OCF Resource Type Specification

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1 Scope

This document specifies the Resources that have been defined by OCF that may be exposed by an OCF Device.

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

This document is built on top of ISO/IEC 30118-1:2018. ISO/IEC 30118-1:2018 specifies the OCF Framework that enables the implementation of profiles for IoT usages and ecosystems. The OCF Core Framework is scalable to support simple devices (constrained device) and more capable devices (smart device).

2 Normative references

The following documents 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.

https://www.iso.org/standard/53238.html
Latest version available at: https://openconnectivity.org/specs/OCF_Core_Specification.pdf

OpenAPI specification, fka Swagger RESTful API Documentation Specification, Version 2.0
https://github.com/OAI/OpenAPI-Specification/blob/master/versions/2.0.md

3 Terms, definitions, and abbreviated terms

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

3.1 Terms and definitions

3.1.1 actuator
resource with support of the UPDATE operation

3.1.2 Composite Resource Type
a Resource Type defined as an OCF Collection of other Resource Types

3.1.3 sensor
resource without support of the UPDATE operation

3.2 Abbreviated terms

3.2.1 CRUDN
Create Retrieve Update Delete Notify
This is an acronym indicating which operations are possible on the Resource.
4 Document conventions and organization

4.1 Conventions

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

4.2 Notation

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

Required (or shall or mandatory).

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

Recommended (or should).

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

Allowed (or allowed).

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

DEPRECATED

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

Conditionally allowed (CA)

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

Conditionally required (CR)

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

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

Words that are emphasized are printed in italic.
5 Baseline Model Constructs

5.1 URI
The URIs mentioned in this document are non-normative, they may be vendor defined.

An Instance of a Resource is indicated by the URI. When more than one instance of the same Resource Type is used in an OCF Device, different URIs for the different Resource instances shall be used.

An implementation shall follow the requirements defined in ISO/IEC 30118-1:2018 with respect to population of the URI. Please refer to the ISO/IEC 30118-1:2018 clauses 6.2 and 6.3 for specific details.

5.2 Interfaces

5.2.1 Introduction
ISO/IEC 30118-1:2018 specifies that all Resource Types have associated with them at least one Interface; this Interface is advertised during Resource discovery. In addition ISO/IEC 30118-1:2018 defines a number of Interfaces that can be applied to an instance of a Resource Type.

The difference between using sensor/actuator and read/write interfaces is due to the fact that a sensor/actuator interface describes an action that has immediate effect on the device, either by reading the sensed value and putting the value on the wire, or as an UPDATE action that something needs to happen (e.g. actuate) on the device. The read/write interface is typically used to set a settings value on the device that might be used later when an action occurs. A typical example is setting the coffee strength that will be used when the coffee is brewed.

5.2.2 Restricting Interface Functionality
Note that the functionality associated with, or visibility of, an instance of any Resource exposed by a Device may be restricted depending upon local (per country or legislative region) regulatory requirements or other restrictions (e.g. with respect to Binary Switch in some jurisdictions the ability to remotely power on a connected device is restricted; a lock status could be read-only depending on the context).

The actual implementation of a resource can be limited by:

– Not implementing the optional properties defined in the payload of a CRUDN operation.
– Removing CRUDN operations

If an UPDATE operation of a resource that can be actuated is not implemented, this change in behaviour is indicated by changing the interfaces accordingly.

When the resource is defined with the interface "oic.if.a", and the UPDATE operation is removed then the interface listed is "oic.if.s".

When the resource is defined with the interface "oic.if.rw", and the UPDATE operation is removed then the interface listed is "oic.if.r".

5.3 OpenAPI Specification 2.0 definition
The OpenAPI Specification 2.0 definitions provided in clause 6 in this document are normative.

The OpenAPI Specification 2.0 definitions are used to describe the payloads of the CRUDN operations on the specified Resource Type. The CRUDN operations are defined in ISO/IEC 30118-1:2018. ISO/IEC 30118-1:2018 also specifies additional Properties in the payloads of the CRUDN operations. The OpenAPI Specification 2.0 definitions in this document are not of themselves sufficient to create an implementation, additional Properties defined in ISO/IEC 30118-1:2018 need to be added to create a compliant implementation. This document makes use of a subset of the
responses supported by OpenAPI Specification 2.0, specifics on the use of these responses are
defined in Table 4. Note that the actual values of success and error conditions are defined in

The OpenAPI Specification 2.0 definitions map the OCF CRUDN behaviour to the OpenAPI
Specification 2.0 as defined in Table 1.

Table 1 – Conversion between OCF CRUDN and OpenAPI Specification 2.0 definitions

<table>
<thead>
<tr>
<th>Resource</th>
<th>Create</th>
<th>Retrieve</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>/example</td>
<td>post</td>
<td>get</td>
<td>post</td>
<td>delete</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Notify is not part of an OpenAPI Specification 2.0 definition but is defined in ISO/IEC 30118-1:2018.
All Resource Types defined in this document support notification via the use of observe as defined
in ISO/IEC 30118-1:2018 clause 11.4.2.

5.4 Property definition

5.4.1 Common Properties

ISO/IEC 30118-1:2018 specifies a number of Properties that may be defined for OCF Resources.
The Common Properties “if” and “rt” shall be specified for all Resource Types defined in this
document; they are exposed within the ISO/IEC 30118-1:2018 defined “/oic/res/” Resource Type
through which the OCF Server and its available Resources are discovered. The Common
Properties “id” and “n” may be specified for all Resource Types defined in this document. Table 2
lists all of the noted Common Properties.

If an OCF Client requires that these Properties be included in a Resource representation that is
provided in response to a RETRIEVE operation then the client shall select the ISO/IEC 30118-
1:2018 defined baseline interface (oic.if.baseline) by specifying this in a query parameter.

Table 2 – Common Properties for OCF Resources

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Property Title</th>
<th>Property Value</th>
<th>Value Type</th>
<th>Access Modes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>if</td>
<td>Interface</td>
<td>See ISO/IEC 30118-1:2018 clause 7.6.2</td>
<td>Array of string</td>
<td>Readonly</td>
<td>Core defined; Interface(s) supported by the Resource</td>
</tr>
<tr>
<td>rt</td>
<td>Resource type</td>
<td>See ISO/IEC 30118-1:2018 clause 7.4</td>
<td>Array of string</td>
<td>Readonly</td>
<td>Core defined; Resource type. The Resource Types are defined in this document. See clause 6</td>
</tr>
<tr>
<td>n</td>
<td>Name</td>
<td>See ISO/IEC 30118-1:2018 clause 7.3.2.5</td>
<td>String</td>
<td>Readonly</td>
<td>Core defined; human understandable name for the Resource.</td>
</tr>
<tr>
<td>id</td>
<td>Resource Identity</td>
<td>See ISO/IEC 30118-1:2018 clause 7.3.2.6</td>
<td>String</td>
<td>Readonly</td>
<td>Core defined; Unique identifier of the Resource (over all Resources in the OCF device)</td>
</tr>
</tbody>
</table>

1 Please refer to ISO/IEC 30118-1:2018 Table 26 for detailed semantics around the appropriate use of CoAP request methods.
5.4.2 Resource Properties

5.4.2.1 Introduction

The Properties against which the CRUDN operations are specified are defined as part of an OpenAPI Specification 2.0 definition.

A basic Resource Type is formulated around one single value denoting a physical property.

Such a Resource Type is specified with the Properties as defined Table 3. Mandatory in the table means that the Property shall be defined as part of the overall Resource Type schema; actual inclusion of the Property as part of a returned or generated payload is dependent upon the schema that applies to the operation being invoked.

Table 3 – Property definitions of a Resource Type in the OpenAPI Specification 2.0 file

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Friendly Alias Name</th>
<th>Property Value</th>
<th>Value Type</th>
<th>Value Rules</th>
<th>Access Modes</th>
<th>Mandatory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;value&gt;, name may change dependent on the Resource</td>
<td></td>
<td>Dependent on the Resource</td>
<td>Dependent on the Resource</td>
<td>Dependent on the Resource</td>
<td>Dependent on the Resource</td>
<td>yes</td>
<td>The current value of the Resource</td>
</tr>
<tr>
<td>range</td>
<td>Range</td>
<td>[Min,Max]</td>
<td>array of integers or numbers</td>
<td>Linear range</td>
<td>Read-only</td>
<td>no</td>
<td>Range of input values, specified as a two element array. See clause 5.4.2.2.</td>
</tr>
<tr>
<td>step</td>
<td>Step</td>
<td>Dependent on the Resource</td>
<td>Integer or Number</td>
<td>Dependent on the Resource</td>
<td>Read-only</td>
<td>no</td>
<td>Step value across the defined range. See clause 5.4.2.3.</td>
</tr>
<tr>
<td>precision</td>
<td>Precision</td>
<td>Dependent on the Resource</td>
<td>Number</td>
<td>Dependent on the Resource</td>
<td>Read-only</td>
<td>no</td>
<td>Accuracy granularity of the exposed value. See clause 5.4.2.4.</td>
</tr>
</tbody>
</table>

For Resources, which by their nature have more than one physical parameter, the value Property can be replaced with multiple Properties specifying the different physical parameters, or with further structures such as arrays of Properties, objects, or Collections. The type of the value shall be indicated in the OpenAPI Specification 2.0 definition of the Resource Type and should be suitable for the conveyed value. All Property Names and Property Values defined in this document are case sensitive.
5.4.2.2 "range" Property
The "range" defines the valid range for the Property in the Resource as a two element array. This is either an integer or a number range. The first value in the array is the minimum value, the second value in the array is the maximum value.

5.4.2.3 "step" Property
The "step" defines the step value across the defined "range" as either an integer or a number. This is the increment for valid values across the range. For example, for the integer case if the "range" is 0..10 and "step" is 2 then valid values are 0,2,4,6,8,10; for the number case if the "range" is 0.0..10.0 and "step" is 2.5 then valid values are 0.0,2.5,5.0,7.5,10.0.

5.4.2.4 "precision" Property
When exposed the value in "precision" provides a +/- tolerance against the Properties in the Resource. Thus if a Property is UPDATED to a value and that Property then RETRIEVED, the RETRIEVED value is valid if in the range of the set value +/- precision.

5.4.3 Basic Resource Schema
All Resource Types defined herein are represented as previously noted by OpenAPI Specification 2.0 files.

5.4.4 CRUDN Operation Response Codes
A Resource can be created or updated depending on the Resource Type definition and the allowed CRUDN operations. The operation may have different response codes with different meanings. This is explained in Table 4.

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Payload of the response will confirm the change. The OpenAPI Specification 2.0 definition will contain a schema to define the payload.</td>
</tr>
<tr>
<td>201</td>
<td>Payload is the URL of the Resource that was created by the server as a result of a CREATE operation. The OpenAPI Specification 2.0 definition will contain schema to define the payload.</td>
</tr>
<tr>
<td>204</td>
<td>Ok, everything went well, no payload provided. The OpenAPI Specification 2.0 definition does not contain a schema. The OpenAPI Specification 2.0 definition may even omit this value, since it is regarded as default behaviour of an OCF Server.</td>
</tr>
<tr>
<td>403</td>
<td>Case 1: In the case of a RETRIEVE on a Resource with the use of a query parameter selecting specific Property values; if the server does not support the values provided then this response should be returned. The response payload should include the allowed values for the query parameter. Case 2: The server could not CREATE or UPDATE the Resource due to a problem with the provided payload. For an UPDATE, unless otherwise stated in the Resource Type definition, the response payload should include the same schema defined for a 200; indicating the current Resource Property value(s).</td>
</tr>
</tbody>
</table>
5.5 Example Resource Definitions

Please see the OCF Resource Types in Clause 6 for examples of Resource Definitions. For an example Resource Type that models an actuator refer to the definition of Dimming; for an example Resource Type that models a sensor refer to the definition of an Illuminance Sensor.

5.6 Observable Resource Types

5.6.1 Introduction

ISO/IEC 30118-1:2018 defines a mechanism by which Resources can advertise themselves as “Observable” to an OCF Client. All Resource Types defined in this document may be observed. Whether or not a Resource Type is made observable via use of the Policy Link Parameter is entirely implementation dependent.

5.6.2 Conditional Notification

5.6.2.1 General

All observable Resources may apply conditions to the generation of notifications that result from the observe action, these conditions can be time based or value based or time and value based. This is achieved by composing the Conditional Notification (oic.r.value.conditional) Resource Type with an instance of an observable Resource; that is the Resource that is exposed by the Server has an “rt” of “["oic.r.<resource>","oic.r.value.conditional"]”.

5.6.2.2 Conditional Notification Property Summary

Table 5 summarizes the Properties provided by the Conditional Notification Resource Type. At least one Property from the table shall be present in an instance of the Resource Type.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>R/W</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>threshold</td>
<td>number</td>
<td>RW</td>
<td>No</td>
<td>Amount by which the observed value changes before a notification is generated</td>
</tr>
<tr>
<td>minnotifyperiod</td>
<td>integer</td>
<td>RW</td>
<td>No</td>
<td>Minimum elapsed time in ms before a notification may be sent</td>
</tr>
<tr>
<td>maxnotifyperiod</td>
<td>integer</td>
<td>RW</td>
<td>No</td>
<td>Maximum elapsed time in ms after which a notification is sent</td>
</tr>
</tbody>
</table>

All Properties if exposed shall be set with initial values. All Properties may be exposed with a value of “0” (zero); this indicates that the functionality associated with the Property is not active. Any Client may update the exposed values subject to any ACL restrictions; such changes are global and apply to all notifications that are sent to all observers. A notifier may reject an update to the Property values; in such cases a diagnostic payload should be included in the rejection response indicating the valid ranges for the Properties.

5.6.2.3 Property Definition: threshold

Minimum value change between two notifications. A notification shall be sent (within the constraints of “minnotifyperiod”) when the change since the last notification is greater than or equal to this value. The measurement is done against the value in the last notification that was sent; thus all notifications (within any “maxnotifyperiod” constraints that may be present) will carry values that differ by at least “threshold”. A “threshold” value of “0” means that no “threshold” is applied.
5.6.2.4 Property Definition: minnotifyperiod

Minimum time (in ms) that shall occur between notifications. If a value change condition is met
(“threshold” equalled or exceeded or any change in value if threshold is not present) before
expiration the notification shall not be sent till the period expires. If the Property is present and set
to “0” then no minimum notify period timer is run; if the Property is present and with a value greater
than “0” then a minimum notify period timer shall be run equal to the value. The Property value
itself is initially populated by the notifier. If the Property is not present, the minimum notify period
is up to the notifier. The timer shall be reset each time a notification is sent.

5.6.2.5 Property Definition: maxnotifyperiod

Maximum time (in ms) that the notifier shall not exceed between notifications. When the timer
expires a notification shall be sent. If present and set to “0” then no maximum notify period timer
is run; if present and with a value greater than 0 then a maximum notify period timer shall be run
equal to the value. The Property value itself shall be initially populated by the notifier. When both
“minnotifyperiod” and “maxnotifyperiod” are present and both are non-zero the value of
“maxnotifyperiod” shall be larger than the “minnotifyperiod”. If not present, the value shall be set
by the notifier. The timer shall be reset each time a notification is sent.

5.6.2.6 Governing State Machine

The “minnotifyperiod” and “maxnotifyperiod” timers are restarted each time a notification is sent
(response to the Observe). A notification is sent when value change condition (threshold) and
“minnotifyperiod” are both met if both are present. If the observed Property value subsequently
drops beneath threshold before the expiration of “minnotifyperiod” the notifier may take no action
or a notification may be sent on expiration of “minnotifyperiod” containing the current observed
Property value (at the time of the notification). If there are no timer constraints; then notifications
are sent whenever the observed Property value has changed by an amount greater than or equal
to “threshold”.

Overall logic is defined in Figure 1. Figure 2 provides an illustrative sequence.

<table>
<thead>
<tr>
<th>If minnotifyperiod expired:</th>
</tr>
</thead>
<tbody>
<tr>
<td>If observed value changed:</td>
</tr>
<tr>
<td>If change amount &gt;= threshold:</td>
</tr>
<tr>
<td>Send notification with current value</td>
</tr>
<tr>
<td>Reset minnotifyperiod, maxnotifyperiod</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If maxnotifyperiod expired:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get current value</td>
</tr>
<tr>
<td>Send notification with current value</td>
</tr>
<tr>
<td>Reset minnotifyperiod, maxnotifyperiod</td>
</tr>
</tbody>
</table>

Figure 1 – Overall conditional notification logic
5.7 Composite Resource Types

Composite Resource Types are Resources that comprises of one or more single or other composite Resource Types, an example of which is shown in Figure 3. The Composite Resource Type can be viewed upon as a new single Resource Type. The Composite Resource Type mechanism is a powerful concept since it uses existing Resource Types in a new combination to express more contexts to a Resource without specifying new single unit Resource Types.

Composite Resource Types are defined by linking the referenced existing Resource values in to a Collection.
The linking is done by using an array of Links; refer to ISO/IEC 30118-1:2018 clause 7.8.2 for more details. Note that the example in Figure 3 contains a partial schema of this definition as it is for descriptive purpose only. The Property name of the array in the example is “resources”.

The contents of the listed Resources can be achieved in a single operation by using the ISO/IEC 30118-1:2018 defined oic.if.b interface.

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Composite Example",
    "version": "v1.1.0-2018",
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CompositeResURI?if=oic.if.baseline" : {
      "get": {
        "description": "Composite Resource.\n",
        "parameters": [
          {
            "$ref": "/parameters/interface-baseline"
          }
        ],
        "responses": {
          "200": {
            "description": "Success path response for the Resource",
            "x-example": {
              "rt": ["oic.r.example"],
              "if": ["oic.if.ll","oic.if.b","oic.if.baseline"],
              "id": "unique_example_id",
              "resources": [
                {
                  "href": "/TimeIntervalResURI",
                  "rt": ["oic.r.time.period"],
                  "if": ["oic.if.a","oic.if.baseline"],
                  "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
                },
                {
                  "href": "/GasConsumptionResURI",
                  "rt": ["oic.r.gas.consumption"],
                  "if": ["oic.if.s","oic.if.baseline"],
                  "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
                }
              ]
            }
          }
        }
      }
    }
  }
}
```

![Figure 3 – Composite Resource Example](image)

5.8 Document Version

Devices conformant to this document version shall add the string “ocf.res.1.3.0” to the dmv Property in “oic.wk.d”. This Property is for legacy Device support only and will no longer be revised in alignment with document versions.

5.9 Data types

This document adopts the types defined in ISO/IEC 30118-1:2018 with the exceptions defined in this clause.
All Properties in this document that are defined as JSON number type shall be transmitted encoded as floating point values and not integer values. Reception of Properties defined as JSON number type shall be as defined in ISO/IEC 30118-1:2018. See ISO/IEC 30118-1:2018 clause 12.4 for specifics.

6 Resource Type definitions

6.1 Introduction

This clause contains definitions for all Resource Types; the complete set is listed in Table 6 – Alphabetical list of Resource Types.

All Resource Types shall be created in accordance with ISO/IEC 30118-1:2018 clause 7.4. All comparisons against a Resource Type shall be case insensitive.

All Resource Types in this document are prefixed with “oic.r” denoting that it is an OCF defined Resource Type.

Table 6 – Alphabetical list of Resource Types

<table>
<thead>
<tr>
<th>Friendly Name (informative)</th>
<th>Resource Type (rt)</th>
<th>Clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>3D Printer</td>
<td>oic.r.printer.3d</td>
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<tr>
<td>Activity Tracker Atomic Measurement</td>
<td>oic.r.activitytracker-am</td>
<td>6.128</td>
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</tr>
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### 6.2 Air Flow

#### 6.2.1 Introduction

This Resource describes Properties associated with air flow.

The Property "supporteddirections" is the set of valid values for the direction property for a particular instance of this Resource Type.

The Property "direction" is the directionality of the air flow if applicable, if Property "supporteddirections" is also present it must be a value from that set.

The values of Property "direction" are dependent on the capabilities of the unit.

The Property "speed" is an integer representing the current speed level for the unit.

The Property "range" is an array of the min,max values for the speed level. If not present the "range" defaults to [0,100].

Property "automode" is the status of the automode feature; Off means automode is not enabled, On means automode is active and the speed is automatically controlled by the Device.

#### 6.2.2 Example URI

```
/AirFlowResURI
```

#### 6.2.3 Resource type

The Resource Type is defined as: "oic.r.airflow".

#### 6.2.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Air Flow",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc3ebd4bf/OCF_DATA_MODEL_LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": 
```
```
"produces": ["application/json"],
"paths": {
  "/AirFlowResURI" : {
    "get": {
      "description": "This Resource describes Properties associated with air flow. The Property
      "supporteddirections" is the set of valid values for the direction property for a particular
      instance of this Resource Type. The Property "direction" is the directionality of the air flow if
      applicable, if Property "supporteddirections" is also present it must be a value from that set. The
      values of Property "direction" are dependent on the capabilities of the unit. The Property
      "speed" is an integer representing the current speed level for the unit. The Property "range"
      is an array of the min,max values for the speed level. If not present the "range" defaults to
      [0,100]. Property "automode" is the status of the automode feature; Off means automode is not
      enabled, On means automode is active and the speed is automatically controlled by the Device.",
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.airflow"],
            "if": ["oic.if.a", "oic.if.baseline"],
            "supporteddirections": ["left", "right", "centre"],
            "direction": "left",
            "speed": 5,
            "range": [1, 7],
            "automode": "Off"
          },
          "schema": { "$ref": "#/definitions/AirFlow" }
        }
      }
    },
    "post": {
      "description": "When "automode" is set to true, "direction" and "speed" are not
      utilized by the device.",
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        },
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/AirFlow" },
          "x-example": {
            "direction": "right",
            "speed": 3
          }
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "direction": "right",
            "speed": 3
          },
          "schema": { "$ref": "#/definitions/AirFlow" }
        },
        "403": {
          "description": "This response is generated by the OCF Server when the client sends:
          An UPDATE with an invalid Property value for direction. An UPDATE with an out of range property
          value for speed. The server may respond with the current resource representation.",
          "x-example": {
            "supporteddirections": ["left", "right", "centre"],
            "direction": "right",
            "speed": 3
          },
          "schema": { "$ref": "#/definitions/AirFlow" }
        }
      }
    }
  }
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "AirFlow": {
    "properties": {
      "rt": {
        "description": "The Resource Type",
        "items": {
          "enum": ["oic.r.airflow"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "speed": {
        "description": "The current speed level."
      },
      "direction": {
        "description": "The directionality of the air flow, a value indicated by "supporteddirections"\"."
      },
      "automode": {
        "description": "The status of the automode feature, if on speed is set by the Device."
      },
      "supporteddirections": {
        "description": "The array of possible direction settings for this instance of the Resource Type."
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_integer"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      }
    }
  }
}
6.2.5 Property definition

Table 7 defines the Properties that are part of the "oic.r.airflow" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type</td>
</tr>
<tr>
<td>speed</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The current speed level</td>
</tr>
<tr>
<td>direction</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>The directionality of the air flow, a value indicated by &quot;supporteddirections&quot;.</td>
</tr>
<tr>
<td>automode</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>The status of the automode feature, if on speed is set by the Device.</td>
</tr>
<tr>
<td>supporteddirections</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The array of possible direction settings for this instance of the Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.2.6 CRUDN behaviour

Table 8 defines the CRUDN operations that are supported on the "oic.r.airflow" Resource Type.
6.3 Air Flow Control

6.3.1 Introduction

This Resource describes the attributes associated with control of air flow, for example as modelled by a Thermostat (fan), Room A/C or other device.

The Resource is a Collection of:
- AirFlow Resource
- BinarySwitch Resource

6.3.2 Example URI

/AirFlowControlResURI

6.3.3 Resource type

The Resource Type is defined as: "oic.r.airflowcontrol".

6.3.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Air Flow Control",
        "version": "20190307",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
            "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/AirFlowControlResURI?if=oic.if.ll" : {
            "get": {
                "description": "This Resource describes the attributes associated with control of air flow, for example as modelled by a Thermostat (fan), Room A/C or other device.

The Resource is a Collection of:
- AirFlow Resource
- BinarySwitch Resource",
                "parameters": [
                    {
                        "$ref": "#/parameters/interface-all"
                    }
                ],
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": [
                            {"href": "/BinarySwitchResURI", "rt": ["oic.r.switch.binary"],
                             "if": ["oic.if.a", "oic.if.baseline"],
                             "eps": [{"ep": "coaps://[fe80:]:1122"}]
                         },
                            {"href": "/AirFlowResURI", "rt": ["oic.r.airflow"],
                             "if": ["oic.if.a", "oic.if.baseline"],
                             "eps": [{"ep": "coaps://[fe80:]:1122"}]
                         }
                        ],
                        "schema": { "$ref": "#/definitions/AirFlowControl-ll" }
                    }
                }
            }  
        }
    }
}
```
flow, for example as modelled by a Thermostat (fan), Room A/C or other device. The Resource is a Collection of:
AirFlow Resource
BinarySwitch Resource

"parameters": [
  {"$ref": "#/parameters/interface-all"}
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "href": "/BinarySwitchResURI",
      "rep": {
        "value": true
      }
    },
    "href": "/AirFlowResURI",
    "rep": {
      "supporteddirections": ["left","right","centre"],
      "direction": "right",
      "speed": 3,
      "range": [1,7],
      "automode": "Off"
    }
  }
},
"schema": { "$ref": "#/definitions/AirFlowControlBatch-Retrieve" }
}

"post": {
  "description": "Sets the current air flow control values using the batch OCF Interface",
  "parameters": [
    {"$ref": "#/parameters/interface-b"},
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/AirFlowControlBatch-Update" },
      "x-example": {
        "href": "/AirFlowResURI",
        "rep": {
          "direction": "left",
          "speed": 4
        }
      }
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "href": "/BinarySwitchResURI",
        "rep": {
          "value": true
        }
      },
      "href": "/AirFlowResURI",
      "rep": {
        "supporteddirections": ["left","right","centre"],
        "direction": "left",
        "speed": 4,
        "range": [1,7],
        "automode": "Off"
      }
    }
  },
  "schema": { "$ref": "#/definitions/AirFlowControlBatch-Retrieve" }
}
"AirFlowControlResURI?if=oic.if.baseline" : {
  "get": {
    "description": "This Resource describes the attributes associated with control of air
flow, for example as modelled by a Thermostat (fan), Room A/C or other device.
The Resource is a Collection of:
  AirFlow Resource
  BinarySwitch Resource
"
  ["$ref": "/parameters/interface-all"]
},
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.airflowcontrol"],
      "rts": ["oic.r.airflow","oic.r.switch.binary"],
      "if": ["oic.if.ll","oic.if.b","oic.if.baseline"],
      "links": ["href": "/BinarySwitchResURI", "rt": ["oic.r.switch.binary"], "if": ["oic.if.a","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]),
      "rt": ["oic.r.airflow"],
      "if": ["oic.if.a","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}])
    ],
    "schema": { "$ref": "/definitions/AirFlowControl-baseline" }
  }
},
"parameters": {
  "interface-b": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.b"]
  },
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
  }
},
"definitions": {
  "AirFlowControl-ll": {
    "type": "array",
    "minItems": 2,
    "uniqueItems": true,
    "readOnly": true,
    "items": { "$ref": "/definitions/oic.oic-link"
  }
},
  "oic.oic-link": {
    "type": "object",
    "properties": {
      "anchor": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
    },
    "di": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
    },
    "eps": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ep"
    }
  },
  "oic.r.airflowcontrol": {
    "type": "array",
    "minItems": 2,
    "uniqueItems": true,
    "readOnly": true,
    "items": { "$ref": "/definitions/oic.oic-link"
  },
  "oic.r.airflow": {
    "type": "array",
    "minItems": 2,
    "uniqueItems": true,
    "readOnly": true,
    "items": { "$ref": "/definitions/oic.oic-link"
  },
  "oic.r.switch.binary": {
    "type": "array",
    "minItems": 2,
    "uniqueItems": true,
    "readOnly": true,
    "items": { "$ref": "/definitions/oic.oic-link"
  }
},
  "oic.if.ll": {
    "type": "array",
    "minItems": 2,
    "uniqueItems": true,
    "readOnly": true,
    "items": { "$ref": "/definitions/oic.oic-link"
  },
  "oic.if.b": {
    "type": "array",
    "minItems": 2,
    "uniqueItems": true,
    "readOnly": true,
    "items": { "$ref": "/definitions/oic.oic-link"
  },
  "oic.if.baseline": {
    "type": "array",
    "minItems": 2,
    "uniqueItems": true,
    "readOnly": true,
    "items": { "$ref": "/definitions/oic.oic-link"
  }
}
"AirFlowResURI?if=oic.if.baseline" : {
  "get": {
    "description": "This Resource describes the attributes associated with control of air
flow, for example as modelled by a Thermostat (fan), Room A/C or other device.
The Resource is a Collection of:
  AirFlow Resource
  BinarySwitch Resource

"get": {
    "description": "This Resource describes the attributes associated with control of air
flow, for example as modelled by a Thermostat (fan), Room A/C or other device.
The Resource is a Collection of:
  AirFlow Resource
  BinarySwitch Resource

"get": {
    "description": "This Resource describes the attributes associated with control of air
flow, for example as modelled by a Thermostat (fan), Room A/C or other device.
The Resource is a Collection of:
  AirFlow Resource
  BinarySwitch Resource

"get": {
    "description": "This Resource describes the attributes associated with control of air
flow, for example as modelled by a Thermostat (fan), Room A/C or other device.
The Resource is a Collection of:
  AirFlow Resource
  BinarySwitch Resource

schema.json#/definitions/eps
}

"href": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
},
"ins": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
},
"p": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
},
"rel": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/rel_array"
},
"title": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/title"
},
"type": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/type"
},
"if": {
"description": "The OCF Interfaces supported by the target Resource",
"items": {
"enum": [
"oic.if.a",
"oic.if.baseline"
],
"type": "string",
"maxLength": 64
},
"minItems": 2,
"uniqueItems": true,
"type": "array",
"readOnly": true
},
"rt": {
"description": "Resource Type of the target Resource",
"items": {
"maxLength": 64,
"type": "string",
"enum": ["oic.r.switch.binary","oic.r.airflow"]
},
"minItems": 1,
"type": "array",
"uniqueItems": true,
"readOnly": true
}
,"required": [
"href",
"rt",
"if"}
},
"AirFlowControl-baseline": {
"properties": {
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"rt": {
  "description": "Resource Type of this Resource",
  "items": {
    "maxLength": 64,
    "type": "string",
    "enum": ["oic.r.airflowcontrol"]
  },
  "minItems": 1,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},
"rts": {
  "items": {
    "type": "string",
    "enum": ["oic.r.airflow","oic.r.switch.binary"],
    "maxLength": 64
  },
  "minItems": 1,
  "type": "array",
  "uniqueItems": true,
  "readOnly": true
},
"if": {
  "description": "The OCF Interfaces supported by this Resource",
  "items": {
    "enum": [
      "oic.if.ll",
      "oic.if.b",
      "oic.if.baseline"
    ],
    "type": "string",
    "maxLength": 64
  },
  "minItems": 1,
  "readOnly": true,
  "uniqueItems": true,
  "type": "array"
},
"links": {
  "description": "A set of simple or individual OCF Links.",
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array",
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true
}
},
"type": "object",
"required": ["rt","rts","if","links"]
},
"AirFlowControlBatch-Retrieve": {
  "type": "array",
  "minItems": 2,
  "uniqueItems": true,
  "items": {
    "type": "object",
    "additionalProperties": true,
    "properties": {
      "href": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
      }
    }
  }
}
6.3.5 Property definition

Table 9 defines the Properties that are part of the "oic.r.airflowcontrol" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>Property</td>
<td>Types</td>
<td>Read/Write</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>-------</td>
<td>------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rep</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

Table 10 - The CRUDN operations of the Resource with type "rt" = "oic.r.airflowcontrol".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.3.6 CRUDN behaviour

Table 10 defines the CRUDN operations that are supported on the "oic.r.airflowcontrol" Resource Type.

