": "oic.r.energy.battery",
1557                 "x-to-ocf": [
1558                     "oic.r.energy.battery.lowbattery = lowBattery"
1559                 ],
1560                 "x-from-ocf": [
1561                     "lowBattery = oic.r.energy.battery.lowbattery"
1562                 ]
1563             }
1564         },
1565         "batteryThreshold": {
1566             "type": "integer",
1567             "description": "When a battery's 'level' is less than 'batteryThreshold' then
1568 'lowBattery' is set to 'True'. This datapoint can be used to raise an alarm, depending on the
1569 implementation",
1570             "x-ocf-conversion": {
1571                 "x-ocf-alias": "oic.r.energy.battery",
1572                 "x-to-ocf": [
1573                     "oic.r.energy.battery.batterythreshold = batteryThreshold"
1574                 ],
1575                 "x-from-ocf": [
1576                     "batteryThreshold = oic.r.energy.battery.batterythreshold"
1577                 ]
1578             }
1579         },
1580         "electricEnergy": {
1581             "type": "integer",
1582             "description": "Rated electric energy. The unit of measure is ampere (A)",
1583             "x-ocf-conversion": {
1584                 "x-ocf-alias": "oic.r.energy.battery",
1585                 "x-to-ocf": [
1586                     "oic.r.energy.electrical.current = electricEnergy"
1587                 ],
1588                 "x-from-ocf": [
1589                     "electricEnergy = oic.r.energy.electrical.current"
1590                 ]
1591             }
1592         },
1593         "voltage": {
1594             "type": "integer",
1595             "description": "Rated voltage. The unit of measure is volts (V)",
1596             "x-ocf-conversion": {
1597                 "x-ocf-alias": "oic.r.energy.battery",
1598                 "x-to-ocf": [
1599                     "oic.r.energy.electrical.voltage = voltage"
1600                 ],
1601                 "x-from-ocf": [
1602                     "voltage = oic.r.energy.electrical.voltage"
1603                 ]
1604             }
1605         },
1606         "material": {
1607             "type": "string",
1608             "description": "The material of the cell (for example lithium ion, nickel and lead",

```

```

1609         "x-ocf-conversion": {
1610             "x-ocf-alias": "oic.r.energy.battery",
1611             "x-to-ocf": [
1612                 "oic.r.batterymaterial.material = material",
1613                 "Direct translation is difficult as OCF has declared an enumeration of strings where
1614 oneM2M has a free-form string. Translation code will need to determine which oneM2M strings can be
1615 mapped to the OCF enumerated values in oic.r.batterymaterial"
1616             ],
1617             "x-from-ocf": [
1618                 "material = oic.r.batterymaterial.material[INDEX]"
1619             ]
1620         }
1621     }
1622 }
1623 },
1624 },
1625 "type": "object",
1626 "allOf": [
1627     { "$ref": "#/definitions/onem2m.m.battery" }
1628 ],
1629 "required": [ "level" ]
1630 }

```

1631 9.12 Binary Object

1632 9.12.1 Derived model

1633 The derived model: "onem2m.m.binaryobject".

1634 9.12.2 Property definition

1635 Table 23 provides the detailed per Property mapping for "onem2m.m.binaryobject".

1636 **Table 23 – The property mapping for "onem2m.m.binaryobject".**

oneM2M Property name	OCF Resource	To OCF	From OCF
objectType	oic.r.opaquedata	oic.r.opaquedata.payloadtype = objectType	objectType = oic.r.opaquedata.payloadtype
object	oic.r.opaquedata	oic.r.opaquedata.payload = objectoic.r.opaquedata.encoding = "base64"oic.r.opaquedata.system = "oneM2M"	If the OCF encoding is not base64, then the payload would need to be converted to base64object = oic.r.opaquedata.payload
size	oic.r.opaquedata	oic.r.opaquedata.size = size	size = oic.r.opaquedata.size
hash	oic.r.opaquedata	oic.r.opaquedata.hash = hash	hash = oic.r.opaquedata.hash

1637 Table 24 provides the details of the Properties that are part of "onem2m.m.binaryobject".

Table 24 – The properties of "onem2m.m.binaryobject".

oneM2M name	Property	Type	Required	Description
	objectType	string	yes	This data point contains the type and subtype of the binary object as a MIME type.
	object	string	yes	This data point contains the base64 encoded binary object.
	size	integer	no	The size of the decoded binary object.
	hash	string	no	The hash code of the blob. If present, it is used to check the decoded content of the "object" data point for integrity. The algorithm used for generating the hash value is SHA-2 [15]. The data point contains the hash as a hex encoded value.

9.12.3 Derived model definition

```

1639 {
1640   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.binaryobject.json#",
1641   "$schema": "http://json-schema.org/draft-04/schema#",
1642   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
1643   "title": "Binary Object",
1644   "definitions": {
1645     "onem2m.m.binaryobject": {
1646       "type": "object",
1647       "properties": {
1648         "object": {
1649           "type": "string",
1650           "description": "This data point contains the base64 encoded binary object.",
1651           "x-ocf-conversion": {
1652             "x-ocf-alias": "oic.r.opaquedata",
1653             "x-to-ocf": [
1654               "oic.r.opaquedata.payload = object",
1655               "oic.r.opaquedata.encoding = \"base64\"",
1656               "oic.r.opaquedata.system = \"oneM2M\""
1657             ],
1658             "x-from-ocf": [
1659               "If the OCF encoding is not base64, then the payload would need to be converted to
1660               base64",
1661               "object = oic.r.opaquedata.payload"
1662             ]
1663           }
1664         }
1665       }
1666     }
1667   }

```

```

1665     },
1666     "objectType": {
1667         "type": "string",
1668         "description": "This data point contains the type and subtype of the binary object as a
1669 MIME type.",
1670         "x-ocf-conversion": {
1671             "x-ocf-alias": "oic.r.opaquedata",
1672             "x-to-ocf": [
1673                 "oic.r.opaquedata.payloadtype = objectType"
1674             ],
1675             "x-from-ocf": [
1676                 "objectType = oic.r.opaquedata.payloadtype"
1677             ]
1678         },
1679     },
1680     "size": {
1681         "type": "integer",
1682         "description": "The size of the decoded binary object.",
1683         "x-ocf-conversion": {
1684             "x-ocf-alias": "oic.r.opaquedata",
1685             "x-to-ocf": [
1686                 "oic.r.opaquedata.size = size"
1687             ],
1688             "x-from-ocf": [
1689                 "size = oic.r.opaquedata.size"
1690             ]
1691         },
1692     },
1693     "hash": {
1694         "type": "string",
1695         "description": "The hash code of the blob. If present, it is used to check the decoded
1696 content of the \"object\" data point for integrity. The algorithm used for generating the hash
1697 value is SHA-2 [15]. The data point contains the hash as a hex encoded value.",
1698         "x-ocf-conversion": {
1699             "x-ocf-alias": "oic.r.opaquedata",
1700             "x-to-ocf": [
1701                 "oic.r.opaquedata.hash = hash"
1702             ],
1703             "x-from-ocf": [
1704                 "hash = oic.r.opaquedata.hash"
1705             ]
1706         },
1707     },
1708 },
1709 },
1710 },
1711 "type": "object",
1712 "allOf": [
1713     {"$ref": "#/definitions/onem2m.m.opaquedata"}
1714 ],
1715 "required": [ "object", "objectType" ]
1716 }
1717

```

9.13 Binary Switch

9.13.1 Derived model

The derived model: "onem2m.m.binaryswitch".

9.13.2 Property definition

Table 25 provides the detailed per Property mapping for "onem2m.m.binaryswitch".

Table 25 – The property mapping for "onem2m.m.binaryswitch".

oneM2M Property name	OCF Resource	To OCF	From OCF
----------------------	--------------	--------	----------

powerState	oic.r.swtich.binary	oic.r.switch.binary.value = powerState	powerState = oic.r.switch.binary.value
------------	---------------------	---	---

Table 26 provides the details of the Properties that are part of "onem2m.m.binaryswitch".

Table 26 – The properties of "onem2m.m.binaryswitch".

oneM2M name	Property	Type	Required	Description
powerState		boolean	yes	Status of the switch

9.13.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.binaryswitch.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Binary Switch",
  "definitions": {
    "onem2m.m.binaryswitch": {
      "type": "object",
      "properties": {
        "powerState": {
          "type": "boolean",
          "description": "Status of the switch",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.swtich.binary",
            "x-to-ocf": [
              "oic.r.switch.binary.value = powerState"
            ],
            "x-from-ocf": [
              "powerState = oic.r.switch.binary.value"
            ]
          }
        }
      }
    }
  },
  "type": "object",
  "allOf": [
    { "$ref": "#/definitions/onem2m.m.binaryswitch" }
  ],
  "required": [ "powerState" ]
}
```

9.14 Boiler

9.14.1 Derived model

The derived model: "onem2m.m.boiler".

9.14.2 Property definition

Table 27 provides the detailed per Property mapping for "onem2m.m.boiler".

Table 27 – The property mapping for "onem2m.m.boiler".

oneM2M name	Property	OCF Resource	To OCF	From OCF
-------------	----------	--------------	--------	----------

status	oic.r.sensor	oic.r.sensor.value = status	status = oic.r.sensor.value
--------	--------------	-----------------------------	-----------------------------

Table 28 provides the details of the Properties that are part of "onem2m.m.boiler".

Table 28 – The properties of "onem2m.m.boiler".

oneM2M name	Property	Type	Required	Description
status		boolean	yes	The status of boiling.

9.14.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.boiler.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Boiler",
  "definitions": {
    "onem2m.m.boiler": {
      "type": "object",
      "properties": {
        "status": {
          "type": "boolean",
          "description": "The status of boiling.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.sensor",
            "x-to-ocf": [
              "oic.r.sensor.value = status"
            ],
            "x-from-ocf": [
              "status = oic.r.sensor.value"
            ]
          }
        }
      }
    }
  },
  "type": "object",
  "allOf": [
    { "$ref": "#/definitions/onem2m.m.boiler" }
  ],
  "required": [ "status" ]
}
```

9.15 Brewing

9.15.1 Derived model

The derived model: "onem2m.m.brewing".

9.15.2 Property definition

Table 29 provides the detailed per Property mapping for "onem2m.m.brewing".

Table 29 – The property mapping for "onem2m.m.brewing".

oneM2M Property name	OCF Resource	To OCF	From OCF
----------------------	--------------	--------	----------

cupsNumber	oic.r.brewing	oic.r.brewing.amountrequested = cupsNumber * 150	cupsNumber = floor(oic.r.brewing.amountrequested / 150)
strength	oic.r.brewing	oic.r.brewing.strengthrange[0] = 1 oic.r.brewing.strengthrange[1] = 5 oic.r.brewing.strength = strength	oic.r.brewing.strengthrange[0] = 1 oic.r.brewing.strengthrange[1] = 5 strength = oic.r.brewing.strength

Table 30 provides the details of the Properties that are part of "onem2m.m.brewing".

Table 30 – The properties of "onem2m.m.brewing".

oneM2M name	Property	Type	Required	Description
cupsNumber		integer	yes	The current number of the cups requested to brew
strength		integer	no	The current strength of the drink taste. A higher value indicates a stronger taste

9.15.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.brewing.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Brewing",
  "definitions": {
    "onem2m.m.brewing": {
      "type": "object",
      "properties": {
        "cupsNumber": {
          "type": "integer",
          "description": "The current number of the cups requested to brew",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.brewing",
            "x-to-ocf": [
              "oic.r.brewing.amountrequested = cupsNumber * 150"
            ],
            "x-from-ocf": [
              "cupsNumber = floor(oic.r.brewing.amountrequested / 150)"
            ]
          }
        },
        "strength": {
          "type": "integer",
          "description": "The current strength of the drink taste. A higher value indicates a stronger taste",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.brewing",
            "x-to-ocf": [
              "oic.r.brewing.strengthrange[0] = 1",
              "oic.r.brewing.strengthrange[1] = 5",
              "oic.r.brewing.strength = strength"
            ]
          }
        }
      }
    }
  }
}
```



```

1841         "x-from-ocf": [
1842             "oic.r.brewing.strengthrange[0] = 1",
1843             "oic.r.brewing.strengthrange[1] = 5",
1844             "strength = oic.r.brewing.strength"
1845         ]
1846     }
1847 }
1848 }
1849 }
1850 },
1851 "type": "object",
1852 "allOf": [
1853     { "$ref": "#/definitions/onem2m.m.brewing" }
1854 ],
1855 "required": [ "cupsNumber" ]
1856 }

```

1857 9.16 Brightness

1858 9.16.1 Derived model

1859 The derived model: "onem2m.m.brightness".

1860 9.16.2 Property definition

1861 Table 31 provides the detailed per Property mapping for "onem2m.m.brightness".

1862 **Table 31 – The property mapping for "onem2m.m.brightness".**

oneM2M Property name	OCF Resource	To OCF	From OCF
brightness	oic.r.light.brightness	oic.r.light.brightness.brightness = brightness	brightness = oic.r.light.brightness.brightness

1863 Table 32 provides the details of the Properties that are part of "onem2m.m.brightness".

1864 **Table 32 – The properties of "onem2m.m.brightness".**

oneM2M name	Property	Type	Required	Description
brightness		integer	yes	The status of brightness level in percentage

1865 9.16.3 Derived model definition

```

1866 {
1867     "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.brightness.json#",
1868     "$schema": "http://json-schema.org/draft-04/schema#",
1869     "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
1870     "title": "Brightness",
1871     "definitions": {
1872         "onem2m.m.brightness": {
1873             "type": "object",
1874             "properties": {
1875                 "brightness": {
1876                     "type": "integer",
1877                     "description": "The status of brightness level in percentage",
1878                     "x-ocf-conversion": {

```

```

1879         "x-ocf-alias": "oic.r.light.brightness",
1880         "x-to-ocf": [
1881             "oic.r.light.brightness.brightness = brightness"
1882         ],
1883         "x-from-ocf": [
1884             "brightness = oic.r.light.brightness.brightness"
1885         ]
1886     }
1887 }
1888 }
1889 }
1890 },
1891 "type": "object",
1892 "allOf": [
1893     { "$ref": "#/definitions/onem2m.m.brightness" }
1894 ],
1895 "required": [ "brightness" ]
1896 }

```

1897 9.17 Clock

1898 9.17.1 Derived model

1899 The derived model: "onem2m.m.clock".

1900 9.17.2 Property definition

1901 Table 33 provides the detailed per Property mapping for "onem2m.m.clock".

1902 **Table 33 – The property mapping for "onem2m.m.clock".**

oneM2M name	Property	OCF Resource	To OCF	From OCF
currentTime		oic.r.clock	bytecpy (oic.r.clock.datetime + "timepos", currentTime, "timelen");	bytecpy (currentTime, oic.r.clock.datetime + "timepos", "timelen");
currentDate		oic.r.clock	bytecpy (oic.r.clock.datetime + "datepos", currentDate, "datelen");	bytecpy (currentDate, oic.r.clock.datetime + "datepos", "datelen");
currentTimeZone		oic.r.clock	Convert IANA formatted currentTimeZone to oic.r.clock.datetime timezone offset location using library calltx_convert (oic.r.clock.datetime + "tzpos", currentTimeZone);	Convert oic.r.clock.datetime timezone offset location in IANA formatted currentTimeZone using library calltz_convert (currentTimeZone, oic.r.clock.datetime + "tzpos");

1903 Table 34 provides the details of the Properties that are part of "onem2m.m.clock".

Table 34 – The properties of "onem2m.m.clock".

oneM2M name	Property	Type	Required	Description
	currentTime	string	yes	Information of the current time.
	currentDate	string	yes	Information of the current time.
	currentTimeZone	string	no	Name of current time zone according to the IANA Timezone data format (TZ) (https://www.iana.org/time-zones).