### 6.4 Battery

#### 6.4.1 Introduction

This Resource describes the attributes associated with a battery. The Property "charge" is an integer showing the current battery charge level as a percentage in the range 0 (fully discharged) to 100 (fully charged). The Property "capacity" represents the total capacity of battery in Amp Hours (Ah). The "charging" status and "discharging" status are represented by boolean values set to "true" indicating enabled and "false" indicating disabled. Low battery status is represented by a boolean value set to "true" indicating low charge level and "false" indicating otherwise, based upon the battery threshold represented as a percentage.
6.4.2 Example URI

/BatteryResURI

6.4.3 Resource type

The Resource Type is defined as: "oic.r.energy.battery".

6.4.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Battery",
    "version": "20190618",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BatteryResURI": {
      "get": {
        "description": "This Resource describes the attributes associated with a battery. The
Property \"charge\" is an integer showing the current battery charge level as a percentage in the
range 0 (fully discharged) to 100 (fully charged). The Property \"capacity\" represents the total
capacity of battery in Amp Hours (Ah). The \"charging\" status and \"discharging\" status are
represented by boolean values set to \"true\" indicating enabled and \"false\" indicating disabled.
Low battery status is represented by a boolean value set to \"true\" indicating low charge level and
\"false\" indicating otherwise, based upon the battery threshold represented as a percentage.",
        "parameters": [
        {"$ref": "/parameters/interface"}
        ],
        "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.energy.battery"],
            "if": ["oic.if.rw", "oic.if.baseline"],
            "charge": 50,
            "capacity": 3000,
            "charging": true,
            "discharging": false,
            "lowbattery": false,
            "batterythreshold": 20,
            "defect": false,
            "timestamp": "2015-11-05T14:30:00.20Z"
          },
          "schema": { "$ref": "/definitions/Battery" }
        }
        }
      }
    },
    "/BatteryResURI": {
      "post": {
        "description": "Sets current battery values",
        "parameters": [
        {"$ref": "/parameters/interface"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "/definitions/BatteryUpdate" },
        },
        "x-example": {
          "batterythreshold": 20
        }
        }},
  }
}
```

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"responses": {
    "200": {
        "description": "", "x-example": {
            "batterythreshold": 20
        }
    }
}, "schema": { "$ref": "/definitions/BatteryUpdate" }
	}
},
"parameters": {
    "interface": {
        "in": "query", "name": "if", "type": "string", "enum": ["oic.if.rw", "oic.if.baseline"]
    }
},
"definitions": {
    "Battery": {
        "properties": {
            "rt": {
                "description": "The Resource Type.", "items": {
                    "enum": ["oic.r.energy.battery"], "maxLength": 64, "type": "string"
                }
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
        },
        "discharging": {
            "description": "The status of discharging.", "readOnly": true,
            "type": "boolean"
        },
        "lowbattery": {
            "description": "The status of the low battery warning based upon the defined threshold.", "readOnly": true,
            "type": "boolean"
        },
        "capacity": {
            "description": "The total capacity in Amp-hours (Ah).", "readOnly": true,
            "type": "number"
        },
        "batterythreshold": {
            "description": "The threshold percentage for the low battery warning.", "maximum": 100, "minimum": 0,
            "type": "integer"
        },
        "charge": {
            "description": "The current charge percentage.", "maximum": 100, "minimum": 0,
            "readOnly": true,
            "type": "integer"
        },
        "charging": {
            "description": "The status of charging.", "readOnly": true,
            "type": "boolean"
        }
    }
}
"defect": {
  "description": "Battery defect detected. True = defect, False = no defect",
  "readOnly": true,
  "type": "boolean"
},
"timestamp": {
  "description": "An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Note that 1/100 time resolution should be used.",
  "format": "date-time",
  "readOnly": true,
  "type": "string"
},
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": {
    "enum": [
      "oic.if.rw",
      "oic.if.baseline"
    ],
    "type": "string"
  },
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
}
},
"BatteryUpdate": {
  "properties": {
    "batterythreshold": {
      "description": "The threshold percentage for the low battery warning.",
      "maximum": 100,
      "minimum": 0,
      "type": "integer"
    }
  }
}

### 6.4.5 Property definition

Table 11 defines the Properties that are part of the "oic.r.energy.battery" Resource Type.

**Table 11 – The Property definitions of the Resource with type "rt" = "oic.r.energy.battery".**

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>discharging</td>
<td>boolean</td>
<td>No</td>
<td>Read Only</td>
<td>The status of discharging.</td>
</tr>
<tr>
<td>lowbattery</td>
<td>boolean</td>
<td>No</td>
<td>Read Only</td>
<td>The status of the low battery warning</td>
</tr>
<tr>
<td>Property</td>
<td>Type</td>
<td>Access</td>
<td>Mode</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------</td>
<td>--------</td>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>capacity</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The total capacity in Amp-hours (Ah).</td>
</tr>
<tr>
<td>batterythreshold</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The threshold percentage for the low battery warning.</td>
</tr>
<tr>
<td>charge</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>The current charge percentage.</td>
</tr>
<tr>
<td>charging</td>
<td>boolean</td>
<td>No</td>
<td>Read Only</td>
<td>The status of charging.</td>
</tr>
<tr>
<td>defect</td>
<td>boolean</td>
<td>No</td>
<td>Read Only</td>
<td>Battery defect detected. True = defect, False = no defect</td>
</tr>
<tr>
<td>timestamp</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Note that 1/100 time resolution should be used.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>batterythreshold</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The threshold percentage for the low battery warning.</td>
</tr>
</tbody>
</table>

### 6.4.6 CRUDN behaviour

Table 12 defines the CRUDN operations that are supported on the "oic.r.energy.battery" Resource Type.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.5 Binary Switch

#### 6.5.1 Introduction

This Resource describes a binary switch (on/off).

The Property "value" is a boolean.

A value of 'true' means that the switch is on.

A value of 'false' means that the switch is off.

#### 6.5.2 Example URI

/BinarySwitchResURI
6.5.3 Resource type

The Resource Type is defined as: "oic.r.switch.binary".

6.5.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Binary Switch",
    "version": "20190222",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8e8dca4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BinarySwitchResURI": {
      "get": {
        "description": "This Resource describes a binary switch (on/off).
        The Property "value" is a boolean. A value of 'true' means that the switch is on.
        A value of 'false' means that the switch is off."
      },
      "parameters": [
        {"$ref": "#/parameters/interface"}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.switch.binary"],
            "if": ["oic.if.a", "oic.if.baseline"],
            "value": false
          }
        }
      }
    },
    "post": {
      "description": "",
      "parameters": [
        {"$ref": "#/parameters/interface"},
        {"name": "body", "in": "body", "required": true, "schema": { "$ref": "#/definitions/BinarySwitch" }, "x-example": { "value": true }}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "value": true
          }
        }
      }
    }
  }
}
```
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "BinarySwitch": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.switch.binary"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "value": {
        "description": "The status of the switch.",
        "type": "boolean"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": ["oic.if.a", "oic.if.baseline"],
          "type": "string"
        },
        "minItems": 2,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      }
    }
  }
},
"required": ["value"]

6.5.5 Property definition

Table 13 defines the Properties that are part of the "oic.r.switch.binary" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>The status of the switch.</td>
</tr>
</tbody>
</table>

Table 13 – The Property definitions of the Resource with type "rt" = "oic.r.switch.binary".
6.5.6 CRUDN behaviour

Table 14 defines the CRUDN operations that are supported on the "oic.r.switch.binary" Resource Type.

Table 14 – The CRUDN operations of the Resource with type "rt" = "oic.r.switch.binary".

<table>
<thead>
<tr>
<th>Operation</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create</td>
<td>get</td>
<td>post</td>
<td></td>
<td>observe</td>
</tr>
<tr>
<td>Read</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Update</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delete</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notify</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.6 Brightness

6.6.1 Introduction

This Resource describes the brightness of a light or lamp. The Property "brightness" is an integer showing the current brightness level as a quantized representation in the range 0-100.

A brightness of 0 is the minimum for the resource.

A brightness of 100 is the maximum for the resource.

6.6.2 Example URI

/BrightnessResURI

6.6.3 Resource type

The Resource Type is defined as: "oic.r.light.brightness".

6.6.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Brightness",
    "version": "20190222",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BrightnessResURI": {
      "get": {
        "description": "This Resource describes the brightness of a light or lamp. The Property "brightness" is an integer showing the current brightness level as a quantized representation in the range 0-100. A brightness of 0 is the minimum for the resource. A brightness of 100 is the maximum for the resource."
      }".
    }
  }
}
```
"description": "Sets the desired brightness level.
",
"parameters": [
    
"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "/definitions/Brightness" },
"x-example": {
    "brightness": 10
}
]
"responses": {
    "200": {
        "description": "Indicates that the brightness was changed. The new brightness level is provided in the response.
",
        "x-example": {
            "brightness": 10
        }
    }
}
"parameters": {
    "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.a", "oic.if.baseline"
    }
}]
"definitions": {
    "Brightness": {
        "properties": {
            "rt": {
                "description": "The Resource Type.",
                "items": {
                    "enum": ["oic.r.light.brightness"],
                    "maxLength": 64,
                    "type": "string"
                },
                "minItems": 1,
                "uniqueItems": true,
                "readOnly": true,
                "type": "array"
            },
            "brightness": {
                "description": "The Quantized representation in the range 0-100 of the current sensed or set value for Brightness.",
                "maximum": 100,
                "minimum": 0,
                "type": "integer"
            },
            "$n": {
                "$ref": "$/definitions/Brightness" 
            }"}
6.6.5 Property definition

Table 15 defines the Properties that are part of the "oic.r.light.brightness" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>brightness</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The Quantized representation in the range 0-100 of the current sensed or set value for Brightness.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.6.6 CRUDN behaviour

Table 16 defines the CRUDN operations that are supported on the "oic.r.light.brightness" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.7 Colour Chroma

6.7.1 Introduction

This Resource describes the colour using chroma conventions. Properties are "hue", "saturation", "csc", and "ct".

The Property "hue" is the hue angle, it is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).

The Property "saturation" is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).

The Property "maximumsaturation" is the upper bound on the saturation supported by the Device. If not present the maximum value for "saturation" is 32767.

The Property "csc" is the colour space coordinates in CIE colour space.

The Property "nct" is the Mired colour temperature.

The Resource provides the colour using chroma conventions.

6.7.2 Example URI

/example/ColourChromaResURI

6.7.3 Resource Type

The Resource Type is defined as: "oic.r.colour.chroma".

6.7.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Colour Chroma",
      "version": "20190215",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
         "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
   },
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
      "/example/ColourChromaResURI" : {
         "get": {
            "description": "This Resource describes the colour using chroma conventions.
Properties are "hue", "saturation", "csc", and "ct". The Property "hue" is the hue angle, it is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]). The Property "saturation" is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]). The Property "maximumsaturation" is the upper bound on the saturation supported by the Device. If not present the maximum value for "saturation" is 32767. The Property "csc" is the colour space coordinates in CIE colour space. The first item in the array is the X coordinate. The second item in the array is the Y coordinate. The Property "nct" is the Mired colour temperature. The Resource provides the colour using chroma conventions.",
            "parameters": [
               {"$ref": "#/parameters/interface"}
            ],
            "responses": {
               "200": {
                  "description": "",
                  "x-example": {
                     "rt": ["oic.r.colour.chroma"],
                     "if": ["oic.if.a", "oic.if.baseline"],
```
"hue": 256.0,
"saturation": 212,
"maximumsaturation": 1000,
"csc": [0.41, 0.51],
"ct": 457,
"schema": { "$ref": "#/definitions/ColourChroma" }
"

"post": {
"description": "Sets current colour chroma values",
"parameters": [
{"$ref": "#/parameters/interface"},

"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "#/definitions/ColourChroma" },
"x-example":
{
  "hue": 300.0,
  "saturation": 212,
  "csc": [0.41, 0.51],
  "ct": 457
}
],
"responses": {
  "200": {
    "description": "",
    "x-example":
    {
      "hue": 300.0,
      "saturation": 212,
      "csc": [0.41, 0.51],
      "ct": 457
    }
  }
}

"parameters": {
"interface": {
  "in": "query",
  "name": "if",
  "type": "string",
  "enum": ["oic.if.a", "oic.if.baseline"]
}
},
"definitions": {
"ColourChroma": {
"properties": {
"rt": {
  "description": "The Resource Type.",
  "items": {
    "enum": ["oic.r.colour.chroma"],
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},
"ct": {
  "description": "The Mired colour temperature.",
  "minimum": 0,
  "type": "integer"
}
"hue": {
  "description": "The hue angle as defined by the CIECAM02 model definition.",
  "maximum": 360.0,
  "minimum": 0.0,
  "type": "number"
},
"saturation": {
  "description": "The saturation as defined by the CIECAM02 model definition.",
  "maximum": 32767,
  "minimum": 0,
  "type": "integer"
},
"maximalsaturation": {
  "description": "The maximum supported value of \"saturation\" for this Device.",
  "maximum": 32767,
  "minimum": 0,
  "readOnly": true,
  "type": "integer"
},
"csc": {
  "description": "The X and Y coordinates of the colour in CIE colour space",
  "items": {
    "maximum": 1,
    "minimum": 0,
    "type": "number"
  },
  "maxItems": 2,
  "minItems": 2,
  "type": "array"
},
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": {
    "enum": [
      "oic.if.a",
      "oic.if.baseline"
    ],
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},
"type": "object",
"required": ["hue", "saturation", "csc"]
}

6.7.5 Property definition

Table 17 defines the Properties that are part of the "oic.r.colour.chroma" Resource Type.

Table 17 – The Property definitions of the Resource with type "rt" = "oic.r.colour.chroma".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
</tbody>
</table>
### 6.7.6 CRUDN behaviour

Table 18 defines the CRUDN operations that are supported on the "oic.r.colour.chroma" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.8 Colour RGB

#### 6.8.1 Introduction

This Resource specifies the actual colour in the RGB space represented as an array of integers. Each colour value is described with a Red, Green, Blue component. These colour values are encoded as an array of integer values ([R,G,B]). The minimum and maximum colour value per component may be described by the Property "range". When "range" is omitted, then the "range" is [0,255].

#### 6.8.2 Example URI

```
/ColourRGBResURI
```

#### 6.8.3 Resource type

The Resource Type is defined as: "oic.r.colour.rgb".

#### 6.8.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Colour RGB",
    "version": "20190215",
    "license": {
      "name": "Apache 2.0",
      "url": "http://www.apache.org/licenses/LICENSE-2.0"
    }
  }
}```
"name": "OCF Data Model License",
"url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc68bdc4ba/LICENSE.md",
"x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
}
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
"/ColourRGBResURI": {
"get": {
"description": "This Resource specifies the actual colour in the RGB space represented as an array of integers. Each colour value is described with a Red, Green, Blue component. These colour values are encoded as an array of integer values ([R,G,B]). The minimum and maximum colour value per component may be described by the Property "range". When "range" is omitted, then the "range" is [0,255].",
"parameters": [{$ref: "/#/parameters/interface"}],
"responses": {
"200": {
"description": "",
"x-example": {
"rt": ["oic.r.colour.rgb"],
"if": ["oic.if.a", "oic.if.baseline"],
"rgbValue": [255, 255, 255],
"range": [0, 255]
},
"schema": {"$ref": "/#/definitions/ColourRGB"}
}
}
},
"post": {
"description": "Sets the current colourRGB value",
"parameters": [{$ref: "/#/parameters/interface"}],
"responses": {
"200": {
"description": "",
"x-example": {
"rgbValue": [255, 0, 0]
},
"schema": {"$ref": "/#/definitions/ColourRGB"}
}
}
},
"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"]
}
6.8.5 Property definition

Table 19 defines the Properties that are part of the "oic.r.colour.rgb" Resource Type.
### Table 19 – The Property definitions of the Resource with type "rt" = "oic.r.colour.rgb".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>rgbValue</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The RGB value; the first item is the R, second the G, third the B.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

### 6.8.6 CRUDN behaviour

Table 20 defines the CRUDN operations that are supported on the "oic.r.colour.rgb" Resource Type.

### Table 20 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.rgb".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 6.9 Dimming

#### 6.9.1 Introduction

This Resource describes a dimming function. The Property "dimmingSetting" is an integer showing the current dimming level. If Property "step" is present then it represents the increment between dimmer values. When the Property "range" is omitted, then the range is [0,100]. A value of 0 means total dimming; a value of 100 means no dimming.

#### 6.9.2 Example URI

/DimmingResURI

#### 6.9.3 Resource type

The Resource Type is defined as: "oic.r.light.dimming".

#### 6.9.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Dimming",
        "version": "20190215",
        "license": {
            "name": "CCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
            "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
        }
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
}
```
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/DimmingResURI": {
    "get": {
      "description": "This Resource describes a dimming function. The Property "dimmingSetting" is an integer showing the current dimming level. If Property "step" is present then it represents the increment between dimmer values. When the Property "range" is omitted, then the range is [0, 100]. A value of 0 means total dimming; a value of 100 means no dimming.",
      "parameters": [ {
        "$ref": "#/parameters/interface"
      } ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.light.dimming"],
            "if": ["oic.if.a", "oic.if.baseline"],
            "dimmingSetting": 30,
            "step": 5,
            "range": [0, 100]
          },
          "schema": { "$ref": "#/definitions/Dimming" }
        }
      }
    },
    "post": {
      "description": "Sets the desired dimming level.",
      "parameters": [ {
        "$ref": "#/parameters/interface"
      } ],
      "responses": {
        "200": {
          "description": "Indicates that the dimming was changed. The new dimming level is provided in the response.",
          "x-example": {
            "dimmingSetting": 40
          },
          "schema": { "$ref": "#/definitions/Dimming" }
        },
        "403": {
          "description": "This response is generated by the OCF Server when the client sends:
          An update with an out of range property value for dimmingSetting. The server responds with the current resource representation.",
          "x-example": {
            "dimmingSetting": 40
          },
          "schema": { "$ref": "#/definitions/Dimming" }
        }
      }
    }
  }
}
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"]
}
"definitions": {
"Dimming": {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"enum": ["oic.r.light.dimming"],
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"type": "array"
},
"dimmingSetting": {
"description": "The current dimming value.",
"type": "integer"
},
"n": {
"$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"range": {
"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_integer"
},
"step": {
"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_integer"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": ["oic.if.a", "oic.if.baseline"],
"type": "string"
},
"minItems": 2,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
},
"type": "object",
"required": ["dimmingSetting"]
}
}

### 6.9.5 Property definition

Table 21 defines the Properties that are part of the "oic.r.light.dimming" Resource Type.
Table 21 – The Property definitions of the Resource with type "rt" = "oic.r.light.dimming".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>dimmingSetting</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The current dimming value.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.9.6 CRUDN behaviour

Table 22 defines the CRUDN operations that are supported on the "oic.r.light.dimming" Resource Type.

Table 22 – The CRUDN operations of the Resource with type "rt" = "oic.r.light.dimming".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.10 Door

6.10.1 Introduction

This Resource describes the open state of the door.

A door is modelled by means of openState (Open/Closed), openDuration (ISO 8601 Time), and openAlarm (boolean).

For Property "openState", the value 'Open' indicates the door is open.

The value 'Closed' indicates the door is closed.

The type of Property "openDuration" is an RFC Time encoded string.

The Property "openAlarm" value 'true' indicates that the open alarm is active.

The openAlarm value 'false' indicates that open alarm is not active.

retrieves the state of the Door.

6.10.2 Example URI

/DoorResURI

6.10.3 Resource type

The Resource Type is defined as: "oic.r.door".

6.10.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Door",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md"
    }
}
```
"x-copyright": "Copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
"/DoorResURI": {
"get": {
"description": "This Resource describes the open state of the door. A door is modelled by means of openState (Open/Closed), openDuration (ISO 8601 Time), and openAlarm (boolean). For Property \"openState\", the value 'Open' indicates the door is open. The value 'Closed' indicates the door is closed. For Property \"openDuration\" is an RFC Time encoded string. For Property \"openAlarm\" value 'true' indicates that the open alarm is active. The openAlarm value 'false' indicates that open alarm is not active. Retrieves the state of the Door."
"parameters": [
{"$ref": "/#/parameters/interface"}
],
"responses": {
"200": {
"description": "",
"x-example": {
"rt": ["oic.r.door"],
"if": ["oic.if.a", "oic.if.baseline"],
"openState": "Open",
"openDuration": "P0Y0M0DT0H0M0S",
"openAlarm": true
},
"schema": { "$ref": "/#/definitions/Door" }
}
},
"post": {
"description": "Sets the current Door properties. The only property that can be set as part of an update operation is openAlarm. This can be made active (true) or inactive (false)",
"parameters": [
{"$ref": "/#/parameters/interface"},
{
"name": "body",
"in": "body",
"required": false,
"schema": { "$ref": "/#/definitions/DoorUpdate" },
"x-example": {
"openAlarm": false
}
}
],
"responses": {
"200": {
"description": "",
"x-example": {
"openAlarm": false
},
"schema": { "$ref": "/#/definitions/DoorUpdate" }
}
}
},
"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"]
}
},
"definitions": {
"Door": {
"properties": {
"parameters": ["interface"]
"get": {
"description": "This Resource describes the open state of the door. A door is modelled by means of openState (Open/Closed), openDuration (ISO 8601 Time), and openAlarm (boolean). For Property \"openState\", the value 'Open' indicates the door is open. The value 'Closed' indicates the door is closed. For Property \"openDuration\" is an RFC Time encoded string. For Property \"openAlarm\" value 'true' indicates that the open alarm is active. The openAlarm value 'false' indicates that open alarm is not active. Retrieves the state of the Door."
"parameters": [
{"$ref": "/#/parameters/interface"}
],
"responses": {
"200": {
"description": "", 
"x-example": {
"rt": ["oic.r.door"],
"if": ["oic.if.a", "oic.if.baseline"],
"openState": "Open",
"openDuration": "P0Y0M0DT0H0M0S",
"openAlarm": true
},
"schema": { "$ref": "/#/definitions/Door" }
}
},
"post": {
"description": "Sets the current Door properties. The only property that can be set as part of an update operation is openAlarm. This can be made active (true) or inactive (false)"
"parameters": [
{"$ref": "/#/parameters/interface"},
{
"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "/#/definitions/DoorUpdate" },
"x-example": {
"openAlarm": false
}
}
],
"responses": {
"200": {
"description": "",
"x-example": {
"openAlarm": false
},
"schema": { "$ref": "/#/definitions/DoorUpdate" }
}
}
}
}
,"x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
,"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
,"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
"/DoorResURI": {
"get": {
"description": "This Resource describes the open state of the door. A door is modelled by means of openState (Open/Closed), openDuration (ISO 8601 Time), and openAlarm (boolean). For Property \"openState\", the value 'Open' indicates the door is open. The value 'Closed' indicates the door is closed. For Property \"openDuration\" is an RFC Time encoded string. For Property \"openAlarm\" value 'true' indicates that the open alarm is active. The openAlarm value 'false' indicates that open alarm is not active. Retrieves the state of the Door."
"parameters": [
{"$ref": "/#/parameters/interface"}
],
"responses": {
"200": {
"description": "", 
"x-example": {
"rt": ["oic.r.door"],
"if": ["oic.if.a", "oic.if.baseline"],
"openState": "Open",
"openDuration": "P0Y0M0DT0H0M0S",
"openAlarm": true
},
"schema": { "$ref": "/#/definitions/Door" }
}
},
"post": {
"description": "Sets the current Door properties. The only property that can be set as part of an update operation is openAlarm. This can be made active (true) or inactive (false)"
"parameters": [
{"$ref": "/#/parameters/interface"},
{
"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "/#/definitions/DoorUpdate" },
"x-example": {
"openAlarm": false
}
}
],
"responses": {
"200": {
"description": "",
"x-example": {
"openAlarm": false
},
"schema": { "$ref": "/#/definitions/DoorUpdate" }
}
}
}
,"x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
,"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
,"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
"/DoorResURI": {
"get": {
"description": "This Resource describes the open state of the door. A door is modelled by means of openState (Open/Closed), openDuration (ISO 8601 Time), and openAlarm (boolean). For Property \"openState\", the value 'Open' indicates the door is open. The value 'Closed' indicates the door is closed. For Property \"openDuration\" is an RFC Time encoded string. For Property \"openAlarm\" value 'true' indicates that the open alarm is active. The openAlarm value 'false' indicates that open alarm is not active. Retrieves the state of the Door."
"parameters": [
{"$ref": "/#/parameters/interface"}
],
"responses": {
"200": {
"description": "", 
"x-example": {
"rt": ["oic.r.door"],
"if": ["oic.if.a", "oic.if.baseline"],
"openState": "Open",
"openDuration": "P0Y0M0DT0H0M0S",
"openAlarm": true
},
"schema": { "$ref": "/#/definitions/Door" }
}
},
"post": {
"description": "Sets the current Door properties. The only property that can be set as part of an update operation is openAlarm. This can be made active (true) or inactive (false)"
"parameters": [
{"$ref": "/#/parameters/interface"},
{
"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "/#/definitions/DoorUpdate" },
"x-example": {
"openAlarm": false
}
}
],
"responses": {
"200": {
"description": "",
"x-example": {
"openAlarm": false
},
"schema": { "$ref": "/#/definitions/DoorUpdate" }
}
}
}
"rt": {
    "description": "The Resource Type.",
    "items": {
        "enum": ["oic.r.door"],
        "maxLength": 64,
        "type": "string"
    },
    "minItems": 1,
    "uniqueItems": true,
    "readOnly": true,
    "type": "array"
},
"openDuration": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-schema.json#/definitions/duration"
},
"openState": {
    "description": "The state of the door (open or closed).",
    "enum": [
        "Open",
        "Closed"
    ],
    "readOnly": true,
    "type": "string"
},
"openAlarm": {
    "description": "The state of the door open alarm.",
    "type": "boolean"
},
"n": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
    "description": "The OCF Interface set supported by this Resource.",
    "items": {
        "enum": [
            "oic.if.a",
            "oic.if.baseline"
        ],
        "type": "string"
    },
    "minItems": 2,
    "uniqueItems": true,
    "readOnly": true,
    "type": "array"
},
"type": "object",
"required": ["openState"]
},
"DoorUpdate" : {
    "properties": {
        "openAlarm": {
            "description": "The state of the door open alarm.",
            "type": "boolean"
        }
    },
    "type": "object",
    "required": ["openAlarm"]
}
### 6.10.5 Property definition

Table 23 defines the Properties that are part of the "oic.r.door" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>openDuration</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>openState</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>The state of the door (open or closed).</td>
</tr>
<tr>
<td>openAlarm</td>
<td>boolean</td>
<td>No</td>
<td>Read Write</td>
<td>The state of the door open alarm.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>openAlarm</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>The state of the door open alarm.</td>
</tr>
</tbody>
</table>

### 6.10.6 CRUDN behaviour

Table 24 defines the CRUDN operations that are supported on the "oic.r.door" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.11 Energy Consumption

#### 6.11.1 Introduction

This Resource describes the energy consumed by the Device since power up (the energy value is in Watt Hours [Wh]) and the instantaneous power draw of the device (the power value is in Watts [W]) at the time the resource was queried.

The Property "power" value is in Watts [W].

The Property "energy" value is in Watt Hours [Wh].

The Resource provides the current power draw and cumulative energy usage.

#### 6.11.2 Example URI

```
/EnergyConsumptionResURI
```

#### 6.11.3 Resource type

The Resource Type is defined as: "oic.r.energy.consumption".

#### 6.11.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Consumption",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
```
"url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bd24ba/LICENSE.md",
"x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
"/EnergyConsumptionResURI": {
"get": {
"description": "This Resource describes the energy consumed by the Device since power up (the energy value is in Watt Hours [Wh]) and the instantaneous power draw of the device (the power value is in Watts [W]) at the time the resource was queried. The Property \"power\" value is in Watts [W]. The Property \"energy\" value is in Watt Hours [Wh]. The Resource provides the current power draw and cumulative energy usage.\",
"parameters": [
{"$ref": "#/parameters/interface"}],
"responses": {
"200": {
"description": "",
"x-example": {
"rt": ["oic.r.energy.consumption"],
"if": ["oic.if.s", "oic.if.baseline"],
"power": 2000.1,
"energy": 3500.4
},
"schema": { "$ref": "#/definitions/Consumption" }
}
}
"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.s", "oic.if.baseline"]
}
}
"definitions": {
"Consumption": {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"enum": ["oic.r.energy.consumption"],
"maxLength": 64,
"type": "string"},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"},
"power": {
"description": "The instantaneous Power.",
"readOnly": true,
"type": "number"},
"energy": {
"description": "The energy consumed.",
"readOnly": true,
"type": "number"},
"n": {
"type": "string"}}}}}}}}}}}}}}}}}}}

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6.11.5 Property definition

Table 25 defines the Properties that are part of the "oic.r.energy.consumption" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>power</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The instantaneous Power.</td>
</tr>
<tr>
<td>energy</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The energy consumed.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.11.6 CRUDN behaviour

Table 26 defines the CRUDN operations that are supported on the "oic.r.energy.consumption" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.12 Energy Usage

6.12.1 Introduction

This Resource describes a cumulative time-based energy usage query. The Resource is a Collection of:
- TimePeriod Resource
- EnergyConsumption Resource

6.12.2 Example URI

/EnergyUsageResURI

6.12.3 Resource type

The Resource Type is defined as: "oic.r.energy.usage".

6.12.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Usage",
    "version": "20190307",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyUsageResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes a cumulative time-based energy usage query. The Resource is a Collection of:
  TimePeriod Resource
  EnergyConsumption Resource",
        "parameters": [
          {"$ref": "/#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/TimePeriodResURI",
                "rt": "oic.r.time.period",
                "if": "oic.if.a", "oic.if.baseline",
                "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
              },
              {
                "href": "/EnergyConsumptionResURI",
                "rt": "oic.r.energy.consumption",
                "if": "oic.if.s", "oic.if.baseline",
                "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
              }
            ],
            "schema": { "$ref":="/#/definitions/Usage-ll" }
          }
        }
      }
    },
    "/EnergyUsageResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes a cumulative time-based energy usage query. The Resource is a Collection of:
  TimePeriod Resource
  EnergyConsumption Resource",
        "parameters": [
          {"$ref": "/#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
            ]
          }
        }
      }
    }
  }
}
```
"post": {
  "description": "Sets the timer period of the query using the batch OCF Interface",
  "parameters": [
    { "$ref": "/parameters/interface-b" },
    { "name": "body", "in": "body", "required": true, "schema": { "$ref": "/definitions/EnergyUsageBatch-Update" }, "x-example": { "href": "/TimePeriodResURI", "rep": { "startTime": "2015-03-15T10:30Z", "stopTime": "2015-03-15T10:45Z" } }]
  },
  "responses": {
    "200": {
      "description": ":",
      "x-example": {
        "href": "/TimePeriodResURI", "rep": { "startTime": "2015-03-15T10:30Z", "stopTime": "2015-03-15T10:45Z" }
      }]
    },
    { "href": "/EnergyConsumptionResURI", "rep": { "power": 1500.1, "energy": 2200.4 } }
  },
  "schema": { "$ref": "/definitions/EnergyUsageBatch-Retrieve" }
}
"description": "",
"x-example": {
  "rt": ["oic.r.energy.usage"],
  "if": ["oic.if.ll","oic.if.b","oic.if.baseline"],
  "rts": ["oic.r.time.period","oic.r.energy.consumption"],
  "links": [
    ["href": "/TimePeriodResURI", "rt": ["oic.r.time.period"],
    "if": ["oic.if.a","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}],
    "href": "/EnergyConsumptionResURI", "rt": ["oic.r.energy.consumption"],
    "if": ["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
  ]},
  "schema": { "$ref": "#/definitions/Usage-baseline" }
}

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
  },
  "interface-b": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.b"]
  }
}

"definitions": {
  "Usage-ll": {
    "items": {
      "$ref": "#/definitions/oic.oic-link"}
  },
  "oic.oic-link": {
    "type": "object",
    "properties": {
      "anchor": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
      },
      "di": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
      },
      "eps": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
      },
      "href": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
      },
      "ins": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
      },
      "p": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
      }
    }
  }
}
"rel": {  
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/rel_array"  
},  
"title": {  
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/title"  
},  
"type": {  
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/type"  
},  
"if": {  
"description": "The OCF Interfaces supported by the target Resource",  
"items": {  
"enum": [  
"oic.if.a",  
"oic.if.s",  
"oic.if.baseline"  
],  
"type": "string",  
"maxLength": 64  
},  
"minItems": 2,  
"uniqueItems": true,  
"type": "array",  
"readOnly": true  
},  
"rt": {  
"description": "Resource Type of the target Resource",  
"items": {  
"maxLength": 64,  
"type": "string",  
"enum": ["oic.r.time.period","oic.r.energy.consumption"]  
},  
"minItems": 1,  
"type": "array",  
"uniqueItems": true,  
"readOnly": true  
}  
},  
"Usage-baseline": {  
"properties": {  
"rt": {  
"description": "Resource Type of this Resource",  
"items": {  
"maxLength": 64,  
"type": "string",  
"enum": ["oic.r.energy.usage"]  
},  
"minItems": 1,  
"readOnly": true,  
"uniqueItems": true,  
"type": "array"  
},  
"rts": {  
"items": {  
"enum": [  
"oic.r.time.period",  
"oic.r.energy.consumption"  
],  
"type": "string",  
"maxLength": 64  
},  
"minItems": 1,  
"readOnly": true,  
"uniqueItems": true,  
"type": "array"  
}  
}  
}
"maxLength": 64
"minItems": 1,
"type": "array",
"readOnly": true,
"uniqueItems": true
},
"links": {
"description": "A set of simple or individual OCF Links.",
"type": "array",
"items": {
"$ref": "#/definitions/oic.oic-link"
}
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
"description": "The OCF Interfaces supported by this Resource",
"items": {
"enum": ["oic.if.ll", "oic.if.b", "oic.if.baseline"],
"type": "string",
"maxLength": 64
},
"minItems": 1,
"readOnly": true,
"uniqueItems": true,
"type": "array"
}
},
"type": "object",
"required": ["rt","if","links"]
},
"EnergyUsageBatch-Retrieve": {
"type": "array",
"minItems": 2,
"uniqueItems": true,
"items": {
"type": "object",
"additionalProperties": true,
"properties": {
"href": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
},
"rep": {
"anyOf": [
{"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/TimePeriodResURI.swagger.json#/definitions/TimePeriod"},
{"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/EnergyConsumptionResURI.swagger.json#/definitions/Consumption"}
]
}
},
"required": ["href","rep"}
}
6.12.5 Property definition

Table 27 defines the Properties that are part of the "oic.r.energy.usage" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>title</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>type</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The OCF Interfaces supported by the target Resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>Resource Type of the target Resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>Resource Type of this Resource</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------</td>
<td>-----</td>
<td>-----------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>A set of simple or individual OCF Links.</td>
</tr>
<tr>
<td>links</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The OCF Interfaces supported by this Resource</td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rep</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rep</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

### 6.12.6 CRUDN behaviour

Table 28 defines the CRUDN operations that are supported on the "oic.r.energy.usage" Resource Type.

**Table 28 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.usage".**

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.13 Humidity

#### 6.13.1 Introduction

This Resource describes a sensed or desired humidity. The Property "humidity" is an integer describing the percentage measured relative humidity. The Property "desiredHumidity" is an integer showing the desired target relative humidity.

#### 6.13.2 Example URI

/HumidityResURI

#### 6.13.3 Resource type

The Resource Type is defined as: "oic.r.humidity".

#### 6.13.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Humidity",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
  }
}
```
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/HumidityResURI": {
    "get": {
      "description": "This Resource describes a sensed or desired humidity.
The Property "humidity" is an integer describing the percentage measured relative humidity.
The Property "desiredHumidity" is an integer showing the desired target relative humidity."
    },
    "parameters": [
      {
        "$ref": "#/parameters/interface"
      }
    ],
    "responses": {
      "200": {
        "description": "RETRIEVES the current (relative) humidity level.",
        "x-example": {
          "rt": ["oic.r.humidity"],
          "if": ["oic.if.a", "oic.if.baseline"],
          "humidity": 40,
          "desiredHumidity": 40
        },
        "schema": {
          "$ref": "#/definitions/Humidity"
        }
      }
    }
  },
  "post": {
    "description": "Sets the desired relative humidity level.",
    "parameters": [
      {
        "$ref": "#/parameters/interface"
      },
      {
        "name": "body",
        "in": "body",
        "required": true,
        "schema": {
          "$ref": "#/definitions/HumidityUpdate"
        },
        "x-example": {
          "desiredHumidity": 45
        }
      }
    ],
    "responses": {
      "200": {
        "description": "Indicates that the relative humidity level was changed.
The new relative humidity level is provided in the response."
      },
      "x-example": {
        "desiredHumidity": 45
      },
      "schema": {
        "$ref": "#/definitions/HumidityUpdate"
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "Humidity": {
    "properties": {
      "rt": {
        "description": "The Resource Type."
      },
      "humidity": {
        "enum": ["oic.r.humidity"]
      }
    }
  }
}
Table 29 defines the Properties that are part of the "oic.r.humidity" Resource Type.
Table 29 – The Property definitions of the Resource with type "rt" = "oic.r.humidity".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>desiredHumidity</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The desired value for humidity.</td>
</tr>
<tr>
<td>humidity</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>The current sensed value for humidity.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>desiredHumidity</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>Desired value for Humidity</td>
</tr>
</tbody>
</table>

6.13.6 CRUDN behaviour

Table 30 defines the CRUDN operations that are supported on the "oic.r.humidity" Resource Type.

Table 30 – The CRUDN operations of the Resource with type "rt" = "oic.r.humidity".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.14 Ice Maker

6.14.1 Introduction

This Resource describes the operational state of an Ice Maker. The Property "status" is a string containing a value from the set of possible ice maker statuses. The possible statuses are defined by the enumeration ["on", "off", "full"]

A status of "on" means that the Ice Maker is operating.
A status of "off" means that the Ice Maker is not operating.
A status of "full" means that the ice collection bin is full (Ice Maker is operating).

6.14.2 Example URI

/IceMakerResURI

6.14.3 Resource type

The Resource Type is defined as: "oic.r.icemaker".

6.14.4 OpenAPI 2.0 definition

```

"swagger": "2.0",
"info": {
  "title": "Ice Maker",
  "version": "20190215",
  "license": {
    "name": "OCF Data Model License",
    "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8e8bd4ba/LICENSE.md",
    "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
}
```
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/IceMakerResURI": {
    "get": {
      "description": "This Resource describes the operational state of an Ice Maker.

The Property "status" is a string containing a value from the set of possible ice maker statuses.

The possible statuses are defined by the enumeration ["on", "off", "full"]. A status of "on" means that the Ice Maker is operating.
A status of "off" means that the Ice Maker is not operating.
A status of "full" means that the ice collection bin is full (Ice Maker is operating).",
      "parameters": [
        {
"$ref": "/parameters/interface"
      }]
    }
  }
"post": {
  "description": "Sets the desired Ice Maker status. Only valid settings for "status" in an UPDATE shall be "on" or "off".",
  "parameters": [
  
    {
"$ref": "/parameters/interface"
    },
  
    "name": "body",
    "in": "body",
    "required": true,
    "schema": {
      "$ref": "/definitions/IceMakerUpdate"
    },
  "x-example": {
      "status": "off"
    }
  },
"responses": {
  "200": {
    "description": "Indicates that the Ice Maker status was changed. The new status is provided in the response."
  },
  "403": {
    "description": "This response is generated by the OCF Server when the client sends an UPDATE with an invalid property value for "status". The OCF Server responds with the current resource representation."
  }
},
"parameters": {
  "interface": {
"interface": {
"in": "query",
"name": "if",
} }"}
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"]
}

"definitions": {

"IceMaker": {
"properties": {

"rt": {
  "description": "The Resource Type.",
  "items": {
    "enum": ["oic.r.icemaker"],
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},

"status": {
  "description": "The status of the Ice Maker.",
  "enum": ["on", "off", "full"
},
  "type": "string"
},

"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},

"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},

"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": {
    "enum": [
      "oic.if.a",
      "oic.if.baseline"
    ],
    "type": "string"
  },
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
}]

"IceMakerUpdate" : {
  "properties": {
    "status": {
      "description": "Set the status of the Ice Maker.",
      "enum": ["on", "off"
    }
  },
  "type": "object",
  "required": ["status"]
}
6.14.5 Property definition

Table 31 defines the Properties that are part of the "oic.r.icemaker" Resource Type.

Table 31 – The Property definitions of the Resource with type "rt" = "oic.r.icemaker".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>status</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>The status of the Ice Maker.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>status</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Set the status of the Ice Maker.</td>
</tr>
</tbody>
</table>

6.14.6 CRUDN behaviour

Table 32 defines the CRUDN operations that are supported on the "oic.r.icemaker" Resource Type.

Table 32 – The CRUDN operations of the Resource with type "rt" = "oic.r.icemaker".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.15 Lock

6.15.1 Introduction

The Resource describing a lock.
The Property "lockState" is a string. The value 'Locked' indicates that the door is Locked.
The value 'Unlocked' indicates that the door is Unlocked.

6.15.2 Example URI

/LockStatusResURI

6.15.3 Resource type

The Resource Type is defined as: "oic.r.lock.status".

6.15.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Lock",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbcbe8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "paths": {
    
```
"produces": ["application/json"],
"paths": {
  "/LockStatusResURI" : {
    "get": {
      "description": "The Resource describing a lock. The Property "lockState" is a string. The value 'Locked' indicates that the door is Locked. The value 'Unlocked' indicates that the door is Unlocked.",
      "parameters": [
        {$ref": "/parameters/interface"
      ],
      "responses": {
        "200": {
          "description": "RETRIEVES the state of the lock.",
          "x-example": {
            "rt": ["oic.r.lock.status"],
            "if": ["oic.if.a", "oic.if.baseline"],
            "lockState": "Locked"
          },
          "schema": { "$ref": "/definitions/Lock" }
        }
      }
    },
    "post": {
      "description": "Sets the current lock state.
      
      "parameters": [
        {$ref": "/parameters/interface"
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "lockState": "Unlocked"
          },
          "schema": { "$ref": "/definitions/Lock" }
        },
        "403": {
          "description": "This response is generated by the OCF Server when the client sends: An UPDATE with an invalid property value for "lockState". The server responds with the current resource representation."
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "Lock": {
    "properties": {

6.15.5 Property definition

Table 33 defines the Properties that are part of the "oic.r.lock.status" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>lockState</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>The state of the lock.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
### 6.15.6 CRUDN behaviour

Table 34 defines the CRUDN operations that are supported on the "oic.r.lock.status" Resource Type.

Table 34 – The CRUDN operations of the Resource with type "rt" = "oic.r.lock.status".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 6.16 Lock Code

#### 6.16.1 Introduction

The Resource describing a lock code.

The Property "lockCodeList" is an array of possible codes that may be associated with a lock. The codes are all presented as strings.

#### 6.16.2 Example URI

/LockCodeResURI

#### 6.16.3 Resource type

The Resource Type is defined as: "oic.r.lock.code".

#### 6.16.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Lock Code",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/LockCodeResURI" : {
      "get": {
        "description": "The Resource describing a lock code.\nThe Property "lockCodeList" is an array of possible codes that may be associated with a lock.\nThe codes are all presented as strings."
      },
      "parameters": [{$ref: "/parameters/interface"}]
    },
    "responses": {
      "200": {
        "description": "RETRIEVES the current lock code values."
      }
    }
  }
}
```
"post": {
  "description": "Updates the current lock code values. e.g. all value in the property
  "lockCodeList",
  "parameters": [
    {"$ref": "#/parameters/interface"},
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/LockCode" },
      "x-example": {
        "lockCodeList": ["543210", "332211"]
      }
    },
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "lockCodeList": ["543210", "332211"]
        },
        "schema": { "$ref": "#/definitions/LockCode" }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "LockCode": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.lock.code"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "lockCodeList": {
          "items": {
            "description": "The value for the lock code.",
            "type": "string"
          },
          "type": "array"
        },
        "n": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
        },
        "id": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
        }
      }
    }
  }
}
"if": {
    "description": "The OCF Interface set supported by this Resource.",
    "items": {
        "enum": [
            "oic.if.a",
            "oic.if.baseline"
        ],
        "type": "string"
    },
    "minItems": 2,
    "uniqueItems": true,
    "readOnly": true,
    "type": "array"
}
},
"type": "object",
"required": ["lockCodeList"]
}

6.16.5 Property definition

Table 35 defines the Properties that are part of the "oic.r.lock.code" Resource Type.

Table 35 – The Property definitions of the Resource with type "rt" = "oic.r.lock.code".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>lockCodeList</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.16.6 CRUDN behaviour

Table 36 defines the CRUDN operations that are supported on the "oic.r.lock.code" Resource Type.

Table 36 – The CRUDN operations of the Resource with type "rt" = "oic.r.lock.code".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.17 Mode

6.17.1 Introduction

This Resource describes the modes of operation that a Device can provide. The mode can be read or set. The Property "supportedModes" is an array of possible modes the device supports. The Property "modes" is an array of the currently active mode(s).

6.17.2 Example URI

/ModeResURI

6.17.3 Resource type

The Resource Type is defined as: "oic.r.mode".
OpenAPI 2.0 definition

{  
  "swagger": "2.0",
  "info": {  
    "title": "Mode",
    "version": "20190215",
    "license": {  
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ModeResURI": {
      "get": {
        "description": "This Resource describes the modes of operation that a Device can provide. The mode can be read or set. The Property "supportedModes" is an array of possible modes the device supports. The Property "modes" is an array of the currently active mode(s).",
        "parameters": [],
        "responses": {
          "200": {
            "description": "RETRIEVES the current mode.",
            "x-example": {
              "rt": ["oic.r.mode"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "supportedModes": ["active","armedAway","armedStay","armedInstant"],
              "modes": ["active"],
            },
            "schema": { "$ref": "#/definitions/Mode" }
          }
        }
      },
      "post": {
        "description": "Sets the desired mode.",
        "parameters": [  
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ModeUpdate" },
            "x-example": {
              "modes": ["armedAway"]
            }
          }
        ],
        "responses": {
          "200": {
            "description": ",",
            "x-example": {
              "modes": ["armedAway"]
            }  
          },
          "403": {
            "description": "This response is generated by the OCF Server when the client sends:
An UPDATE with an value for "modes" that is not found in "supportedModes". The server responds with the current resource representation.",
          }
        }
      }
    }
  }
}
"x-example":
{
  "supportedModes": ["active","armedAway","armedStay","armedInstant"],
  "modes": ["active"]
},
"schema": { "$ref": "#/definitions/Mode" }

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "Mode": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.mode"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "modes": {
        "description": "The array of the currently active mode(s).",
        "items": {
          "type": "string"
        },
        "type": "array"
      },
      "supportedModes": {
        "description": "The array of possible modes the device supports.",
        "items": {
          "type": "string"
        },
        "type": "array"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": ["oic.if.a", "oic.if.baseline"],
          "type": "string"
        },
        "minItems": 2,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      }
    }
  }
}

"supportedModes": ["active","armedAway","armedStay","armedInstant"],
"modes": ["active"]
"schema": { "$ref": "#/definitions/Mode" }
}
6.17.5 Property definition

Table 37 defines the Properties that are part of the "oic.r.mode" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>modes</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The array of the currently active mode(s).</td>
</tr>
<tr>
<td>supportedModes</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The array of possible modes the device supports.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>modes</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Desired mode</td>
</tr>
</tbody>
</table>

6.17.6 CRUDN behaviour

Table 38 defines the CRUDN operations that are supported on the "oic.r.mode" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.18 Open Level

6.18.1 Introduction

This Resource describes how open or ajar an entity such as a window, door, blind or shutter is.

The Property "openLevel" can be read (acting as a sensor).

The "openLevel" can also be set (acting as an actuator).

The "openLevel" is device dependent across the range provided.

When the Property "range" is omitted then 0 to 100 is assumed where 0 means closed, 100 means fully open.
If a "range" is provided then the lower bound=closed, upper bound=open.
If Property "step" is present then it represents the increment between possible values; if not
provided 1 is assumed.

6.18.2 Example URI

/OpenLevelResURI

6.18.3 Resource type

The Resource Type is defined as: "oic.r.openlevel".

6.18.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Open Level",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042e3661e4c0fbce8bcd4ba/LICENSE.md",
      "x-copyright": "Copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/OpenLevelResURI": {
      "get": {
        "description": "This Resource describes how open or ajar an entity such as a window, door,
        blind or shutter is. The Property \"openLevel\" can be read (acting as a sensor). The
        \"openLevel\" can also be set (acting as an actuator). The \"openLevel\" is device dependent
        across the range provided. When the Property \"range\" is omitted then 0 to 100 is assumed where 0 means
        closed, 100 means fully open. If a \"range\" is provided then the lower bound=closed, upper
        bound=open. If Property \"step\" is present then it represents the increment between possible
        values; if not provided 1 is assumed.",
        "parameters": ["$ref": "/parameters/interface"],
        "responses": {
          "200": {
            "description": "RETRIEVES the current openLevel.",
            "x-example": {
              "rt": ["oic.r.openlevel"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "openLevel": 50,
              "step": 2,
              "range": [0, 100]
            },
            "schema": { "$ref": "/definitions/OpenLevel" }
          }
        }
      },
      "post": {
        "description": "Sets the desired openLevel.",
        "parameters": ["$ref": "/parameters/interface"],
        "parameters": {};
      {
        "name": "body",
        "in": "body",
        "required": true,
        "schema": { "$ref": "/definitions/OpenLevel" },
        "x-example": {
          
```
"openLevel": 0
}
"
}
"responses": {
"200": {
  "description": "",
  "x-example":
  {
    "openLevel": 0
  },
  "schema": { "$ref": "#/definitions/OpenLevel" }
},
"403": {
  "description": "This response is generated by the OCF Server when the client sends:
\nAn UPDATE with an out of range property value for \"openLevel\".
The OCF Server responds with the current resource representation:\n",
  "x-example":
  {
    "openLevel": 50,
    "step": 2,
    "range": [0, 100]
  },
  "schema": { "$ref": "#/definitions/OpenLevel" }
}
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "OpenLevel": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "maxLength": 64,
          "type": "string",
          "enum": ["oic.r.openlevel"]
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "openLevel": {
        "description": "How open or ajar the entity is.",
        "type": "integer"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_integer"
      },
      "step": {

6.18.5 Property definition

Table 39 defines the Properties that are part of the "oic.r.openlevel" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>openLevel</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>How open or ajar the entity is.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.18.6 CRUDN behaviour

Table 40 defines the CRUDN operations that are supported on the "oic.r.openlevel" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.19 Operational State

6.19.1 Introduction

This Resource describes the operational and job states on a device. The states can be read or set, setting indicates a desired state. A device may reject an attempt to set a state that would result...
The Property "machineStates" is an array of the possible operational states.
The Property "currentMachineState" is the current state of operation of the device.
The Property "jobStates" is an array of the possible job states.
The Property "currentJobState" is the currently active jobState.
The Property "runningTime" is the ISO8601 encoded elapsed time in the current operational state.
The Property "remainingTime" is the ISO8601 encoded time till completion of the current operational state.
The Property "progressPercentage" is the percentage completeness of the current jobState.

6.19.2 Example URI

/OperationalStateResURI

6.19.3 Resource type

The Resource Type is defined as: "oic.r.operational.state".

6.19.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Operational State",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bd4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/OperationalStateResURI": {
      "get": {
        "description": "This Resource describes the operational and job states on a device. The states can be read or set, setting indicates a desired state. A device may reject an attempt to set a state that would result in adverse operational characteristics. The Property "machineStates" is an array of the possible operational states. The Property "currentMachineState" is the current state of operation of the device. The Property "jobStates" is an array of the possible job states. The Property "currentJobState" is the currently active jobState. The Property "runningTime" is the ISO8601 encoded elapsed time in the current operational state. The Property "remainingTime" is the ISO8601 encoded time till completion of the current operational state. The Property "progressPercentage" is the percentage completeness of the current jobState."
      },
      "parameters": [],
      "responses": {
        "200": {
          "description": "RETRIEVES the current operational and job states."
        }
      }""xml-example": {
        "rt": ["oic.r.operational.state"],
        "if": ["oic.if.a", "oic.if.baseline"],
        "machineStates": ["pause", "stopped", "idle", "active"],
        "currentMachineState": "active",
        "jobStates": ["preWash", "wash", "rinse", "spin", "dry", "airDry", "wrinklePrevent"],
        "currentJobState": "rinse",
        "runningTime": "PT15M20S",
        "remainingTime": "PT10M40S",
        "progressPercentage": 75
      }
    }
  }
}
```
"post": {
  "description": "Sets the desired operational or job state.",
  "parameters": [
    {"$ref": "#/parameters/interface"},
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": {"$ref": "#/definitions/OperationUpdate"},
      "x-example": {
        "currentMachineState": "pause",
        "currentJobState": "wash"
      }
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "currentMachineState": "pause",
        "currentJobState": "wash"
      },
      "schema": {"$ref": "#/definitions/OperationUpdate"}
    },
    "403": {
      "description": "This response is generated by the OCF Server when the client sends:
An UPDATE with an value for "currentMachineState" that is not found in "machineStates".
An UPDATE with an value for "currentJobState" that is not found in "jobStates".
The OCF Server responds with the current resource representation.
",
      "x-example": {
        "machineStates": ["pause", "stopped", "idle", "active"],
        "currentMachineState": "active",
        "jobStates": ["preWash", "wash", "rinse", "spin", "dry", "airDry", "wrinklePrevent"],
        "currentJobState": "rinse",
        "runningTime": "PT15M20S",
        "remainingTime": "PT10M40S",
        "progressPercentage": 75
      },
      "schema": {"$ref": "#/definitions/Operation"}
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "Operation": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.operational.state"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "currentMachineState": {
        "description": "The current state of operation of the device.",
        "type": "string"
      }
    }
  }
}
"type": "string",
"currentJobState": {
  "description": "The currently active jobState.",
  "type": "string"
},
"machineStates": {
  "description": "The array of the possible operational states.",
  "items": {
    "type": "string"
  },
  "readOnly": true,
  "type": "array"
},
"runningTime": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-schema.json#/definitions/duration"
},
"remainingTime": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-schema.json#/definitions/duration"
},
"progressPercentage": {
  "description": "The percentage completeness of the current jobState.",
  "maximum": 100,
  "minimum": 0,
  "readOnly": true,
  "type": "integer"
},
"jobStates": {
  "description": "The Array of the possible job states.",
  "items": {
    "type": "string"
  },
  "readOnly": true,
  "type": "array"
},
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": {
    "enum": [
      "oic.if.a",
      "oic.if.baseline"
    ],
    "type": "string"
  },
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},
"type": "object",
"required": ["machineStates", "currentMachineState"]
}"OperationUpdate": {
  "properties": {
    "currentMachineState": {
      "description": "The current state of operation of the device.",
      "type": "string"
    },
    "currentJobState": {
6.19.5 Property definition

Table 41 defines the Properties that are part of the "oic.r.operational.state" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>currentMachineState</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>The current state of operation of the device.</td>
</tr>
<tr>
<td>currentJobState</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>The currently active jobState.</td>
</tr>
<tr>
<td>machineStates</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The array of the possible operational states.</td>
</tr>
<tr>
<td>runningTime</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>remainingTime</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>progressPercentage</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>The percentage completeness of the current jobState.</td>
</tr>
<tr>
<td>jobStates</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Array of the possible job states.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>currentMachineState</td>
<td>string</td>
<td></td>
<td>Read Write</td>
<td>The current state of operation of the device.</td>
</tr>
<tr>
<td>currentJobState</td>
<td>string</td>
<td></td>
<td>Read Write</td>
<td>The currently active jobState.</td>
</tr>
</tbody>
</table>

6.19.6 CRUDN behaviour

Table 42 defines the CRUDN operations that are supported on the "oic.r.operational.state" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.20 Ramp Time

6.20.1 Introduction
This Resource that describes the ramp time of a dimming function.
It specifies the actual speed of changing between 2 dimming values.
The Property "ramptime" is specified in milliseconds [ms].
When range is omitted the maximum value is 100 ms.
The ramp time of 0ms indicates the minimal delay possible by the implementation.

6.20.2 Example URI
/RampTimeResURI

6.20.3 Resource type
The Resource Type is defined as: "oic.r.light.ramptime".

6.20.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Ramp Time",
        "version": "20190215",
        "license": {
            "name": "OCP Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
            "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved.
        }
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
}
```

"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
    "/RampTimeResURI": {
        "get": {
            "description": "This Resource that describes the ramp time of a dimming function.
It specifies the actual speed of changing between 2 dimming values.
The Property "ramptime" is specified in milliseconds [ms].
When range is omitted the maximum value is 100 ms.
The ramp time of 0ms indicates the minimal delay possible by the implementation.",
            "parameters": [
                {"$ref": "#/parameters/interface"}
            ],
            "responses": {
                "200": {
                    "description": "RETRIEVES the current RampTime.",
                    "x-example": {
                        "rt": ["oic.r.light.ramptime"],
                        "if": ["oic.if.a", "oic.if.baseline"],
                        "rampTime": 40,
                        "range": [0, 100]
                    },
                    "schema": { "$ref": "#/definitions/RampTime" }
                }
            }
        },
        "post": {
            "description": "Sets the current RampTime."
        },
        "parameters": [
            {"$ref": "#/parameters/interface"},
            {"name": "body",
             "in": "body",
             "required": true,
             "schema": { "$ref": "#/definitions/RampTime" }
        }
    }
}
```

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"x-example":
    {
      "rampTime": 50
    }
}

"responses": {
  "200": {
    "description": "This response is generated by the OCF Server when the client sends an UPDATE with an in range Property value for \"rampTime\". The OCF Server responds with the current resource representation.\",
    "x-example":
      {
        "rampTime": 50,
        "range": [0, 100]
      },
    "schema": { "$ref": "#/definitions/RampTime" }
  },
  "403": {
    "description": "Error response. This response is generated by the OCF Server when the client sends an UPDATE with an out of range Property value for \"rampTime\".\",
    "x-example":
      {
        "rampTime": 40,
        "range": [0, 100]
      },
    "schema": { "$ref": "#/definitions/RampTime" }
  }
}

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
}

"definitions": {
  "RampTime": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.light.ramptime"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "rampTime": {
        "description": "The actual speed of changing between 2 dimming values.\",
        "type": "integer"
      }
    }
  }
}
Table 43 defines the Properties that are part of the "oic.r.light.ramptime" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>rampTime</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The actual speed of changing between 2 dimming values.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.20.6 CRUDN behaviour

Table 44 defines the CRUDN operations that are supported on the "oic.r.light.ramptime" Resource Type.
Table 44 – The CRUDN operations of the Resource with type "rt" = "oic.r.light.ramptime".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.21 Refrigeration

6.21.1 Introduction

This Resource describes a refrigeration function.

The Property "filter" is a read-only value providing the percentage life time remaining for the water filter.

The Property "rapidFreeze" is a boolean that controls the rapid freeze capability if present.

The Property "rapidCool" is a boolean that controls the rapid cool capability if present.

The Property "defrost" is a boolean that controls the defrost cycle if present.

At least one of the listed Properties shall be present in a Resource Instance.

6.21.2 Example URI

/RefrigerationResURI

6.21.3 Resource type

The Resource Type is defined as: "oic.r.refrigeration".

6.21.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Refrigeration",
      "version": "20190215",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
         "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
   },
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
      "/RefrigerationResURI": {
         "get": {
            "description": "This Resource describes a refrigeration function. The Property \"filter\" is a read-only value providing the percentage life time remaining for the water filter. The Property \"rapidFreeze\" is a boolean that controls the rapid freeze capability if present. The Property \"rapidCool\" is a boolean that controls the rapid cool capability if present. The Property \"defrost\" is a boolean that controls the defrost cycle if present. At least one of the listed Properties shall be present in a Resource Instance.\",
            "parameters": [],
            "responses": {
               "200": {
                  "description": "Retrieves the current Refrigeration function status; all Properties supported by the Device are returned.\",
                  "x-example": {
                     "rt": ["oic.r.refrigeration"],
                     "if": ["oic.if.a", "oic.if.baseline"],
                     "filter": 75,
                     "rapidFreeze": false,
                     "rapidCool": false,
                     "defrost": true
                  }
               }
            }
         }
      }
   }
}
```
"post": {
  "description": "Activates the desired Refrigeration functions. Supported values are "rapidFreeze", "rapidCool" and "defrost". At least one of the supported values shall be provided.",
  "parameters": [
    {
      "$ref": "#/parameters/interface",
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/RefrigerationUpdate" },
      "x-example": {
        "rapidFreeze": true
      }
    }
  ],
  "responses": {
    "200": {
      "description": "Indicates that the Refrigeration function was changed. The new status can be provided in the response."
    },
    "rapidFreeze": true
  },
  "schema": { "$ref": "#/definitions/RefrigerationUpdate" }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "Refrigeration": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.refrigeration"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "rapidFreeze": {
        "description": "Indicates whether the unit has a rapid freeze capability active.",
        "type": "boolean"
      },
      "defrost": {
        "description": "Indicates whether a defrost cycle is currently active.",
        "type": "boolean"
      },
      "filter": {
        "description": "Percentage life time remaining for the water filter.",
        "maximum": 100,
        "minimum": 0,
        "readOnly": true,
        "type": "integer"
      }
    }
  }
}
"type": "integer",
"rapidCool": {
"description": "Indicates whether the unit has a rapid cool capability active.",
"type": "boolean"
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": [
"oic.if.a",
"oic.if.baseline"
],
"type": "string"
},
"minItems": 2,
"readOnly": true,
"type": "array"
},
"anyOf": [
{
"required": ["filter"]
},
{
"required": ["rapidFreeze"]
},
{
"required": ["rapidCool"]
},
{
"required": ["defrost"]
}
],
"type": "object"
},
"RefrigerationUpdate": {
"properties": {
"rapidFreeze": {
"description": "Indicates whether the unit has a rapid freeze capability active.",
"type": "boolean"
},
"defrost": {
"description": "Indicates whether a defrost cycle is currently active.",
"type": "boolean"
},
"rapidCool": {
"description": "Indicates whether the unit has a rapid cool capability active.",
"type": "boolean"
}
},
"anyOf": [
{
"required": ["rapidFreeze"]
},
{
"required": ["rapidCool"]
},
{
"required": ["defrost"]
}
],
"type": "object"
6.21.5 Property definition

Table 45 defines the Properties that are part of the "oic.r.refrigeration" Resource Type.