9.17.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.clock.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Clock",
  "definitions": {
    "onem2m.m.clock": {
      "type": "object",
      "properties": {
        "currentTime": {
          "type": "string",
          "description": "Information of the current time.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.clock",
            "x-to-ocf": [
              "bytecpy ( oic.r.clock.datetime + \"timepos\", currentTime, \"timelen\" );"
            ],
            "x-from-ocf": [
              "bytecpy ( currentTime, oic.r.clock.datetime + \"timepos\", \"timelen\" );"
            ]
          }
        },
        "currentDate": {
          "type": "string",
          "description": "Information of the current time.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.clock",
            "x-to-ocf": [
              "bytecpy ( oic.r.clock.datetime + \"datepos\", currentDate, \"datelen\" );"
            ],
            "x-from-ocf": [
              "bytecpy ( currentDate, oic.r.clock.datetime + \"datepos\", \"datelen\" );"
            ]
          }
        },
        "currentTimeZone": {
          "type": "string",
          "description": "Name of current time zone according to the IANA Timezone data format (TZ) (https://www.iana.org/time-zones).",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.clock",
            "x-to-ocf": [
              "Convert IANA formatted currentTimeZone to oic.r.clock.datetime timezone offset location using library call",
              "tx_convert ( oic.r.clock.datetime + \"tzpos\", currentTimeZone );"
            ]
          }
        }
      }
    }
  }
}

```

```

1951         ],
1952         "x-from-ocf": [
1953             "Convert oic.r.clock.datetime timezone offset location in IANA formatted
1954             currentTimeZone using library call",
1955             "tz_convert ( currentTimeZone, oic.r.clock.datetime + \"tzpos\" );"
1956         ]
1957     }
1958 }
1959 }
1960 }
1961 },
1962 "type": "object",
1963 "allOf": [
1964     { "$ref": "#/definitions/onem2m.m.clock" }
1965 ],
1966 "required": [ "currentTime", "currentDate" ]
1967 }
1968

```

1969 9.18 Clothes Dryer Job Mode

1970 9.18.1 Derived model

1971 The derived model: "onem2m.m.clothesdryerjobmode".

1972 9.18.2 Property definition

1973 Table 35 provides the detailed per Property mapping for "onem2m.m.clothesdryerjobmode".

1974 **Table 35 – The property mapping for "onem2m.m.clothesdryerjobmode".**

oneM2M Property name	OCF Resource	To OCF	From OCF
currentJobModeName	oic.r.operational.state	This value does not exist in OCF as it is already accommodated in the currentJobMode property.	Need to translate between the OCF operational state enumerated string and the oneM2M string value if (oic.r.operational.state.currentJobState == "normal") { currentJobModeName = "normal"; } if (oic.r.operational.state.currentJobState == "quick") { currentJobModeName = "quickDry"; } if (oic.r.operational.state.currentJobState == "permapress" { currentJobModeName = "permanentPress"; } if (oic.r.operational.state.currentJobState == "heavy") { currentJobModeName = "heavyDuty"; } if (oic.r.operational.state.currentJobState == "delicate") { currentJobModeName = "delicates"; } if (oic.r.operational.state.currentJobState == "airDry")

			<pre> { currentJobModeName = "airDry"; }if (oic.r.operational.state.curr entJobState == "extended") { currentJobModeName = "extendedTumble"; }else { currentJobModeName = ""; } </pre>
jobModes	oic.r.operational.state	This does not exist in OCF as all possible operational states are available.	<p>This is an array of integers in oneM2M defined by the current version of the specification as follows:</p> <pre> jobModes[1] = 1jobModes[2] = 2jobModes[3] = 3jobModes[4] = 4jobModes[5] = 5jobModes[6] = 6jobModes[7] = 7 </pre>
currentJobMode	oic.r.operational.state	<p>Need to translate between the oneM2M integer value and the OCF operational state enumerated string</p> <pre> if (currentJobMode == 1) { oic.r.operational.state.curr entJobState == "normal"; }if (currentJobMode == 2) { oic.r.operational.state.curr entJobState == "quick"; }if (currentJobMode == 3) { oic.r.operational.state.curr entJobState == "permapress"; }if (currentJobMode == 4) { oic.r.operational.state.curr entJobState == "heavy"; }if (currentJobMode == 5) { oic.r.operational.state.curr entJobState == "delicate"; }if (currentJobMode == 6) { oic.r.operational.state.curr entJobState == "airDry"; }if (currentJobMode == 7) { oic.r.operational.state.curr entJobState == "extended"; }else { oic.r.operational.state.curr entJobState == "unknown"; } </pre>	<p>Need to translate between the OCF operational state enumerated string and the oneM2M integer value</p> <pre> if (oic.r.operational.state.curr entJobState == "normal") { currentJobMode = 1; }if (oic.r.operational.state.curr entJobState == "quick") { currentJobMode = 2; }if (oic.r.operational.state.curr entJobState == "permapress" { currentJobMode = 3; }if (oic.r.operational.state.curr entJobState == "heavy") { currentJobMode = 4; }if (oic.r.operational.state.curr entJobState == "delicate") { currentJobMode = 5; }if (oic.r.operational.state.curr entJobState == "airDry") { currentJobMode = 6; }if (oic.r.operational.state.curr entJobState == "extended") { currentJobMode = 7; }else { currentJobMode = 0; } </pre>

1975 Table 36 provides the details of the Properties that are part of "onem2m.m.clothesdryerjobmode".

Table 36 – The properties of "onem2m.m.clothesdryerjobmode".

oneM2M name	Property	Type	Required	Description
currentJobModeName		string	no	Name of current job mode in string. This can be used when currentJobMode is vendor-specific.
jobModes		array	yes	List of possible job states the device supports
currentJobMode		integer	yes	Currently active job mode.

1977

9.18.3 Derived model definition

1978

1979

1980

1981

1982

1983

1984

1985

1986

1987

1988

1989

1990

1991

1992

1993

1994

1995

1996

1997

1998

1999

2000

2001

2002

2003

2004

2005

2006

2007

2008

2009

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

2021

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.clothesdryerjobmode.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Clothes Dryer Job Mode",
  "definitions": {
    "onem2m.m.clothesdryerjobmode": {
      "type": "object",
      "properties": {
        "currentJobMode": {
          "type": "integer",
          "description": "Currently active job mode.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.operational.state",
            "x-to-ocf": [
              "Need to translate between the oneM2M integer value and the OCF operational state
enumerated string",
              "if ( currentJobMode == 1 ) { oic.r.operational.state.currentJobState ==
\\\"normal\\\"; }",
              "if ( currentJobMode == 2 ) { oic.r.operational.state.currentJobState ==
\\\"quick\\\"; }",
              "if ( currentJobMode == 3 ) { oic.r.operational.state.currentJobState ==
\\\"permapress\\\"; }",
              "if ( currentJobMode == 4 ) { oic.r.operational.state.currentJobState ==
\\\"heavy\\\"; }",
              "if ( currentJobMode == 5 ) { oic.r.operational.state.currentJobState ==
\\\"delicate\\\"; }",
              "if ( currentJobMode == 6 ) { oic.r.operational.state.currentJobState ==
\\\"airDry\\\"; }",
              "if ( currentJobMode == 7 ) { oic.r.operational.state.currentJobState ==
\\\"extended\\\"; }",
              "else { oic.r.operational.state.currentJobState == \\\"unknown\\\"; }"
            ],
            "x-from-ocf": [
              "Need to translate between the OCF operational state enumerated string and the oneM2M
integer value",
              "if (oic.r.operational.state.currentJobState == \\\"normal\\\" ) { currentJobMode =
1; }",
              "if (oic.r.operational.state.currentJobState == \\\"quick\\\" ) { currentJobMode = 2; }",
              "if (oic.r.operational.state.currentJobState == \\\"permapress\\\" ) { currentJobMode =
3; }",
              "if (oic.r.operational.state.currentJobState == \\\"heavy\\\" ) { currentJobMode = 4; }",
              "if (oic.r.operational.state.currentJobState == \\\"delicate\\\" ) { currentJobMode =
5; }",

```

```

2022         "if (oic.r.operational.state.currentJobState == \"airDry\" ) { currentJobMode =
2023 6; }",
2024         "if (oic.r.operational.state.currentJobState == \"extended\" ) { currentJobMode =
2025 7; }",
2026         "else { currentJobMode = 0; }"
2027     ]
2028     },
2029     },
2030     "currentJobModeName": {
2031         "type": "string",
2032         "description": "Name of current job mode in string. This can be used when currentJobMode
2033 is vendor-specific.",
2034         "x-ocf-conversion": {
2035             "x-ocf-alias": "oic.r.operational.state",
2036             "x-to-ocf": [
2037                 "This value does not exist in OCF as it is already accommodated in the currentJobMode
2038 property."
2039             ],
2040             "x-from-ocf": [
2041                 "Need to translate between the OCF operational state enumerated string and the oneM2M
2042 string value",
2043                 "if (oic.r.operational.state.currentJobState == \"normal\" ) { currentJobModeName =
2044 \"normal\"; }",
2045                 "if (oic.r.operational.state.currentJobState == \"quick\" ) { currentJobModeName =
2046 \"quickDry\"; }",
2047                 "if (oic.r.operational.state.currentJobState == \"permapress\" ) { currentJobModeName =
2048 \"permanentPress\"; }",
2049                 "if (oic.r.operational.state.currentJobState == \"heavy\" ) { currentJobModeName =
2050 \"heavyDuty\"; }",
2051                 "if (oic.r.operational.state.currentJobState == \"delicate\" ) { currentJobModeName =
2052 \"delicates\"; }",
2053                 "if (oic.r.operational.state.currentJobState == \"airDry\" ) { currentJobModeName =
2054 \"airDry\"; }",
2055                 "if (oic.r.operational.state.currentJobState == \"extended\" ) { currentJobModeName =
2056 \"extendedTumble\"; }",
2057                 "else { currentJobModeName = \"\"; }"
2058             ]
2059         },
2060     },
2061     "jobModes": {
2062         "type": "array",
2063         "description": "List of possible job states the device supports",
2064         "x-ocf-conversion": {
2065             "x-ocf-alias": "oic.r.operational.state",
2066             "x-to-ocf": [
2067                 "This does not exist in OCF as all possible operational states are available."
2068             ],
2069             "x-from-ocf": [
2070                 "This is an array of integers in oneM2M defined by the current version of the
2071 specification as follows:",
2072                 "jobModes[1] = 1",
2073                 "jobModes[2] = 2",
2074                 "jobModes[3] = 3",
2075                 "jobModes[4] = 4",
2076                 "jobModes[5] = 5",
2077                 "jobModes[6] = 6",
2078                 "jobModes[7] = 7"
2079             ]
2080         },
2081     },
2082     },
2083     },
2084     },
2085     "type": "object",
2086     "allOf": [
2087         { "$ref": "#/definitions/oneM2M.m.airconjobmode" }
2088     ],
2089     "required": [ "currentJobMode", "jobModes" ]
2090 }

```

9.19 Colour

9.19.1 Derived model

The derived model: "onem2m.m.colour".

9.19.2 Property definition

Table 37 provides the detailed per Property mapping for "onem2m.m.colour".

Table 37 – The property mapping for "onem2m.m.colour".

oneM2M Property name	OCF Resource	To OCF	From OCF
red	oic.r.colour	oic.r.colour.rgb.rgbValue[0] = red	red = oic.r.colour.rgb.rgbValue[0]
blue	oic.r.colour	oic.r.colour.rgb.rgbValue[2] = blue	blue = oic.r.colour.rgb.rgbValue[2]
green	oic.r.colour	oic.r.colour.rgb.rgbValue[1] = green	green = oic.r.colour.rgb.rgbValue[1]

Table 38 provides the details of the Properties that are part of "onem2m.m.colour".

Table 38 – The properties of "onem2m.m.colour".

oneM2M name	Property	Type	Required	Description
red		integer	yes	The value of the Red colour channel of RGB. The range is [0,255]
blue		integer	yes	The value of the Blue colour channel of RGB. The range is [0,255]
green		integer	yes	The value of the Green colour channel of RGB. The range is [0,255]

9.19.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.colour.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Colour",
  "definitions": {
    "onem2m.m.colour": {
      "type": "object",
      "properties": {
```



```

2109     "red": {
2110       "type": "integer",
2111       "description": "The value of the Red colour channel of RGB. The range is [0,255]",
2112       "x-ocf-conversion": {
2113         "x-ocf-alias": "oic.r.colour",
2114         "x-to-ocf": [
2115           "oic.r.colour.rgb.rgbValue[0] = red"
2116         ],
2117         "x-from-ocf": [
2118           "red = oic.r.colour.rgb.rgbValue[0]"
2119         ]
2120       }
2121     },
2122     "green": {
2123       "type": "integer",
2124       "description": "The value of the Green colour channel of RGB. The range is [0,255]",
2125       "x-ocf-conversion": {
2126         "x-ocf-alias": "oic.r.colour",
2127         "x-to-ocf": [
2128           "oic.r.colour.rgb.rgbValue[1] = green"
2129         ],
2130         "x-from-ocf": [
2131           "green = oic.r.colour.rgb.rgbValue[1]"
2132         ]
2133       }
2134     },
2135     "blue": {
2136       "type": "integer",
2137       "description": "The value of the Blue colour channel of RGB. The range is [0,255]",
2138       "x-ocf-conversion": {
2139         "x-ocf-alias": "oic.r.colour",
2140         "x-to-ocf": [
2141           "oic.r.colour.rgb.rgbValue[2] = blue"
2142         ],
2143         "x-from-ocf": [
2144           "blue = oic.r.colour.rgb.rgbValue[2]"
2145         ]
2146       }
2147     }
2148   },
2149   "type": "object",
2150   "allOf": [
2151     { "$ref": "#/definitions/onem2m.m.colour.json" }
2152   ],
2153   "required": [ "red", "green", "blue" ]
2154 }
2155
2156
2157

```

9.20 Colour Saturation

9.20.1 Derived model

The derived model: "onem2m.m.coloursaturation".

9.20.2 Property definition

Table 39 provides the detailed per Property mapping for "onem2m.m.coloursaturation".

Table 39 – The property mapping for "onem2m.m.coloursaturation".

oneM2M Property name	OCF Resource	To OCF	From OCF

colourSaturation	oic.r.colour.saturation	oic.r.colour.saturation.colourSaturation = colourSaturation	colourSaturation = oic.r.colour.saturation.colourSaturation
------------------	-------------------------	---	---

Table 40 provides the details of the Properties that are part of "onem2m.m.coloursaturation".

Table 40 – The properties of "onem2m.m.coloursaturation".

oneM2M name	Property	Type	Required	Description
colourSaturation		integer	yes	The status of colour saturation level. 'colourSaturation' has a range of [0,100].

9.20.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.coloursaturation.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Colour Saturation",
  "definitions": {
    "onem2m.m.coloursaturation": {
      "type": "object",
      "properties": {
        "colourSaturation": {
          "type": "integer",
          "description": "The status of colour saturation level. 'colourSaturation' has a range of [0,100].",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.colour.saturation",
            "x-to-ocf": [
              "oic.r.colour.saturation.colourSaturation = colourSaturation"
            ],
            "x-from-ocf": [
              "colourSaturation = oic.r.colour.saturation.colourSaturation"
            ]
          }
        }
      }
    }
  },
  "type": "object",
  "allOf": [
    { "$ref": "#/definitions/onem2m.m.coloursaturation" }
  ],
  "required": [ "colourSaturation" ]
}
```

9.21 Credentials

9.21.1 Derived model

The derived model: "onem2m.m.credentials".

9.21.2 Property definition

Table 41 provides the detailed per Property mapping for "onem2m.m.credentials".

Table 41 – The property mapping for "onem2m.m.credentials".

oneM2M Property name	OCF Resource	To OCF	From OCF
loginName	oic.r.userinfo	oic.r.userinfo.username = loginName	loginName = oic.r.userinfo.username
token	oic.r.userinfo	oic.r.userinfo.token = token	token = oic.r.userinfo.token
password	oic.r.userinfo	oic.r.userinfo.password = password	password = oic.r.userinfo.password

Table 42 provides the details of the Properties that are part of "onem2m.m.credentials".

Table 42 – The properties of "onem2m.m.credentials".

oneM2M Property name	Type	Required	Description
loginName	string	no	User's login name.
token	string	no	Authentication token e.g. OAuth token.
password	string	no	User's password.

9.21.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.credentials.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Credentials",
  "definitions": {
    "onem2m.m.credentials": {
      "type": "object",
      "properties": {
        "loginName": {
          "type": "string",
          "description": "User's login name.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.userinfo",
            "x-to-ocf": [
              "oic.r.userinfo.username = loginName"
            ],
            "x-from-ocf": [
              "loginName = oic.r.userinfo.username"
            ]
          }
        },
        "password": {
          "type": "string",
          "description": "User's password.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.userinfo",
            "x-to-ocf": [
              "oic.r.userinfo.password = password"
            ]
          }
        }
      }
    }
  }
}
```