Table 45 – The Property definitions of the Resource with type "rt" = "oic.r.refrigeration".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>rapidFreeze</td>
<td>boolean</td>
<td>No</td>
<td>Read Write</td>
<td>Indicates whether the unit has a rapid freeze capability active.</td>
</tr>
<tr>
<td>defrost</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>Indicates whether a defrost cycle is currently active.</td>
</tr>
<tr>
<td>filter</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>Percentage life time remaining for the water filter.</td>
</tr>
<tr>
<td>rapidCool</td>
<td>boolean</td>
<td>No</td>
<td>Read Write</td>
<td>Indicates whether the unit has a rapid cool capability active.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>rapidFreeze</td>
<td>boolean</td>
<td>No</td>
<td>Read Write</td>
<td>Indicates whether the unit has a rapid freeze capability active.</td>
</tr>
<tr>
<td>defrost</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>Indicates whether a defrost cycle is currently active.</td>
</tr>
<tr>
<td>rapidCool</td>
<td>boolean</td>
<td>No</td>
<td>Read Write</td>
<td>Indicates whether the unit has a rapid cool capability active.</td>
</tr>
</tbody>
</table>

6.21.6 CRUDN behaviour

Table 46 defines the CRUDN operations that are supported on the "oic.r.refrigeration" Resource Type.

Table 46 – The CRUDN operations of the Resource with type "rt" = "oic.r.refrigeration".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.22 Temperature

6.22.1 Introduction

This Resource describes a sensed or actuated Temperature value.
The Property "temperature" describes the current value measured.
The Property "units" is a single value that is one of "C", "F" or "K".
It provides the unit of measurement for the "temperature" value.
It is a read-only value that is provided by the server.
If the "units" Property is missing the default is Celsius [C].
When the Property "range" is omitted the default is +/- MAXINT.
A client can specify the units for the requested temperature by use of a query parameter.
If no query parameter is provided the server provides its default measure or set value.
It is recommended to return always the units Property in the result.

6.22.2 Example URI

/TemperatureResURI

6.22.3 Resource type

The Resource Type is defined as: "oic.r.temperature".

6.22.4 OpenAPI 2.0 definition

```
{
   "swagger": "2.0",
   "info": {
      "title": "Temperature",
      "version": "20190215",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
         "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
      }
   },
   "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
},
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
   "/TemperatureResURI" : {
      "get": {
         "description": "This Resource describes a sensed or actuated Temperature value.
         The Property "temperature" describes the current value measured.
         The Property "units" is a single value that is one of "C", "F" or "K".
         It provides the unit of measurement for the "temperature" value.
         It is a read-only value that is provided by the server.
         If the "units" Property is missing the default is Celsius [C].
         When the Property "range" is omitted the default is +/- MAXINT.
         A client can specify the units for the requested temperature by use of a query parameter.
         If no query parameter is provided the server provides its default measure or set value.
         It is recommended to return always the units Property in the result.",
         "parameters": [
            {"$ref": "#/parameters/interface"},
            {"$ref": "#/parameters/unit"}
         ],
         "responses": {
            "200": {
               "description": "Retrieves the current temperature value.",
               "x-example": {
                  "rt": ["oic.r.temperature"],
                  "if": [ "oic.if.a", "oic.if.baseline"],
                  "temperature": 20.0,
                  "units": "C"
               }
            }
         },
         "schema": { "$ref": "#/definitions/Temperature" }
   }
```
"403": {
  "description": "This response is generated by the OCF Server when the client sends:

  A RETRIEVE with queryParameter indicating a unit that the server does not support.

  The server responds with the current resource representation including the

  "units" property illustrating the supported units and the error.",
  "x-example": {
    "temperature": 20.0,
    "units": "C"
  },
  "schema": { "$ref": "#/definitions/Temperature" }
},
"post": {
  "description": "Sets the desired temperature value. If a "unit" is included and the

  server may not support the unit indicated the request will fail. If the units are omitted value is taken to be in C.",
  "parameters": [
    { "$ref": "#/parameters/interface"},
    { "name": "body", "in": "body", "required": true,
      "schema": { "$ref": "#/definitions/Temperature" },
      "x-example": {
        "temperature": 18.0,
        "units": "F"
      }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "temperature": 18.0,
        "units": "F"
      },
      "schema": { "$ref": "#/definitions/Temperature" }
    },
    "403": {
      "description": "This response is generated by the OCF Server when the client sends:

      An UPDATE with an out of range property value for temperature. An UPDATE with an unsupported unit

      for this server. The OCF Server responds with the current resource representation including

      the "range" property illustrating the supported range and the error.",
      "x-example": {
        "temperature": 20.0,
        "units": "C"
      },
      "schema": { "$ref": "#/definitions/Temperature" }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.s", "oic.if.baseline"]
  },
  "unit": {
    "in": "query",
    "description": "Units",
    "type": "string",
    "enum": ["C", "F", "K"]
  }
}
"enum": ["C", "F", "K"],
"name": "units",
"x-queryexample": "/TemperatureResURI?units=C"
}

"definitions": {
"Temperature": {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"maxLength": 64,
"type": "string",
"enum": ["oic.r.temperature"]
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"temperature": {
"description": "The current temperature setting or measurement.",
"type": "number"
},
"units": {
"description": "The unit for the conveyed temperature value, Note that when doing an
UPDATE, the unit on the device does NOT change, it only indicates the unit of the conveyed value
during the UPDATE operation.",
"enum": ["C", "F", "K"],
"type": "string"
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
},
"range": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
},
"step": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
},
"precision": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": ["oic.if.baseline", "oic.if.s", "oic.if.a"
},
"maxLength": 64,
"type": "string"
},
"minItems": 2,
### 6.22.5 Property definition

Table 47 defines the Properties that are part of the "oic.r.temperature" Resource Type.

Table 47 – The Property definitions of the Resource with type "rt" = "oic.r.temperature".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>temperature</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>The current temperature setting or measurement.</td>
</tr>
<tr>
<td>units</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>The unit for the conveyed temperature value. Note that when doing an UPDATE, the unit on the device does NOT change, it only indicates the unit of the conveyed value during the UPDATE operation.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

### 6.22.6 CRUDN behaviour

Table 48 defines the CRUDN operations that are supported on the "oic.r.temperature" Resource Type.

Table 48 – The CRUDN operations of the Resource with type "rt" = "oic.r.temperature".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
### 6.23 Time Period

#### 6.23.1 Introduction

This Resource describes the time period over which any additionally provided information is derived or bounded.

The Property "startTime" and "stopTime" are RFC3339 encoded strings. The Property "startTime" must be present.

The interval is the interval of the time period in minutes, if present this value must be no less than 0 minute.

The intervalsecond is the interval of the time period in seconds, if present this value must be numerical zero or greater.

The repeat is the number of the time period's iteration, which means how many times to repeat the time period. The Property "repeat" accepts only negative one, numerical zero, and positive number. When this value is numerical zero, the time period will be repeated infinitely until a client makes it stop by inputting negative one for the value.

The Property "stoptime" and "interval" are mutually exclusive; both Properties cannot be present in a Resource instance.

The Property "intervalsecond" cannot be presented with the Property "stopTime". In case of both the Property "interval" and "intervalsecond" are presented together, the total time interval is the sum of "interval" and "intervalsecond".

The Resource defines a time period for information retrieval, action or other behaviour.

#### 6.23.2 Example URI

/TimePeriodResURI

#### 6.23.3 Resource type

The Resource Type is defined as: "oic.r.time.period".

#### 6.23.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Time Period",
    "version": "20190327",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e8366e4cc0f8cbe8bde4bad4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/TimePeriodResURI" : {
      "get": {
        "description": "This Resource describes the time period over which any additionally provided information is derived or bounded. The Property "startTime" and "stopTime" are RFC3339 encoded strings. The Property "startTime" must be present. The interval is the interval of the time period in minutes, if present this value must be no less than 0 minute. The intervalsecond is the interval of the time period in seconds, if present this value must be numerical zero or greater. The repeat is the number of the time period's iteration, which means how many times to repeat the time period. The Property "repeat" accepts only negative one, numerical zero, and positive number. When this value is numerical zero, the time period will be repeated infinitely until a client makes it stop by inputting negative one for the value. The Property "stoptime" and "interval" are mutually exclusive; both Properties cannot be present in a Resource instance. The Property "intervalsecond" cannot be presented with the Property "stopTime". In case of both the Property "interval" and "intervalsecond" are presented together, the total time interval is the sum of "interval" and "intervalsecond".
        
        The Resource defines a time period for information retrieval, action or other behaviour.
    }
  }
}
```
"parameters": [  
  {"$ref": "#/parameters/interface"}  
],

"responses": {  
  "200": {  
    "description": "",  
    "x-example":  
      {  
        "rt": ["oic.r.time.period"],  
        "if": ["oic.if.a", "oic.if.baseline"],  
        "startTime": "2015-01-09T14:30:00Z",  
        "stopTime": "2015-01-09T14:45:00Z"  
      },  
    "schema": { "$ref": "#/definitions/TimePeriod" }  
  }  
},

"post": {  
  "description": "Sets or updates a time period for information retrieval, action or other  
  behavior.",  
  "parameters": [  
    {"$ref": "#/parameters/interface"},  
    {  
      "name": "body",  
      "in": "body",  
      "required": true,  
      "schema": { "$ref": "#/definitions/TimePeriod" },  
      "x-example":  
        {  
          "startTime": "2015-01-09T14:30:00Z",  
          "stopTime": "2015-01-09T14:45:00Z"  
        }  
    }  
  ],

  "responses": {  
    "200": {  
      "description": "",  
      "x-example":  
        {  
          "startTime": "2015-01-09T14:30:00Z",  
          "stopTime": "2015-01-09T14:45:00Z"  
        }  
    }  
  }  
}
"interval": {
  "description": "The time interval in minutes after the "startTime", if present the Property "stopTime" cannot be present.",
  "type": "integer",
  "minimum": 0
},

"intervalsecond": {
  "description": "The time interval in seconds after the "startTime", if present the Property "stopTime" cannot be present.",
  "type": "integer",
  "minimum": 0
},

"startTime": {
  "description": "The start time for the time period.",
  "type": "string",
  "format": "date-time"
},

"stopTime": {
  "description": "The stop time for the time period, if present the Property "interval" or "intervalsecond" cannot be present.",
  "type": "string",
  "format": "date-time"
},

"repeat": {
  "description": "The number of times to repeat the time period",
  "type": "integer",
  "minimum": -1
},

"n": {
  "$ref":
  "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"},

"id": {
  "$ref":
  "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"},

"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": {
    "enum": [
      "oic.if.a",
      "oic.if.baseline"
    ],
    "type": "string"
  },
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},

"type": "object",

"required": ["startTime"]
}

6.23.5 Property definition

Table 49 defines the Properties that are part of the "oic.r.time.period" Resource Type.

Table 49 – The Property definitions of the Resource with type "rt" = "oic.r.time.period".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>interval</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The time interval in minutes after the &quot;startTime&quot;</td>
</tr>
<tr>
<td>Property</td>
<td>Type</td>
<td>Access</td>
<td>Read</td>
<td>Write</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>--------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>intervalSecond</td>
<td>integer</td>
<td>No</td>
<td>Read</td>
<td>Write</td>
</tr>
<tr>
<td>stopTime</td>
<td>string</td>
<td>No</td>
<td>Read</td>
<td>Write</td>
</tr>
<tr>
<td>startTime</td>
<td>string</td>
<td>Yes</td>
<td>Read</td>
<td>Write</td>
</tr>
<tr>
<td>repeat</td>
<td>integer</td>
<td>No</td>
<td>Read</td>
<td>Write</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read</td>
<td>Write</td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read</td>
<td>Write</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read</td>
<td>Only</td>
</tr>
</tbody>
</table>

### 6.23.6 CRUDN behaviour

Table 50 defines the CRUDN operations that are supported on the "oic.r.time.period" Resource Type.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.24 Activity Count

#### 6.24.1 Introduction

This Resource specifies an activity count. The Resource can be readonly (oic.if.s interface) in which instance it represents a count. The Resource can be readwrite (oic.if.a interface) in which instance it represents a goal or target for a count. The Property "count" is an integer representing either the current count or goal value.

#### 6.24.2 Example URI

```
/ActivityCountResURI
```

#### 6.24.3 Resource type

The Resource Type is defined as: "oic.r.sensor.activity.count".

#### 6.24.4 OpenAPI 2.0 definition

```
{
    "swagger": "2.0",
    "info": {
        "title": "Activity Count",
        "version": "20190222",
```
"license": {
  "name": "OCF Data Model License",
  "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbcce8bdc4ba/LICENSE.md",
  "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
},
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/ActivityCountResURI": {
    "get": {
      "description": "This Resource specifies an activity count. The Resource can be read only (oic.if.s interface) in which instance it represents a count. The Resource can be read write (oic.if.a interface) in which instance it represents a goal or target for a count. The Property \"count\" is an integer representing either the current count or goal value.",
      "parameters": [
        { "$ref": "#/parameters/interface" }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.sensor.activity.count"],
            "if": ["oic.if.a", "oic.if.baseline"],
            "count": 2500
          },
          "schema": { "$ref": "#/definitions/Count" }
        }
      }
    },
    "post": {
      "description": "Sets the \"count\" target.",
      "parameters": [
        { "$ref": "#/parameters/interface" }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "count": 5000
          },
          "schema": { "$ref": "#/definitions/Count" }
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "Count": {
    "type": "object",
    "properties": {
      "count": {
        "type": "integer",
        "description": "The Property \"count\" is an integer representing either the current count or goal value." 
      }
    }
  }
}
"paths": [
  {"path": "/ActivityCountResURI", "get": {
    "parameters": [
      { "$ref": "#/parameters/interface" }
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "count": 2500
        },
        "schema": { "$ref": "#/definitions/Count" }
      }
    }
  },
  "/ActivityCountResURI": {
    "post": {
      "description": "Sets the \"count\" target.",
      "parameters": [ 
        { "$ref": "#/parameters/interface" }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "count": 5000
          },
          "schema": { "$ref": "#/definitions/Count" }
        }
      }
    }
  }
}
Property definition

Table 51 defines the Properties that are part of the "oic.r.sensor.activity.count" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
</tbody>
</table>
6.24.6 CRUDN behaviour

Table 52 defines the CRUDN operations that are supported on the "oic.r.sensor.activity.count" Resource Type.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.25 Atmospheric Pressure Sensor

6.25.1 Introduction

This Resource provides a measurement of Mean Sea Level Pressure experienced at the measuring point expressed in millibars. The Property "atmosphericPressure" is a float which describes the atmospheric pressure in hPa (hectoPascals). Note that hPa and the also commonly used unit of millibars (mbar) are numerically equivalent.

6.25.2 Example URI

/AtmosphericPressureResURI

6.25.3 Resource type

The Resource Type is defined as: "oic.r.sensor.atmosphericpressure".

6.25.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Atmospheric Pressure Sensor",
        "version": "20190225",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
            "x-copyright": "Copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "x-service-url": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/AtmosphericPressureResURI": {
            "get": {
                "summary": "Get atmosphericPressure",
                "description": "Get atmosphericPressure",
                "operationId": "getAtmosphericPressure",
                "tags": ["Atmospheric Pressure Sensor"],
                "consumes": ["application/json"],
                "produces": ["application/json"],
                "parameters": [
                    {
                        "in": "path",
                        "name": "AtmosphericPressureResURI",
                        "required": true,
                        "schema": {
                            "title": "Atmospheric Pressure Resource URI",
                            "type": "string",
                            "description": "The URI of the Atmospheric Pressure Resource"
                        }
                    }
                ],
                "responses": {
                    "200": {
                        "description": "OK - Atmospheric Pressure Resource retrieved successfully",
                        "schema": {
                            "title": "Atmospheric Pressure Resource",
                            "type": "object",
                            "properties": {
                                "atmosphericPressure": {
                                    "type": "number",
                                    "description": "The atmospheric pressure in hPa"
                                }
                            }
                        }
                    }
                }
            }
        }
    }
}
```
"get": {
"description": "This Resource provides a measurement of Mean Sea Level Pressure experienced
at the measuring point expressed in millibars.\nThe Property "atmosphericPressure" is a float
which describes the atmospheric pressure in hPa (hectoPascals).\nNote that hPa and the also commonly
used unit of millibars (mbar) are numerically equivalent.",

"parameters": [
    {
      "$ref": "/#parameters/interface"
    },
    "200": {
      "description": ",
      "x-example": {
        "rt": ["oic.r.sensor.atmosphericpressure"],
        "if": ["oic.if.s", "oic.if.baseline"],
        "atmosphericPressure": 1000.4
      }
    }
  ],
  "responses": {
    "200": {
      "description": ",
      "x-example": {
        "rt": ["oic.r.sensor.atmosphericpressure"],
        "if": ["oic.if.s", "oic.if.baseline"],
        "atmosphericPressure": 1000.4
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "atmosphericPressure": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.sensor.atmosphericpressure"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "atmosphericPressure": {
        "description": "The current atmospheric pressure in hPa.",
        "readOnly": true,
        "type": "number"
      }
    },
    "$ref": "/#definitions/atmosphericPressure"
  }
},
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"precision": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-precision.json#/definitions/precision"
},
"range": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-range-number.json#/definitions/range_number"
},
"step": {
6.25.5 Property definition

Table 53 defines the Properties that are part of the "oic.r.sensor.atmosphericpressure" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>atmosphericPressure</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The current atmospheric pressure in hPa.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.25.6 CRUDN behaviour

Table 54 defines the CRUDN operations that are supported on the "oic.r.sensor.atmosphericpressure" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.26 Audio Controls

6.26.1 Introduction

This Resource defines basic audio control functions.

The Property "volume" is an integer containing a percentage [0,100].

A volume of 0 (zero) means no sound produced.

A volume of 100 means maximum sound production.

The Property "mute" is implemented as a boolean.

A mute value of true means that the device is muted (no audio).

A mute value of false means that the device is not muted (audio).

6.26.2 Example URI

/ AudioResURI

6.26.3 Resource type

The Resource Type is defined as: "oic.r.audio".

6.26.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Audio Controls",
    "version": "20190620",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc88d4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AudioResURI": {
      "get": {
        "description": "This Resource defines basic audio control functions.

The Property "volume" is an integer containing a percentage [0,100].

A volume of 0 (zero) means no sound produced.

A volume of 100 means maximum sound production.

The Property "mute" is implemented as a boolean.

A mute value of true means that the device is muted (no audio).

A mute value of false means that the device is not muted (audio)."
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.audio"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "volume": 50,
              "mute": false
            }
          },
          "schema": { "$ref": "#/definitions/Audio" }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ]
      }
    }
  }
}
```
"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "#/definitions/Audio-update" },
"x-example": {
  "volume": 75
}
},
"
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "volume": 75,
      "mute": false
    },
    "schema": { "$ref": "#/definitions/Audio" }
  }
},
"
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"
  }
},
"
"definitions": {
  "Audio": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.audio"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "mute": {
        "description": "The mute setting of an audio rendering device.",
        "type": "boolean"
      },
      "volume": {
        "description": "The volume setting of an audio rendering device.",
        "maximum": 100,
        "minimum": 0,
        "type": "integer"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_integer"
      }
    }
  }
}
6663  "step": {
6664  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_integer"
6666  },
6669  "if": {
6670  "description": "The OCF Interface set supported by this Resource.",
6671  "items": {
6672  "enum": [
6673  "oic.if.a",
6674  "oic.if.baseline"
6675  ],
6676  "type": "string"
6677  },
6678  "minItems": 2,
6679  "uniqueItems": true,
6680  "readOnly": true,
6681  "type": "array"
6682  },
6683  "type": "object",
6684  "required": ["volume", "mute"]
6685  },
6686  "Audio-update": {
6687  "properties": {
6688  "mute": {
6689  "description": "The mute setting of an audio rendering device.",
6690  "type": "boolean"
6691  },
6692  "volume": {
6693  "description": "The volume setting of an audio rendering device.",
6694  "maximum": 100,
6695  "minimum": 0,
6696  "type": "integer"
6697  }
6698  }
6699  }
6700  }
6701  }
6702 }
6703
6.26.5 Property definition
6704
Table 55 defines the Properties that are part of the "oic.r.audio" Resource Type.
6705
<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>mute</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>The mute setting of an audio rendering device.</td>
</tr>
<tr>
<td>volume</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The volume setting of an audio rendering device.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
### 6.26.6 CRUDN behaviour

Table 56 defines the CRUDN operations that are supported on the "oic.r.audio" Resource Type.

<table>
<thead>
<tr>
<th>Resource Type</th>
<th>CRUDN Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create</td>
<td>Read</td>
</tr>
<tr>
<td>get</td>
<td>post</td>
</tr>
</tbody>
</table>

### 6.27 Auto Focus

#### 6.27.1 Introduction

This Resource describes an auto focus on/off feature. The Property "autoFocus" is a boolean. An "autoFocus" value of 'true' means that the auto focus feature is on. An "autoFocus" value of 'false' means that the auto focus feature is off. Note that when Pan Tilt Zoom (see 'Pan Tilt Zoom' Resource definition) is used the auto focus works only in the selected area.

#### 6.27.2 Example URI

/AutoFocusResURI

#### 6.27.3 Resource type

The Resource Type is defined as: "oic.r.autofocus".

#### 6.27.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Auto Focus",
    "version": "20190222",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "paths": {
    "/AutoFocusResURI": {
      "get": {
        "description": "This Resource describes an auto focus on/off feature.
The Property "autoFocus" is a boolean. An "autoFocus" value of 'true' means that the auto focus feature is on. An "autoFocus" value of 'false' means that the auto focus feature is off. Note that when Pan Tilt Zoom (see 'Pan Tilt Zoom' Resource definition) is used the auto focus works only in the selected area."
      },
      "parameters": [ {
        "$ref": "#/parameters/interface"
      }
```
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.autofocus"],
      "if": ["oic.if.a", "oic.if.baseline"],
      "autoFocus": false
    },
    "schema": { "$ref": "#/definitions/AutoFocus" }
  }
}

"post": {
  "description": "",
  "parameters": [
    { "$ref": "#/parameters/interface"},
    { "name": "body", "in": "body", "required": true,
    "schema": { "$ref": "#/definitions/AutoFocus" },
    "x-example": {
      "autoFocus": true
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "autoFocus": true
      }
    }
  }
}

"parameters": {
  "interface": {
    "in": "query", "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
}

"definitions": {
  "AutoFocus": {
    "properties": {
      "rt": { "description": "The Resource Type.",
      "items": { "enum": ["oic.r.autofocus"],
      "maxLength": 64,
      "type": "string"
      },
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    },
    "autoFocus": { "description": "The status of the Auto Focus feature.",
    "type": "boolean"
    }
  }
}

"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
6.27.5 Property definition

Table 57 defines the Properties that are part of the "oic.r.autofocus" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>autoFocus</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>The status of the Auto Focus feature.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.27.6 CRUDN behaviour

Table 58 defines the CRUDN operations that are supported on the "oic.r.autofocus" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.28 Automatic Document Feeder

6.28.1 Introduction

This Resource describes the state of an automatic document feeder, typically used with a scanner.

The Property "adfstates" and "currentAdfState" are read only.

The Property "adfStates" is an array of the possible operational states.
The Property "adfProcessing" is the OK state, other states are errors or require 'user attention'.
The currentAdfState is the current value of the ADF state on the device.

6.28.2 Example URI
/AutomaticDocumentFeederResURI

6.28.3 Resource type
The Resource Type is defined as: "oic.r.automaticdocumentfeeder".

6.28.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Automatic Document Feeder",
    "version": "20190222",
    "license": {
      "name": "CCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc88bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AutomaticDocumentFeederResURI": {
      "get": {
        "description": "This Resource describes the state of an automatic document feeder, typically
         used with a scanner. The Property \"adfstates\" and \"currentAdfState\" are read only. The
         Property \"adfStates\" is an array of the possible operational states. The Property
         \"adfprocessing\" is the OK state, other states are errors or require 'user attention'. The
         currentAdfState is the current value of the ADF state on the device.",
        "parameters": {
          "$ref": "#/parameters/interface"
        },
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.automaticdocumentfeeder"],
              "if": ["oic.if.s", "oic.if.baseline"],
              "adfStates": ["adfProcessing", "adfEmpty", "adfJam", "adfLoaded", "adfMispick",
              "adfHatchOpen", "adfDuplexPageTooShort", "adfDuplexPageTooLong", "adfMultipickDetected",
              "adfInputTrayFailed", "adfInputTrayOverloaded"],
              "currentAdfState": "adfProcessing"
            }
          }
        }
      }},
      "parameters": {
        "interface": {
          "in": "query",
          "name": "if",
          "type": "string",
          "enum": ["oic.if.s", "oic.if.baseline"]
        }
      },
      "definitions": {
        "AutomaticDocumentFeeder": {
          "properties": {
            "rt": [
```

"description": "The Resource Type.",
"items": {
  "enum": ["oic.r.automaticdocumentfeeder"],
  "maxLength": 64,
  "type": "string"
 },
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"adfStates": {
  "description": "The array of the possible adf states.",
  "items": {
    "type": "string"
  },
  "readOnly": true,
  "uniqueItems": true,
  "type": "array"
},
"currentAdfState": {
  "description": "The current adf state.",
  "readOnly": true,
  "type": "string"
 },

"n": {
  "$ref":
  "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
  "$ref":
  "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},

"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": {
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ],
    "type": "string"
  },
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"

Table 59 defines the Properties that are part of the "oic.r.automaticdocumentfeeder" Resource Type.

Table 59 – The Property definitions of the Resource with type "rt" = "oic.r.automaticdocumentfeeder".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type</td>
</tr>
<tr>
<td>adfStates</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The array of the possible adf states.</td>
</tr>
</tbody>
</table>
**6.28.6 CRUDN behaviour**

Table 60 defines the CRUDN operations that are supported on the "oic.r.automaticdocumentfeeder" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.29 Button Switch

**6.29.1 Introduction**

This Resource describes the operation of a button style switch.

The Property "value" is a boolean.

A value of 'true' means that the button is being pushed/pressed.

A value of 'false' means that the button is not being pushed/pressed.

**6.29.2 Example URI**

/"ButtonResURI"

**6.29.3 Resource type**

The Resource Type is defined as: "oic.r.button".

**6.29.4 OpenAPI 2.0 definition**

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Button Switch",
        "version": "20190222",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fabe8bdc4ba/LICENSE.md",
            "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/ButtonResURI": {
            "get": {
                "description": "This Resource describes the operation of a button style switch.\nThe Property \"value\" is a boolean.\nA value of 'true' means that the button is being pushed/pressed.\nA value of 'false' means that the button is not being pushed/pressed.\n",
                "parameters": [
                    {$ref: "/#parameters/interface"
                ]
            }
        }
    }
}
```
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.button"],
      "if": ["oic.if.s", "oic.if.baseline"],
      "value": true
    },
    "schema": { "$ref": "#/definitions/Button" }
  }
},

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},

"definitions": {
  "Button": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.button"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "value": {
        "description": "The status of the button",
        "readOnly": true,
        "type": "boolean"
      }
    },
    "n": { "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n" },
    "id": { "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id" },
    "if": {
      "description": "The OCF Interface set supported by this Resource.",
      "items": {
        "enum": [ "oic.if.s", "oic.if.baseline" ],
        "type": "string"
      },
      "minItems": 2,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    }
  }
}
6.29.5 Property definition

Table 61 defines the Properties that are part of the "oic.r.button" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The status of the button</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.29.6 CRUDN behaviour

Table 62 defines the CRUDN operations that are supported on the "oic.r.button" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>get</td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.30 Carbon Dioxide Sensor

6.30.1 Introduction

This Resource describes whether carbon dioxide has been sensed or not.

The Property "value" is a boolean.

A value of 'true' means that carbon dioxide has been detected.

A value of 'false' means that carbon dioxide has not been detected.

6.30.2 Example URI

/CarbonDioxideResURI

6.30.3 Resource type

The Resource Type is defined as: "oic.r.sensor.carbondioxide".

6.30.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Carbon Dioxide Sensor",
    "version": "20191118",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc41ba/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  ...
}
```
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/CarbonDioxideResURI" : {
  "get": {
  "description": "This Resource describes whether carbon dioxide has been sensed or not. The
  Property \"value\" is a boolean. A value of 'true' means that carbon dioxide has been detected. A
  value of 'false' means that carbon dioxide has not been detected. ",
  "parameters": [
    {
      "$ref": "#/parameters/interface"
    }
  ],
  "responses": {
  "200": {
  "description": '',
  "x-example": {
    "rt": ["oic.r.sensor.carbondioxide"],
    "id": "unique_example_id",
    "value": true
  },
  "schema": {
    "$ref": "#/definitions/CO2" 
  }
  }
  }
  }
  },
  "parameters": {
  "interface": {
  "in": "query",
  "name": "if",
  "type": "string",
  "enum": ["oic.if.s", "oic.if.baseline"]
  }
  }
  },
  "definitions": {
  "CO2": {
  "properties": {
  "rt": {
  "description": "The Resource Type",
  "items": {
  "maxLength": 64,
  "type": "string",
  "enum": ["oic.r.sensor.carbondioxide"]
  },
  "minItems": 1,
  "readOnly": true,
  "uniqueItems": true,
  "type": "array"
  },
  "value": {
  "description": "The carbon dioxide indicator, true - sensed, false - not sensed. ",
  "readOnly": true,
  "type": "boolean"
  },
  "measurement": {
  "type": "number",
  "description": "Measured value for this sensor, units are in ppm",
  "readOnly": true
  },
  "precision": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
  }
  }
  }
  }
  },
  "n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
  },
  "range": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
Table 63 defines the Properties that are part of the "oic.r.sensor.carbondioxide" Resource Type.

Table 63 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.carbondioxide".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The carbon dioxide indicator, true = sensed, false = not sensed.</td>
</tr>
<tr>
<td>measurement</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Measured value for this sensor, units are in ppm</td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>
6.30.6 CRUDN behaviour

Table 64 defines the CRUDN operations that are supported on the "oic.r.sensor.carbondioxide" Resource Type.

Table 64 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.carbondioxide".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.31 Carbon Monoxide Sensor

6.31.1 Introduction

This Resource describes whether carbon monoxide has been sensed or not. The Property "value" is a boolean. A value of 'true' means that carbon monoxide has been detected. A value of 'false' means that carbon monoxide has not been detected.

6.31.2 Example URI

/CarbonMonoxideResURI

6.31.3 Resource type

The Resource Type is defined as: "oic.r.sensor.carbonmonoxide".

6.31.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Carbon Monoxide Sensor",
    "version": "20191118",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8d4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CarbonMonoxideResURI" : {
      "get": {
        "description": "This Resource describes whether carbon monoxide has been sensed or not. The Property "value" is a boolean. A value of 'true' means that carbon monoxide has been detected. A value of 'false' means that carbon monoxide has not been detected."
      
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.sensor.carbonmonoxide"],
            "id": "unique_example_id",
            "value": true
          },
          "schema": { "$ref": "#/definitions/CO" }
        }
      }
    }
  }
}
```
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "CO": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string",
          "enum": ["oic.r.sensor.carbonmonoxide"]
        },
        "minItems": 1,
        "readOnly": true,
        "uniqueItems": true,
        "type": "array"
      },
      "value": {
        "description": "The carbon monoxide indicator, true = sensed, false = not sensed.",
        "readOnly": true,
        "type": "boolean"
      },
      "measurement": {
        "type": "number",
        "description": "The measured value for this sensor, units are in ppm",
        "readOnly": true
      },
      "precision": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
      },
      "step": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource",
        "items": {
          "enum": ["oic.if.baseline", "oic.if.s"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
6.31.5 Property definition

Table 65 defines the Properties that are part of the "oic.r.sensor.carbonmonoxide" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The carbon monoxide indicator, true = sensed, false = not sensed.</td>
</tr>
<tr>
<td>measurement</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Measured value for this sensor, units are in ppm</td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.31.6 CRUDN behaviour

Table 66 defines the CRUDN operations that are supported on the "oic.r.sensor.carbonmonoxide" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.32 Auto White Balance

6.32.1 Introduction

This Resource describes an auto balance on/off feature.

The Property "autoWhiteBalance" is a boolean.

An AutoWhiteBalance value of 'true' means that the auto white balance feature is on.

An AutoWhiteBalance value of 'false' means that the auto white balance feature is off.
6.32.2 Example URI
/AutoWhiteBalanceResURI

6.32.3 Resource type
The Resource Type is defined as: "oic.r.colour.autowhitebalance".

6.32.4 OpenAPI 2.0 definition
```
{
"swagger": "2.0",
"info": {
  "title": "Auto White Balance",
  "version": "20190222",
  "license": {
    "name": "OCF Data Model License",
    "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
    "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
},
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/AutoWhiteBalanceResURI" : {
    "get": {
      "description": "This Resource describes an auto balance on/off feature. The Property "autoWhiteBalance" is a boolean. An AutoWhiteBalance value of 'true' means that the auto white balance feature is on. An AutoWhiteBalance value of 'false' means that the auto white balance feature is off."
    },
    "parameters": [ 
      {"$ref": "#/parameters/interface"}
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.colour.autowhitebalance"],
          "if": ["oic.if.a", "oic.if.baseline"],
          "autoWhiteBalance": false
        }
      },
      "schema": { "$ref": "#/definitions/AutoWhiteBalance" }
    }
  },
  "post": {
    "description": "",
    "parameters": [ 
      {"$ref": "#/parameters/interface"},
      {"name": "body",
       "in": "body",
       "required": true,
       "schema": { "$ref": "#/definitions/AutoWhiteBalance" },
       "x-example": {
         "autoWhiteBalance": true
       }
      }
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "autoWhiteBalance": true
        }
      },
      }
    }

```
6.32.5 Property definition

Table 67 defines the Properties that are part of the "oic.r.colour.autowhitebalance" Resource Type.
Table 67 – The Property definitions of the Resource with type "rt" = "oic.r.colour.autowhitebalance".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>autoWhiteBalance</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>The status of the Auto White balance feature.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.32.6 CRUDN behaviour

Table 68 defines the CRUDN operations that are supported on the "oic.r.colour.autowhitebalance" Resource Type.

Table 68 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.autowhitebalance".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.33 Colour Saturation

6.33.1 Introduction

This Resource describes a Colour saturation value.

The Property "colourSaturation" is an integer.

A "colourSaturation" has a range of [0,100].

A "colourSaturation" value of 0 means producing black and white images.

A "colourSaturation" value of 50 means producing device specific normal colour images.

A "colourSaturation" value of 100 means producing device very full colour images.

6.33.2 Example URI

/ColourSaturationResURI

6.33.3 Resource type

The Resource Type is defined as: "oic.r.colour.saturation".

6.33.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Saturation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
}
```
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
"/ColourSaturationResURI": {
"get": {
"description": "This Resource describes a Colour saturation value.\nThe Property \n"colourSaturation" is an integer.\nA "colourSaturation" has a range of [0,100].\nA "colourSaturation" value of 0 means producing black and white images.\nA "colourSaturation" value of 50 means producing device specific normal colour images.\nA "colourSaturation" value of 100 means producing device very full colour images.\n",
"parameters": [
{"$ref": "#/parameters/interface"}
],
"responses": {
"200": {
"description": "",
"x-example": {
"rt": ["oic.r.colour.saturation"],
"if": ["oic.if.a", "oic.if.baseline"],
"colourSaturation": 50
},
"schema": { "$ref": "#/definitions/Saturation" }
}
},
"post": {
"description": "",
"parameters": [
{"$ref": "#/parameters/interface"},

"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"]
}
],
"responses": {
"200": {
"description": "",
"x-example": {
"colourSaturation": 60
},
"schema": { "$ref": "#/definitions/Saturation" }
}
}
},
"definitions": {
"Saturation": {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"enum": ["oic.r.colour.saturation"],
"maxLength": 64,
"description": "This Resource describes a Colour saturation value.\nThe Property \n"colourSaturation" is an integer.\nA "colourSaturation" has a range of [0,100].\nA "colourSaturation" value of 0 means producing black and white images.\nA "colourSaturation" value of 50 means producing device specific normal colour images.\nA "colourSaturation" value of 100 means producing device very full colour images.\n",
"parameters": [
{"$ref": "#/parameters/interface"}
],
"responses": {
"200": {
"description": "",
"x-example": {
"rt": ["oic.r.colour.saturation"],
"if": ["oic.if.a", "oic.if.baseline"],
"colourSaturation": 50
},
"schema": { "$ref": "#/definitions/Saturation" }
}
},
"post": {
"description": "",
"parameters": [
{"$ref": "#/parameters/interface"},

"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"]
}
],
"responses": {
"200": {
"description": "",
"x-example": {
"colourSaturation": 60
},
"schema": { "$ref": "#/definitions/Saturation" }
}
}
},
"definitions": {
"Saturation": {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"enum": ["oic.r.colour.saturation"],
"maxLength": 64,
6.33.5 Property definition

Table 69 defines the Properties that are part of the "oic.r.colour.saturation" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>colourSaturation</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The colour saturation value.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>
6.33.6 CRUDN behaviour
Table 70 defines the CRUDN operations that are supported on the "oic.r.colour.saturation" Resource Type.

Table 70 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.saturation".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.34 Contact Sensor

6.34.1 Introduction
This Resource describes whether a contact sensor has been tripped or not. Typical use case is in Security Systems detecting window or door open. The Property "value" is a boolean. A value of 'true' means that contact has been broken (open). A value of 'false' means that contact is in place (closed).

6.34.2 Example URI
/ContactResURI

6.34.3 Resource type
The Resource Type is defined as: "oic.r.sensor.contact".

6.34.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Contact Sensor",
      "version": "20190215",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bd54ba/LICENSE.md",
         "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
   },
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
      "/ContactResURI": {
         "get": {
            "description": "This Resource describes whether a contact sensor has been tripped or not. Typical use case is in Security Systems detecting window or door open. The Property "value" is a boolean. A value of 'true' means that contact has been broken (open). A value of 'false' means that contact is in place (closed).",
            "parameters": ["$ref": "/parameters/interface"],
            "responses": {
               "200": {
                  "description": "",
                  "x-example": {
                     "rt": ["oic.r.sensor.contact"],
                     "if": ["oic.if.s", "oic.if.baseline"],
                     "value": true
                  }
               }
            }
         }
      }
   }
}
```
"schema": { "$ref": "#/definitions/Contact" }
}
}
}
",
"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.s", "oic.if.baseline"]
}
}
",
"definitions": {
"Contact": {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"enum": ["oic.r.sensor.contact"],
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"value": {
"description": "The contact indication, true = broken (open), false = in place (closed).",
"readOnly": true,
"type": "boolean"
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": ["oic.if.s", "oic.if.baseline"
},
"type": "string"
},
"minItems": 2,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
},
"required": ["value"]
}
}

6.34.5 Property definition

Table 71 defines the Properties that are part of the "oic.r.sensor.contact" Resource Type.
Table 71 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.contact".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The contact indication, true = broken (open), false = in place (closed).</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.34.6 CRUDN behaviour

Table 72 defines the CRUDN operations that are supported on the "oic.r.sensor.contact" Resource Type.

Table 72 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.contact".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.35 Demand Response Load Control (DRLC).

6.35.1 Introduction

This Resource describes any to be applied or currently being applied DRLC signal.

The Property "DRType" is the ApplianceLoadReductionType defined in Zigbee/HA Smart Energy Profile 2.0.

The Property "start" is a string containing an RFC3339 encoded start time.

The Property "duration" value is in minutes.

The Property "Override" indicates whether the consumer has overridden the request (true) or not (false).

The Resource provides the current DRLC action that is being applied.

A duration of 0 (zero) means that no DRLC is currently active.

6.35.2 Example URI

/DRLCResURI

6.35.3 Resource type

The Resource Type is defined as: "oic.r.energy.drlc".

6.35.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Demand Response Load Control (DRLC).",
    "version": "20190709",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbcde8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2019, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
}
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
    "/DRLCResURI" : {
        "get": {
            "description": "This Resource describes any to be applied or currently being applied DRLC
signal.
The Property "DRType" is the ApplianceLoadReductionType defined in Zigbee/HA Smart Energy
Profile 2.0.
The Property "start" is a string containing an RFC3339 encoded start time.
The
Property "duration" value is in minutes.
The Property "Override" indicates whether the consumer
has overridden the request (true) or not (false).
The Resource provides the current DRLC action
that is being applied.
A duration of 0 (zero) means that no DRLC is currently active.
",
            "parameters": [
                {"$ref": "/parameters/interface"}
            ],
            "responses": {
                "200": {
                    "description": "",
                    "x-example": {
                        "rt": ["oic.r.energy.drlc"],
                        "if": ["oic.if.a", "oic.if.baseline"],
                        "DRType": 1,
                        "start": "2015-01-09T16:45:00Z",
                        "duration": 10,
                        "override": false,
                        "drlevel": 2,
                        "mandate": true
                    },
                    "schema": { "$ref": "/definitions/DRLC" } 
                }
            },
            "post": {
                "description": "Provides the DRLC action to be applied to the device or updates an existing
action.
",
                "parameters": [
                    {"$ref": "/parameters/interface"},
                    {
                        "name": "body",
                        "in": "body",
                        "required": true,
                        "schema": { "$ref": "/definitions/DRLC" },
                        "x-example": {
                            "DRType": 1,
                            "start": "2015-01-09T17:00:00Z",
                            "duration": 10
                        }
                    }
                ],
                "responses": {
                    "200": {
                        "description": "Indicates that the target DRLC resource was changed.
The new resource
attributes are provided in the response.
",
                        "x-example": {
                            "DRType": 1,
                            "start": "2015-01-09T17:00:00Z",
                            "duration": 15,
                            "override": false
                        },
                        "schema": { "$ref": "/definitions/DRLC" }
                    }
                }
            }
        }
    }
}
"enum" : ["oic.if.a", "oic.if.baseline"]
}
"definitions": {
"DRLC" : {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"enum": ["oic.r.energy.drlc"],
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"start": {
"description": "The start time for the application of DR.",
"type": "string",
"format": "date-time"
},
"duration": {
"description": "The duration of the to be applied DR type in minutes. A value of 0 means no applied DR.",
"type": "integer",
"minimum": 0
},
"override": {
"description": "Whether the consumer has overriden the application of DR.",
"type": "boolean"
},
"DRType": {
"description": "The to be applied demand-response type.",
"type": "integer"
},
"drlevel": {
"type": "integer",
"minimum": 0,
"maximum": 3,
"description": "Indicator of the strength of the DR response that is requested; 0-0%, 1-30%, 2-50%, 3-70%"
},
"mandate": {
"type": "boolean",
"description": "Whether overriding the DR request by the consumer is allowed"
},
"n": {
$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": ["oic.if.a",
"oic.if.baseline"
],
"type": "string"
},
"minItems": 2,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
6.35.5 Property definition

Table 73 defines the Properties that are part of the "oic.r.energy.drlc" Resource Type.

Table 73 – The Property definitions of the Resource with type "rt" = "oic.r.energy.drlc".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>start</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>The start time for the application of DR.</td>
</tr>
<tr>
<td>duration</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The duration of the to be applied DR type in minutes. A value of 0 means no applied DR.</td>
</tr>
<tr>
<td>override</td>
<td>boolean</td>
<td>No</td>
<td>Read Write</td>
<td>Whether the consumer has overridden the application of DR.</td>
</tr>
<tr>
<td>DRType</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The to be applied demand-response type.</td>
</tr>
<tr>
<td>drlevel</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>Indicator of the strength of the DR response that is requested: 0-0%, 1-30%, 2-50%, 3-70%</td>
</tr>
<tr>
<td>mandate</td>
<td>boolean</td>
<td>No</td>
<td>Read Write</td>
<td>Whether overriding the DR request by the consumer is allowed</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.35.6 CRUDN behaviour

Table 74 defines the CRUDN operations that are supported on the "oic.r.energy.drlc" Resource Type.

Table 74 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.drlc".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.36 Energy Overload/Circuit Breaker

6.36.1 Introduction

This Resource describes whether an energy overload detector/circuit breaker is currently tripped. The Property "value" is a boolean. A value of 'true' means that energy overload has been tripped. A value of 'false' means that energy overload has not been tripped.

6.36.2 Example URI

/energyOverloadResURI

6.36.3 Resource type

The Resource Type is defined as: "oic.r.energy.overload".

6.36.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Energy Overload/Circuit Breaker",
        "version": "20190215",
        "license": {
            "name": "OFC Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
            "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/EnergyOverloadResURI" : {
            "get": {
                "description": "This Resource describes whether an energy overload detector/circuit breaker is currently tripped. The Property "value" is a boolean. A value of 'true' means that energy overload has been tripped. A value of 'false' means that energy overload has not been tripped.

                "parameters": [
                    {
                        "$ref": "#/parameters/interface"
                    },
                    
                    "responses": {
                        "200": {
                            "description": "",
                            "x-example": {
                                "rt": ["oic.r.energy.overload"],
                                "if": ["oic.if.s", "oic.if.baseline"],
                                "value": true
                            },
                            "schema": { "$ref": "#/definitions/EnergyOverload" }
                        }
                    }
                }
            }
        }
    }
}
```

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"EnergyOverload" : {
  "properties": {
    "rt": {
      "description": "The Resource Type.",
      "items": {
        "enum": ["oic.r.energy.overload"],
        "maxLength": 64,
        "type": "string"
      },
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    },
    "value": {
      "description": "The energy overload indication, true = tripped, false = not tripped.",
      "readOnly": true,
      "type": "boolean"
    },
    "n": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
      schema.json#/definitions/n"
    },
    "id": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
      schema.json#/definitions/id"
    },
    "if": {
      "description": "The OCF Interface set supported by this Resource.",
      "items": {
        "enum": [
          "oic.if.s",
          "oic.if.baseline"
        ],
        "type": "string"
      },
      "minItems": 2,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    }
  },
  "type": "object",
  "required": ["value"]
}

6.36.5 Property definition

Table 75 defines the Properties that are part of the "oic.r.energy.overload" Resource Type.

Table 75 – The Property definitions of the Resource with type "rt" = "oic.r.energy.overload".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The energy overload indication, true = tripped, false = not tripped.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
6.36.6 CRUDN behaviour

Table 76 defines the CRUDN operations that are supported on the "oic.r.energy.overload" Resource Type.

Table 76 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.overload".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>observe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.37 Generic Sensor

6.37.1 Introduction

This Resource describes whether some value or property or entity has been sensed or not. The Property "value" is a boolean.

A value of 'true' means that the target has been sensed.

A value of 'false' means that the target has not been sensed.

6.37.2 Example URI

/GenericSensorResURI

6.37.3 Resource type

The Resource Type is defined as: "oic.r.sensor".

6.37.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Generic Sensor",
      "version": "20191118",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fboe8bdc4ba/LICENSE.md",
         "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
   },
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
      "/GenericSensorResURI": {
         "get": {
            "description": "This Resource describes whether some value or property or entity has been sensed or not. The Property "value" is a boolean. A value of 'true' means that the target has been sensed. A value of 'false' means that the target has not been sensed."
         },
         "parameters": [
            "$ref": "#/parameters/interface"
         ],
         "responses": {
            "200": {
               "description": "",
               "x-example": {
                  "rt": ["oic.r.sensor"],
                  "id": "unique_example_id",
                  "value": true
               },
               "schema": { "$ref": "#/definitions/Sensor" }
            }
         }
      }
   }
}
```
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "Sensor": {
    "properties": {
      "rt": {
        "description": "The Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string",
          "enum": ["oic.r.sensor"]
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "value": {
        "description": "true = sensed, false = not sensed.",
        "readOnly": true,
        "type": "boolean"
      },
      "measurement": {
        "type": "number",
        "description": "Measured value for this sensor, units depend on the specific type of
sensor",
        "readOnly": true
      },
      "precision": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
      },
      "step": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource",
        "items": {
          "enum": ["oic.if.baseline", "oic.if.s"]
        },
        "maxLength": 64,
6.37.5 Property definition

Table 77 defines the Properties that are part of the "oic.r.sensor" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>true = sensed, false = not sensed.</td>
</tr>
<tr>
<td>measurement</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Measured value for this sensor, units depend on the specific type of sensor</td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.37.6 CRUDN behaviour

Table 78 defines the CRUDN operations that are supported on the "oic.r.sensor" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.38 Glass Break Sensor

6.38.1 Introduction

This Resource describes a glass break sensor. The Property "value" is a boolean. A value of 'true' means that glass break has been sensed. A value of 'false' means that glass break not been sensed.
### 6.38.2 Example URI

/GlassBreakResURI

### 6.38.3 Resource type

The Resource Type is defined as: "oic.r.sensor.glassbreak".

### 6.38.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Glass Break Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GlassBreakResURI": {
      "get": {
        "description": "This Resource describes a glass break sensor. The Property "value" is a boolean. A value of 'true' means that glass break has been sensed. A value of 'false' means that glass break not been sensed."
      },
      "parameters": [
        {"$ref": "/#parameters/interface"}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.sensor.glassbreak"],
            "if": ["oic.if.s", "oic.if.baseline"],
            "value": true
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "GlassBreak": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.glassbreak"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
```

---

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6.38.5 Property definition

Table 79 defines the Properties that are part of the "oic.r.sensor.glassbreak" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The glassbreak indication, true = glass break sensed, false = glass break not sensed.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.38.6 CRUDN behaviour

Table 80 defines the CRUDN operations that are supported on the "oic.r.sensor.glassbreak" Resource Type.
Table 80 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.glassbreak".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>observe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.39 Heart Rate Zone

6.39.1 Introduction

This Resource describes a measured heart rate by the current Zone using the Zoladz method. The Zoladz method defines Zones based on maximum heart rate; Zone 1 is the lowest, Zone 5 is the highest.

The heartRateZone is an enumeration containing one of: "Zone1", "Zone2", "Zone3", "Zone4", and "Zone5".

6.39.2 Example URI

/HeartRateZoneResURI

6.39.3 Resource type

The Resource Type is defined as: "oic.r.sensor.heart.zone".

6.39.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Heart Rate Zone",
      "version": "2019-03-28",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
         "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
   },
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
      "/HeartRateZoneResURI": {
         "get": {
            "description": "This Resource describes a measured heart rate by the current Zone using the Zoladz method. The Zoladz method defines Zones based on maximum heart rate; Zone 1 is the lowest, Zone 5 is the highest. The heartRateZone is an enumeration containing one of: "Zone1", "Zone2", "Zone3", "Zone4", and "Zone5"."
         },
         "parameters": [
            {"$ref": "#/parameters/interface"}
         ],
         "responses": {
            "200": {
               "description": "",
               "x-example": {
                  "rt": ["oic.r.sensor.heart.zone"],
                  "heartRateZone": "Zone3"
               },
               "schema": { "$ref": "#/definitions/heartRateZone" }
            }
         }
      }
   }
}
```

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"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "heartRateZone": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": ["oic.r.sensor.heart.zone"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "uniqueItems": true,
        "type": "array"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "heartRateZone": {
        "description": "Current heart rate zone based on the Zoladz system.",
        "enum": [
          "Zone1",
          "Zone2",
          "Zone3",
          "Zone4",
          "Zone5"
        ],
        "readOnly": true,
        "type": "string"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource",
        "items": {
          "enum": [
            "oic.if.s",
            "oic.if.baseline"
          ],
          "maxLength": 64
        },
        "minItems": 1,
        "readOnly": true,
        "uniqueItems": true,
        "type": "array"
      }
    },
    "type": "object",
    "required": ["heartRateZone"]
  }
}

6.39.5 Property definition
Table 81 defines the Properties that are part of the "oic.r.sensor.heart.zone" Resource Type.
Table 81 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.heart.zone".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>heartRateZone</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>Current heart rate zone based on the Zoladz system.</td>
</tr>
</tbody>
</table>

6.39.6 CRUDN behaviour

Table 82 defines the CRUDN operations that are supported on the "oic.r.sensor.heart.zone" Resource Type.

Table 82 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.heart.zone".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.40 Illuminance Sensor

6.40.1 Introduction

This Resource describes an illuminance sensor. The Property "illuminance" is a float and represents the sensed luminous flux per unit area in lux.

6.40.2 Example URI

/IlluminanceSensorResURI

6.40.3 Resource type

The Resource Type is defined as: "oic.r.sensor.illuminance".

6.40.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Illuminance Sensor",
        "version": "20190808",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e836d61e4c0fbc8bdc4ba/LICENSE.md",
            "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/IlluminanceSensorResURI": 
    }
}
```
Property "illuminance" is a float and represents the sensed luminous flux per unit area in lux.

"parameters": [  
  {"$ref": "/parameters/interface"}  
],

"responses": {  
  "200": {  
    "description": "",  
    "x-example": {  
      "rt": ["oic.r.sensor.illuminance"],  
      "if": ["oic.if.s", "oic.if.baseline"],  
      "illuminance": 450.0,  
      "range": [100.0, 500.0]  
    },  
    "schema": {"$ref": "/definitions/Illuminance"}  
  }  
}  

"parameters": {  
  "interface": {  
    "in": "query",  
    "name": "if",  
    "type": "string",  
    "enum": ["oic.if.s", "oic.if.baseline"]  
  }  
},

"definitions": {  
  "Illuminance": {  
    "properties": {  
      "rt": {  
        "description": "The Resource Type.",  
        "items": {  
          "enum": ["oic.r.sensor.illuminance"],  
          "maxLength": 64,  
          "type": "string"  
        },  
        "minItems": 1,  
        "uniqueItems": true,  
        "readOnly": true,  
        "type": "array"  
      },  
      "illuminance": {  
        "description": "The sensed luminous flux per unit area in lux.",  
        "readOnly": true,  
        "type": "number"  
      },  
      "n": {  
        "$ref":  
        "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"  
    }  
  },

  "id": {  
    "$ref":  
    "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"  
},

  "range": {  
    "$ref":  
    "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"  
  },  
  "if": {  
    "description": "The OCF Interface set supported by this Resource.",  
    "items": {  
      "enum": [  
        "oic.if.s",  
        "oic.if.baseline"  
      ]  
    }  
  }  
}
6.40.5 Property definition

Table 83 defines the Properties that are part of the "oic.r.sensor.illuminance" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>illuminance</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The sensed luminous flux per unit area in lux.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.40.6 CRUDN behaviour

Table 84 defines the CRUDN operations that are supported on the "oic.r.sensor.illuminance" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.41 Magnetic Field Direction Sensor

6.41.1 Introduction

This Resource describes the direction of the Earth's magnetic field at the observer's current point in space.

Typical use case includes measurement of compass readings on a personal device.

The Property "value" is an array containing Hx, Hy, Hz (in that order) each of which are floats.

Each of Hx, Hy and Hz are expressed in A/m (Amperes per metre).

6.41.2 Example URI

/MagneticFieldDirectionResURI
6.4.3 Resource type

The Resource Type is defined as: "oic.r.sensor.magneticfielddirection".

6.4.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Magnetic Field Direction Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MagneticFieldDirectionResURI" : {
      "get": {
        "description": "This Resource describes the direction of the Earth's magnetic field at the observer's current point in space.\nTypical use case includes measurement of compass readings on a personal device.\nThe Property \"value\" is an array containing Hx, Hy, Hz (in that order) each of which are floats.\nEach of Hx, Hy and Hz are expressed in A/m (Amperes per metre).\",
        "parameters": [{$ref": "/#parameters/interface"}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.sensor.magneticfielddirection"],
            "if": ["oic.if.s", "oic.if.baseline"],
            "value": [100.0, 15.0, 90.0]
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  }
}
```

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6.41.5 Property definition

Table 85 defines the Properties that are part of the "oic.r.sensor.magneticfielddirection" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>value</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The array containing Hx, Hy, Hz.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.41.6 CRUDN behaviour

Table 86 defines the CRUDN operations that are supported on the "oic.r.sensor.magneticfielddirection" Resource Type.
<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.42 Media

#### 6.42.1 Introduction

This Resource specifies the media types that an OCF Server supports. The resource is an array of media elements. Each element contains:
- A URL at which the specified media type can be accessed.
- A string array containing the definition of the media using SDP.
- Each entry in the sdp array is an SDP line.
- Each line shall follow the SDP description syntax as defined in the SDP specification.