```

2238         ],
2239         "x-from-ocf": [
2240             "password = oic.r.userinfo.password"
2241         ]
2242     },
2243     },
2244     "token": {
2245         "type": "string",
2246         "description": "Authentication token e.g. OAuth token.",
2247         "x-ocf-conversion": {
2248             "x-ocf-alias": "oic.r.userinfo",
2249             "x-to-ocf": [
2250                 "oic.r.userinfo.token = token"
2251             ],
2252             "x-from-ocf": [
2253                 "token = oic.r.userinfo.token"
2254             ]
2255         }
2256     }
2257 },
2258 },
2259 },
2260 "type": "object",
2261 "allof": [
2262     { "$ref": "#/definitions/onem2m.m.credentials" }
2263 ],
2264 "required": [ ]
2265 }
2266

```

2267 9.22 Dehumidifier Job Mode

2268 9.22.1 Derived model

2269 The derived model: "onem2m.m.dehumidifierjobmode".

2270 9.22.2 Property definition

2271 Table 43 provides the detailed per Property mapping for "onem2m.m.dehumidifierjobmode".

2272 **Table 43 – The property mapping for "onem2m.m.dehumidifierjobmode".**

oneM2M Property name	OCF Resource	To OCF	From OCF
currentJobMode	oic.r.operational.state	Need to translate between the oneM2M integer value and the OCF operational state enumerated stringif (currentJobMode == 1) { oic.r.operational.state.currentJobState == "smart"; }if (currentJobMode == 2) { oic.r.operational.state.currentJobState == "fast"; }if (currentJobMode == 3) { oic.r.operational.state.currentJobState == "silent"; }if (currentJobMode == 4) { oic.r.operational.state.currentJobState == "focused"; }if (currentJobMode == 5) { oic.r.operational.state.currentJobState ==	Need to translate between the OCF operational state enumerated string and the oneM2M integer valueif (oic.r.operational.state.currentJobState == "smart") { currentJobMode = 1; }if (oic.r.operational.state.currentJobState == "fast") { currentJobMode = 2; }if (oic.r.operational.state.currentJobState == "silent") { currentJobMode = 3; }if (oic.r.operational.state.currentJobState == "focused") { currentJobMode = 4; }if (oic.r.operational.state.currentJobState == "clothes")

		<pre>"clothes"; }else { oic.r.operational.state.curr entJobState == "unknown"; }</pre>	<pre>{ currentJobMode = 5; }else { currentJobMode = 0; }</pre>
currentJobModeName	oic.r.operational.state	This value does not exist in OCF as it is already accommodated in the currentJobMode property.	<p>Need to translate between the OCF operational state enumerated string and the oneM2M string value</p> <pre>if (oic.r.operational.state.currentJobState == "smart") { currentJobModeName = "smart"; } if (oic.r.operational.state.currentJobState == "fast") { currentJobModeName = "fast"; } if (oic.r.operational.state.currentJobState == "silent") { currentJobModeName = "silent"; } if (oic.r.operational.state.currentJobState == "focused") { currentJobModeName = "focus"; } if (oic.r.operational.state.currentJobState == "clothes") { currentJobModeName = "clothes"; } else { currentJobModeName = ""; }</pre>
jobModes	oic.r.operational.state	This does not exist in OCF as all possible operational states are available.	<p>This is an array of integers in oneM2M defined by the current version of the specification as follows:</p> <pre>jobModes[1] = 1 jobModes[2] = 2 jobModes[3] = 3 jobModes[4] = 4 jobModes[5] = 5</pre>

2273 Table 44 provides the details of the Properties that are part of "onem2m.m.dehumidiifierjobmode".

2274 **Table 44 – The properties of "onem2m.m.dehumidiifierjobmode".**

oneM2M name	Property	Type	Required	Description
currentJobMode		integer	yes	Currently active job mode.
currentJobModeName		string	no	Name of current job mode in string. This can be used when

			currentJobMode is vendor-specific.
jobModes	array	yes	List of possible job states the device supports

9.22.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/oneM2Mmapping/schemas/oneM2M.dehumidifierjobmode.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Dehumidifier Job Mode",
  "definitions": {
    "oneM2M.dehumidifierjobmode": {
      "type": "object",
      "properties": {
        "currentJobMode": {
          "type": "integer",
          "description": "Currently active job mode.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.operational.state",
            "x-to-ocf": [
              "Need to translate between the oneM2M integer value and the OCF operational state
enumerated string",
              "if ( currentJobMode == 1 ) { oic.r.operational.state.currentJobState ==
\\\"smart\\\"; }",
              "if ( currentJobMode == 2 ) { oic.r.operational.state.currentJobState ==
\\\"fast\\\"; }",
              "if ( currentJobMode == 3 ) { oic.r.operational.state.currentJobState ==
\\\"silent\\\"; }",
              "if ( currentJobMode == 4 ) { oic.r.operational.state.currentJobState ==
\\\"focused\\\"; }",
              "if ( currentJobMode == 5 ) { oic.r.operational.state.currentJobState ==
\\\"clothes\\\"; }",
              "else { oic.r.operational.state.currentJobState == \\\"unknown\\\"; }"
            ],
            "x-from-ocf": [
              "Need to translate between the OCF operational state enumerated string and the oneM2M
integer value",
              "if (oic.r.operational.state.currentJobState == \\\"smart\\\" ) { currentJobMode = 1; }",
              "if (oic.r.operational.state.currentJobState == \\\"fast\\\" ) { currentJobMode = 2; }",
              "if (oic.r.operational.state.currentJobState == \\\"silent\\\" ) { currentJobMode = 3; }",
              "if (oic.r.operational.state.currentJobState == \\\"focused\\\" ) { currentJobMode =
4; }",
              "if (oic.r.operational.state.currentJobState == \\\"clothes\\\" ) { currentJobMode =
5; }",
              "else { currentJobMode = 0; }"
            ]
          }
        },
        "currentJobModeName": {
          "type": "string",
          "description": "Name of current job mode in string. This can be used when currentJobMode
is vendor-specific.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.operational.state",
            "x-to-ocf": [
              "This value does not exist in OCF as it is already accommodated in the currentJobMode
property."
            ],
            "x-from-ocf": [
              "Need to translate between the OCF operational state enumerated string and the oneM2M
string value",
              "if (oic.r.operational.state.currentJobState == \\\"smart\\\" ) { currentJobModeName =
\\\"smart\\\"; }",
              "if (oic.r.operational.state.currentJobState == \\\"fast\\\" ) { currentJobModeName =

```

```

2335 \ "fast\"; }",
2336 "if (oic.r.operational.state.currentJobState == \"silent\" { currentJobModeName =
2337 \"silent\"; }",
2338 "if (oic.r.operational.state.currentJobState == \"focused\" ) { currentJobModeName =
2339 \"focus\"; }",
2340 "if (oic.r.operational.state.currentJobState == \"clothes\" ) { currentJobModeName =
2341 \"clothes\"; }",
2342 "else { currentJobModeName = \"\"; }"
2343 ]
2344 }
2345 },
2346 "jobModes": {
2347 "type": "array",
2348 "description": "List of possible job states the device supports",
2349 "x-ocf-conversion": {
2350 "x-ocf-alias": "oic.r.operational.state",
2351 "x-to-ocf": [
2352 "This does not exist in OCF as all possible operational states are available."
2353 ],
2354 "x-from-ocf": [
2355 "This is an array of integers in oneM2M defined by the current version of the
2356 specification as follows:",
2357 "jobModes[1] = 1",
2358 "jobModes[2] = 2",
2359 "jobModes[3] = 3",
2360 "jobModes[4] = 4",
2361 "jobModes[5] = 5"
2362 ]
2363 }
2364 }
2365 }
2366 }
2367 },
2368 "type": "object",
2369 "allof": [
2370 { "$ref": "#/definitions/onem2m.m.airconjobmode" }
2371 ],
2372 "required": [ "currentJobMode", "jobModes" ]
2373 }

```

2374 9.23 Door Status

2375 9.23.1 Derived model

2376 The derived model: "onem2m.m.doorStatus".

2377 9.23.2 Property definition

2378 Table 45 provides the detailed per Property mapping for "onem2m.m.doorStatus".

2379 **Table 45 – The property mapping for "onem2m.m.doorStatus".**

oneM2M Property name	OCF Resource	To OCF	From OCF
openDuration	oic.r.door	Conversion from oneM2M timestamp is not yet defined oic.r.door.openDuration = openDuration	Conversion from oneM2M timestamp is not yet defined openDuration = oic.r.door.openDuration
doorState	oic.r.door	if doorState == 1 oic.r.door.openState = "Closed" if doorState == 2 oic.r.door.openState = "Open"	if oic.r.door.openState = "Closed" doorState == 1 if oic.r.door.openState = "Open" doorState == 2

openAlarm	oic.r.door	oic.r.door.openAlarm openAlarm	=	openAlarm oic.r.door.openAlarm	=
-----------	------------	-----------------------------------	---	-----------------------------------	---

Table 46 provides the details of the Properties that are part of "onem2m.m.doorStatus".

Table 46 – The properties of "onem2m.m.doorStatus".

oneM2M name	Property	Type	Required	Description
openDuration		string	no	The time duration the door has been open.
doorState		integer	yes	Current state of the door.
openAlarm		boolean	no	The state of the door open alarm. 'True' indicates that the open alarm is active. 'False' indicates that the open alarm is not active.

9.23.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.doorStatus.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Door Status",
  "definitions": {
    "onem2m.m.doorStatus": {
      "type": "object",
      "properties": {
        "doorState": {
          "type": "integer",
          "description": "Current state of the door.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.door",
            "x-to-ocf": [
              "if doorState == 1",
              "oic.r.door.openState = \"Closed\"",
              "if doorState == 2",
              "oic.r.door.openState = \"Open\""
            ],
            "x-from-ocf": [
              "if oic.r.door.openState = \"Closed\"",
              "doorState == 1",
              "if oic.r.door.openState = \"Open\"",
              "doorState == 2"
            ]
          }
        },
        "openDuration": {
          "type": "string",
          "description": "The time duration the door has been open.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.door",
            "x-to-ocf": [
              "Conversion from oneM2M timestamp is not yet defined",
              "oic.r.door.openDuration = openDuration"
            ]
          }
        }
      }
    }
  }
}
```



```

2419         ],
2420         "x-from-ocf": [
2421             "Conversion from oneM2M timestamp is not yet defined",
2422             "openDuration = oic.r.door.openDuration"
2423         ]
2424     },
2425 },
2426 "openAlarm": {
2427     "type": "boolean",
2428     "description": "The state of the door open alarm. 'True' indicates that the open alarm is
active. 'False' indicates that the open alarm is not active.",
2429     "x-ocf-conversion": {
2430         "x-ocf-alias": "oic.r.door",
2431         "x-to-ocf": [
2432             "oic.r.door.openAlarm = openAlarm"
2433         ],
2434         "x-from-ocf": [
2435             "openAlarm = oic.r.door.openAlarm"
2436         ]
2437     }
2438 },
2439 }
2440 }
2441 },
2442 },
2443 "type": "object",
2444 "allOf": [
2445     { "$ref": "#/definitions/onem2m.m.doorStatus" }
2446 ],
2447 "required": [ "doorState" ]
2448 }
2449

```

9.24 Electric Vehicle Connector

9.24.1 Derived model

The derived model: "onem2m.m.electricvehicleconnector".

9.24.2 Property definition

Table 47 provides the detailed per Property mapping for "onem2m.m.electricvehicleconnector".

Table 47 – The property mapping for "onem2m.m.electricvehicleconnector".

oneM2M Property name	OCF Resource	To OCF	From OCF
propDischargingCapacity	oic.r.vehicle.connector	oic.r.vehicle.connector.rated dischargingcapacity = propDischargingCapacity * 1000	propDischargingCapacity = oic.r.vehicle.connector.rated dischargingcapacity / 1000
propChargingCapacity	oic.r.vehicle.connector	oic.r.vehicle.connector.rated chargingcapacity = propChargingCapacity * 1000	propChargingCapacity = oic.r.vehicle.connector.rated chargingcapacity / 1000
status	oic.r.vehicle.connector	oic.r.vehicle.connector.status = status;	status = oic.r.vehicle.connector.status

Table 48 provides the details of the Properties that are part of "onem2m.m.electricvehicleconnector".

Table 48 – The properties of "onem2m.m.electricvehicleconnector".

oneM2M Property name	Type	Required	Description
propDischargingCapacity	integer	no	Rated discharging capacity in milli-Amps.
propChargingCapacity	integer	no	Rated charging capacity in milli-Amps.
status	boolean	yes	The status of connection.

9.24.3 Derived model definition

```

2459 {
2460   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.electricvehicleconnector#",
2461   "$schema": "http://json-schema.org/draft-04/schema#",
2462   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
2463   "title": "Electric Vehicle Connector",
2464   "definitions": {
2465     "onem2m.m.electricvehicleconnector": {
2466       "type": "object",
2467       "properties": {
2468         "status": {
2469           "type": "boolean",
2470           "description": "The status of connection.",
2471           "x-ocf-conversion": {
2472             "x-ocf-alias": "oic.r.vehicle.connector",
2473             "x-to-ocf": [
2474               "oic.r.vehicle.connector.status = status;"
2475             ],
2476             "x-from-ocf": [
2477               "status = oic.r.vehicle.connector.status"
2478             ]
2479           }
2480         },
2481         "propChargingCapacity": {
2482           "type": "integer",
2483           "description": "Rated charging capacity in milli-Amps.",
2484           "x-ocf-conversion": {
2485             "x-ocf-alias": "oic.r.vehicle.connector",
2486             "x-to-ocf": [
2487               "oic.r.vehicle.connector.ratedchargingcapacity = propChargingCapacity * 1000"
2488             ],
2489             "x-from-ocf": [
2490               "propChargingCapacity = oic.r.vehicle.connector.ratedchargingcapacity / 1000"
2491             ]
2492           }
2493         },
2494         "propDischargingCapacity": {
2495           "type": "integer",
2496           "description": "Rated discharging capacity in milli-Amps.",
2497           "x-ocf-conversion": {
2498             "x-ocf-alias": "oic.r.vehicle.connector",
2499             "x-to-ocf": [
2500               "oic.r.vehicle.connector.rateddischargingcapacity = propDischargingCapacity * 1000"
2501             ],
2502             "x-from-ocf": [
2503               "propDischargingCapacity = oic.r.vehicle.connector.rateddischargingcapacity / 1000"
2504             ]
2505           }
2506         }
2507       }
2508     }
2509   }

```

```

2508     }
2509   }
2510 },
2511 "type": "object",
2512 "allOf": [
2513   { "$ref": "#/definitions/onem2m.m.electricvehicleconnector" }
2514 ],
2515 "required": [ "status" ]
2516 }
2517

```

2518 9.25 Energy Consumption

2519 9.25.1 Derived model

2520 The derived model: "onem2m.m.energyconsumption".

2521 9.25.2 Property definition

2522 Table 49 provides the detailed per Property mapping for "onem2m.m.energyconsumption".

2523 **Table 49 – The property mapping for "onem2m.m.energyconsumption".**

oneM2M name	Property	OCF Resource	To OCF	From OCF
significantDigits		oic.r.energy.consumption	This is not needed in OCF as only the absolute energy consumption is tracked.	significantDigits = 0
roundingEnergyConsumption		oic.r.energy.consumption	This is not needed in OCF as only the absolute energy consumption is tracked.	roundingEnergyConsumption = oic.r.energy.consumption.energy
voltage		oic.r.energy.electrical	oic.r.energy.electrical.voltage = voltage	voltage = oic.r.energy.electrical.voltage
frequency		oic.r.energy.electrical	oic.r.energy.electrical.frequency = frequency	frequency = oic.r.energy.electrical.frequency
multiplyingFactors		oic.r.energy.consumption	This is not needed in OCF as only the absolute energy consumption is tracked.	multiplyingFactors = 1
absoluteEnergyConsumption		oic.r.energy.consumption	oic.r.energy.consumption.energy = absoluteEnergyConsumption	absoluteEnergyConsumption = oic.r.energy.consumption.energy
current		oic.r.energy.electrical	oic.r.energy.electrical.current = current	current = oic.r.energy.electrical.current

Power	oic.r.energy.consumption	oic.r.energy.consumption.power = Power;	Power = oic.r.energy.consumption.power
-------	--------------------------	---	--

2524 Table 50 provides the details of the Properties that are part of "onem2m.m.energyconsumption".

2525 **Table 50 – The properties of "onem2m.m.energyconsumption".**

oneM2M Property name	Type	Required	Description
significantDigits	integer	no	The number of effective digits for data.
roundingEnergyConsumption	number	no	This energy consumption data can be calculated by using significantDigits and multiplyingFactors.
voltage	number	no	The voltage of the device. The common unit is volts (V).
frequency	number	no	The frequency of the device. The common unit is hertz (H).
multiplyingFactors	integer	no	The unit for data (multiplying factors)., e.g. 1 kWh, 0,1 kWh, 0,01 kWh etc.
absoluteEnergyConsumption	number	no	The absolute energy consumption, reflecting the real measurement of accumulative energy. The common unit is Watt-hour (Wh).
current	number	no	The current of the device. The common unit is ampere (A).
Power	number	yes	The power of the device. The common unit is Watt (W).

9.25.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.energyconsumption#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Energy Consumption",
  "definitions": {
    "onem2m.m.energyconsumption": {
      "type": "object",
      "properties": {
        "Power": {
          "type": "number",
          "description": "The power of the device. The common unit is Watt (W).",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.energy.consumption",
            "x-to-ocf": [
              "oic.r.energy.consumption.power = Power;"
            ],
            "x-from-ocf": [
              "Power = oic.r.energy.consumption.power"
            ]
          }
        },
        "absoluteEnergyConsumption": {
          "type": "number",
          "description": "The absolute energy consumption, reflecting the real measurement of
accumulative energy. The common unit is Watt-hour (Wh).",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.energy.consumption",
            "x-to-ocf": [
              "oic.r.energy.consumption.energy = absoluteEnergyConsumption"
            ],
            "x-from-ocf": [
              "absoluteEnergyConsumption = oic.r.energy.consumption.energy"
            ]
          }
        },
        "roundingEnergyConsumption": {
          "type": "number",
          "description": "This energy consumption data can be calculated by using significantDigits
and multiplyingFactors.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.energy.consumption",
            "x-to-ocf": [
              "This is not needed in OCF as only the absolute energy consumption is tracked."
            ],
            "x-from-ocf": [
              "roundingEnergyConsumption = oic.r.energy.consumption.energy"
            ]
          }
        },
        "significantDigits": {
          "type": "integer",
          "description": "The number of effective digits for data.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.energy.consumption",
            "x-to-ocf": [
              "This is not needed in OCF as only the absolute energy consumption is tracked."
            ],
            "x-from-ocf": [
              "significantDigits = 0"
            ]
          }
        },
        "multiplyingFactors": {
          "type": "integer",
          "description": "The unit for data (multiplying factors)., e.g. 1 kWh, 0,1 kWh, 0,01 kWh
etc.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.energy.consumption",
```

```

2596         "x-to-ocf": [
2597             "This is not needed in OCF as only the absolute energy consumption is tracked."
2598         ],
2599         "x-from-ocf": [
2600             "multiplyingFactors = 1"
2601         ]
2602     },
2603 },
2604 "voltage": {
2605     "type": "number",
2606     "description": "The voltage of the device. The common unit is volts (V).",
2607     "x-ocf-conversion": {
2608         "x-ocf-alias": "oic.r.energy.electrical",
2609         "x-to-ocf": [
2610             "oic.r.energy.electrical.voltage = voltage"
2611         ],
2612         "x-from-ocf": [
2613             "voltage = oic.r.energy.electrical.voltage"
2614         ]
2615     }
2616 },
2617 "current": {
2618     "type": "number",
2619     "description": "The current of the device. The common unit is ampere (A).",
2620     "x-ocf-conversion": {
2621         "x-ocf-alias": "oic.r.energy.electrical",
2622         "x-to-ocf": [
2623             "oic.r.energy.electrical.current = current"
2624         ],
2625         "x-from-ocf": [
2626             "current = oic.r.energy.electrical.current"
2627         ]
2628     }
2629 },
2630 "frequency": {
2631     "type": "number",
2632     "description": "The frequency of the device. The common unit is hertz (H).",
2633     "x-ocf-conversion": {
2634         "x-ocf-alias": "oic.r.energy.electrical",
2635         "x-to-ocf": [
2636             "oic.r.energy.electrical.frequency = frequency"
2637         ],
2638         "x-from-ocf": [
2639             "frequency = oic.r.energy.electrical.frequency"
2640         ]
2641     }
2642 }
2643 }
2644 }
2645 },
2646 "type": "object",
2647 "allOf": [
2648     {"$ref": "#/definitions/onem2m.m.energyconsumption"}
2649 ],
2650 "required": [ "Power" ]
2651 }
2652

```

9.26 Energy Generation

9.26.1 Derived model

The derived model: "onem2m.m.energygeneration".