The SDP specification can be found at http://tools.ietf.org/html/rfc4566.

#### 6.42.2 Example URI

```
/MediaResURI
```

#### 6.42.3 Resource type

The Resource Type is defined as: "oic.r.media".

#### 6.42.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media",
    "version": "20190508",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MediaResURI": {
      "get": {
        "description": "This Resource specifies the media types that an OCF Server supports. The resource is an array of media elements. Each element contains:\n        A URL at which the specified media type can be accessed.\n        A string array containing the definition of the media using SDP.\n        Each line shall follow the SDP description syntax as defined in the SDP specification.\n        The SDP specification can be found at http://tools.ietf.org/html/rfc4566.\n        
        Each entry in the sdp array is an SDP line.\n        Each line shall follow the SDP description syntax as defined in the SDP specification.\n        The SDP specification can be found at http://tools.ietf.org/html/rfc4566.\n        
        "parameters": {
          "$ref": "#/parameters/interface"
        },
        "responses": {
          "200": {
            "description": "RETRIEVES the current media resource.\n            
            
            "rt": ["oic.r.media"],
            "if": ["oic.if.a", "oic.if.baseline"],
            "media": [
              
              "url": "some example url",
              "sdp": [
              ]
            ]
          }
        }
      }
    }
  }
}
```
"m=video 1 RTP/AVP 96",
"a=rtpmap:96 H264/9000",
"a=fmtp:96 profile-level-id=42A028;packetization-mode=1"
],

"url": "some other example1 url",
"sdp": [
  "m=audio 2 RTP/AVP 97",
  "a=rtpmap:97 MP4A-LATM/90000"
]
},

"url": "some other example2 url",
"sdp": [
  "m=video 3 RTP/AVP 98",
  "a=rtpmap:98 jpeg/90000",
  "a=fmtp:98 sampling=YCbCr-4:2:0;width=256;height=256"
]
},

"schema": { "$ref": "#/definitions/Media" }
}

"post": {
  "description": "This is to change the URL that can be played back by the device. Note that some devices do not have the capability to set the URL to be played back",
  "parameters": [
    { "$ref": "#/parameters/interface"},
    { "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/Media" },
      "x-example": [ { "media": [ { "url": "new example url for playback",
                  "sdp": [ { "m=video 1 RTP/AVP 100",
                          "a=rtpmap:100 H264/9000",
                          "a=fmtp:100 profile-level-id=42A028;packetization-mode=1"
                    ]
                } ]
            } ]
  },

  "responses": { "200": { "description": "The current media resource.",
          "x-example": { "rt": ["oic.r.media"],
          "if": ["oic.if.a", "oic.if.baseline"],
          "media": [ { "url": "new example url for playback",
                    "sdp": [ { "m=video 1 RTP/AVP 100",
                              "a=rtpmap:100 H264/9000",
                              "a=fmtp:100 profile-level-id=42A028;packetization-mode=1"
                        ]
                    } ]
          } } }
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "Media": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.media"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "media": {
        "items": {
          "properties": {
            "sdp": {
              "description": "The array of strings, one per SDP line.",
              "items": {
                "description": "SDP media or attribute line",
                "type": "string"
              },
              "type": "array"
            },
            "url": {
              "description": "The url for the media instance.",
              "type": "string"
            }
          }
        },
        "type": "object"
      },
      "type": "array"
    },
    "n": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-scheme.json#/definitions/n"
    },
    "id": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-scheme.json#/definitions/id"
    },
    "if": {
      "description": "The OCF Interface set supported by this Resource.",
      "items": {
        "enum": [
          "oic.if.a",
          "oic.if.s",
          "oic.if.baseline"
        ],
        "type": "string"
      },
      "minItems": 2,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    }
  }
},
6.42.5 Property definition

Table 87 defines the Properties that are part of the "oic.r.media" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>media</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.42.6 CRUDN behaviour

Table 88 defines the CRUDN operations that are supported on the "oic.r.media" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.43 Media Source

6.43.1 Introduction

This Resource defines a single media source that exists on a device. The source can be an input source or output source, this resource is agnostic of that. The Property "sourceName" specifies a pre-defined media input or output (e.g. "HDMI", "DVI"). The Property "sourceNumber" is a label to specify the instance (e.g. "PC", "1"). The Property "sourceType" is an enumeration defining whether the source is audio, video or both. The Property "status" is a boolean that determines if the specific source instance is selected or not. A status of true means that the source instance is selected. A status of false means that the source instance is not selected.

6.43.2 Example URI

/mediaSourceResURI

6.43.3 Resource type

The Resource Type is defined as: "oic.r.mediasource".

6.43.4 OpenAPI 2.0 definition

```
"type": "object",
"required": ["media"
}
```

"url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc88d4ba/11CENSE.md",
"x-copyright": "Copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
},
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
},
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
"/mediaSourceResURI": {
"get": {
"description": "This Resource defines a single media source that exists on a device. The source can be an input source or output source, this resource is agnostic of that. The Property "sourceName" specifies a pre-defined media input or output (e.g. "HDMI", "DVI"). The Property "sourceNumber" is a label to specify the instance (e.g. "PC", "1"). The Property "sourceType" is an enumeration defining whether the source is audio, video or both. The Property "status" is a boolean that determines if the specific source instance is selected or not. A status of true means that the source instance is selected. A status of false means that the source instance is not selected.",
"parameters": [
{"$ref": "#/parameters/interface"}]
},
"responses": {
"200": {
"description": "",
"x-example": {
"rt": ["oic.r.mediasource"],
"if": ["oic.if.a", "oic.if.baseline"],
"sourceName": "HDMI-CEC",
"sourceNumber": "1",
"sourceType": "audioPlusVideo",
"status": true
},
"schema": { "$ref": "#/definitions/mediaSource" }
}
}
"post": {
"description": "Changes the status of the source. Allows changes of the "sourceName" and the "status".",
"parameters": [
{"$ref": "#/parameters/interface"},

{"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "#/definitions/mediaSource" },
"x-example": {
"sourceName": "my new name",
"status": true
}
}
"responses": {
"200": {
"description": "",
"x-example": {
"sourceName": "my new name",
"sourceNumber": "1",
"sourceType": "audioPlusVideo",
"status": true
},
"schema": { "$ref": "#/definitions/mediaSource" }
}
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "mediaSource": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.mediasource"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "status": {
        "description": "Specifies if the specific source instance is selected or not.",
        "type": "boolean"
      },
      "sourceType": {
        "description": "Specifies the type of the source.",
        "enum": ["audioOnly", "videoOnly", "audioPlusVideo"],
        "readOnly": true,
        "type": "string"
      },
      "sourceName": {
        "description": "Specifies a pre-defined media input or output.",
        "type": "string"
      },
      "sourceNumber": {
        "description": "Label to specify the instance.",
        "type": "string"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": ["oic.if.a", "oic.if.baseline"],
          "type": "string"
        },
        "minItems": 2,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      }
    }
  }
}
6.43.5 Property definition

Table 89 defines the Properties that are part of the "oic.r.mediasource" Resource Type.

Table 89 – The Property definitions of the Resource with type "rt" = "oic.r.mediasource".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>status</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>Specifies if the specific source instance is selected or not.</td>
</tr>
<tr>
<td>sourceType</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Specifies the type of the source.</td>
</tr>
<tr>
<td>sourceName</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>Specifies a pre-defined media input or output.</td>
</tr>
<tr>
<td>sourceNumber</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>Label to specify the instance.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.43.6 CRUDN behaviour

Table 90 defines the CRUDN operations that are supported on the "oic.r.mediasource" Resource Type.

Table 90 – The CRUDN operations of the Resource with type "rt" = "oic.r.mediasource".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.44 Media Source List

6.44.1 Introduction

This Resource provides the list of all media sources available on the Device (input and/or output). The sources are an array of mediaSource(s) as separately defined see Resource Type "oic.r.mediasource".

6.44.2 Example URI

/mediaSourceListResURI

6.44.3 Resource type

The Resource Type is defined as: "oic.r.mediasourcelist".
6.44.4  OpenAPI 2.0 definition

```json
{  
  "swagger": "2.0",
  "info": {  
    "title": "Media Source List",
    "version": "20190729",
    "license": {  
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },  
  "schemes": ["http"],  
  "consumes": ["application/json"],  
  "produces": ["application/json"],  
  "paths": {  
    "/mediaSourceListResURI": {  
      "get": {  
        "description": "This Resource provides the list of all media sources available on the Device (input and/or output). The sources are an array of mediaSource(s) as separately defined see Resource Type \"oic.r.mediasource\"",  
        "parameters": [  
          {"$ref": "/#/parameters/interface"}  
        ],  
        "responses": {  
          "200": {  
            "description": "",  
            "x-example": {  
              "rt": ["oic.r.mediasourcelist"],  
              "if": ["oic.if.a", "oic.if.baseline"],  
              "sources": [  
                {  
                  "sourceName": "HDMI-CEC",
                  "sourceNumber": "1",
                  "sourceType": "audioPlusVideo",
                  "status": true  
                },  
                {  
                  "sourceName": "dualRCA",
                  "sourceNumber": "1",
                  "sourceType": "audioOnly",
                  "status": false  
                }  
              ]  
            }  
          }  
        }  
      },  
      "post": {  
        "description": "Changes the status of the source(s). Allows changes of the sourceName and the status.",  
        "parameters": [  
          {"$ref": "/#/parameters/interface"},  
          {  
            "name": "body",
            "in": "body",
            "required": true,
            "schema": {"$ref": "/#/definitions/mediaSourceList"},
            "x-example": {  
              "sources": [  
                {  
                  "sourceName": "my new name",
                  "status": true  
                }  
              ]  
            }  
          }  
        ]  
      }  
    }  
  }  
}
```
"sourceName": "dualRCA",
}
]
}

"responses": {
"200": {
"description": "",
"x-example": {
"sources": [
{
"sourceName": "my new name",
"sourceNumber": "1",
"sourceType": "audioPlusVideo",
"status": true
},
{
"sourceName": "dualRCA",
"sourceNumber": "1",
"sourceType": "audioOnly",
"status": false
}
]
},
"schema": { "$ref": "#/definitions/mediaSourceList" }
}

"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"
}
},

"definitions": {
"mediaSourceList": {
"properties": {
"rt": {
"description": "The Resource Type."
},
"items": {
"enum": ["oic.r.mediasourcelist"],
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"sources": {
"items": {
"properties": {
"sourceName": {
"description": "Specifies a pre-defined media input or output."
},
"type": "string"
},
"sourceNumber": {
"description": "Label to specify the instance."
},
"readOnly": true,
"type": "string"
},
"sourceType": {
"description": "Specifies the type of the source."
},
"enum": ["audioOnly"],

Table 91 defines the Properties that are part of the “oic.r.mediasourcelist” Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>sources</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>
6.44.6 CRUDN behaviour

Table 92 defines the CRUDN operations that are supported on the "oic.r.mediasourcelist" Resource Type.

Table 92 – The CRUDN operations of the Resource with type "rt" = "oic.r.mediasourcelist".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.45 Media Source Input

6.45.1 Introduction

This Resource provides the list of input media sources available on the device. The sources are an array of Media Source(s) see Resource Type "oic.r.mediasource"

6.45.2 Example URI

/mediaSourceInputResURI

6.45.3 Resource type

The Resource Type is defined as: "oic.r.media.input".

6.45.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Source Input",
    "version": "20190729",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/mediaSourceInputResURI" : {
      "get": {
        "description": "This Resource provides the list of input media sources available on the device. The sources are an array of Media Source(s) see Resource Type "oic.r.mediasource"
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": ",",
            "x-example": {
              "rt": ["oic.r.media.input"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "sources": [ {
                "sourceName": "HDMI-CEC",
                "sourceNumber": "1",
                "sourceType": "audioPlusVideo",
                "status": true
              },
              {"sourceName": "dualRCA",
              "sourceNumber": "1",
              "sourceType": "audioPlusVideo",
              "status": true
              }]
            }
          }
        }
      }
    }
  }
}
```
"sourceType": "audioOnly",
"status": false
}
]
"schema": { "$ref": "/#definitions/mediaSourceList" }
}

"post": { "description": "Changes the status of the source(s).
Allows changes of the sourceName and the status.",
"parameters": [
{"$ref": "/#parameters/interface"},

{name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "/#definitions/mediaSourceList" },
"x-example": {
"sources": [

{name": "my new name",
"status": true
},

{name": "dualRCA"
}
]
,
"schema": { "$ref": "/#definitions/mediaSourceList" }
]

"responses": {
"200": {
"description": "",
"x-example": {
"sources": [

{name": "my new name",
"sourceNumber": "1",
"sourceType": "audioPlusVideo",
"status": true
},

{name": "dualRCA",
"sourceNumber": "1",
"sourceType": "audioOnly",
"status": false
}
]
,
"schema": { "$ref": "/#definitions/mediaSourceList" }
]

"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"]
}
]

"definitions": {
"mediaSourceList" : {
"properties": {
"rt": {
"description": "Resource Type",
"items": {
"enum": ["oic.r.media.input"]
}}

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights reserved.
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"sources": {
"items": {
"properties": {
"sourceName": {
"description": "Specifies a pre-defined media input or output",
"type": "string"
},
"sourceNumber": {
"description": "Label to specify the instance",
"readOnly": true,
"type": "string"
},
"sourceType": {
"description": "Specifies the type of the source",
"enum": ["audioOnly", "videoOnly", "audioPlusVideo"
},
"readOnly": true,
"type": "string"
},
"status": {
"description": "Specifies if the specific source instance is selected or not",
"type": "boolean"

"type": "object"
},
"type": "array"
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"

"if": {
"description": "The OCF Interface set supported by this Resource",
"items": {
"enum": [
"oic.if.a",
"oic.if.baseline"
],
"type": "string"
},
"minItems": 2,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
},
"type": "object",
"required": ["sources"]
}
6.45.5 Property definition

Table 93 defines the Properties that are part of the "oic.r.media.input" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>sources</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.45.6 CRUDN behaviour

Table 94 defines the CRUDN operations that are supported on the "oic.r.media.input" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.46 Media Source Output

6.46.1 Introduction

This Resource provides the list of output media sources available on the device. The sources are an array of Media Source(s) see Resource Type "oic.r.mediasource"

6.46.2 Example URI

/mediaSourceOutputResURI

6.46.3 Resource type

The Resource Type is defined as: "oic.r.media.output".

6.46.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Media Source Output",
      "version": "20190729",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
         "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
   },
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
      "/mediaSourceOutputResURI" : {
```
"get": {  
  "description": "This Resource provides the list of output media sources available on the
device. The sources are an array of Media Source(s) see Resource Type \"oic.r.mediasource\". 
  "parameters": [  
    {"$ref": "/parameters/interface"}  
  ],  
  "responses": {  
    "200": {  
      "description": "",  
      "x-example": {  
        "rt": ["oic.r.media.output"],  
        "if": ["oic.if.a", "oic.if.baseline"],  
        "sources": [  
          {  
            "sourceName": "HDMI-CEC",  
            "sourceNumber": "1",  
            "sourceType": "audioPlusVideo",  
            "status": true  
          },  
          {  
            "sourceName": "dualRCA",  
            "sourceNumber": "1",  
            "sourceType": "audioOnly",  
            "status": false  
          }  
        ]  
      },  
      "schema": { "$ref": "/definitions/mediaSourceList" }  
    }  
  },  
  "post": {  
    "description": "Changes the status of the source(s). Allows changes of the sourceName and
the status." ,  
    "parameters": [  
      {"$ref": "/parameters/interface"}  
    ],  
    "responses": {  
      "200": {  
        "description": "",  
        "x-example": {  
          "sources": [  
            {  
              "sourceName": "my new name",  
              "status": true  
            },  
            {  
              "sourceName": "dualRCA"  
            }  
          ]  
        }  
      }  
    }  
  }  
}
"schema": { "$ref": "#/definitions/mediaSourceList" }
}
"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"]
}
"definitions": {
"mediaSourceList" : {
"properties": {
"rt": { 
"description": "Resource Type",
"items": { 
"enum": ["oic.r.media.output"],
"maxLength": 64,
"type": "string"
 },
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"sources": {
"items": { 
"properties": {
"sourceName": { 
"description": "Specifies a pre-defined media input or output",
"type": "string"
 },
"sourceNumber": { 
"description": "Label to specify the instance",
"readOnly": true,
"type": "string"
 },
"sourceType": { 
"description": "Specifies the type of the source",
"enum": [ 
"audioOnly",
"videoOnly",
"audioPlusVideo"
 ],
"readOnly": true,
"type": "string"
 },
"status": { 
"description": "Specifies if the specific source instance is selected or not",
"type": "boolean"
 }
 },
"type": "object"
 },
"type": "array"
 },
"n": { "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": { "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
6.46.5 Property definition

Table 95 defines the Properties that are part of the "oic.r.media.output" Resource Type.

Table 95 – The Property definitions of the Resource with type "rt" = "oic.r.media.output".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>sources</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types:</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types:</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.46.6 CRUDN behaviour

Table 96 defines the CRUDN operations that are supported on the "oic.r.media.output" Resource Type.

Table 96 – The CRUDN operations of the Resource with type "rt" = "oic.r.media.output".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.47 Motion Sensor

6.47.1 Introduction

This Resource describes whether motion has been sensed or not.

The Property "value" is a boolean.

A value of 'true' means that motion has been sensed.

A value of 'false' means that motion not been sensed.

6.47.2 Example URI

/MotionResURI

6.47.3 Resource type

The Resource Type is defined as: "oic.r.sensor.motion".
```json
6.47.4 OpenAPI 2.0 definition
{
  "swagger": "2.0",
  "info": {
    "title": "Motion Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MotionResURI": {
      "get": {
        "description": "This Resource describes whether motion has been sensed or not. The Property 
        "value" is a boolean. A value of 'true' means that motion has been sensed. A value of 'false' 
        means that motion not been sensed.",
        "parameters": [ { "$ref": "#/parameters/interface" } ],
        "responses": { "200": { 
          "description": "",
          "x-example": {
            "rt": ["oic.r.sensor.motion"],
            "if": ["oic.if.s", "oic.if.baseline"],
            "value": true
          }
        },
        "schema": { "$ref": "#/definitions/Motion" }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Motion": {
        "properties": {
          "rt": {
            "description": "The Resource Type.",
            "items": ["oic.r.sensor.motion"],
            "maxLength": 64,
            "type": "string",
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "value": {
            "description": "The motion sensor, true = motion sensed, false = motion not sensed.",
            "readOnly": true,
            "type": "boolean"
          }
        }
      }
    }
  }
}
```
6.47.5 Property definition

Table 97 defines the Properties that are part of the "oic.r.sensor.motion" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The motion sensor, true = motion sensed, false = motion not sensed.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.47.6 CRUDN behaviour

Table 98 defines the CRUDN operations that are supported on the "oic.r.sensor.motion" Resource Type.

Table 98 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.motion".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.48 Night Mode

6.48.1 Introduction

This Resource describes a night mode on/off feature.
A nightMode value of 'true' means that the feature is on.
A nightMode value of 'false' means that the feature is off.

6.48.2 Example URI

/NightModeResURI

6.48.3 Resource type

The Resource Type is defined as: "oic.r.nightmode".

6.48.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Night Mode",
    "version": "20190215",
    "license": {
      "name": "CC-BY-SA 4.0",
      "url": "https://creativecommons.org/licenses/by-sa/4.0",
      "x-copyright": "copyright 2015-2018, 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/NightModeResURI": {
      "get": {
        "description": "This Resource describes a night mode on/off feature. A nightMode value of 'true' means that the feature is on. A nightMode value of 'false' means that the feature is off.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.nightmode"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "nightMode": false
            }
          }
        }
      }
    },
    "post": {
      "description": "",
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        },
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/NightMode" },
          "x-example": {
            "nightMode": true
          }
        }
      }
    }
  }
}
```

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"responses": {
  "200": {
    "description": "",
    "x-example": {
      "nightMode": true
    },
    "schema": { "$ref": "#/definitions/NightMode" }
  }
}

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},

"definitions": {
  "NightMode": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.nightmode"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "nightMode": {
        "description": "The status of the Night Mode.",
        "type": "boolean"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": [
            "oic.if.a",
            "oic.if.baseline"
          ],
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      }
    }
  }
}
6.48.5 Property definition

Table 99 defines the Properties that are part of the "oic.r.nightmode" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>nightMode</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>The status of the Night Mode.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.48.6 CRUDN behaviour

Table 100 defines the CRUDN operations that are supported on the "oic.r.nightmode" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.49 Presence Sensor

6.49.1 Introduction

This Resource describes whether presence has been sensed or not. The Property "value" is a boolean. A value of 'true' means that presence has been sensed. A value of 'false' means that presence not been sensed.

6.49.2 Example URI

/PresenceResURI

6.49.3 Resource type

The Resource Type is defined as: "oic.r.sensor.presence".

6.49.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Presence Sensor",
        "version": "20190215",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc86d4ba/LICENSE.md"
        }
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
}
```
"paths": {
  "/PresenceResURI": {
    "get": {
      "description": "This Resource describes whether presence has been sensed or not. The Property 'value' is a boolean. A value of 'true' means that presence has been sensed. A value of 'false' means that presence not been sensed."
    },
    "parameters": [
      {"$ref": "#/parameters/interface"}
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.sensor.presence"],
          "if": ["oic.if.s", "oic.if.baseline"],
          "value": true
        },
        "schema": { "$ref": "#/definitions/Presence" } 
      }
    } 
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "Presence": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.sensor.presence"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "value": {
        "description": "The presences sensor, true = precense sensed, false = precensenot sensed.",
        "readOnly": true,
        "type": "boolean"
      }
    },
    "n": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
    },
    "id": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
    },
    "if": {
      "description": "The OCF Interface set supported by this Resource.",
      "items": {
        "enum": ["oic.if.s", "oic.if.baseline"],
        "type": "string"
      }
    }
  }
}
6.49.5 Property definition

Table 101 defines the Properties that are part of the "oic.r.sensor.presence" Resource Type.

Table 101 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.presence".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The presence sensor, true = presence sensed, false = presence not sensed.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.49.6 CRUDN behaviour

Table 102 defines the CRUDN operations that are supported on the "oic.r.sensor.presence" Resource Type.

Table 102 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.presence".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.50 Pan Tilt Zoom Movement

6.50.1 Introduction

This Resource specifies the pan tilt and zoom capabilities of a device. The Resource Type is dynamic and reflects whether the values apply to physical movement of the device or digital/virtual enhancements to the image. For physical movement the Resource Type is "oic.r.movement.ptz". For digital/virtual image enhancements the Resource Type is "oic.r.image.ptz".

The Properties "pan" and "tilt" are specified in degrees. The Property "zoomFactor" is a value in the range 1-100 for linear (optical) zoom. The zoom factor is a value in the range [1x, 2x, 4x, 8x, 16x, 32x] for digital zoom. If there is no zoom value to set the zoom factor shall be '1x'. The value 0 degrees means neutral, this is a vendor defined setting.

Note that this resource also can be used to create an offset for physical movement. When that is the case, the Resource Type value is: "oic.r.movement.offset.ptz".
Note that this resource also can be used to create an offset for image movement. When that is the case, the Resource Type value is: "oic.r.image.offset.ptz".

When the Property "pan_range" value is omitted, then the range is [-180.0,180.0].

If "pan" is not supported then the range shall be [0.0,0.0]

When the Property "tilt_range" value is omitted, then the range is [-180.0,180.0].

If "tilt" is not supported then the range shall be [0.0,0.0].

6.50.2 Example URI

/PanTiltZoomResURI

6.50.3 Resource type

The Resource Type is defined as: "oic.r.ptz".

6.50.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Pan Tilt Zoom Movement",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc5e8badc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PanTiltZoomResURI": {
      "get": {
        "description": "This Resource specifies the pan tilt and zoom capabilities of a device. The Resource Type is dynamic and reflects whether the values apply to physical movement of the device or digital/virtual enhancements to the image. For physical movement the Resource Type is "oic.r.movement.ptz". For digital/virtual image enhancements the Resource Type is "oic.r.image.ptz". The Properties "pan" and "tilt" are specified in degrees. The Property "zoomFactor" is a value in the range 1-100 for linear (optical) zoom. The zoom factor is a value in the range [1x, 2x, 4x, 8x, 16x, 32x] for digital zoom. If there is no zoom value to set the zoom factor shall be '1x'. The value 0 degrees means neutral, this is a vendor defined setting. Note that this resource also can be used to create an offset for physical movement. When that is the case, the Resource Type value is: "oic.r.movement.offset.ptz". Note that this resource also can be used to create an offset for image movement. When that is the case, the Resource Type value is: "oic.r.image.offset.ptz". When the Property "pan_range" value is omitted, then the range is [-180.0,180.0]. If "pan" is not supported then the range shall be [0.0,0.0]. When the Property "tilt_range" value is omitted, then the range is [-180.0,180.0]. If "tilt" is not supported then the range shall be [0.0,0.0]."
        
        "parameters": [
          
          { "$ref": "#/parameters/interface" }
        ],
        
        "responses": {
          "200": {
            "description": "Retrieves the current pan, tilt and zoom setting."
          }
        }
      }
    }
  }
}
```
"post": {
  "description": "Sets the current pan, tilt and zoom value."
},
"parameters": [
  {"$ref": "/parameters/interface"},
  {
    "name": "body",
    "in": "body",
    "required": true,
    "schema": { "$ref": "/definitions/PanTiltZoom" },
    "x-example": {
      "pan": 10.0,
      "tilt": -10.0,
      "zoomFactor": "4x"
    }
  }
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "pan": 10.0,
      "tilt": -10.0,
      "zoomFactor": "4x"
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "PanTiltZoom": {
    "properties": {
      "rt": {
        "description": "The Resource Type."
      },
      "tilt_range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
      },
      "zoomFactor": {
        "description": "The zoom factor value."
      },
      "tilt": {
        "description": "The vertical tilt in degrees."
      }
    }
  }
}
Table 103 defines the Properties that are part of the "oic.r.ptz" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>tilt_range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>zoomFactor</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>The zoom factor value.</td>
</tr>
</tbody>
</table>
### 6.50.6 CRUDN behaviour

Table 104 defines the CRUDN operations that are supported on the "oic.r.ptz" Resource Type.

![Table 104 – The CRUDN operations of the Resource with type "rt" = "oic.r.ptz".](image)

### 6.51 Signal Strength

#### 6.51.1 Introduction

This Resource describes the strength of a signal by means of lqi and rssi. The Property "lqi" is a floating point number that represents Link Quality Indicator. The Property "rssi" is a floating point number that represents the received signal strength indicator.

#### 6.51.2 Example URI

/SignalStrengthResURI

#### 6.51.3 Resource type

The Resource Type is defined as: "oic.r.signalstrength".

#### 6.51.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Signal Strength",
      "version": "20190215",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
         "x-copyright": "Copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
      }
   },
   "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
}
```

---

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/SignalStrengthResURI": {
    "get": {
      "description": "This Resource describes the strength of a signal by means of lqi and
rssi. The Property \"lqi\" is a floating point number that represents Link Quality Indicator.\nThe Property \"rssi\" is a floating point number that represents the received signal strength
indicator.\",
      "parameters": [
        {"$ref": "/#parameters/interface"}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.signalstrength"],
            "if": ["oic.if.s", "oic.if.baseline"],
            "lqi": 10.0,
            "rssi": 55.0
          }
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.s", "oic.if.baseline"]
      }
    }
  }
},
"definitions": {
  "SignalStrength": {
    "properties": {
      "rt": {
        "description": "The Resource Type.\",
        "items": {
          "enum": ["oic.r.signalstrength"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "lqi": {
        "description": "The current value of Link Quality Indicator.\",
        "readOnly": true,
        "type": "number"
      },
      "rssi": {
        "description": "The current value of Received Signal Strength Indicator.\",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      }
    }
  }
}
"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": [
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ],
    "type": "string"
  ],
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
}

6.51.5 Property definition
Table 105 defines the Properties that are part of the "oic.r.signalstrength" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>lqi</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The current value of Link Quality Indicator.</td>
</tr>
<tr>
<td>rssi</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The current value of Received Signal Strength Indicator.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.51.6 CRUDN behaviour
Table 106 defines the CRUDN operations that are supported on the "oic.r.signalstrength" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.52 Speech Synthesis-TTS
6.52.1 Introduction
This Resource may be created on the OCF Server that is capable of rendering speech by an OCF Client and allows the client to provide an SSML document with text to render or may be created on the OIC Server by some resident application. The audio rendered is at this stage local to the Server (i.e. not streamed). The utterance is an SSML document. The supportedLanguages is an array of the RFC5646 defined language tags that are supported.
The supportedVoices is an SSML document fragment indicating the voices that are supported. Utterance in the example shall be a properly escaped (JSON rules) SSML document. An example:

"<?xml version="1.0" encoding="ISO-8859-1"?>

<speak version="1.1" xmlns="http://www.w3.org/2001/10/synthesis"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://www.w3.org/2001/10/synthesis

http://www.w3.org/TR/speech-synthesis11/synthesis.xsd"

xml:lang="en-US">

The title of the movie is:

"Monty Pythons The Meaning of Life"

which is directed by Terry Jones.

</speak>

6.52.2 Example URI

/SpeechTTSResURI

6.52.3 Resource type

The Resource Type is defined as: "oic.r.speech.tts".

6.52.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Speech Synthesis-TTS",
      "version": "20190215",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e092e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
         "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
   },
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": []
}
```


"produces": ["application/json"],

"paths": {
  "/SpeechTTSResURI": {
    "get": {
      "description": "This Resource may be created on the OCF Server that is capable of rendering
speech by an OCF Client and allows the client to provide an SSML document with text to render or
may be created on the OIC Server by some resident application. The audio rendered is at this stage
local to the Server (i.e. not streamed). The utterance is an SSML document. The supportedLanguages
is an array of the RFC5646 defined language tags that are supported. The supportedVoices is an SSML
document fragment indicating the voices that are supported. The utterance in the example shall be a
properly escaped (JSON rules) SSML document. An example:

  "<?xml version="1.0" encoding="ISO-8859-1"?>
  <speak version="1.1" xmlns="http://www.w3.org/2001/10/synthesis"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.w3.org/2001/10/synthesis
    http://www.w3.org/2001/XMLSchema-instance"
  xmlns:lang="en-US">
  The title of the movie is: Monty Pythons The Meaning of Life which is directed by Terry Jones.
</speak",

  "parameters": {
    "$ref": "/parameters/interface"},

    "responses": {
      "200": {
        "description": "",
        "x-example":
        {
          "rt": ["oic.r.speech.tts"],
          "if": ["oic.if.a", "oic.if.baseline"],
          "utterance": "Strange women lying in ponds distributing swords is no basis for a system of government.",
          "supportedLanguages": ["en-US", "en-GB", "fr-CA"],
          "supportedVoices": "<voice gender="female" variant="2"></voice>
<voice name="Mike"></voice>"
        },
        "schema": { "$ref": "/definitions/Speech" }
      }
    },

    "post": {
      "description": "Changes the utterance being rendered. Example shows a change in language selected.