9.26.2 Property definition

Table 51 provides the detailed per Property mapping for "onem2m.m.energygeneration".

Table 51 – The property mapping for "onem2m.m.energygeneration".

oneM2M Property name	OCF Resource	To OCF	From OCF
multiplyingFactors	oic.r.energy.generation	This is not needed in OCF as only the absolute energy consumption is tracked.	multiplyingFactors = 1
roundingEnergyGeneration	oic.r.energy.generation	This is not needed in OCF as only the absolute energy consumption is tracked.	roundingEnergyConsumption = oic.r.energy.consumption.powerGenerationData
powerGenerationData	oic.r.energy.generation	oic.r.energy.generation.energygenerated = powerGenerationData;	powerGenerationData = oic.r.energy.generation.energygenerated
significantDigits	oic.r.energy.generation	This is not needed in OCF as only the absolute energy consumption is tracked.	significantDigits = 0

Table 52 provides the details of the Properties that are part of "onem2m.m.energygeneration".

Table 52 – The properties of "onem2m.m.energygeneration".

oneM2M Property name	Type	Required	Description
multiplyingFactors	number	no	The unit for data (multiplying factors), e.g. 1 kWh, 0,1 kWh, 0,01 kWh etc.
roundingEnergyGeneration	integer	no	This energy generation data can be calculated by using significantFigures and multiplyingFactors.
powerGenerationData	number	no	Amount of instantaneous generation data.
significantDigits	integer	no	The number of effective digits for data.

9.26.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.energygeneration#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Energy Generation",
  "definitions": {
    "onem2m.m.energygeneration": {
      "type": "object",
      "properties": {
        "powerGenerationData": {
          "type": "number",
          "description": "Amount of instantaneous generation data.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.energy.generation",
            "x-to-ocf": [
              "oic.r.energy.generation.energygenerated = powerGenerationData;"
            ],
            "x-from-ocf": [
              "powerGenerationData = oic.r.energy.generation.energygenerated"
            ]
          }
        },
        "roundingEnergyGeneration": {
          "type": "integer",
          "description": "This energy generation data can be calculated by using significantFigures
and multiplyingFactors.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.energy.generation",
            "x-to-ocf": [
              "This is not needed in OCF as only the absolute energy consumption is tracked."
            ],
            "x-from-ocf": [
              "roundingEnergyConsumption = oic.r.energy.consumption.powerGenerationData"
            ]
          }
        },
        "significantDigits": {
          "type": "integer",
          "description": "The number of effective digits for data.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.energy.generation",
            "x-to-ocf": [
              "This is not needed in OCF as only the absolute energy consumption is tracked."
            ],
            "x-from-ocf": [
              "significantDigits = 0"
            ]
          }
        },
        "multiplyingFactors": {
          "type": "number",
          "description": "The unit for data (multiplying factors)., e.g. 1 kWh, 0,1 kWh, 0,01 kWh
etc.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.energy.generation",
            "x-to-ocf": [
              "This is not needed in OCF as only the absolute energy consumption is tracked."
            ],
            "x-from-ocf": [
              "multiplyingFactors = 1"
            ]
          }
        }
      }
    }
  },
  "type": "object",
  "allOf": [
    {"$ref": "#/definitions/onem2m.m.energygeneration"}
  ]
}
```



```

2731     ],
2732     "required": [ ]
2733 }
2734

```

2735 9.27 Filter Info

2736 9.27.1 Derived model

2737 The derived model: "onem2m.m.filterinfo".

2738 9.27.2 Property definition

2739 Table 53 provides the detailed per Property mapping for "onem2m.m.filterinfo".

2740 **Table 53 – The property mapping for "onem2m.m.filterinfo".**

oneM2M Property name	OCF Resource	To OCF	From OCF
needsReplacement	oic.r.sensor	oic.r.sensor.value = needsReplacement	needsReplacement = oic.r.sensor.value
usedTime	oic.r.consumable	oic.r.consumable.typeofconsumable = "water filter" oic.r.consumable.usedtime = usedTime	usedTime = oic.r.consumable.usedtime
filterLifetime	oic.r.consumable	oic.r.consumable.remaining = filterLifetime	filterLifetime = oic.r.consumable.remaining

2741 Table 54 provides the details of the Properties that are part of "onem2m.m.filterinfo".

2742 **Table 54 – The properties of "onem2m.m.filterinfo".**

oneM2M name	Property	Type	Required	Description
needsReplacement		boolean	no	This value indicates that the filter needs to be replaced.
usedTime		integer	yes	Cumulative used time in second of a filter.
filterLifetime		integer	no	Percentage life time remaining for the water filter.

2743 9.27.3 Derived model definition

```

2744 {
2745   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.filterinfo.json#",
2746   "$schema": "http://json-schema.org/draft-04/schema#",
2747   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
2748   "title": "Filter Info",
2749   "definitions": {

```

```

2750 "onem2m.m.filterinfo": {
2751   "type": "object",
2752   "properties": {
2753     "usedTime": {
2754       "type": "integer",
2755       "description": "Cumulative used time in second of a filter.",
2756       "x-ocf-conversion": {
2757         "x-ocf-alias": "oic.r.consumable",
2758         "x-to-ocf": [
2759           "oic.r.consumable.typeofconsumable = \"water filter\"",
2760           "oic.r.consumable.usedtime = usedTime"
2761         ],
2762         "x-from-ocf": [
2763           "usedTime = oic.r.consumable.usedtime"
2764         ]
2765       }
2766     },
2767     "needsReplacement": {
2768       "type": "boolean",
2769       "description": "This value indicates that the filter needs to be replaced.",
2770       "x-ocf-conversion": {
2771         "x-ocf-alias": "oic.r.sensor",
2772         "x-to-ocf": [
2773           "oic.r.sensor.value = needsReplacement"
2774         ],
2775         "x-from-ocf": [
2776           "needsReplacement = oic.r.sensor.value"
2777         ]
2778       }
2779     },
2780     "filterLifetime": {
2781       "type": "integer",
2782       "description": "Percentage life time remaining for the water filter.",
2783       "x-ocf-conversion": {
2784         "x-ocf-alias": "oic.r.consumable",
2785         "x-to-ocf": [
2786           "oic.r.consumable.remaining = filterLifetime"
2787         ],
2788         "x-from-ocf": [
2789           "filterLifetime = oic.r.consumable.remaining"
2790         ]
2791       }
2792     }
2793   }
2794 },
2795 "type": "object",
2796 "allOf": [
2797   { "$ref": "#/definitions/onem2m.m.filterinfo" }
2798 ],
2799 "required": [ "usedTime" ]
2800 }
2801
2802

```

9.28 Foaming

9.28.1 Derived model

The derived model: "onem2m.m.foaming".

9.28.2 Property definition

Table 55 provides the detailed per Property mapping for "onem2m.m.foaming".

Table 55 – The property mapping for "onem2m.m.foaming".

oneM2M Property name	OCF Resource	To OCF	From OCF
-------------------------	--------------	--------	----------

foamingStrength	oic.r.foaming	oic.r.foaming.foamstrength = foamingStrength	foamingStrength = oic.r.foaming.foamstrength
-----------------	---------------	---	---

Table 56 provides the details of the Properties that are part of "onem2m.m.foaming".

Table 56 – The properties of "onem2m.m.foaming".

oneM2M name	Property	Type	Required	Description
foamingStrength		integer	yes	The current strength of foamed milk. A higher value indicates a milk which is more foamed.

9.28.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.foaming.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Foaming",
  "definitions": {
    "onem2m.m.foaming": {
      "type": "object",
      "properties": {
        "foamingStrength": {
          "type": "integer",
          "description": "The current strength of foamed milk. A higher value indicates a milk
which is more foamed.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.foaming",
            "x-to-ocf": [
              "oic.r.foaming.foamstrength = foamingStrength"
            ],
            "x-from-ocf": [
              "foamingStrength = oic.r.foaming.foamstrength"
            ]
          }
        }
      }
    }
  },
  "type": "object",
  "allOf": [
    { "$ref": "#/definitions/onem2m.m.foaming" }
  ],
  "required": [ "foamingStrength" ]
}
```

9.29 Grinder

9.29.1 Derived model

The derived model: "onem2m.m.grinder".

9.29.2 Property definition

Table 57 provides the detailed per Property mapping for "onem2m.m.grinder".

2850

Table 57 – The property mapping for "onem2m.m.grinder".

oneM2M Property name	OCF Resource	To OCF	From OCF
useGrinder	oic.r.switch.binary	oic.r.switch.binary.value = foamingStrength	foamingStrength = oic.r.switch.binary.value
grainsRemaining	oic.r.grinder	oic.r.grinder.remaining = remaining / 20	remaining = oic.r.grinder.remaining * 20
coarseness	oic.r.grinder	oic.r.grinder.coarseness = coarseness	coarseness = oic.r.grinder.coarseness

2851

Table 58 provides the details of the Properties that are part of "onem2m.m.grinder".

2852

Table 58 – The properties of "onem2m.m.grinder".

oneM2M Property name	Type	Required	Description
useGrinder	boolean	yes	The current status of the grinder enablement. True indicates enabled, and False indicates not enabled.
grainsRemaining	integer	no	The level of remaining grains in a machine having a grinder e.g. remaining coffee beans in the coffee machine grinder.
coarseness	integer	no	The wished coarseness of the solid supplies e.g. coffee beans, after grinding.

2853

9.29.3 Derived model definition

2854

2855

2856

2857

2858

2859

2860

2861

2862

2863

2864

2865

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.grinder.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Grinder",
  "definitions": {
    "onem2m.m.grinder": {
      "type": "object",
      "properties": {
        "useGrinder": {
          "type": "boolean",
          "description": "The current status of the grinder enablement. True indicates enabled, and

```

```

2866 False indicates not enabled.",
2867     "x-ocf-conversion": {
2868         "x-ocf-alias": "oic.r.switch.binary",
2869         "x-to-ocf": [
2870             "oic.r.switch.binary.value = foamingStrength"
2871         ],
2872         "x-from-ocf": [
2873             "foamingStrength = oic.r.switch.binary.value"
2874         ]
2875     },
2876     "coarseness": {
2877         "type": "integer",
2878         "description": "The wished coarseness of the solid supplies e.g. coffee beans, after
2880 grinding.",
2881         "x-ocf-conversion": {
2882             "x-ocf-alias": "oic.r.grinder",
2883             "x-to-ocf": [
2884                 "oic.r.grinder.coarseness = coarseness"
2885             ],
2886             "x-from-ocf": [
2887                 "coarseness = oic.r.grinder.coarseness"
2888             ]
2889         },
2890     },
2891     "grainsRemaining": {
2892         "type": "integer",
2893         "description": "The level of remaining grains in a machine having a grinder e.g.
2894 remaining coffee beans in the coffee machine grinder.",
2895         "x-ocf-conversion": {
2896             "x-ocf-alias": "oic.r.grinder",
2897             "x-to-ocf": [
2898                 "oic.r.grinder.remaining = remaining / 20"
2899             ],
2900             "x-from-ocf": [
2901                 "remaining = oic.r.grinder.remaining * 20"
2902             ]
2903         },
2904     },
2905 },
2906 },
2907 },
2908 "type": "object",
2909 "allOf": [
2910     {"$ref": "#/definitions/onem2m.m.grinder"}
2911 ],
2912 "required": [ "useGrinder" ]
2913 }
2914

```

9.30 Heating Zone

9.30.1 Derived model

The derived model: "onem2m.m.heatingzone".

9.30.2 Property definition

Table 59 provides the detailed per Property mapping for "onem2m.m.heatingzone".

Table 59 – The property mapping for "onem2m.m.heatingzone".

oneM2M Property name	OCF Resource	To OCF	From OCF

maxHeatingLevel	oic.r.heatingzone	oic.r.heatingzone.maxheatinglevel = maxHeatingLevel	maxHeatingLevel = oic.r.heatingzone.maxheatinglevel
heatingLevel	oic.r.heatingzone	oic.r.heatingzone.heatinglevel = heatingLevel	heatingLevel = oic.r.heatingzone.heatinglevel

Table 60 provides the details of the Properties that are part of "onem2m.m.heatingzone".

Table 60 – The properties of "onem2m.m.heatingzone".

oneM2M name	Property	Type	Required	Description
	maxHeatingLevel	integer	yes	The maximum value allowed for the heating level of the zone
	heatingLevel	integer	yes	The current heating level of the zone. The value range is from 0 (indicating that the zone is not heating) up to the maxHeatingLevel

9.30.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.heatingzone.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Heating Zone",
  "definitions": {
    "onem2m.m.heatingzone": {
      "type": "object",
      "properties": {
        "heatingLevel": {
          "type": "integer",
          "description": "The current heating level of the zone. The value range is from 0
(indicating that the zone is not heating) up to the maxHeatingLevel",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.heatingzone",
            "x-to-ocf": [
              "oic.r.heatingzone.heatinglevel = heatingLevel"
            ],
            "x-from-ocf": [
              "heatingLevel = oic.r.heatingzone.heatinglevel"
            ]
          }
        }
      }
    },
    "maxHeatingLevel": {
      "type": "integer",
      "description": "The maximum value allowed for the heating level of the zone",
      "x-ocf-conversion": {
        "x-ocf-alias": "oic.r.heatingzone",
        "x-to-ocf": [
          "oic.r.heatingzone.maxheatinglevel = maxHeatingLevel"
        ]
      }
    }
  }
}
```

```

2955         "x-from-ocf": [
2956             "maxHeatingLevel = oic.r.heatingzone.maxheatinglevel"
2957         ]
2958     }
2959 }
2960 }
2961 }
2962 },
2963 "type": "object",
2964 "allOf": [
2965     { "$ref": "#/definitions/onem2m.m.heatingzone" }
2966 ],
2967 "required": [ "heatingLevel", "maxHeatingLevel" ]
2968 }
2969

```

2970 9.31 Height

2971 9.31.1 Derived model

2972 The derived model: "onem2m.m.height".

2973 9.31.2 Property definition

2974 Table 61 provides the detailed per Property mapping for "onem2m.m.height".

2975 **Table 61 – The property mapping for "onem2m.m.height".**

oneM2M name	Property	OCF Resource	To OCF	From OCF
height		oic.r.height	oic.r.height.height = height oic.r.height.units = cm	oneOf

2976 Table 62 provides the details of the Properties that are part of "onem2m.m.height".

2977 **Table 62 – The properties of "onem2m.m.height".**

oneM2M name	Property	Type	Required	Description
height		number	yes	Measurement of height

2978 9.31.3 Derived model definition

```

2979 {
2980     "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.height.json#",
2981     "$schema": "http://json-schema.org/draft-04/schema#",
2982     "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
2983     "title": "Height",
2984     "definitions": {
2985         "onem2m.m.height": {
2986             "type": "object",
2987             "properties": {
2988                 "height": {
2989                     "type": "number",
2990                     "description": "Measurement of height",
2991                     "x-ocf-conversion": {
2992                         "x-ocf-alias": "oic.r.height",
2993                         "x-to-ocf": [
2994                             "oic.r.height.height = height",
2995                             "oic.r.height.units = cm"

```

```
2996 ],
2997 "x-from-ocf": {
2998   "oneOf": [
2999     {
3000       "properties": {
3001         "oic.r.height.units": "string",
3002         "enum": ["cm"]
3003       },
3004       "x-from-ocf": [
3005         "height = oic.r.height.height"
3006       ]
3007     },
3008     {
3009       "properties": {
3010         "oic.r.height.units": "string",
3011         "enum": ["m"]
3012       },
3013       "x-from-ocf": [
3014         "height = oic.r.height.height*100"
3015       ]
3016     },
3017     {
3018       "properties": {
3019         "voic.r.height.units": "string",
3020         "enum": ["ft"]
3021       },
3022       "x-from-ocf": [
3023         "height = oic.r.height.height*30.48"
3024       ]
3025     },
3026     {
3027       "properties": {
3028         "oic.r.height.units": "string",
3029         "enum": ["in"]
3030       },
3031       "x-from-ocf": [
3032         "height = oic.r.height.height*2.54"
3033       ]
3034     }
3035   ]
3036 }
3037 }
3038 }
3039 }
3040 }
3041 },
3042 "type": "object",
3043 "allOf": [
3044   {"$ref": "#/definitions/onem2m.m.height"}
3045 ],
3046 "required": [ "height" ]
3047 }
```

3048 **9.32 Hot Water Supply**

3049 **9.32.1 Derived model**

3050 The derived model: "onem2m.m.hotwatersupply".

3051 **9.32.2 Property definition**

3052 Table 63 provides the detailed per Property mapping for "onem2m.m.hotwatersupply".

3053 **Table 63 – The property mapping for "onem2m.m.hotwatersupply".**

oneM2M Property name	OCF Resource	To OCF	From OCF
----------------------	--------------	--------	----------

bath	oic.r.switch.binary	oic.r.switch.binary.value = bath	bath oic.r.switch.binary.value =
status	oic.r.sensor	oic.r.sensor.value = status	status oic.r.sensor.value =

Table 64 provides the details of the Properties that are part of "onem2m.m.hotwatersupply".