  "parameters": [
    {
      "$ref": "/parameters/interface"},

      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "/definitions/Speech" },
      "x-example":
      {
        "utterance": "Alright, but apart from the sanitation, the medicine, education, wine, public order, irrigation, roads, the fresh-water system, and public health, what have the Romans ever done for us?"
      }
    }
  ],

  "responses": {
    "200": {
      "description": "",
      "x-example":
      {
        "utterance": "Alright, but apart from the sanitation, the medicine, education, wine, public order, irrigation, roads, the fresh-water system, and public health, what have the Romans ever done for us?"
      },
      "schema": { "$ref": "/definitions/Speech" }
    }
  }

  }},

  "interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"]
}
}
"definitions": {
"Speech": {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"enum": ["oic.r.speech.tts"],
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"supportedLanguages": {
"description": "The array of supported language tags.",
"items": {
"type": "string"
},
"readOnly": true,
"type": "array"
},
"supportedVoices": {
"description": "The SSML document fragment indicating supported voices.",
"readOnly": true,
"maxLength": 1024,
"type": "string"
},
"utterance": {
"description": "The SSML document including the speech body.",
"maxLength": 1024,
"type": "string"
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"}
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": ["oic.if.a", "oic.if.baseline"],
"type": "string"
},
"minItems": 2,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
},
"type": "object",
"required": ["utterance"]}
6.52.5 Property definition

Table 107 defines the Properties that are part of the "oic.r.speech.tts" Resource Type.

Table 107 – The Property definitions of the Resource with type "rt" = "oic.r.speech.tts".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>supportedLanguages</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The array of supported language tags.</td>
</tr>
<tr>
<td>supportedVoices</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>The SSML document fragment indicating supported voices.</td>
</tr>
<tr>
<td>utterance</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>The SSML document including the speech body.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.52.6 CRUDN behaviour

Table 108 defines the CRUDN operations that are supported on the "oic.r.speech.tts" Resource Type.

Table 108 – The CRUDN operations of the Resource with type "rt" = "oic.r.speech.tts".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.53 Touch Sensor

6.53.1 Introduction

This Resource describes whether a touch has been sensed or not.

The Property "value" is a boolean.

A value of 'true' means that touch has been sensed.

A value of 'false' means that touch not been sensed.

6.53.2 Example URI

/TouchResURI

6.53.3 Resource type

The Resource Type is defined as: "oic.r.sensor.touch".

6.53.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Touch Sensor",
        "version": "20190215",
        "license": {
            "name": "OCF Data Model License",
            "url":
```
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bd4ba/L10727CENSE.md",

"x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."

"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"

"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],

"paths": {
  "/TouchResURI": {
    "get": {
      "description": "This Resource describes whether a touch has been sensed or not. The Property "value" is a boolean. A value of 'true' means that touch has been sensed. A value of 'false' means that touch not been sensed."
    }
  }
}

"parameters": [
  {"$ref": "#/parameters/interface"}
],

"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.sensor.touch"],
      "if": ["oic.if.s", "oic.if.baseline"],
      "value": true
    }
  }
}

"schema": { "$ref": "#/definitions/Touch" }

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
}

"definitions": {
  "Touch": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": ["oic.r.sensor.touch"],
        "maxLength": 64,
        "type": "string"
      },
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    },
    "value": {
      "description": "The touch sensor, true = sensed, false = not sensed.",
      "readOnly": true,
      "type": "boolean"
    },
    "n": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
    }
  }
}

"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
}
6.53.5 Property definition

Table 109 defines the Properties that are part of the "oic.r.sensor.touch" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The touch sensor, true = sensed, false = not sensed.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.53.6 CRUDN behaviour

Table 110 defines the CRUDN operations that are supported on the "oic.r.sensor.touch" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.54 UV Radiation

6.54.1 Introduction

This Resource specifies UV radiation measurement.

The Property "measurement" is the current measured UV Index

6.54.2 Example URI

/UVRadiationResURI

6.54.3 Resource type

The Resource Type is defined as: "oic.r.sensor.radiation.uv".
6.54.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "UV Radiation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4a/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/UVRadiationResURI" : {
      "get": {
        "description": "This Resource specifies UV radiation measurement. The Property "measurement" is the current measured UV Index",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.sensor.radiation.uv"],
              "if": ["oic.if.s", "oic.if.baseline"],
              "measurement": 3.5
            }
          }
        },
        "parameters": {
          "interface": {
            "in": "query",
            "name": "if",
            "type": "string",
            "enum": ["oic.if.s", "oic.if.baseline"]
          }
        },
        "definitions": {
          "UVRadiation": {
            "properties": {
              "rt": {
                "description": "The Resource Type.",
                "items": {
                  "enum": ["oic.r.sensor.radiation.uv"],
                  "maxLength": 64,
                  "type": "string"
                },
                "minItems": 1,
                "uniqueItems": true,
                "readOnly": true,
                "type": "array"
              },
              "measurement": {
                "description": "The measured UV Index.",
                "readOnly": true,
                "type": "number"
              }
            }
          }
        }
      }
    }
  }
}
```
6.54.5 Property definition

Table 111 defines the Properties that are part of the "oic.r.sensor.radiation.uv" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>measurement</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The measured UV Index.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.54.6 CRUDN behaviour

Table 112 defines the CRUDN operations that are supported on the "oic.r.sensor.radiation.uv" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.55 Water Sensor

6.55.1 Introduction
This Resource describes whether water has been sensed or not. The Property "value" is a boolean. A value of 'true' means that water has been sensed. A value of 'false' means that water not been sensed.

6.55.2 Example URI
/WaterResURI

6.55.3 Resource type
The Resource Type is defined as: "oic.r.sensor.water".

6.55.4 OpenAPI 2.0 definition
```json
{
    "swagger": "2.0",
    "info": {
        "title": "Water Sensor",
        "version": "20191118",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md"
        }
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
},

"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
    "/WaterResURI" : {
        "get": {
            "description": "This Resource describes whether water has been sensed or not. The Property "value" is a boolean. A value of 'true' means that water has been sensed. A value of 'false' means that water not been sensed."
        },
        "parameters": {
            "interface": {
                "in": "query",
                "name": "if",
                "type": "string",
                "enum": ["oic.if.s", "oic.if.baseline"]
            }
        },
        "responses": {
            "200": {
                "description": "",
                "x-example": {
                    "rt": ["oic.r.sensor.water"],
                    "id": "unique_example_id",
                    "value": true
                },
                "schema": { "$ref": "#/definitions/Water" }
            }
        }
    }
}
```

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"rt": {
  "description": "The Resource Type",
  "items": {
    "maxLength": 64,
    "type": "string",
    "enum": ["oic.r.sensor.water"]
  },
  "minItems": 1,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},
"value": {
  "description": "true - sensed, false - not sensed.",
  "readOnly": true,
  "type": "boolean"
},
"measurement": {
  "type": "number",
  "description": "Measured value for this sensor in units of litres/hr",
  "readOnly": true
},
"precision": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
},
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"range": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
},
"step": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
},
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
  "description": "The OCF Interface set supported by this Resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.s"
    ],
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},
"type": "object",
"required": ["value"]
}

6.55.5 Property definition

Table 113 defines the Properties that are part of the "oic.r.sensor.water" Resource Type.
Table 113 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.water".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>true = sensed, false = not sensed.</td>
</tr>
<tr>
<td>measurement</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Measured value for this sensor in units of litres/hr</td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.55.6 CRUDN behaviour

Table 114 defines the CRUDN operations that are supported on the "oic.r.sensor.water" Resource Type.

Table 114 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.water".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.56 Acceleration Sensor

6.56.1 Introduction

This Resource provides a measure of proper acceleration (g force) as opposed to co-ordinate acceleration (which is dependent on the co-ordinate system and the observer).

The Property "value" is a float which describes the acceleration experienced by the object in "g".

6.56.2 Example URI

/AccelerationResURI

6.56.3 Resource type

The Resource Type is defined as: "oic.r.sensor.acceleration".

6.56.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Acceleration Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
  }
}
```
"description": "This Resource provides a measure of proper acceleration (g force) as opposed to co-ordinate acceleration (which is dependent on the co-ordinate system and the observer). The Property "value" is a float which describes the acceleration experienced by the object in "g\"."

"parameters": [ {$ref": "/#/parameters/interface"} ]

"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.sensor.acceleration"],
      "if": ["oic.if.s", "oic.if.baseline"],
      "acceleration": 0.5
    },
    "schema": { "$ref": "/#/definitions/acceleration" }  
  }
}

"interface": {
  "in": "query",
  "name": "if",
  "type": "string",
  "enum": ["oic.if.s", "oic.if.baseline"]
}

"definitions": {
  "acceleration": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string",
          "enum": ["oic.r.sensor.acceleration"]
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "acceleration": {
        "description": "The sensed acceleration experienced in 'g\".",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"  
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
      }
    }
  }
}
6.5.6 Property definition

Table 115 defines the Properties that are part of the "oic.r.sensor.acceleration" Resource Type.

Table 115 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.acceleration".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>acceleration</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The sensed acceleration experienced in 'g'.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.5.6 CRUDN behaviour

Table 116 defines the CRUDN operations that are supported on the "oic.r.sensor.acceleration" Resource Type.
### Table 116 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.acceleration".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>observe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 6.57 Movement

#### 6.57.1 Introduction

This Resource specifies linear movement.

The Property "movementSettings" is an array of strings containing possible movement values (e.g. spin, stop, left, right).

The Property "movement" is the currently selected movement value.

The Property "movementModifier" is a modifier to the movement value (e.g. "spin", "90")

### 6.57.2 Example URI

/api/MovementResURI

### 6.57.3 Resource type

The Resource Type is defined as: "oic.r.movement.linear".

### 6.57.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Movement",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MovementResURI": {
      "get": {
        "description": "This Resource specifies linear movement. The Property "movementSettings" is an array of strings containing possible movement values (e.g. spin, stop, left, right). The Property "movement" is the currently selected movement value. The Property "movementModifier" is a modifier to the movement value (e.g. "spin", "90")",
        "parameters": [],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.movement.linear"],
              "if": ["oic.if.s", "oic.if.baseline"],
              "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
              "movement": "rotate",
              "movementModifier": "90"
            }
          }
        },
        "schema": { "$ref": "#/definitions/movement" }
      }
    }
  }
}
```
"post": {
  "description": "Sets the current device movement.",
  "parameters": [
    {
      "$ref": "#/parameters/interface",
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/movement" },
      "x-example": {
        "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
        "movement": "stop"
      }
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
        "movement": "stop"
      },
      "schema": { "$ref": "#/definitions/movement" }
    }
  }
}

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
}

"definitions": {
  "movement": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.movement.linear"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "movementSettings": {
        "description": "The array of possible movement values.",
        "items": {
          "type": "string"
        },
        "readOnly": true,
        "type": "array"
      },
      "movementModifier": {
        "description": "The modifier to the movement value (e.g. spin-90, left-20), units are device dependent.",
        "type": "string"
      },
      "movement": {
        "description": "The current movement value.",
        "type": "string"
      },
      "n": {
      }
    }
  }
}
6.57.5 Property definition

Table 117 defines the Properties that are part of the "oic.r.movement.linear" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>movementSettings</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The array of possible movement values.</td>
</tr>
<tr>
<td>movementModifier</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>The modifier to the movement value (e.g. spin-90, left-20), units are device dependent.</td>
</tr>
<tr>
<td>movement</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>The current movement value.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.57.6 CRUDN behaviour

Table 118 defines the CRUDN operations that are supported on the "oic.r.movement.linear" Resource Type.
### Table 118 – The CRUDN operations of the Resource with type "rt" = "oic.r.movement.linear".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 6.58 Sleep Sensor

#### 6.58.1 Introduction

This Resource describes whether human sleep has been sensed or not.

The Property "value" is a boolean.

A value of 'true' means that sleep has been sensed.

A value of 'false' means that sleep not been sensed.

#### 6.58.2 Example URI

/SleepSensorResURI

#### 6.58.3 Resource type

The Resource Type is defined as: "oic.r.sensor.sleep".

#### 6.58.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Sleep Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e092e170421ba3e83661a4c0fbbe8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SleepSensorResURI": {
      "get": {
        "description": "This Resource describes whether human sleep has been sensed or not. The Property "value" is a boolean. A value of 'true' means that sleep has been sensed. A value of 'false' means that sleep not been sensed."
      },
      "parameters": {
        "$ref": "#/parameters/interface"
      },
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.sensor.sleep"],
            "if": ["oic.if.s", "oic.if.baseline"],
            "value": true
          },
          "schema": { "$ref": "#/definitions/sleep" }
        }
      }
    }
  },
  "parameters": {
```

---

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6.58.5 Property definition

Table 119 defines the Properties that are part of the "oic.r.sensor.sleep" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The sleep sensor, true = sleep sensed, false = sleep not sensed.</td>
</tr>
</tbody>
</table>
6.58.6 CRUDN behaviour

Table 120 defines the CRUDN operations that are supported on the "oic.r.sensor.sleep" Resource Type.

Table 120 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.sleep".

<table>
<thead>
<tr>
<th></th>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>id</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>if</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

false = sleep not sensed.

6.59 Smoke Sensor

6.59.1 Introduction

This Resource describes whether smoke has been sensed or not. The Property "value" is a boolean. A value of 'true' means that smoke has been sensed. A value of 'false' means that smoke not been sensed.

6.59.2 Example URI

/SmokeSensorResURI

6.59.3 Resource type

The Resource Type is defined as: "oic.r.sensor.smoke".

6.59.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Smoke Sensor",
    "version": "20191118",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc2be8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
   },
   "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
     "/SmokeSensorResURI": {
       "get": {
         "description": "This Resource describes whether smoke has been sensed or not. The Property "value" is a boolean. A value of 'true' means that smoke has been sensed. A value of 'false' means that smoke not been sensed."
       },
       "parameters": [
         {$ref: "#/parameters/interface"}]
     }
   }
}
```
"200": {
  "description": "",
  "x-example": {
    "rt": ["oic.r.sensor.smoke"],
    "id": "unique_example_id",
    "value": true
  },
  "schema": { "$ref": "#/definitions/smoke" }
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "smoke": {
    "properties": {
      "rt": {
        "description": "The Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string",
          "enum": ["oic.r.sensor.smoke"]
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "value": {
        "description": "The smoke indicator, true = sensed, false = not sensed.",
        "readOnly": true,
        "type": "boolean"
      },
      "measurement": {
        "type": "number",
        "description": "Measured value for this sensor, this is a percentage",
        "readOnly": true
      },
      "precision": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
      },
      "step": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "if": {

6.59.5 Property definition

Table 121 defines the Properties that are part of the "oic.r.sensor.smoke" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The smoke indicator, true = sensed, false = not sensed.</td>
</tr>
<tr>
<td>measurement</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Measured value for this sensor, this is a percentage</td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.59.6 CRUDN behaviour

Table 122 defines the CRUDN operations that are supported on the "oic.r.sensor.smoke" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>observe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.3.3 Resource Type
The Resource Type is defined as: "oic.r.sensor.threeaxis".

3.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Three Axis Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ThreeAxisResURI" : {
      "get": {
        "description": "This Resource provides a representation of the measurement from a three-axis sensor.
The Property "orientation" is an array of numbers representing x-plane, y-plane and z-plane values.
The unit of measurement for each pane is 'g'.",
        "parameters": [],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt": ["oic.r.sensor.threeaxis"],
              "if": ["oic.if.s", "oic.if.baseline"],
              "orientation": [0.7, 1.1, -0.2]
            },
            "schema": { "$ref": "#/definitions/threeAxis" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "threeAxis" : {
      "rt": ["oic.r.sensor.threeaxis"],
      "if": ["oic.if.s", "oic.if.baseline"],
      "orientation": [0.7, 1.1, -0.2]
    }
  }
}
```
Table 123 defines the Properties that are part of the "oic.r.sensor.threeaxis" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>orientation</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The array containing x-plane, y-plane and z-plane orientation in 'g'.</td>
</tr>
</tbody>
</table>
6.60.6 CRUDN behaviour

Table 124 defines the CRUDN operations that are supported on the "oic.r.sensor.threeaxis" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>n</th>
<th>multiple types: see schema</th>
<th>No</th>
<th>Read Write</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

6.61 Altimeter

6.61.1 Introduction

This Resource describes the properties associated with altimeter. The Property "alt" is the distance (metres) above or below 'local' sea-level.

6.61.2 Example URI

/AltimeterResURI

6.61.3 Resource type

The Resource Type is defined as: "oic.r.altimeter".

6.61.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Altimeter",
    "version": "20190225",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bd24ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AltimeterResURI": {
      "get": {
        "description": "This Resource describes the properties associated with altimeter.

        The Property "alt" is the distance (metres) above or below 'local' sea-level."
      },
      "parameters": [],
      "responses": {
        "200": {
          "description": "RETRIEVES the current the distance (metres) above or below 'local' sea-level."
        },
        "x-example": {
          ... (code snippet continues)...
        }
      }
    }
  }
}
```
"rt": ["oic.r.altimeter"],
"if": ["oic.if.s", "oic.if.baseline"],
"alt": 1500.0
},
"schema": { "$ref": "#/definitions/Altimeter" }
}
}

"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.s", "oic.if.baseline"]
}
},
"definitions": {
"Altimeter": {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"enum": ["oic.r.altimeter"],
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"alt": {
"description": "The current distance (metres) above or below 'local' sea-level.",
"readOnly": true,
"type": "number"
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"precision": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
},
"range": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
},
"step": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": ["oic.if.s", "oic.if.baseline"],
"type": "string"}
6.61.5 Property definition

Table 125 defines the Properties that are part of the "oic.r.altimeter" Resource Type.

Table 125 – The Property definitions of the Resource with type "rt" = "oic.r.altimeter".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>alt</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The current distance (metres) above or below 'local' sea-level.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.61.6 CRUDP behaviour

Table 126 defines the CRUDP operations that are supported on the "oic.r.altimeter" Resource Type.

Table 126 – The CRUDP operations of the Resource with type "rt" = "oic.r.altimeter".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.62 Clock

6.62.1 Introduction

This Resource describes the properties associated with clock and time.

Clock is a time information.

The Property "datetime" is using RFC3339 datetime format (e.g: "2007-04-05T14:30Z")

(Time+Date+Timezone)

The Property "countdown" is the desired total seconds for countdown.

6.62.2 Example URI

/ClockResURI
6.6.2.3 Resource type

The Resource Type is defined as: "oic.r.clock".

6.6.2.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Clock",
    "version": "20190327",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bd04ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ClockResURI": {
      "get": {
        "description": "This Resource describes the properties associated with clock and
        time. The Clock is a time information. The Property "datetime" is using RFC3339
datetime format (e.g. "2007-04-05T14:30Z") (Time=Date+Timezone) and the Property "countdown"
is the desired total seconds for countdown.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": ",
            "x-example": {
              "rt": ["oic.r.clock"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "datetime": "2015-11-05T14:30:00Z",
              "countdown": 0.0
            }
          }
        }
      },
      "post": {
        "description": "Sets the desired datetime.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          },
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": {
              "$ref": "#/definitions/Clock" },
            "x-example": {
              "datetime": "2015-11-05T14:30:00Z",
              "countdown": 0.0
            }
          }
        ],
        "responses": {
          "200": {
            "description": "Indicates that the datetime value was successfully changed. The new
datetime value is provided in the response.",
            "x-example": {
              "datetime": "2015-11-05T14:30:00Z",
              "countdown": 0.0
            }
          }
        }
      }
    }
  }
}
```
"403": {
  "description": "Indicates that OIC client sent an invalid property value to the
  server. The server responds with the required input representation.",
  "x-example":
    {
      "datetime": "2015-11-05T14:30:00Z",
      "countdown": 0.0
    }
}

"schema": { "$ref": "#/definitions/Clock" }
6.62.5 Property definition

Table 127 defines the Properties that are part of the "oic.r.clock" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>countdown</td>
<td>number</td>
<td>No</td>
<td>Read Write</td>
<td>The desired total seconds for countdown.</td>
</tr>
<tr>
<td>datetime</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>The date time using RFC3339 datetime format (e.g: 2007-04-05T14:30:00Z, 2007-04-05T14:30:00+09:00).</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.62.6 CRUDN behaviour

Table 128 defines the CRUDN operations that are supported on the "oic.r.clock" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.63 Geolocation

6.63.1 Introduction

This Resource describes the properties associated with the current geolocation coordinate.

Geolocation is a geolocation coordinate data.

The Property "latitude" is a device's current Latitude coordinate (degrees).

The Property "longitude" is a device's current Longitude coordinate (degrees).

The Property "alt" is a device's current distance (metres) above or below 'local' sea-level.

The Property "accuracy" is the accuracy level of the latitude and longitude coordinates (metres).

The Property "altitudeAccuracy" is the accuracy level of the altitude coordinates (metres).

The Property "heading" is a direction of travel of device (degree).

The Property "speed" is a device's current velocity (metres per second).

6.63.2 Example URI

/GeolocationResURI
6.63.3 Resource type

The Resource Type is defined as: "oic.r.sensor.geolocation".

6.63.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Geolocation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e836614ec0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016–2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GeolocationResURI" : {
      "get": {
        "description": "This Resource describes the properties associated with the current geolocation coordinate. Geolocation is a geolocation coordinate data. The Property "latitude" is a device's current Latitude coordinate (degrees). The Property "longitude" is a device's current Longitude coordinate (degrees). The Property "alt" is a device's current distance (metres) above or below 'local' sea-level. The Property "accuracy" is the accuracy level of the latitude and longitude coordinates (metres). The Property "altitudeAccuracy" is the accuracy level of the altitude coordinates (metres). The Property "heading" is a direction of travel of device (degree). The Property "speed" is a device's current velocity (metres per second).",
        "parameters": ["$ref": "/parameters/interface"],
        "responses": {
          "200": {
            "description": "RETRIEVES the current geolocation coordinates."
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"
    }
  },
  "definitions": {
    "Geolocation": {
      "properties": {
        "rt": {
          "description": "The Resource Type."
        }
      }
    }
  }
}
```
"items": {
  "enum": ["oic.r.sensor.geolocation"],
  "maxLength": 64,
  "type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"longitude": {
  "description": "The Device's Current Longitude coordinate (degrees).",
  "readOnly": true,
  "type": "number"
},
"heading": {
  "description": "The direction of travel of the Device (degree).",
  "maximum": 360,
  "minimum": 0,
  "readOnly": true,
  "type": "number"
},
"latitude": {
  "description": "The Device's Current Latitude coordinate (degrees).",
  "readOnly": true,
  "type": "number"
},
"altitudeAccuracy": {
  "description": "The accuracy level of the altitude coordinates (metres).",
  "minimum": 0,
  "readOnly": true,
  "type": "number"
},
"alt": {
  "description": "The current distance (metres) above or below 'local' sea-level.",
  "readOnly": true,
  "type": "number"
},
"accuracy": {
  "description": "The accuracy level of the latitude and longitude coordinates (metres).",
  "minimum": 0,
  "readOnly": true,
  "type": "number"
},
"speed": {
  "description": "The Device's current velocity (metres per second).",
  "minimum": 0,
  "readOnly": true,
  "type": "number"
},
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": {
    "enum": ["oic.if.s", "oic.if.baseline"],
    "type": "string"
  },
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true,
Table 129 defines the Properties that are part of the "oic.r.sensor.geolocation" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>longitude</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The Device's Current Longitude coordinate (degrees).</td>
</tr>
<tr>
<td>heading</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The direction of travel of the Device (degree).</td>
</tr>
<tr>
<td>latitude</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The Device's Current Latitude coordinate (degrees).</td>
</tr>
<tr>
<td>altitudeAccuracy</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The accuracy level of the altitude coordinates (metres).</td>
</tr>
<tr>
<td>alt</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The current distance (metres) above or below 'local' sea-level.</td>
</tr>
<tr>
<td>accuracy</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The accuracy level of the latitude and longitude coordinates (metres).</td>
</tr>
<tr>
<td>speed</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The Device's current velocity (metres per second).</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.63.6 CRUDN behaviour

Table 130 defines the CRUDN operations that are supported on the "oic.r.sensor.geolocation" Resource Type.
6.64 Height

6.64.1 Introduction
This Resource describes the Properties associated with height of an object's physical size. The unit is a single value that is one of m, cm, ft or in. If the unit Property is missing the default is meters [m]. The unit Property is a read-only value that is provided by the server. When range is omitted the default is 0 to +MAXFLOAT.

6.64.2 Example URI
/HeightResURI

6.64.3 Resource type
The Resource Type is defined as: "oic.r.height".

6.64.4 OpenAPI 2.0 definition
```
{
  "swagger": "2.0",
  "info": {
    "title": "Height",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HeightResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with height of an object's physical size. The unit is a single value that is one of m, cm, ft or in. If the unit Property is missing the default is meters [m]. The unit Property is a read-only value that is provided by the server. When range is omitted the default is 0 to +MAXFLOAT."
      }
    },
    "parameters": [
      {
        "$ref": "#/parameters/interface"
      }
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.height",
          ],
          "height": 1.8,
          }
        }
    }
  }
}
```
"units": "m"
},
  "schema": {
    "$ref": "#/definitions/Height"
  }
}
"post": {
  "description": "Sets the height.",
  "parameters": [
    {
      "$ref": "#/parameters/interface"
    },
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": {
        "$ref": "#/definitions/Height"
      }
    },
    "x-example": {
      "height": 1.75,
      "units": "m"
    }
  ],
  "responses": {
    "200": {
      "description": "Indicates that the height was successfully changed. The new height is provided in the response.",
      "x-example": {
        "height": 1.75,
        "units": "m"
      },
      "schema": {
        "$ref": "#/definitions/Height"
      }
    },
    "403": {
      "description": "Indicates that OCF Client sent an invalid Property value to the Server. The Server responds with the current Resource representation."
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.a",
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Height": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "rt": "oic.if.a",
..."
"enum": [  
  "oic.r.height"
],
"type": "string",
"maxLength": 64
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
],
"height": {
  "description": "Height of an object",
  "minimum": 0,
  "type": "number"
},
"units": {
  "description": "Height unit",
  "enum": [  
    "m",
    "cm",
    "ft",
    "in"
  ],
  "readOnly": true,
  "type": "string",
  "default": "m"
},
"range": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
},
"step": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
},
"precision": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
},
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
  "description": "The OCF Interface set supported by this Resource",
  "items": {
    "enum": [  
      "oic.if.a",
      "oic.if.s",
      "oic.if.baseline"
    ],
    "type": "string",
    "maxLength": 64
  },
  "minItems": 1,
  "readOnly": true,
  "uniqueItems": true,
  "type": "array"
},
"type": "object",
"required": [  
  "description": "Height of an object",
  "minItems": 0,
  "type": "number"
]  
}
6.64.5 Property definition

Table 131 defines the Properties that are part of the "oic.r.height" Resource Type.

**Table 131 – The Property definitions of the Resource with type "rt" = "oic.r.height".**

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>height</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>Height of an object</td>
</tr>
<tr>
<td>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Height unit</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.64.6 CRUDN behaviour

Table 132 defines the CRUDN operations that are supported on the "oic.r.height" Resource Type.

**Table 132 – The CRUDN operations of the Resource with type "rt" = "oic.r.height".**

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.65 Weight

6.65.1 Introduction

This Resource describes the Properties associated with weight of an object.

The unit is a single value that is one of kg, g, lb or oz.

If the unit Property is missing the default is kilograms [kg].

The unit Property is a read-only value that is provided by the server.

When range is omitted the default is 0 to +MAXFLOAT.

6.65.2 Example URI

/WeightResURI

6.65.3 Resource type

The Resource Type is defined as: "oic.r.weight".

6.65.4 OpenAPI 2.0 definition

```
"swagger": "2.0",
```
"info": {
  "title": "Weight",
  "version": "2019-03-22",
  "license": {
    "name": "OCF Data Model License",
    "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
    "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
},
"schemes": [
  "http"
],
"consumes": [
  "application/json"
],
"produces": [
  "application/json"
],
"paths": {
  "/WeightResURI": {
    "get": {
      "description": "This Resource describes the Properties associated with weight of an object. The unit is a single value that is one of kg, g, lb or oz. If the unit Property is missing the default is kilograms [kg]. The unit Property is a read-only value that is provided by the server. When range is omitted the default is 0 to +MAXFLOAT.",
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        },
        {"responses": {
          "200": {
            "description": "Indicates that the weight was successfully changed. The new weight is provided in the response."
          }
        }},
        "post": {
          "description": "Sets the Weight."
        }
      ]
    }
  }
}
"x-example": {
  "weight": 75.0,
  "units": "kg"
},
"schema": {
  "$ref": "#/definitions/Weight"
}
"403": {
  "description": "Indicates that OCF client sent an invalid Property value to the server. The server responds with the current resource representation.",
  "x-example": {
    "weight": 80.0,
    "units": "kg"
  },
  "schema": {
    "$ref": "#/definitions/Weight"
  }
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.a", "oic.if.baseline"
    ]
  }"definitions": {
  "Weight": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": ["oic.r.weight"
        ],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    },
    "weight": {
      "description": "Weight of an object",
      "minimum": 0.0,
      "type": "number"
    },
    "units": {
      "description": "Weight unit",
      "enum": ["kg", "g", "lb", "oz"
    ],
      "readOnly": true,
      "type": "string",
      "default": "kg"
    },
    "range": {
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-"
6.65.5 Property definition

Table 133 defines the Properties that are part of the "oic.r.weight" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>weight</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>Weight of an object</td>
</tr>
<tr>
<td>units</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>Weight unit</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
6.65.6 CRUDN behaviour

Table 134 defines the CRUDN operations that are supported on the "oic.r.weight" Resource Type.