Table 64 – The properties of "onem2m.m.hotwatersupply".

oneM2M name	Property	Type	Required	Description
bath		boolean	no	The status of filling bath tub.
status		boolean	yes	The status of watering operation.

9.32.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.hotwatersupply.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Hot Water Supply",
  "definitions": {
    "onem2m.m.hotwatersupply": {
      "type": "object",
      "properties": {
        "status": {
          "type": "boolean",
          "description": "The status of watering operation.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.sensor",
            "x-to-ocf": [
              "oic.r.sensor.value = status"
            ],
            "x-from-ocf": [
              "status = oic.r.sensor.value"
            ]
          }
        },
        "bath": {
          "type": "boolean",
          "description": "The status of filling bath tub.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.switch.binary",
            "x-to-ocf": [
              "oic.r.switch.binary.value = bath"
            ],
            "x-from-ocf": [
              "bath = oic.r.switch.binary.value"
            ]
          }
        }
      }
    }
  },
  "type": "object",
  "allOf": [
    { "$ref": "#/definitions/onem2m.m.hotwatersupply" }
  ]
}
```

```

3099     "required": [ "status" ]
3100 }
3101

```

3102 9.33 Impact Sensor

3103 9.33.1 Derived model

3104 The derived model: "onem2m.m.impactsensor".

3105 9.33.2 Property definition

3106 Table 65 provides the detailed per Property mapping for "onem2m.m.impactsensor".

3107 **Table 65 – The property mapping for "onem2m.m.impactsensor".**

oneM2M Property name	OCF Resource	To OCF	From OCF
impactStatus	oic.r.impact sensor	oic.r.impactsensor.impactstat us = impactStatus	impactStatus = oic.r.impactsensor.impactstat us
impactDirectionV ertical	oic.r.impact sensor	oic.r.impactsensor.impactdir ectionvertical = impactDirectionVertical	impactDirectionVertical = oic.r.impactsensor.impactdir ectionvertical
impactDirectionH orizontal	oic.r.impact sensor	oic.r.impactsensor.impactdir ectionhorizontal = impactDirectionHorizontal	impactDirectionHorozintal = oic.r.impactsensor.impactdir ectionhorizontal
impactLevel	oic.r.impact sensor	oic.r.impactsensor.impactlev el = impactLevel	impactLevel= oic.r.impactsensor.impactlev el

3108 Table 66 provides the details of the Properties that are part of "onem2m.m.impactsensor".

3109 **Table 66 – The properties of "onem2m.m.impactsensor".**

oneM2M Property name	Type	Required	Description
impactStatus	boolean	no	The impactStatus indicates as follows: (True) A physical impact is detected / (False) Normal status, an impact is not detected
impactDirectionVertical	number	no	The impactDirectionVertical shows a vertical direction where the impact comes from. The value is 0 to 360 degrees. 0 is the front

			of the sensor and upward increment.
impactDirectionHorizontal	number	no	The impactDirectionHorizontal shows a horizontal direction where the impact comes from. The value is 0 to 360 degrees. 0 is the front of the sensor and clockwise increment.
impactLevel	number	no	The impactLevel provides the level of impact which unit is "G" (G-force).

9.33.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.impactsensor.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Impact Sensor",
  "definitions": {
    "onem2m.m.impactsensor": {
      "type": "object",
      "properties": {
        "impactStatus": {
          "type": "boolean",
          "description": "The impactStatus indicates as follows: (True) A physical impact is
detected / (False) Normal status, an impact is not detected",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.impactsensor",
            "x-to-ocf": [
              "oic.r.impactsensor.impactstatus = impactStatus"
            ],
            "x-from-ocf": [
              "impactStatus = oic.r.impactsensor.impactstatus"
            ]
          }
        },
        "impactLevel": {
          "type": "number",
          "description": "The impactLevel provides the level of impact which unit is \"G\" (G-
force).",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.impactsensor",
            "x-to-ocf": [
              "oic.r.impactsensor.impactlevel = impactLevel"
            ],
            "x-from-ocf": [
              "impactLevel= oic.r.impactsensor.impactlevel"
            ]
          }
        },
        "impactDirectionHorizontal": {
          "type": "number",
          "description": "The impactDirectionHorizontal shows a horizontal direction where the
impact comes from. The value is 0 to 360 degrees. 0 is the front of the sensor and clockwise
increment.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.impactsensor",
            "x-to-ocf": [
              "oic.r.impactsensor.impactdirectionhorizontal = impactDirectionHorizontal"
            ],
            "x-from-ocf": [

```

```

3159         "impactDirectionHorozintal = oic.r.impactsensor.impactdirectionhorizontal"
3160     }
3161 }
3162 },
3163 "impactDirectionVertical": {
3164     "type": "number",
3165     "description": "The impactDirectionVertical shows a vertical direction where the impact
3166 comes from. The value is 0 to 360 degrees. 0 is the front of the sensor and upward increment.",
3167     "x-ocf-conversion": {
3168         "x-ocf-alias": "oic.r.impactsensor",
3169         "x-to-ocf": [
3170             "oic.r.impactsensor.impactdirectionvertical = impactDirectionVertical"
3171         ],
3172         "x-from-ocf": [
3173             "impactDirectionVertical = oic.r.impactsensor.impactdirectionvertical"
3174         ]
3175     }
3176 }
3177 }
3178 }
3179 },
3180 "type": "object",
3181 "allOf": [
3182     { "$ref": "#/definitions/onem2m.m.impactsensor" }
3183 ],
3184 "required": [ "impactstatus" ]
3185 }
3186

```

3187 9.34 Keep Warm

3188 9.34.1 Derived model

3189 The derived model: "onem2m.m.keepwarm".

3190 9.34.2 Property definition

3191 Table 67 provides the detailed per Property mapping for "onem2m.m.keepwarm".

3192 **Table 67 – The property mapping for "onem2m.m.keepwarm".**

oneM2M Property name	OCF Resource	To OCF	From OCF
time	oic.r.time.period	oic.r.time.period.interval = timeoic.r.time.period.starttime = 0	time = oic.r.time.period.interval

3193 Table 68 provides the details of the Properties that are part of "onem2m.m.keepwarm".

3194 **Table 68 – The properties of "onem2m.m.keepwarm".**

oneM2M name	Property	Type	Required	Description
time		integer	no	The desired duration of 'keep water warm' function. It indicates how long water shall be kept warm e.g. after the boiling in the case of a kettle. The

			value indicates a time expressed in minutes.
--	--	--	--

9.34.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.keepwarm.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Keep Warm",
  "definitions": {
    "onem2m.m.keepwarm": {
      "type": "object",
      "properties": {
        "time": {
          "type": "integer",
          "description": "The desired duration of 'keep water warm' function. It indicates how long
water shall be kept warm e.g. after the boiling in the case of a kettle. The value indicates a time
expressed in minutes.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.time.period",
            "x-to-ocf": [
              "oic.r.time.period.interval = time",
              "oic.r.time.period.starttime = 0"
            ],
            "x-from-ocf": [
              "time = oic.r.time.period.interval"
            ]
          }
        }
      }
    }
  },
  "type": "object",
  "allOf": [
    { "$ref": "#/definitions/onem2m.m.keepwarm" }
  ],
  "required": [ ]
}

```

9.35 Keypad

9.35.1 Derived model

The derived model: "onem2m.m.keypad".

9.35.2 Property definition

Table 69 provides the detailed per Property mapping for "onem2m.m.keypad".

Table 69 – The property mapping for "onem2m.m.keypad".

oneM2M Property name	OCF Resource	To OCF	From OCF
keyNumber	oic.r.keypadchar	Need to translate between the oneM2M integer value and the OCF enumerated stringif (keyNumber == 0) { oic.r.keypadchar.keyvalue == "0"; }if (keyNumber == 1) { oic.r.keypadchar.keyvalue	Need to translate between the OCF enumerated string and the oneM2M integer valueif (oic.r.keypadchar.keyvalue == "0") { keyNumber = 0; }if (oic.r.keypadchar.keyvalue

		<pre> == "1"; }if (keyNumber == 2) { oic.r.keypadchar.keyvalue == "2"; }if (keyNumber == 3) { oic.r.keypadchar.keyvalue == "3"; }if (keyNumber == 4) { oic.r.keypadchar.keyvalue == "4"; }if (keyNumber == 5) { oic.r.keypadchar.keyvalue == "5"; }if (keyNumber == 6) { oic.r.keypadchar.keyvalue == "6"; }if (keyNumber == 7) { oic.r.keypadchar.keyvalue == "7"; }if (keyNumber == 8) { oic.r.keypadchar.keyvalue == "8"; }if (keyNumber == 9) { oic.r.keypadchar.keyvalue == "9"; } </pre>	<pre> == "1") { keyNumber = 1; }if (oic.r.keypadchar.keyvalue == "2") { keyNumber = 2; }if (oic.r.keypadchar.keyvalue == "3") { keyNumber = 3; }if (oic.r.keypadchar.keyvalue == "4") { keyNumber = 4; }if (oic.r.keypadchar.keyvalue == "5") { keyNumber = 5; }if (oic.r.keypadchar.keyvalue == "6") { keyNumber = 6; }if (oic.r.keypadchar.keyvalue == "7") { keyNumber = 7; }if (oic.r.keypadchar.keyvalue == "8") { keyNumber = 8; }if (oic.r.keypadchar.keyvalue == "9") { keyNumber = 9; } </pre>
--	--	--	--

3237 Table 70 provides the details of the Properties that are part of "onem2m.m.keypad".

3238 **Table 70 – The properties of "onem2m.m.keypad".**

oneM2M name	Property	Type	Required	Description
keyNumber		integer	yes	The number of key.

3239 9.35.3 Derived model definition

```

3240 {
3241   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.keypad.json#",
3242   "$schema": "http://json-schema.org/draft-04/schema#",
3243   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
3244   "title": "Keypad",
3245   "definitions": {
3246     "onem2m.m.keypad": {
3247       "type": "object",
3248       "properties": {
3249         "keyNumber": {
3250           "type": "integer",
3251           "description": "The number of key.",
3252           "x-ocf-conversion": {
3253             "x-ocf-alias": "oic.r.keypadchar",
3254             "x-to-ocf": [
3255               "Need to translate between the oneM2M integer value and the OCF enumerated string",
3256               "if ( keyNumber == 0 ) { oic.r.keypadchar.keyvalue == \"0\"; }",
3257               "if ( keyNumber == 1 ) { oic.r.keypadchar.keyvalue == \"1\"; }",
3258               "if ( keyNumber == 2 ) { oic.r.keypadchar.keyvalue == \"2\"; }",
3259               "if ( keyNumber == 3 ) { oic.r.keypadchar.keyvalue == \"3\"; }",
3260               "if ( keyNumber == 4 ) { oic.r.keypadchar.keyvalue == \"4\"; }",
3261               "if ( keyNumber == 5 ) { oic.r.keypadchar.keyvalue == \"5\"; }",
3262               "if ( keyNumber == 6 ) { oic.r.keypadchar.keyvalue == \"6\"; }",

```

```

3263         "if ( keyNumber == 7 ) { oic.r.keypadchar.keyvalue == \"7\"; }",
3264         "if ( keyNumber == 8 ) { oic.r.keypadchar.keyvalue == \"8\"; }",
3265         "if ( keyNumber == 9 ) { oic.r.keypadchar.keyvalue == \"9\"; }"
3266     ],
3267     "x-from-ocf": [
3268         "Need to translate between the OCF enumerated string and the oneM2M integer value",
3269         "if ( oic.r.keypadchar.keyvalue == \"0\" ) { keyNumber = 0; }",
3270         "if ( oic.r.keypadchar.keyvalue == \"1\" ) { keyNumber = 1; }",
3271         "if ( oic.r.keypadchar.keyvalue == \"2\" ) { keyNumber = 2; }",
3272         "if ( oic.r.keypadchar.keyvalue == \"3\" ) { keyNumber = 3; }",
3273         "if ( oic.r.keypadchar.keyvalue == \"4\" ) { keyNumber = 4; }",
3274         "if ( oic.r.keypadchar.keyvalue == \"5\" ) { keyNumber = 5; }",
3275         "if ( oic.r.keypadchar.keyvalue == \"6\" ) { keyNumber = 6; }",
3276         "if ( oic.r.keypadchar.keyvalue == \"7\" ) { keyNumber = 7; }",
3277         "if ( oic.r.keypadchar.keyvalue == \"8\" ) { keyNumber = 8; }",
3278         "if ( oic.r.keypadchar.keyvalue == \"9\" ) { keyNumber = 9; }"
3279     ]
3280 }
3281 }
3282 }
3283 },
3284 },
3285 "type": "object",
3286 "allOf": [
3287     { "$ref": "#/definitions/oneM2m.m.keypad" }
3288 ],
3289 "required": [ "keyNumber" ]
3290 }

```

3291 9.36 Liquid Level

3292 9.36.1 Derived model

3293 The derived model: "onem2m.m.liquidlevel".

3294 9.36.2 Property definition

3295 Table 71 provides the detailed per Property mapping for "onem2m.m.liquidlevel".

3296 **Table 71 – The property mapping for "onem2m.m.liquidlevel".**

oneM2M Property name	OCF Resource	To OCF	From OCF
liquidLevel	oic.r.liquid.level	oic.r.liquid.level.desiredlevel = liquidLevel * 20	liquidLevel = oic.r.liquid.level.desiredlevel / 20

3297 Table 72 provides the details of the Properties that are part of "onem2m.m.liquidlevel".

3298 **Table 72 – The properties of "onem2m.m.liquidlevel".**

oneM2M Property name	Type	Required	Description
liquidLevel	integer	no	The desired level of liquid

3299 9.36.3 Derived model definition

```

3300 {
3301     "id": "http://openinterconnect.org/oneM2mmapping/schemas/oneM2m.m.liquidlevel.json#",
3302     "$schema": "http://json-schema.org/draft-04/schema#",

```

```

3303 "description" : "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
3304 "title": "Liquid Level",
3305 "definitions": {
3306   "onem2m.m.liquidlevel": {
3307     "type": "object",
3308     "properties": {
3309       "liquidLevel": {
3310         "type": "integer",
3311         "description": "The desired level of liquid",
3312         "x-ocf-conversion": {
3313           "x-ocf-alias": "oic.r.liquid.level",
3314           "x-to-ocf": [
3315             "oic.r.liquid.level.desiredlevel = liquidLevel * 20"
3316           ],
3317           "x-from-ocf": [
3318             "liquidLevel = oic.r.liquid.level.desiredlevel / 20"
3319           ]
3320         }
3321       }
3322     }
3323   },
3324   "type": "object",
3325   "allOf": [
3326     { "$ref": "#/definitions/onem2m.m.liquidlevel" }
3327   ],
3328   "required": [ "liquidlevel" ]
3329 }
3330 }
3331

```

3332 9.37 Liquid Remaining

3333 9.37.1 Derived model

3334 The derived model: "onem2m.m.liquidremaining".

3335 9.37.2 Property definition

3336 Table 73 provides the detailed per Property mapping for "onem2m.m.liquidremaining".

3337 **Table 73 – The property mapping for "onem2m.m.liquidremaining".**

oneM2M Property name	OCF Resource	To OCF	From OCF
liquidRemaini ng	oic.r.liquid.lev el	This value is 0-5 in oneM2M and 0-100 in OCF, so do the arithmetic conversion $\text{oic.r.liquid.level.current level} = \text{liquidRemaining} * 20$	This value is 0-5 in oneM2M and 0-100 in OCF, so do the arithmetic conversion $\text{liquidRemaining} = \text{oic.r.liquid.level.current level} / 20$

3338 Table 74 provides the details of the Properties that are part of "onem2m.m.liquidremaining".

3339 **Table 74 – The properties of "onem2m.m.liquidremaining".**

oneM2M name	Property	Type	Required	Description
----------------	----------	------	----------	-------------

liquidRemaining	integer	yes	The remaining level of liquid
-----------------	---------	-----	-------------------------------

9.37.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/oneM2Mmapping/schemas/oneM2M.m.liquidremaining.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Liquid Remaining",
  "definitions": {
    "oneM2M.m.liquidremaining": {
      "type": "object",
      "properties": {
        "liquidRemaining": {
          "type": "integer",
          "description": "The remaining level of liquid",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.liquid.level",
            "x-to-ocf": [
              "This value is 0-5 in oneM2M and 0-100 in OCF, so do the arithmetic conversion",
              "oic.r.liquid.level.currentlevel = liquidRemaining * 20"
            ],
            "x-from-ocf": [
              "This value is 0-5 in oneM2M and 0-100 in OCF, so do the arithmetic conversion",
              "liquidRemaining = oic.r.liquid.level.currentlevel / 20"
            ]
          }
        }
      }
    }
  },
  "type": "object",
  "allOf": [
    { "$ref": "#/definitions/oneM2M.m.liquidremaining" }
  ],
  "required": [ "liquidRemaining" ]
}

```

9.38 Lock

9.38.1 Derived model

The derived model: "oneM2M.m.lock".

9.38.2 Property definition

Table 75 provides the detailed per Property mapping for "oneM2M.m.lock".

Table 75 – The property mapping for "oneM2M.m.lock".

oneM2M Property name	OCF Resource	To OCF	From OCF
lock	oic.r.lock	if lock oic.r.lock.status.lockState = "Locked" if !lock oic.r.lock.status.lockState = "Unlocked"	lock = (oic.r.lock.status.lockState == "Locked")

Table 76 provides the details of the Properties that are part of "oneM2M.m.lock".

Table 76 – The properties of "onem2m.m.lock".

oneM2M name	Property	Type	Required	Description
lock		boolean	yes	'True' indicates the object is locked, while 'False' indicates the object is not locked.

9.38.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.lock.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Lock",
  "definitions": {
    "onem2m.m.lock": {
      "type": "object",
      "properties": {
        "lock": {
          "type": "boolean",
          "description": "'True' indicates the object is locked, while 'False' indicates the object
is not locked.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.lock",
            "x-to-ocf": [
              "if lock oic.r.lock.status.lockState = \"Locked\"",
              "if !lock oic.r.lock.status.lockState = \"Unlocked\""
            ],
            "x-from-ocf": [
              "lock = (oic.r.lock.status.lockState == \"Locked\")"
            ]
          }
        }
      }
    }
  },
  "type": "object",
  "allOf": [{
    "$ref": "#/definitions/onem2m.m.lock"
  }],
  "required": ["lock"]
}

```

9.39 Motion Sensor**9.39.1 Derived model**

The derived model: "onem2m.m.motionSensor".

9.39.2 Property definition

Table 77 provides the detailed per Property mapping for "onem2m.m.motionSensor".

Table 77 – The property mapping for "onem2m.m.motionSensor".

oneM2M Property name	OCF Resource	To OCF	From OCF
----------------------	--------------	--------	----------

motionSensor	oic.r.sensor.motion	oic.r.sensor.motion.value = alarm	alarm = oic.r.sensor.motion.value
silentTime	oic.r.sensor.props	oic.r.sensor.props.silenttime = silentTime	silentTime = oic.r.sensor.props.silenttime
sensitivity	oic.r.sensor.props	oic.r.sensor.props.sensitivity = sensitivityOCF sensitivity is a number and oneM2M sensitivity is an integer, so this arithmetic assignment works, but an arithmetic conversion may be necessary depending on how the value is interpreted	sensitivity = oic.r.sensor.props.sensitivityOCF sensitivity is a number and the oneM2M is an integer, so arithmetic conversion may be necessary depending on how the value is interpreted

Table 78 provides the details of the Properties that are part of "onem2m.m.motionSensor".

Table 78 – The properties of "onem2m.m.motionSensor".

oneM2M name	Property	Type	Required	Description
motionSensor		boolean	no	Alarm State
silentTime		integer	no	Silent Time
sensitivity		number	no	Sensitivity

9.39.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.motionsensor.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Motion Sensor",
  "definitions": {
    "onem2m.m.motionSensor": {
      "type": "object",
      "properties": {
        "motionSensor": {
          "type": "boolean",
          "description": "Alarm State",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.sensor.motion",
            "x-to-ocf": [
              "oic.r.sensor.motion.value = alarm"
            ],
            "x-from-ocf": [
              "alarm = oic.r.sensor.motion.value"
            ]
          }
        },
        "silentTime": {
          "type": "integer",
          "description": "Silent Time",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.sensor.props",

```

```

3453         "x-to-ocf": [
3454             "oic.r.sensor.props.silenttime = silentTime"
3455         ],
3456         "x-from-ocf": [
3457             "silentTime = oic.r.sensor.props.silenttime"
3458         ]
3459     }
3460 },
3461 "sensitivity": {
3462     "type": "number",
3463     "description": "Sensitivity",
3464     "x-ocf-conversion": {
3465         "x-ocf-alias": "oic.r.sensor.props",
3466         "x-to-ocf": [
3467             "oic.r.sensor.props.sensitivity = sensitivity",
3468             "OCF sensitivity is a number and oneM2M sensitivity is an integer, so this arithmetic
3469 assignment works, but an arithmetic conversion may be necessary depending on how the value is
3470 interpreted"
3471         ],
3472         "x-from-ocf": [
3473             "sensitivity = oic.r.sensor.props.sensitivity",
3474             "OCF sensitivity is a number and the oneM2M is an integer, so arithmetic conversion
3475 may be necessary depending on how the value is interpreted"
3476         ]
3477     }
3478 }
3479 }
3480 },
3481 },
3482 "type": "object",
3483 "allof": [
3484     {"$ref": "#/definitions/onem2m.m.motionsensor"}
3485 ],
3486 "required": [ "alarm" ]
3487 }
3488

```

9.40 Open Level

9.40.1 Derived model

The derived model: "onem2m.m.openlevel".

9.40.2 Property definition

Table 79 provides the detailed per Property mapping for "onem2m.m.openlevel".

Table 79 – The property mapping for "onem2m.m.openlevel".

oneM2M Property name	OCF Resource	To OCF	From OCF
openLevel	oic.r.openlevel	oic.r.openlevel.openLevel = openLevel	openLevel = oic.r.openlevel.openLevel
maxLevel	oic.r.openlevel	oic.r.openlevel.range[1] = maxLevel	maxLevel = oic.r.openlevel.range[1]
stepValue	oic.r.openlevel	oic.r.openlevel.increment = stepValue	stepValue = oic.r.openlevel.increment
minLevel	oic.r.openlevel	oic.r.openlevel.range[0] = minLevel	minLevel = oic.r.openlevel.range[0]

3495 Table 80 provides the details of the Properties that are part of "onem2m.m.openlevel".

3496 **Table 80 – The properties of "onem2m.m.openlevel".**

oneM2M name	Property	Type	Required	Description
openLevel		integer	yes	The rounded percentage of the current open level of entity in the range of [0, 100]. 0 percentage shall mean the entity is closed.
maxLevel		integer	no	The maximum value allowed for the "openLevel" status. The default value is 100, which means fully opened.
stepValue		integer	no	The step value used by the "open" and "close" actions.
minLevel		integer	no	The minimum value allowed for the "openLevel" status. The default value is 0, which means fully closed.

3497 **9.40.3 Derived model definition**

```
3498 {
3499   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.openlevel.json#",
3500   "$schema": "http://json-schema.org/draft-04/schema#",
3501   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
3502   "title": "Open Level",
3503   "definitions": {
3504     "onem2m.m.openlevel": {
3505       "type": "object",
3506       "properties": {
3507         "openLevel": {
3508           "type": "integer",
3509           "description": "The rounded percentage of the current open level of entity in the range
3510 of [0, 100]. 0 percentage shall mean the entity is closed.",
3511           "x-ocf-conversion": {
3512             "x-ocf-alias": "oic.r.openlevel",
3513             "x-to-ocf": [
3514               "oic.r.openlevel.openLevel = openLevel"
3515             ],
3516             "x-from-ocf": [
3517               "openLevel = oic.r.openlevel.openLevel"
3518             ]
3519           }
3520         },
3521         "stepValue": {
3522           "type": "integer",
```

```

3523     "description": "The step value used by the \"open\" and \"close\" actions.",
3524     "x-ocf-conversion": {
3525       "x-ocf-alias": "oic.r.openlevel",
3526       "x-to-ocf": [
3527         "oic.r.openlevel.increment = stepValue"
3528       ],
3529       "x-from-ocf": [
3530         "stepValue = oic.r.openlevel.increment"
3531       ]
3532     },
3533   },
3534   "minLevel": {
3535     "type": "integer",
3536     "description": "The minimum value allowed for the \"openLevel\" status. The default value
3537 is 0, which means fully closed.",
3538     "x-ocf-conversion": {
3539       "x-ocf-alias": "oic.r.openlevel",
3540       "x-to-ocf": [
3541         "oic.r.openlevel.range[0] = minLevel"
3542       ],
3543       "x-from-ocf": [
3544         "minLevel = oic.r.openlevel.range[0]"
3545       ]
3546     },
3547   },
3548   "maxLevel": {
3549     "type": "integer",
3550     "description": "The maximum value allowed for the \"openLevel\" status. The default value
3551 is 100, which means fully opened.",
3552     "x-ocf-conversion": {
3553       "x-ocf-alias": "oic.r.openlevel",
3554       "x-to-ocf": [
3555         "oic.r.openlevel.range[1] = maxLevel"
3556       ],
3557       "x-from-ocf": [
3558         "maxLevel = oic.r.openlevel.range[1]"
3559       ]
3560     },
3561   }
3562 },
3563 },
3564 },
3565 "type": "object",
3566 "allOf": [
3567   {"$ref": "#/definitions/onem2m.m.openlevel"}
3568 ],
3569 "required": [ "openLevel" ]
3570 }
3571

```

9.41 Operation Mode

9.41.1 Derived model

The derived model: "onem2m.m.operationmode".

9.41.2 Property definition

Table 81 provides the detailed per Property mapping for "onem2m.m.operationmode".

Table 81 – The property mapping for "onem2m.m.operationmode".

oneM2M Property name	OCF Resource	To OCF	From OCF
startPause	oic.r.switch.binary	oic.r.switch.binary.value = startPause	startPause = oic.r.switch.binary.value

3578 Table 82 provides the details of the Properties that are part of "onem2m.m.operationmode".

3579 **Table 82 – The properties of "onem2m.m.operationmode".**

oneM2M name	Property	Type	Required	Description
	startPause	boolean	yes	True triggers an operation, and False pauses the operation.

3580 9.41.3 Derived model definition

```
3581 {
3582   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.operationmode.json#",
3583   "$schema": "http://json-schema.org/draft-04/schema#",
3584   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
3585   "title": "Operation Mode",
3586   "definitions": {
3587     "onem2m.m.operationmode": {
3588       "type": "object",
3589       "properties": {
3590         "startPause": {
3591           "type": "boolean",
3592           "description": "True triggers an operation, and False pauses the operation.",
3593           "x-ocf-conversion": {
3594             "x-ocf-alias": "oic.r.switch.binary",
3595             "x-to-ocf": [
3596               "oic.r.switch.binary.value = startPause"
3597             ],
3598             "x-from-ocf": [
3599               "startPause = oic.r.switch.binary.value"
3600             ]
3601           }
3602         }
3603       }
3604     },
3605     "type": "object",
3606     "allOf": [
3607       { "$ref": "#/definitions/onem2m.m.operationmode" }
3608     ],
3609     "required": [ "startPause" ]
3610   }
3611 }
```

3613 9.42 Overcurrent Sensor

3614 9.42.1 Derived model

3615 The derived model: "onem2m.m.overcurrentsensor".

3616 9.42.2 Property definition

3617 Table 83 provides the detailed per Property mapping for "onem2m.m.overcurrentsensor".

3618 **Table 83 – The property mapping for "onem2m.m.overcurrentsensor".**

oneM2M Property name	OCF Resource	To OCF	From OCF
overcurrentStatus	oic.r.sensor	oic.r.sensor.value overcurrentStatus	= overcurrentStatus oic.r.sensor.value

duration	oic.r.time.period	oic.r.time.period.stoptime = oic.r.time.period.starttime + duration An arithmetic conversion will be necessary to go from string plus integer to string	duration = oic.r.time.period.stoptime - oic.r.time.period.starttime An arithmetic conversion will be necessary to go from string to integer
detectedTime	oic.r.time.period	oic.r.time.period.startTime = detectedTime	detectedTime = oic.r.time.period.startTime

Table 84 provides the details of the Properties that are part of "onem2m.m.overcurrentsensor".

Table 84 – The properties of "onem2m.m.overcurrentsensor".

oneM2M name	Property	Type	Required	Description
overcurrentStatus		boolean	yes	The overcurrentStatus indicates as follows: (True) An over-current is detected / (False) Normal status, an over-current is not detected
duration		integer	no	The duration the over-current is detected. The unit of duration is ms.
detectedTime		string	no	The time the over-current is detected.

9.42.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.overcurrentsensor.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Overcurrent Sensor",
  "definitions": {
    "onem2m.m.overcurrentsensor": {
      "type": "object",
      "properties": {
        "overcurrentStatus": {
          "type": "boolean",
          "description": "The overcurrentStatus indicates as follows: (True) An over-current is
detected / (False) Normal status, an over-current is not detected",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.sensor",
            "x-to-ocf": [
              "oic.r.sensor.value = overcurrentStatus"
            ],
            "x-from-ocf": [
              "overcurrentStatus = oic.r.sensor.value"
            ]
          }
        }
      }
    }
  }
}
```



```

3643     }
3644   },
3645   "detectedTime": {
3646     "type": "string",
3647     "description": "The time the over-current is detected.",
3648     "x-ocf-conversion": {
3649       "x-ocf-alias": "oic.r.time.period",
3650       "x-to-ocf": [
3651         "oic.r.time.period.startTime = detectedTime"
3652       ],
3653       "x-from-ocf": [
3654         "detectedTime = oic.r.time.period.startTime"
3655       ]
3656     }
3657   },
3658   "duration": {
3659     "type": "integer",
3660     "description": "The duration the over-current is detected. The unit of duration is ms.",
3661     "x-ocf-conversion": {
3662       "x-ocf-alias": "oic.r.time.period",
3663       "x-to-ocf": [
3664         "oic.r.time.period.stoptime = oic.r.time.period.starttime + duration",
3665         "An arithmetic conversion will be necessary to go from string plus integer to string"
3666       ],
3667       "x-from-ocf": [
3668         "duration = oic.r.time.period.stoptime - oic.r.time.period.starttime",
3669         "An arithmetic conversion will be necessary to go from string to integer"
3670       ]
3671     }
3672   }
3673 }
3674 }
3675 },
3676 "type": "object",
3677 "allof": [
3678   {"$ref": "#/definitions/onem2m.m.overcurrentsensor"}
3679 ],
3680 "required": [ "overcurrentStatus" ]
3681 }
3682

```

9.43 Power Save

9.43.1 Derived model

The derived model: "onem2m.m.powersave".

9.43.2 Property definition

Table 85 provides the detailed per Property mapping for "onem2m.m.powersave".

Table 85 – The property mapping for "onem2m.m.powersave".

oneM2M Property name	OCF Resource	To OCF	From OCF
powerSaveEnabled	oic.r.switch.binary	oic.r.switch.binary.value = powerSaveEnabled	powerSaveEnabled = oic.r.switch.binary.value

Table 86 provides the details of the Properties that are part of "onem2m.m.powersave".

Table 86 – The properties of "onem2m.m.powersave".

oneM2M name	Property	Type	Required	Description
-------------	----------	------	----------	-------------

powerSaveEnabled	boolean	yes	The current status of the Power Saving Mode. True indicates enabled, and false indicates not enabled.
------------------	---------	-----	---

9.43.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/oneM2Mmapping/schemas/oneM2M.m.powersave.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Power Save",
  "definitions": {
    "oneM2M.m.powersave": {
      "type": "object",
      "properties": {
        "powerSaveEnabled": {
          "type": "boolean",
          "description": "The current status of the Power Saving Mode. True indicates enabled, and
false indicates not enabled.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.switch.binary",
            "x-to-ocf": [
              "oic.r.switch.binary.value = powerSaveEnabled"
            ],
            "x-from-ocf": [
              "powerSaveEnabled = oic.r.switch.binary.value"
            ]
          }
        }
      }
    }
  },
  "type": "object",
  "allOf": [
    { "$ref": "#/definitions/oneM2M.m.powersave" }
  ],
  "required": [ "powerSaveEnabled" ]
}

```

9.44 Print Queue

9.44.1 Derived model

The derived model: "oneM2M.m.printqueue".

9.44.2 Property definition

Table 87 provides the detailed per Property mapping for "oneM2M.m.printqueue".

Table 87 – The property mapping for "oneM2M.m.printqueue".

oneM2M Property name	OCF Resource	To OCF	From OCF
uri	oic.r.printer.queue	For each item in the array of queue items from oneM2M.m.printqueueoic.r.print.queue item[i].uri = uri[i]	For each item in the array of queue items from oic.r.printer.queueuri[i] = oic.r.print.queueitem[i].uri

printingState	oic.r.printer.queue	For each item in the array of queue items from onem2m.m.printqueue oic.r.print.queue item[i].status = printingStatus[i]	For each item in the array of queue items from oic.r.printer.queue printingStatus[i] = oic.r.print.queueitem[i].status
---------------	---------------------	---	--

Table 88 provides the details of the Properties that are part of "onem2m.m.printqueue".

Table 88 – The properties of "onem2m.m.printqueue".

oneM2M name	Property	Type	Required	Description
uri		string	yes	The URI of the printing file.
printingState		string	yes	The printingState is indicating the status of the printing file.

9.44.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.printqueue.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Print Queue",
  "definitions": {
    "onem2m.m.printqueue": {
      "type": "object",
      "properties": {
        "uri": {
          "type": "string",
          "description": "The URI of the printing file.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.printer.queue",
            "x-to-ocf": [
              "For each item in the array of queue items from onem2m.m.printqueue",
              "oic.r.print.queueitem[i].uri = uri[i]"
            ],
            "x-from-ocf": [
              "For each item in the array of queue items from oic.r.printer.queue",
              "uri[i] = oic.r.print.queueitem[i].uri"
            ]
          }
        },
        "printingState": {
          "type": "string",
          "description": "The printingState is indicating the status of the printing file.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.printer.queue",
            "x-to-ocf": [
              "For each item in the array of queue items from onem2m.m.printqueue",
              "oic.r.print.queueitem[i].status = printingStatus[i]"
            ],
            "x-from-ocf": [
              "For each item in the array of queue items from oic.r.printer.queue",
              "printingStatus[i] = oic.r.print.queueitem[i].status"
            ]
          }
        }
      }
    }
  }
}

```

```

3774     }
3775   },
3776   "type": "object",
3777   "allOf": [
3778     { "$ref": "#/definitions/onem2m.m.printqueue" }
3779   ],
3780   "required": [ "uri", "printingState" ]
3781 }

```

3782 9.45 Push Button

3783 9.45.1 Derived model

3784 The derived model: "onem2m.m.pushbutton".

3785 9.45.2 Property definition

3786 Table 89 provides the detailed per Property mapping for "onem2m.m.pushbutton".

3787 **Table 89 – The property mapping for "onem2m.m.pushbutton".**

oneM2M name	Property	OCF Resource	To OCF	From OCF
pushed		oic.r.button	oic.r.button.value = pushed	pushed = oic.r.button.value

3788 Table 90 provides the details of the Properties that are part of "onem2m.m.pushbutton".

3789 **Table 90 – The properties of "onem2m.m.pushbutton".**

oneM2M name	Property	Type	Required	Description
pushed		boolean	yes	This data point indicates the press of the button.

3790 9.45.3 Derived model definition

```

3791 {
3792   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.pushbutton.json#",
3793   "$schema": "http://json-schema.org/draft-04/schema#",
3794   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
3795   "title": "Push Button",
3796   "definitions": {
3797     "onem2m.m.pushbutton": {
3798       "type": "object",
3799       "properties": {
3800         "pushed": {
3801           "type": "boolean",
3802           "description": "This data point indicates the press of the button.",
3803           "x-ocf-conversion": {
3804             "x-ocf-alias": "oic.r.button",
3805             "x-to-ocf": [
3806               "oic.r.button.value = pushed"
3807             ],
3808             "x-from-ocf": [
3809               "pushed = oic.r.button.value"
3810             ]
3811           }
3812         }
3813       }
3814     }

```

```

3815     },
3816     "type": "object",
3817     "allOf": [{
3818         "$ref": "#/definitions/onem2m.m.pushbutton"
3819     }],
3820     "required": ["pushed"]
3821 }
3822

```

3823 9.46 Refrigeration

3824 9.46.1 Derived model

3825 The derived model: "onem2m.m.refrigeration".

3826 9.46.2 Property definition

3827 Table 91 provides the detailed per Property mapping for "onem2m.m.refrigeration".

3828 **Table 91 – The property mapping for "onem2m.m.refrigeration".**

oneM2M Property name	OCF Resource	To OCF	From OCF
defrost	oic.r.refrigeratio n	oic.r.refrigeration.defrost = defrost	defrost = oic.r.refrigeration.defrost
rapidCool	oic.r.refrigeratio n	oic.r.refrigeration.rapidCool = rapidCool	rapidCool = oic.r.refrigeration.rapidCool
rapidFreeze	oic.r.refrigeratio n	oic.r.refrigeration.rapidFreeze = rapidFreeze	rapidFreeze = oic.r.refrigeration.rapidFreeze

3829 Table 92 provides the details of the Properties that are part of "onem2m.m.refrigeration".

3830 **Table 92 – The properties of "onem2m.m.refrigeration".**

oneM2M name	Property	Type	Required	Description
defrost		boolean	no	Controls the defrost cycle. "True" indicates active, "False" indicates inactive.
rapidCool		boolean	no	Controls the rapid cool capability. "True" indicates active, "False" indicates inactive.
rapidFreeze		boolean	no	Controls the rapid freeze capability. "True" indicates

			active, "False" indicates inactive.
--	--	--	--

9.46.3 Derived model definition

```

3832 {
3833   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.refrigeration.json#",
3834   "$schema": "http://json-schema.org/draft-04/schema#",
3835   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
3836   "title": "Refrigeration",
3837   "definitions": {
3838     "onem2m.m.refrigeration": {
3839       "type": "object",
3840       "properties": {
3841         "rapidFreeze": {
3842           "type": "boolean",
3843           "description": "Controls the rapid freeze capability. \"True\" indicates active,
3844 \"False\" indicates inactive.",
3845           "x-ocf-conversion": {
3846             "x-ocf-alias": "oic.r.refrigeration",
3847             "x-to-ocf": [
3848               "oic.r.refrigeration.rapidFreeze = rapidFreeze"
3849             ],
3850             "x-from-ocf": [
3851               "rapidFreeze = oic.r.refrigeration.rapidFreeze"
3852             ]
3853           }
3854         },
3855         "rapidCool": {
3856           "type": "boolean",
3857           "description": "Controls the rapid cool capability. \"True\" indicates active, \"False\"
3858 indicates inactive.",
3859           "x-ocf-conversion": {
3860             "x-ocf-alias": "oic.r.refrigeration",
3861             "x-to-ocf": [
3862               "oic.r.refrigeration.rapidCool = rapidCool"
3863             ],
3864             "x-from-ocf": [
3865               "rapidCool = oic.r.refrigeration.rapidCool"
3866             ]
3867           }
3868         },
3869         "defrost": {
3870           "type": "boolean",
3871           "description": "Controls the defrost cycle. \"True\" indicates active, \"False\"
3872 indicates inactive.",
3873           "x-ocf-conversion": {
3874             "x-ocf-alias": "oic.r.refrigeration",
3875             "x-to-ocf": [
3876               "oic.r.refrigeration.defrost = defrost"
3877             ],
3878             "x-from-ocf": [
3879               "defrost = oic.r.refrigeration.defrost"
3880             ]
3881           }
3882         }
3883       }
3884     },
3885     "type": "object",
3886     "allOf": [
3887       { "$ref": "#/definitions/onem2m.m.refrigeration" }
3888     ],
3889     "required": [ ]
3890   }
3891 }
3892

```

9.47 Relative Humidity

9.47.1 Derived model

The derived model: "onem2m.m.relativeHumidity".

9.47.2 Property definition

Table 93 provides the detailed per Property mapping for "onem2m.m.relativeHumidity".

Table 93 – The property mapping for "onem2m.m.relativeHumidity".

oneM2M Property name	OCF Resource	To OCF	From OCF
relativeHumidity	oic.r.humidity	oic.r.humidity.humidity = int(relativeHumidity)	relativeHumidity = float(oic.r.humidity.humidity)
desiredHumidity	oic.r.humidity	oic.r.humidity.desiredhumidity = int(desiredHumidity)	desiredHumidity = float(oic.r.humidity.desiredhumidity)

Table 94 provides the details of the Properties that are part of "onem2m.m.relativeHumidity".

Table 94 – The properties of "onem2m.m.relativeHumidity".

oneM2M Property name	Type	Required	Description
relativeHumidity	number	yes	The measurement of the relative humidity value; the unit of measure is percentage
desiredHumidity	number	no	Desired value for humidity. This data point indicates the desired humidity

9.47.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.relativeHumidity.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Relative Humidity",
  "definitions": {
    "onem2m.m.relativeHumidity": {
      "type": "object",
      "properties": {
        "relativeHumidity": {
          "type": "number",
          "description": "The measurement of the relative humidity value; the unit of measure is percentage",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.humidity",
            "x-to-ocf": [
```

```

3918         "oic.r.humidity.humidity = int(relativeHumidity)"
3919     ],
3920     "x-from-ocf": [
3921         "relativeHumidity = float(oic.r.humidity.humidity)"
3922     ]
3923 },
3924 },
3925 "desiredHumidity": {
3926     "type": "number",
3927     "description": "Desired value for humidity. This data point indicates the desired
humidity",
3928     "x-ocf-conversion": {
3929         "x-ocf-alias": "oic.r.humidity",
3930         "x-to-ocf": [
3931             "oic.r.humidity.desiredhumidity = int(desiredHumidity)"
3932         ],
3933         "x-from-ocf": [
3934             "desiredHumidity = float(oic.r.humidity.desiredhumidity)"
3935         ]
3936     }
3937 }
3938 }
3939 }
3940 },
3941 },
3942 "type": "object",
3943 "allOf": [
3944     { "$ref": "#/definitions/onem2m.m.relativeHumidity" }
3945 ],
3946 "required": [ "relativeHumidity" ]
3947 }

```

9.48 Robot Cleaner Job Mode

9.48.1 Derived model

The derived model: "onem2m.m.robotcleanerjobmode".

9.48.2 Property definition

Table 95 provides the detailed per Property mapping for "onem2m.m.robotcleanerjobmode".

Table 95 – The property mapping for "onem2m.m.robotcleanerjobmode".

oneM2M Property name	OCF Resource	To OCF	From OCF
jobModes	oic.r.operational.state	This does not exist in OCF as all possible operational states are available.	This is an array of integers in oneM2M defined by the current version of the specification as follows: jobModes[1] = 1 jobModes[2] = 2 jobModes[3] = 3
currentJobMode	oic.r.operational.state	Need to translate between the oneM2M integer value and the OCF operational state enumerated string if (currentJobMode == 1) { oic.r.operational.state.currentJobState == "zigzag"; } if (currentJobMode == 2) { oic.r.operational.state.currentJobState == "sectored"; }	Need to translate between the OCF operational state enumerated string and the oneM2M integer value if (oic.r.operational.state.currentJobState == "zigzag") { currentJobMode = 1; } if (oic.r.operational.state.currentJobState == "sectored") { currentJobMode = 2; }

		<pre>"sectored"; }if (currentJobMode == 3) { oic.r.operational.state.curr entJobState == "spot"; }else { oic.r.operational.state.curr entJobState == "unknown"; }</pre>	<pre>(oic.r.operational.state.curr entJobState == "spot" { currentJobMode = 3; }else { currentJobMode = 0; }</pre>
currentJobModeName	oic.r.operational.state	This value does not exist in OCF as it is already accommodated in the currentJobMode property.	<p>Need to translate between the OCF operational state enumerated string and the oneM2M string value</p> <pre>if (oic.r.operational.state.curr entJobState == "zigzag") { currentJobModeName = "zigzag"; }if (oic.r.operational.state.curr entJobState == "sectored") { currentJobModeName = "sectorBase"; }if (oic.r.operational.state.curr entJobState == "spot" { currentJobModeName = "spot"; }else { currentJobModeName = ""; }</pre>

Table 96 provides the details of the Properties that are part of "onem2m.m.robotcleanerjobmode".

Table 96 – The properties of "onem2m.m.robotcleanerjobmode".

oneM2M name	Property	Type	Required	Description
jobModes		array	yes	List of possible job states the device supports
currentJobMode		integer	yes	Currently active job mode.
currentJobModeName		string	no	Name of current job mode in string. This can be used when currentJobMode is vendor-specific.

9.48.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.robotcleanerjobmode.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Robot Cleaner Job Mode",
  "definitions": {
    "onem2m.m.robotcleanerjobmode": {
      "type": "object",
```

```

3965     "properties": {
3966         "currentJobMode": {
3967             "type": "integer",
3968             "description": "Currently active job mode.",
3969             "x-ocf-conversion": {
3970                 "x-ocf-alias": "oic.r.operational.state",
3971                 "x-to-ocf": [
3972                     "Need to translate between the oneM2M integer value and the OCF operational state
3973 enumerated string",
3974                     "if ( currentJobMode == 1 ) { oic.r.operational.state.currentJobState ==
3975 \"zigzag\"; }",
3976                     "if ( currentJobMode == 2 ) { oic.r.operational.state.currentJobState ==
3977 \"sectored\"; }",
3978                     "if ( currentJobMode == 3 ) { oic.r.operational.state.currentJobState ==
3979 \"spot\"; }",
3980                     "else { oic.r.operational.state.currentJobState == \"unknown\"; }"
3981                 ],
3982                 "x-from-ocf": [
3983                     "Need to translate between the OCF operational state enumerated string and the oneM2M
3984 integer value",
3985                     "if ( oic.r.operational.state.currentJobState == \"zigzag\" ) { currentJobMode =
3986 1; }",
3987                     "if ( oic.r.operational.state.currentJobState == \"sectored\" ) { currentJobMode =
3988 2; }",
3989                     "if ( oic.r.operational.state.currentJobState == \"spot\" { currentJobMode = 3; }",
3990                     "else { currentJobMode = 0; }"
3991                 ]
3992             }
3993         },
3994         "currentJobModeName": {
3995             "type": "string",
3996             "description": "Name of current job mode in string. This can be used when currentJobMode
3997 is vendor-specific.",
3998             "x-ocf-conversion": {
3999                 "x-ocf-alias": "oic.r.operational.state",
4000                 "x-to-ocf": [
4001                     "This value does not exist in OCF as it is already accommodated in the currentJobMode
4002 property."
4003                 ],
4004                 "x-from-ocf": [
4005                     "Need to translate between the OCF operational state enumerated string and the oneM2M
4006 string value",
4007                     "if ( oic.r.operational.state.currentJobState == \"zigzag\" ) { currentJobModeName =
4008 \"zigzag\"; }",
4009                     "if ( oic.r.operational.state.currentJobState == \"sectored\" ) { currentJobModeName =
4010 \"sectorBase\"; }",
4011                     "if ( oic.r.operational.state.currentJobState == \"spot\" { currentJobModeName =
4012 \"spot\"; }",
4013                     "else { currentJobModeName = \"\"; }"
4014                 ]
4015             }
4016         },
4017         "jobModes": {
4018             "type": "array",
4019             "description": "List of possible job states the device supports",
4020             "x-ocf-conversion": {
4021                 "x-ocf-alias": "oic.r.operational.state",
4022                 "x-to-ocf": [
4023                     "This does not exist in OCF as all possible operational states are available."
4024                 ],
4025                 "x-from-ocf": [
4026                     "This is an array of integers in oneM2M defined by the current version of the
4027 specification as follows:",
4028                     "jobModes[1] = 1",
4029                     "jobModes[2] = 2",
4030                     "jobModes[3] = 3"
4031                 ]
4032             }
4033         }
4034     }
4035 }

```

```

4036     },
4037     "type": "object",
4038     "allOf": [
4039         { "$ref": "#/definitions/onem2m.m.airconjobmode" }
4040     ],
4041     "required": [ "currentJobMode", "jobModes" ]
4042 }

```

4043 9.49 Steam Closet Job Mode

4044 9.49.1 Derived model

4045 The derived model: "onem2m.m.steamclosetjobmode".

4046 9.49.2 Property definition

4047 Table 97 provides the detailed per Property mapping for "onem2m.m.steamclosetjobmode".

4048 **Table 97 – The property mapping for "onem2m.m.steamclosetjobmode".**

oneM2M Property name	OCF Resource	To OCF	From OCF
currentJobMode	oic.r.operational.state	Need to translate between the oneM2M integer value and the OCF operational state enumerated string if (currentJobMode == 1) { oic.r.operational.state.currentJobState == "aroma" } if (currentJobMode == 2) { oic.r.operational.state.currentJobState == "steam" } if (currentJobMode == 3) { oic.r.operational.state.currentJobState == "pure" } if (currentJobMode == 4) { oic.r.operational.state.currentJobState == "delicate" } else { oic.r.operational.state.currentJobState == "unknown" };	Need to translate between the OCF operational state enumerated string and the oneM2M integer value if (oic.r.operational.state.currentJobState == "aroma") { currentJobMode = 1; } if (oic.r.operational.state.currentJobState == "steam") { currentJobMode = 2; } if (oic.r.operational.state.currentJobState == "pure") { currentJobMode = 3; } if (oic.r.operational.state.currentJobState == "delicate") { currentJobMode = 4; } else { currentJobMode = 0; }
jobModes	oic.r.operational.state	This does not exist in OCF as all possible operational states are available.	This is an array of integers in oneM2M defined by the current version of the specification as follows: jobModes[1] = 1 jobModes[2] = 2 jobModes[3] = 3 jobModes[4] = 4
currentJobModeName	oic.r.operational.state	This value does not exist in OCF as it is already accommodated in the currentJobMode property.	Need to translate between the OCF operational state enumerated string and the oneM2M string value if (oic.r.operational.state.currentJobState == "aroma")

			<pre> { currentJobModeName = "reduceOdor"; }if (oic.r.operational.state.curr entJobState == "steam") { currentJobModeName = "steamWrinkle"; }if (oic.r.operational.state.curr entJobState == "pure" { currentJobModeName = "helpClean"; }if (oic.r.operational.state.curr entJobState == "delicate") { currentJobModeName = "gentleDry"; }else { currentJobModeName = ""; } </pre>
--	--	--	--

Table 98 provides the details of the Properties that are part of "onem2m.m.steamclosetjobmode".

Table 98 – The properties of "onem2m.m.steamclosetjobmode".

oneM2M name	Property	Type	Required	Description
	currentJobMode	integer	yes	Currently active job mode.
	jobModes	array	yes	List of possible job states the device supports
	currentJobModeName	string	no	Name of current job mode in string. This can be used when currentJobMode is vendor-specific.

9.49.3 Derived model definition

```

{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.steamclosetjobmode.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Steam Closet Job Mode",
  "definitions": {
    "onem2m.m.steamclosetjobmode": {
      "type": "object",
      "properties": {
        "currentJobMode": {
          "type": "integer",
          "description": "Currently active job mode.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.operational.state",
            "x-to-ocf": [
              "Need to translate between the oneM2M integer value and the OCF operational state",
              "enumerated string",
              "if ( currentJobMode == 1 ) { oic.r.operational.state.currentJobState ==",
              "\"aroma\"; }",
              "if ( currentJobMode == 2 ) { oic.r.operational.state.currentJobState ==

```

```

4072     \"steam\"; }",
4073     "if ( currentJobMode == 3 ) { oic.r.operational.state.currentJobState ==
4074     \"pure\"; }",
4075     "if ( currentJobMode == 4 ) { oic.r.operational.state.currentJobState ==
4076     \"delicate\"; }",
4077     "else { oic.r.operational.state.currentJobState == \"unknown\"; }"
4078 ],
4079     "x-from-ocf": [
4080     "Need to translate between the OCF operational state enumerated string and the oneM2M
4081     integer value",
4082     "if (oic.r.operational.state.currentJobState == \"aroma\" ) { currentJobMode = 1; }",
4083     "if (oic.r.operational.state.currentJobState == \"steam\" ) { currentJobMode = 2; }",
4084     "if (oic.r.operational.state.currentJobState == \"pure\" { currentJobMode = 3; }",
4085     "if (oic.r.operational.state.currentJobState == \"delicate\" ) { currentJobMode =
4086     4; }",
4087     "else { currentJobMode = 0; }"
4088     ]
4089 },
4090 },
4091     "currentJobModeName": {
4092     "type": "string",
4093     "description": "Name of current job mode in string. This can be used when currentJobMode
4094     is vendor-specific.",
4095     "x-ocf-conversion": {
4096     "x-ocf-alias": "oic.r.operational.state",
4097     "x-to-ocf": [
4098     "This value does not exist in OCF as it is already accommodated in the currentJobMode
4099     property."
4100     ],
4101     "x-from-ocf": [
4102     "Need to translate between the OCF operational state enumerated string and the oneM2M
4103     string value",
4104     "if (oic.r.operational.state.currentJobState == \"aroma\" ) { currentJobModeName =
4105     \"reduceOdor\"; }",
4106     "if (oic.r.operational.state.currentJobState == \"steam\" ) { currentJobModeName =
4107     \"steamWrinkle\"; }",
4108     "if (oic.r.operational.state.currentJobState == \"pure\" { currentJobModeName =
4109     \"helpClean\"; }",
4110     "if (oic.r.operational.state.currentJobState == \"delicate\" ) { currentJobModeName =
4111     \"gentleDry\"; }",
4112     "else { currentJobModeName = \"\"; }"
4113     ]
4114     },
4115 },
4116     "jobModes": {
4117     "type": "array",
4118     "description": "List of possible job states the device supports",
4119     "x-ocf-conversion": {
4120     "x-ocf-alias": "oic.r.operational.state",
4121     "x-to-ocf": [
4122     "This does not exist in OCF as all possible operational states are available."
4123     ],
4124     "x-from-ocf": [
4125     "This is an array of integers in oneM2M defined by the current version of the
4126     specification as follows:",
4127     "jobModes[1] = 1",
4128     "jobModes[2] = 2",
4129     "jobModes[3] = 3",
4130     "jobModes[4] = 4"
4131     ]
4132     },
4133 },
4134 },
4135 },
4136 },
4137     "type": "object",
4138     "allOf": [
4139     { "$ref": "#/definitions/oneM2M.m.airconjobmode" }
4140     ],
4141     "required": [ "currentJobMode", "jobModes" ]
4142 }

```

9.50 Temperature

9.50.1 Derived model

The derived model: "onem2m.m.temperature".

9.50.2 Property definition

Table 99 provides the detailed per Property mapping for "onem2m.m.temperature".

Table 99 – The property mapping for "onem2m.m.temperature".

oneM2M Property name	OCF Resource	To OCF	From OCF
stepValue	oic.r.temperat ure	oic.r.temperature.step = stepValue	stepValue = oic.r.temperature.stepotherwise : stepValue = 1
minValue	oic.r.temperat ure	oic.r.temperature.range[0] = minValue	minValue = oic.r.temperature.range[0]other wise: minValue = -MAXINT
maxValue	oic.r.temperat ure	oic.r.temperature.range[1] = maxValue	maxValue =oic.r.temperature.range[1]othe rwise: maxValue = MAXINT
targetTemperatu re	oic.r.temperat ure	oic.r.temperature.temper ature = targetTemperatureunits = CDuring translation, need to set the description of the multi- instance temperature resource to indicate whether this is the current or target temperature being translated	oneOf
currentTemperat ure	oic.r.temperat ure	oic.r.temperature.temper ature = currentTemperatureunits = CDuring translation, need to set the description of the multi- instance temperature resource to indicate whether this is the current or target temperature being translated	oneOf

Table 100 provides the details of the Properties that are part of "onem2m.m.temperature".

Table 100 – The properties of "onem2m.m.temperature".

oneM2M name	Property	Type	Required	Description
stepValue		number	no	Step value allowed for 'targetTemperature'
minValue		number	no	Minimum value of 'targetTemperature'
maxValue		number	no	Maximum value of 'targetTemperature'
targetTemperature		number	no	The desired temperature to reach
currentTemperature		number	yes	The current temperature

4151 9.50.3 Derived model definition

```

4152 {
4153   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.temperature.json#",
4154   "$schema": "http://json-schema.org/draft-04/schema#",
4155   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
4156   "title": "Temperature",
4157   "definitions": {
4158     "onem2m.m.temperature": {
4159       "type": "object",
4160       "properties": {
4161         "currentTemperature": {
4162           "type": "number",
4163           "description": "The current temperature",
4164           "x-ocf-conversion": {
4165             "x-ocf-alias": "oic.r.temperature",
4166             "x-to-ocf": [
4167               "oic.r.temperature.temperature = currentTemperature",
4168               "units = C",
4169               "During translation, need to set the description of the multi-instance temperature
4170 resource to indicate whether this is the current or target temperature being translated"
4171             ],
4172             "x-from-ocf": {
4173               "oneOf": [
4174                 {
4175                   "properties": {
4176                     "units": "string",
4177                     "enum": ["C"]
4178                   },
4179                   "x-from-ocf": [
4180                     "currentTemperature = oic.r.temperature.temperature"
4181                   ]
4182                 },
4183                 {
4184                   "properties": {
4185                     "units": "string",
4186                     "enum": ["F"]
4187                   },
4188                   "x-from-ocf": [
4189                     "currentTemperature = (oic.r.temperature.temperature-32)*5/9"
4190                   ]
4191                 }
4192               ]
4193             }
4194           }
4195         }
4196       }
4197     }
4198   }

```

```

4193         "properties": {
4194             "units": "string",
4195             "enum": ["K"]
4196         },
4197         "x-from-ocf": [
4198             "currentTemperature = oic.r.temperature.temperature-273.15"
4199         ]
4200     }
4201 ]
4202 }
4203 }
4204 },
4205 "targetTemperature": {
4206     "type": "number",
4207     "description": "The desired temperature to reach",
4208     "x-ocf-conversion": {
4209         "x-ocf-alias": "oic.r.temperature",
4210         "x-to-ocf": [
4211             "oic.r.temperature.temperature = targetTemperature",
4212             "units = C",
4213             "During translation, need to set the description of the multi-instance temperature
4214 resource to indicate whether this is the current or target temperature being translated"
4215         ],
4216         "x-from-ocf": {
4217             "oneOf": [
4218                 {
4219                     "properties": {
4220                         "units": "string",
4221                         "enum": ["C"]
4222                     },
4223                     "x-from-ocf": [
4224                         "targetTemperature = oic.r.temperature.temperature"
4225                     ]
4226                 },
4227                 {
4228                     "properties": {
4229                         "units": "string",
4230                         "enum": ["F"]
4231                     },
4232                     "x-from-ocf": [
4233                         "targetTemperature = (oic.r.temperature.temperature-32)*5/9"
4234                     ]
4235                 },
4236                 {
4237                     "properties": {
4238                         "units": "string",
4239                         "enum": ["K"]
4240                     },
4241                     "x-from-ocf": [
4242                         "targetTemperature = oic.r.temperature.temperature-273.15"
4243                     ]
4244                 }
4245             ]
4246         }
4247     }
4248 },
4249 "minValue": {
4250     "type": "number",
4251     "description": "Minimum value of 'targetTemperature'",
4252     "x-ocf-conversion": {
4253         "x-ocf-alias": "oic.r.temperature",
4254         "x-to-ocf": [
4255             "oic.r.temperature.range[0] = minValue"
4256         ],
4257         "x-from-ocf": [
4258             "minValue = oic.r.temperature.range[0]",
4259             "otherwise: minValue = -MAXINT"
4260         ]
4261     }
4262 },
4263 "maxValue": {

```



```

4264         "type": "number",
4265         "description": "Maximum value of 'targetTemperature'",
4266         "x-ocf-conversion": {
4267             "x-ocf-alias": "oic.r.temperature",
4268             "x-to-ocf": [
4269                 "oic.r.temperature.range[1] = maxValue"
4270             ],
4271             "x-from-ocf": [
4272                 "maxValue = oic.r.temperature.range[1]",
4273                 "otherwise: maxValue = MAXINT"
4274             ]
4275         },
4276     },
4277     "stepValue": {
4278         "type": "number",
4279         "description": "Step value allowed for 'targetTemperature'",
4280         "x-ocf-conversion": {
4281             "x-ocf-alias": "oic.r.temperature",
4282             "x-to-ocf": [
4283                 "oic.r.temperature.step = stepValue"
4284             ],
4285             "x-from-ocf": [
4286                 "stepValue = oic.r.temperature.step",
4287                 "otherwise: stepValue = 1"
4288             ]
4289         },
4290     },
4291 },
4292 },
4293 },
4294 "type": "object",
4295 "allOf": [
4296     { "$ref": "#/definitions/onem2m.m.temperature" }
4297 ],
4298 "required": [ "currentTemperature" ]
4299 }

```

4300 9.51 UV Sensor

4301 9.51.1 Derived model

4302 The derived model: "onem2m.m.uvsensor".

4303 9.51.2 Property definition

4304 Table 101 provides the detailed per Property mapping for "onem2m.m.uvsensor".

4305 **Table 101 – The property mapping for "onem2m.m.uvsensor".**

oneM2M Property name	OCF Resource	To OCF	From OCF
uvstatus	oic.r.sensor.radiation.uv	oic.r.sensor.radiation.uv.step = uvstatus	uvstatus = oic.r.sensor.radiation.uv.step
uvvalue	oic.r.sensor.radiation.uv	oic.r.sensor.radiation.uv.measurement = uvvalue	uvvalue = oic.r.sensor.radiation.uv.measurement

4306 Table 102 provides the details of the Properties that are part of "onem2m.m.uvsensor".

Table 102 – The properties of "onem2m.m.uvsensor".

oneM2M name	Property	Type	Required	Description
uvstatus		integer	no	The "uvStatus" indicates the level of the UV radiation status.
uvvalue		number	yes	The unit of measure of the UV intensity of radiation is "mW/cm2".

9.51.3 Derived model definition

```

4308 {
4309   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.uvsensor.json#",
4310   "$schema": "http://json-schema.org/draft-04/schema#",
4311   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
4312   "title": "UV Sensor",
4313   "definitions": {
4314     "onem2m.m.uvsensor": {
4315       "type": "object",
4316       "properties": {
4317         "uvvalue": {
4318           "type": "number",
4319           "description": "The unit of measure of the UV intensity of radiation is \"mW/cm2\".",
4320           "x-ocf-conversion": {
4321             "x-ocf-alias": "oic.r.sensor.radiation.uv",
4322             "x-to-ocf": [
4323               "oic.r.sensor.radiation.uv.measurement = uvvalue"
4324             ],
4325             "x-from-ocf": [
4326               "uvvalue = oic.r.sensor.radiation.uv.measurement"
4327             ]
4328           }
4329         },
4330         "uvstatus": {
4331           "type": "integer",
4332           "description": "The \"uvStatus\" indicates the level of the UV radiation status.",
4333           "x-ocf-conversion": {
4334             "x-ocf-alias": "oic.r.sensor.radiation.uv",
4335             "x-to-ocf": [
4336               "oic.r.sensor.radiation.uv.step = uvstatus"
4337             ],
4338             "x-from-ocf": [
4339               "uvstatus = oic.r.sensor.radiation.uv.step"
4340             ]
4341           }
4342         }
4343       }
4344     }
4345   },
4346   "type": "object",
4347   "allOf": [
4348     { "$ref": "#/definitions/onem2m.m.uvsensor" }
4349   ],
4350   "required": [ "uvvalue" ]
4351 }
4352
4353
```

9.52 Water Sensor

9.52.1 Derived model

The derived model: "onem2m.m.watersensor".

9.52.2 Property definition

Table 103 provides the detailed per Property mapping for "onem2m.m.watersensor".

Table 103 – The property mapping for "onem2m.m.watersensor".

oneM2M Property name	OCF Resource	To OCF	From OCF
alarm	oic.r.sensor.water	oic.r.sensor.water.value = alarm	alarm = oic.r.sensor.water.value

Table 104 provides the details of the Properties that are part of "onem2m.m.watersensor".

Table 104 – The properties of "onem2m.m.watersensor".

oneM2M Property name	Type	Required	Description
alarm	boolean	yes	The detection of water. The alarm is indicated as follows: "True" indicates that water has been detected, "False" indicates a normal status, that means that water is not detected.

9.52.3 Derived model definition

```
{
  "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.watersensor.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
  "title": "Water Sensor",
  "definitions": {
    "onem2m.m.watersensor": {
      "type": "object",
      "properties": {
        "alarm": {
          "type": "boolean",
          "description": "The detection of water. The alarm is indicated as follows: \"True\" indicates that water has been detected, \"False\" indicates a normal status, that means that water is not detected.",
          "x-ocf-conversion": {
            "x-ocf-alias": "oic.r.sensor.water",
            "x-to-ocf": [
              "oic.r.sensor.water.value = alarm"
            ],
            "x-from-ocf": [
              "alarm = oic.r.sensor.water.value"
            ]
          }
        }
      }
    }
  }
}
```

```

4387     }
4388   }
4389 },
4390 "type": "object",
4391 "allOf": [
4392   { "$ref": "#/definitions/onem2m.m.watersensor" }
4393 ],
4394 "required": [ "alarm" ]
4395 }
4396

```

4397 9.53 Weight

4398 9.53.1 Derived model

4399 The derived model: "onem2m.m.weight".

4400 9.53.2 Property definition

4401 Table 105 provides the detailed per Property mapping for "onem2m.m.weight".

4402 **Table 105 – The property mapping for "onem2m.m.weight".**

oneM2M name	Property	OCF Resource	To OCF	From OCF
weight		oic.r.weight	oic.r.weight.weight = weightoic.r.weight.units = kg	oneOf

4403 Table 106 provides the details of the Properties that are part of "onem2m.m.weight".

4404 **Table 106 – The properties of "onem2m.m.weight".**

oneM2M name	Property	Type	Required	Description
weight		number	yes	Measurement of weight

4405 9.53.3 Derived model definition

```

4406 {
4407   "id": "http://openinterconnect.org/onem2mmapping/schemas/onem2m.m.weight.json#",
4408   "$schema": "http://json-schema.org/draft-04/schema#",
4409   "description": "Copyright (c) 2019 Open Connectivity Foundation, Inc. All rights reserved.",
4410   "title": "Weight",
4411   "definitions": {
4412     "onem2m.m.weight": {
4413       "type": "object",
4414       "properties": {
4415         "weight": {
4416           "type": "number",
4417           "description": "Measurement of weight",
4418           "x-ocf-conversion": {
4419             "x-ocf-alias": "oic.r.weight",
4420             "x-to-ocf": [
4421               "oic.r.weight.weight = weight",
4422               "oic.r.weight.units = kg"
4423             ],
4424             "x-from-ocf": {
4425               "oneOf": [
4426                 {
4427                   "properties": {

```

```

4428         "oic.r.weight.units": "string",
4429         "enum": [ "kg" ]
4430     },
4431     "x-from-ocf": [
4432         "weight = oic.r.weight.weight"
4433     ]
4434 },
4435 {
4436     "properties": {
4437         "oic.r.weight.units": "string",
4438         "enum": [ "g" ]
4439     },
4440     "x-from-ocf": [
4441         "weight = oic.r.weight.weight/1000"
4442     ]
4443 },
4444 {
4445     "properties": {
4446         "oic.r.weight.units": "string",
4447         "enum": [ "lb" ]
4448     },
4449     "x-from-ocf": [
4450         "weight = oic.r.weight.weight*0.45"
4451     ]
4452 },
4453 {
4454     "properties": {
4455         "oic.r.weight.units": "string",
4456         "enum": [ "oz" ]
4457     },
4458     "x-from-ocf": [
4459         "weight = oic.r.weight.weight*0.028"
4460     ]
4461 }
4462 ]
4463 }
4464 }
4465 }
4466 }
4467 }
4468 },
4469 "type": "object",
4470 "allof": [
4471     { "$ref": "#/definitions/onem2m.m.weight" }
4472 ],
4473 "required": [ "weight" ]
4474 }
4475

```