<table>
<thead>
<tr>
<th>CRUDN Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create</td>
</tr>
<tr>
<td>get</td>
</tr>
</tbody>
</table>

6.66 Air Quality

6.66.1 Introduction

This Resource describes a qualitative or measured contaminant that can be used to infer Air Quality.

The Property "valueType" indicates a qualitative or measured reading within the contaminant value Property.

The Property "contaminantvalue" can contain the actual sensed value with units per contaminant type.

Qualitative is a representative value within the range provided where the minimum value is minimum contamination and maximum value is maximum contamination for the specific contaminant.

The Property "contaminantvalue" contains the actual measured or qualitative level.

The Property "range" contains the allowed range for the value that is being reported.

If valueType is 'Measured' then the units for the contaminant types are as follows:

- Methanol (also known as Formaldehyde): CH2O (ug/m^3),
- Carbon Dioxide: CO2 (ppm),
- Carbon Monoxide: CO (ppm),
- Particulate Matter (less than 1 micron in diameter): PM1 (ug/m^3),
- Particulate Matter (less than 2.5 microns in diameter): PM2.5 (ug/m^3),
- Particulate Matter (less than 10 microns in diameter): PM10 (ug/m^3),
- Volatile Organic Compounds: VOC (ug/m^3).

6.66.2 Example URI

/AirQualityResURI

6.66.3 Resource type

The Resource Type is defined as: "oic.r.airquality".

6.66.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Air Quality",
        "version": "20190613",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc4e8bdc4ba/LICENSE.md",
            "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
        }
    }
}
```
This Resource describes a qualitative or measured contaminant that can be used to infer Air Quality. The Property "valueType" indicates a qualitative or measured reading within the contaminant value Property. The Property "contaminant value" can contain the actual sensed value with units per contaminant type. Qualitative is a representative value within the range provided where the minimum value is minimum contamination and maximum value is maximum contamination for the specific contaminant. The Property "contaminant value" contains the actual measured or qualitative level. The Property "range" contains the allowed range for the value that is being reported. If valueType is 'Measured' then the units for the contaminant types are as follows:

- Methanol (also known as Formaldehyde): CH2O (ug/m^3),
- Carbon Dioxide: CO2 (ppm),
- Carbon Monoxide: CO (ppm),
- Particulate Matter (less than 2.5 microns in diameter): PM2.5 (ug/m^3),
- Particulate Matter (less than 10 microns in diameter): PM10 (ug/m^3),
- Volatile Organic Compounds: VOC (ug/m^3).

### Parameters

- **Interface**: 
  - **in**: "query",
  - **name**: "if",
  - **type**: "string",
  - **enum**: ["oic.if.s", "oic.if.baseline"]

### Responses

- **200**: 
  - **description**: "",
  - **example**: 
    - "rt": ["oic.r.airquality"],
    - "if": ["oic.if.s", "oic.if.baseline"],
    - "contaminanttype": "CO",
    - "valueType": "Measured",
    - "contaminantvalue": 10,
    - "range": [0, 500]
  - **schema**: 
    - "$ref": "/#/definitions/AirQuality"

### Definitions

- **AirQuality**: 
  - **properties**: 
    - **rt**: 
      - **description**: "The Resource Type.",
      - **items**: 
        - **enum**: ["oic.r.airquality"],
        - **maxLength**: 64,
        - **type**: "string"
    - **minItems**: 1,
    - **uniqueItems**: true,
    - **readOnly**: true,
    - **type**: "array"

- **contaminanttype**: 
  - **description**: "The contaminant being measured.",
  - **enum**: ["CH2O", "CO2", "CO", "PM1", "PM2.5"],

---

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6.6.6.5 Property definition

Table 135 defines the Properties that are part of the "oic.r.airquality" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
</tbody>
</table>
contaminanttype  |  string  |  Yes  |  Read Only  |  The contaminant being measured.
valuetype  |  string  |  Yes  |  Read Only  |  The property that indicates whether the provided value is qualitative or measured.
contaminantvalue  |  integer  |  Yes  |  Read Only  |  The measured or qualitative value for the contaminant.
range  |  multiple types: see schema  |  No  |  Read Write  |  
id  |  multiple types: see schema  |  No  |  Read Write  |  

Table 136 – The CRUDN operations of the Resource with type "rt" = "oic.r.airquality".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.66.6 CRUDN behaviour

Table 136 defines the CRUDN operations that are supported on the "oic.r.airquality" Resource Type.

6.67 Air Quality Collection

6.67.1 Introduction

This resource describes a sensor that provides the qualitative or measured Air Quality. The resource is a collection of instances of oic.r.airquality detailing the individual exposed contaminant measures. There is one collection entry per contaminant type supported by the device. A device must expose at least one measured or qualitative value.

Retrieves the current air quality.

6.67.2 Example URI

/AirQualityCollectionResURI

6.67.3 Resource type

The Resource Type is defined as: "oic.r.airqualitycollection, oic.wk.col".

6.67.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Air Quality Collection",
    "version": "20190307",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
  }
}
```
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",

"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],

.paths: {
  "/AirQualityCollectionResURI?if=oic.if.ll" : {
    "get": {
      "description": "This resource describes a sensor that provides the qualitative or measured Air Quality. The resource is a collection of instances of oic.r.airquality detailing the individual exposed contaminant measures. There is one collection entry per contaminant type supported by the device. A device must expose at least one measured or qualitative value. Retrieves the current air quality.",
      "parameters": [
        {"$ref": "/#parameters/interface-all"}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "href": "/myCOMeasureResURI",
            "rt": ["oic.r.airquality"],
            "if": ["oic.if.s","oic.if.baseline"],
            "eps": [["ep": "coaps://[fe80::b1d6]:1122"]]
          }
        }
      }
    }
  },
  "/AirQualityCollectionResURI?if=oic.if.b" : {
    "get": {
      "description": "This resource describes a sensor that provides the qualitative or measured Air Quality. The resource is a collection of instances of oic.r.airquality detailing the individual exposed contaminant measures. There is one collection entry per contaminant type supported by the device. A device must expose at least one measured or qualitative value. Retrieves the current air quality.",
      "parameters": [
        {"$ref": "/#parameters/interface-all"}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "href": "/AirQualityCOREsResURI",
            "rep": {
              "contaminanttype": "CO",
              "valuetype": "Measured",
              "contaminantvalue": 10,
              "range": [0,500]
            }
          }
        }
      }
    }
  },
  "/AirQualityCollectionResURI?if=oic.if.baseline" : {
    "get": {
      "description": "This resource describes a sensor that provides the qualitative or measured Air Quality. The resource is a collection of instances of oic.r.airquality detailing the individual exposed contaminant measures. There is one collection entry per contaminant type supported by the device. A device must expose at least one measured or qualitative value. Retrieves the current air quality.",
      "parameters": [
        {"$ref": "/#parameters/interface-all"}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "href": "/AirQualitySmokeResURI",
            "rep": {
              "contaminanttype": "Smoke",
              "valuetype": "Measured",
              "contaminantvalue": 100,
              "range": [0,5000]
            }
          }
        }
      }
    }
  }
}
Air Quality. The resource is a collection of instances of oic.r.airquality detailing the individual exposed contaminant measures. There is one collection entry per contaminant type supported by the device. A device must expose at least one measured or qualitative value.

Retrieves the current air quality.

```
"parameters": [
  {
    "$ref": "#/parameters/interface-all"
  },
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "rt": ["oic.r.airqualitycollection","oic.wk.col"],
        "if": ["oic.if.baseline","oic.if.ll"],
        "links": [
          {"href": "/myCOMeasureResURI", "rt": ["oic.r.airquality"], "if": ["oic.if.s","oic.if.baseline"], "eps": ["coaps://[fe80::b1d6]:1122"]},
          {"href": "/myCO2ResURI", "rt": ["oic.r.airquality"], "if": ["oic.if.s","oic.if.baseline"], "eps": ["coaps://[fe80::b1d6]:1122"]}
        ]
      },
      "schema": { "$ref": "#/definitions/AirQuality" }
    }
  }
],
"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.ll", "oic.if.b","oic.if.baseline"]
  }
},
"definitions": {
  "AirQuality-ll": {
    "items": {
      "$ref": "#/definitions/oic.oic-link"
    },
    "type": "array"
  },
  "oic.oic-link": {
    "type": "object",
    "properties": {
      "anchor": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
      },
      "di": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
      },
      "eps": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
      },
      "href": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
      },
      "ins": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
      },
      "p": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
      }
    }
  }
},
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p",
"rel": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/rel_array",
  "title": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/title",
    "type": "string",
    "maxLength": 64
  },
  "minItems": 2,
  "uniqueItems": true,
  "type": "array",
  "readOnly": true
},
"rt": {
  "description": "Resource Type of the target Resource",
  "items": {
    "maxLength": 64,
    "type": "string",
    "enum": ["oic.r.airquality"]
  },
  "minItems": 1,
  "type": "array",
  "uniqueItems": true,
  "readOnly": true
}
},
"required": [
  "href",
  "rt",
  "if"
],
"AirQuality": {
  "type": "object",
  "properties": {
    "rt": {
      "description": "The OCF Interfaces supported by the target Resource",
      "items": {
        "enum": ["oic.if.s", "oic.if.baseline"],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 2,
      "uniqueItems": true,
      "type": "array",
      "readOnly": true
    },
    "rt": {
      "description": "Resource Type of the target Resource",
      "items": {
        "maxLength": 64,
        "type": "string",
        "enum": ["oic.r.airquality"]
      },
      "minItems": 1,
      "type": "array",
      "uniqueItems": true,
      "readOnly": true
    }
  },
  "required": [
    "href",
    "rt"
  ]
}
"$ref": ">#/definitions/oic.oic-link"
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"rts": {
"items": {
"enum": ["oic.r.airquality"],
"type": "string",
"maxLength": 64
},
"minItems": 1,
"type": "array",
"uniqueItems": true
},
"if": {
"description": "The OCF Interfaces supported by this Resource",
"items": {
"enum": [
"oic.if.ll",
"oic.if.b",
"oic.if.baseline"
],
"type": "string",
"maxLength": 64
},
"minItems": 1,
"readOnly": true,
"uniqueItems": true,
"type": "array"
}
"AirQualityCollectionBatch-Retrieve" : {
"type": "array",
"minItems": 1,
"uniqueItems": true,
"items": {
"type": "object",
"additionalProperties": true,
"properties": {
"href": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
},
"rep": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/AirQualityResURI.swagger.json#/definitions/AirQuality"
}
,"required": [
"href",
"rep"
]}
"AirQualityCollectionBatch-Retrieve" : {
"type": "array",
"minItems": 1,
"uniqueItems": true,
"items": {
"type": "string",
"maxLength": 64
},
"minItems": 1,
"readOnly": true,
"uniqueItems": true,
"type": "array"
}
"AirQualityCollectionBatch-Retrieve" : {
"type": "array",
"minItems": 1,
"uniqueItems": true,
"items": {
"type": "string",
"maxLength": 64
},
"minItems": 1,
"readOnly": true,
"uniqueItems": true,
"type": "array"
}
"AirQualityCollectionBatch-Retrieve" : {
"type": "array",
"minItems": 1,
"uniqueItems": true,
"items": {
"type": "string",
"maxLength": 64
},
"minItems": 1,
"readOnly": true,
"uniqueItems": true,
"type": "array"
}
"AirQualityCollectionBatch-Retrieve" : {
"type": "array",
"minItems": 1,
"uniqueItems": true,
"items": {
"type": "string",
"maxLength": 64
},
"minItems": 1,
"readOnly": true,
"uniqueItems": true,
"type": "array"
}
### 6.67.5 Property definition

Table 137 defines the Properties that are part of the "oic.r.airqualitycollection, oic.wk.col" Resource Type.

#### Table 137 – The Property definitions of the Resource with type "rt" = "oic.r.airqualitycollection, oic.wk.col".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>title</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>type</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The OCF Interfaces supported by the target Resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>Resource Type of the target Resource</td>
</tr>
<tr>
<td>links</td>
<td>array: see schema</td>
<td>Read Write</td>
<td>A set of simple or individual OCF Links.</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>Read Write</td>
<td></td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>Read Write</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>Read Write</td>
<td></td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Read Only</td>
<td>The OCF Interfaces supported by this Resource</td>
<td></td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rep</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

### 6.67.6 CRUDN behaviour

Table 138 defines the CRUDN operations that are supported on the "oic.r.airqualitycollection, oic.wk.col" Resource Type.
Table 138 – The CRUDN operations of the Resource with type \"rt\" = \"oic.r.airqualitycollection, oic.wk.col\".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>observe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.68 Consumable

6.68.1 Introduction

This Resource specifies a thing that can be consumed such as filter material, printer toner etc.

The Property \"typeofconsumable\" is an enumeration defining the thing being consumed as defined by the Smart Home Device Specification.

The Property \"remaining\" is an integer capturing the percentage remaining life.

The Property \"orderpercentage\" is an integer capturing the percentage life at which replacement or replenishment is recommended by the manufacturer.

The Property \"url\" is a string containing a URL at which further information may be obtained with respect to the consumable.

6.68.2 Example URI

/ConsumableResURI

6.68.3 Resource type

The Resource Type is defined as: \"oic.r.consumable\".

6.68.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Consumable",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc86bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ConsumableResURI": {
      "get": {
        "description": "This Resource specifies a thing that can be consumed such as filter material, printer toner etc. The Property \"typeofconsumable\" is an enumeration defining the thing being consumed as defined by the Smart Home Device Specification. The Property \"remaining\" is an integer capturing the percentage remaining life. The Property \"orderpercentage\" is an integer capturing the percentage life at which replacement or replenishment is recommended by the manufacturer. The Property \"url\" is a string containing a URL at which further information may be obtained with respect to the consumable.",
        "parameters": [
          {"$ref": "/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.consumable"],
              "if": ["oic.if.s", "oic.if.baseline"],
              "typeofconsumable": "tonerBlack",
```
"remaining": 20,
"orderpercentage": 10,
"url": "http://myreorderURL"
},
"schema": { "$ref": "#/definitions/consumable" }
}
}
,"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.s", "oic.if.baseline"]
}
},
"definitions": {
"consumable" : {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"enum": ["oic.r.consumable"],
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"remaining": {
"description": "The percentage remaining lifespan.",
"maximum": 100,
"minimum": 0,
"readOnly": true,
"type": "integer"
},
"typeofconsumable": {
"description": "The thing that is being consumed.",
"readOnly": true,
"type": "string"
},
"url": {
"description": "The URL at which additional ordering information may be found.",
"format": "uri",
"readOnly": true,
"type": "string"
},
"orderpercentage": {
"description": "The percentage at which re-ordering is recommended by the manufacturer.",
"maximum": 100,
"minimum": 0,
"readOnly": true,
"type": "integer"
},
}"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": ["}
6.68.5 Property definition

Table 139 defines the Properties that are part of the "oic.r.consumable" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>remaining</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>The percentage remaining lifespan.</td>
</tr>
<tr>
<td>typeofconsumable</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>The thing that is being consumed.</td>
</tr>
<tr>
<td>url</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>The URL at which additional ordering information may be found.</td>
</tr>
<tr>
<td>orderpercentage</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>The percentage at which re-ordering is recommended by the manufacturer.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.68.6 CRUDN behaviour

Table 140 defines the CRUDN operations that are supported on the "oic.r.consumable" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.69 Consumables

6.69.1 Introduction

This Resource specifies things that can be consumed such as filter material, printer toner etc. The resource is a Collection of instances of oic.r.consumable detailing the individual consumed items.
supportedconsumables is the set of consumable types that this instance of the Resource supports

6.69.2 Example URI

/ConsumablesResURI

6.69.3 Resource type

The Resource Type is defined as: "oic.r.consumablecollection, oic.wk.col".

6.69.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Consumables",
    "version": "20190613",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e09e0a92e17042e3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ConsumablesResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource specifies things that can be consumed such as filter material, printer toner etc. The resource is a collection of instances of oic.r.consumable detailing the individual consumed items. supportedconsumables is the set of consumable types that this instance of the Resource supports."
        "parameters": ["$ref": "/parameters/interface-all"],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myTonerBlackResURI",
                "rt": ["oic.r.consumable"],
                "if": ["oic.if.s", "oic.if.baseline"],
                "eps": ["coaps://[fe80::b1d6]:1122"]
              },
              {
                "href": "/myTonerCyanResURI",
                "rt": ["oic.r.consumable"],
                "if": ["oic.if.s", "oic.if.baseline"],
                "eps": ["coaps://[fe80::b1d6]:1122"]
              },
              {
                "href": "/myTonerMagentaResURI",
                "rt": ["oic.r.consumable"],
                "if": ["oic.if.s", "oic.if.baseline"],
                "eps": ["coaps://[fe80::b1d6]:1122"]
              },
              {
                "href": "/myTonerYellowResURI",
                "rt": ["oic.r.consumable"],
                "if": ["oic.if.s", "oic.if.baseline"],
                "eps": ["coaps://[fe80::b1d6]:1122"]
              }
            ]
          }
        }
    },
    "/ConsumablesResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource specifies things that can be consumed such as filter material, printer toner etc. The resource is a collection of instances of oic.r.consumable detailing the individual consumed items. supportedconsumables is the set of consumable types that this instance of the Resource supports."
        "parameters": ["$ref": "/parameters/interface-all"],
        "responses": {
          "200": {
```
"description": "", "x-example": [
    
    
    
    
    
    "href": "/tonerCyanResURI",
    "rep": {
    "typeofconsumable": "tonerCyan",
    "remaining": 70,
    "orderpercentage": 10,
    "url": "http://myreorderURL"
    }
],

    
    "href": "/tonerBlackResURI",
    "rep": {
    "typeofconsumable": "tonerBlack",
    "remaining": 20,
    "orderpercentage": 10,
    "url": "http://myreorderURL"
    }
},

"schema": { "$ref": "#/definitions/ConsumableCollectionBatch-Retrieve" }
]
"consumables": {
  "properties": {
    "rt": {
      "items": {
        "enum": [
          "oic.r.consumablecollection",
          "oic.wk.col"
        ],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 2,
      "type": "array",
      "readOnly": true,
      "uniqueItems": true
    },
    "supportedconsumables": {
      "description": "Array of possible consumables the device measures.",
      "items": {
        "type": "string"
      },
      "readOnly": true,
      "type": "array"
    },
    "links": {
      "description": "A set of simple or individual OCF Links.",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      },
      "type": "array"
    },
    "n": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
    },
    "id": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
    },
    "rts": {
      "items": {
        "enum": ["oic.r.consumable"],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 1,
      "type": "array",
      "readOnly": true,
      "uniqueItems": true
    },
    "if": {
      "description": "The OCF Interfaces supported by this Resource",
      "items": {
        "enum": ["oic.if.ll", "oic.if.b", "oic.if.baseline"],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 1,
      "readOnly": true,
      "uniqueItems": true
    }
  }
},
"type": "array"
"type": "object",
"ConsumableCollectionBatch-Retrieve": {
  "type": "array",
  "minItems": 1,
  "uniqueItems": true,
  "items": {
    "type": "object",
    "additionalProperties": true,
    "properties": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href",
      "rep": {},
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/ConsumableResURI.swagger.json#/definitions/consumable"
    }
  }
},
"required": [
  "href",
  "rep"
]
},
"oic.oic-link": {
  "type": "object",
  "properties": {
    "anchor": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
    },
    "di": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
    },
    "eps": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
    },
    "href": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
    },
    "ins": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
    },
    "p": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
    },
    "rel": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/rel_array"
    },
    "title": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/title"
    }
  }
}
Table 141 defines the Properties that are part of the "oic.r.consumablecollection, oic.wk.col" Resource Type.

Table 141 – The Property definitions of the Resource with type "rt" = "oic.r.consumablecollection, oic.wk.col".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td></td>
<td>Read Only</td>
<td>Array of possible consumables the device measures.</td>
</tr>
<tr>
<td>supportedconsumables</td>
<td>array: see schema</td>
<td></td>
<td>Read Only</td>
<td>A set of simple or individual OCF Links.</td>
</tr>
<tr>
<td>links</td>
<td>array: see schema</td>
<td></td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td></td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td></td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td></td>
<td>Read Only</td>
<td>The OCF Interfaces supported by this Resource</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td></td>
<td>Read Only</td>
<td></td>
</tr>
</tbody>
</table>
6.69.6 CRUDN behaviour

Table 142 defines the CRUDN operations that are supported on the "oic.r.consumablecollection, oic.wk.col" Resource Type.

<table>
<thead>
<tr>
<th>Column</th>
<th>Data Type</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
</tr>
<tr>
<td>rep</td>
<td>multiple types: see schema</td>
<td>Yes</td>
</tr>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
</tr>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
</tr>
<tr>
<td>p</td>
<td>multiple types: see schema</td>
<td>No</td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
</tr>
<tr>
<td>title</td>
<td>multiple types: see schema</td>
<td>No</td>
</tr>
<tr>
<td>type</td>
<td>multiple types: see schema</td>
<td>No</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operation</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create</td>
<td>Get</td>
</tr>
<tr>
<td>Read</td>
<td>Observe</td>
</tr>
<tr>
<td>Update</td>
<td></td>
</tr>
<tr>
<td>Delete</td>
<td></td>
</tr>
<tr>
<td>Notify</td>
<td></td>
</tr>
</tbody>
</table>

6.70 Delay Defrost

6.70.1 Introduction

This Resource describes the delay defrost function as defined by the US Energy Star Specifications. See Energy Star Refrigerator Requirements Version 5 Section 4).

The Property "status" is a boolean indicating whether the function is on, if off then defrost is scheduled as part of normal device operation. The Property "startTime" is an ISO8601 encoded start time for the interval in which defrost shall not occur. The Property "stopTime" is an ISO8601 encoded stop time for the interval in which defrost shall not occur. The Property "interval" with additional range restrictions is the time in minutes of the period that starts at starttime (if not present the default is 240).
The Properties "stopTime" and "interval" are mutually exclusive; they cannot both be present in a Resource instance.

6.70.2 Example URI

/DelayDefrostResURI

6.70.3 Resource type

The Resource Type is defined as: "oic.r.delaydefrost".

6.70.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Delay Defrost",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/DelayDefrostResURI": {
      "get": {
        "description": "This Resource describes the delay defrost function as defined by the US Energy Star Specifications. See Energy Star Refrigerator Requirements Version 5 Section 4.1.4 (https://www.energystar.gov/sites/default/files/specs/private/ENERGY%20STAR%20Final%20Version%20205%20Residential%20Refrigerators%20and%20Freezers%20Program%20Requirements.pdf). The Property "status" is a boolean indicating whether the function is on, if off then defrost is scheduled as part of normal device operation. The Property "startTime" is an ISO8601 encoded start time for the interval in which defrost shall not occur. The Property "startTime" is an ISO8601 encoded stop time for the interval in which defrost shall not occur. The Property "interval" with additional range restrictions is the time in minutes of the period that starts at startTime (if not present the default is 240). The Properties "stopTime" and "interval" are mutually exclusive; they cannot both be present in a Resource instance." ,
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": "oic.r.delaydefrost",
              "if": ["oic.if.a", "oic.if.baseline"],
              "startTime": "T06:00:00Z",
              "status": false
            }
          }
        };
      }
    },
    "post": {
      "description": "Activates the desired Delay Defrost functions",
      "parameters": [
        {"$ref": "#/parameters/interface"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/DelayDefrost" };
      }
    }
  }
}
```
"x-example":
{
  "status": true,
  "startTime": "T06:00:00Z",
  "interval": 180
}

"responses": {
  "200": {
    "description": "Indicates that the DelayDefrost function was changed. The new representation may be provided in the response."
  },
  "403": {
    "description": "Indicates the update to the time properties was rejected. Reasons for rejection:
  invalid time entry
  The current unchanged representation may be provided in the response."
  }
}

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
}

"definitions": {
  "DelayDefrost": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.delaydefrost"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "status": {
        "description": "Indicates whether any supported delay defrost function is active.",
        "type": "boolean"
      },
      "interval": {
        "description": "Defrost interval as defined by Energy Star.",
        "minimum": 1,
        "maximum": 1440,
        "default": 240,
        "type": "integer"
      },
      "stopTime": {
  "active": true,
  "startTime": "T06:00:00Z",
  "interval": 180
}
}
"description": "Stop time for the time period, if present interval cannot be present."
"type": "string",
"pattern": "^[0-2][0-9]([0-5][0-9])?([zZ]([\+\-])\d{2}\d{2})?([0-5][0-9])?$",
"startTime": {
"description": "Start time for the time period. This is the time of day at which the delay
interval starts.",
"type": "string",
"pattern": "^[0-2][0-9]([0-5][0-9])?([zZ]([\+\-])\d{2}\d{2})?([0-5][0-9])?$",
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": [
"oic.if.a",
"oic.if.baseline"
],
"type": "string"
},
"minItems": 2,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
}

6.70.5 Property definition

Table 143 defines the Properties that are part of the "oic.r.delaydefrost" Resource Type.

Table 143 – The Property definitions of the Resource with type "rt" = "oic.r.delaydefrost".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td></td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>status</td>
<td>boolean</td>
<td></td>
<td>Read Write</td>
<td>Indicates whether any supported delay defrost function is active.</td>
</tr>
<tr>
<td>interval</td>
<td>integer</td>
<td></td>
<td>Read Write</td>
<td>Defrost interval as defined by Energy Star.</td>
</tr>
<tr>
<td>stopTime</td>
<td>string</td>
<td></td>
<td>Read Write</td>
<td>Stop time for the time period, if present interval cannot be present. This is the time of day at which the delay interval stops.</td>
</tr>
<tr>
<td>startTime</td>
<td>string</td>
<td></td>
<td>Read Write</td>
<td>Start time for the time period. This is</td>
</tr>
</tbody>
</table>
6.70.6 CRUDN behaviour

Table 144 defines the CRUDN operations that are supported on the "oic.r.delaydefrost" Resource Type.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get</td>
<td>Post</td>
<td>Observe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.71 Eco Mode

6.71.1 Introduction

This Resource specifies the supported and currently active Eco Mode of a Device. The Resource is a derivative of the Mode Resource (oic.r.mode) with a restriction that the population of supported modes and modes Properties is restricted to the set of values: "disabled", "enabled", "notsupported". The adminforced Property indicates that the value has been set by another party (e.g. via some offboard Smart Energy interaction).

6.71.2 Example URI

/EcomodeResURI

6.71.3 Resource type

The Resource Type is defined as: "oic.r.ecomode".

6.71.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Eco Mode",
        "version": "20190215",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
            "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/EcomodeResURI": {
            "get": {
                "description": "This Resource specifies the supported and currently active Eco Mode of a Device. The Resource is a derivative of the Mode Resource (oic.r.mode) with a restriction that the population of supported modes and modes Properties is restricted to the set of values: "disabled", "enabled", "notsupported". The adminforced Property indicates that the value has been set by another party (e.g. via some offboard Smart Energy interaction)."
            }
        }
    }
}
```
The population of supportedModes and modes Properties is restricted to the set of values: \"disabled\", \"enabled\", \"notsupported\".

The adminforced Property indicates that the value has been set by another party (e.g. via some offboard Smart Energy interaction).

```
"parameters": [
  {"$ref": "/parameters/interface"}
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.ecomode"],
      "if": ["oic.if.a", "oic.if.baseline"],
      "supportedModes": ["disabled","enabled"],
      "modes": ["disabled"],
      "adminforced": false
    },
    "schema": { "$ref": "/definitions/ecomode" }
  }
},
"post": {
  "description": "",
  "parameters": [
    {"$ref": "/parameters/interface"},
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "/definitions/ecomode-update" },
      "x-example": {
        "modes": ["enabled"]
      }
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "modes": ["enabled"]
      },
      "schema": { "$ref": "/definitions/ecomode-update" }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "ecomode": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.ecomode"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "adminforced": false
    },
      "supportedModes": ["disabled","enabled"],
      "modes": ["disabled"],
      "adminforced": false
    },
    "schema": { "$ref": "/definitions/ecomode" }
  }
},
```

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"modes": {
  "description": "The array of the currently active mode(s).",
  "items": {
    "enum": ["disabled", "enabled", "notsupported"],
    "type": "string"
  },
  "uniqueItems": true,
  "type": "array"
},

"supportedModes": {
  "description": "The array of possible modes the device supports.",
  "items": {
    "enum": ["disabled", "enabled", "notsupported"],
    "type": "string"
  },
  "readOnly": true,
  "type": "array"
},

"adminforced": {
  "description": "The indicator that the current mode of operation has been forced by admin
action.",
  "readOnly": true,
  "type": "boolean"
},

"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
},

"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
},

"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": {
    "enum": [
      "oic.if.a",
      "oic.if.baseline"
    ],
    "type": "string"
  },
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},

"ecomode-update": {
  "properties": {
    "modes": {
      "description": "The desired mode.",
      "items": {
        "enum": ["disabled", "enabled", "notsupported"],
        "type": "string"
      },
      "type": "array"
    }
  },
  "required": ["supportedModes", "modes"]
}}

6.71.5 Property definition

Table 145 defines the Properties that are part of the "oic.r.ecomode" Resource Type.
Table 145 – The Property definitions of the Resource with type "rt" = "oic.r.ecomode".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>modes</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The array of the currently active mode(s).</td>
</tr>
<tr>
<td>supportedModes</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The array of possible modes the device supports.</td>
</tr>
<tr>
<td>adminforced</td>
<td>boolean</td>
<td>No</td>
<td>Read Only</td>
<td>The indicator that the current mode of operation has been forced by admin action.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>modes</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The desired mode.</td>
</tr>
</tbody>
</table>

6.71.6 CRUDN behaviour

Table 146 defines the CRUDN operations that are supported on the "oic.r.ecomode" Resource Type.

Table 146 – The CRUDN operations of the Resource with type "rt" = "oic.r.ecomode".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.72 Heating Zone

6.72.1 Introduction

This Resource provides information about the status of a (single) heating zone of a Cook-Top. It describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the device implements pot recognition). The Property "maxheatinglevel" defines the max level for the heating zone. The Property "heatinglevel" is the current heating level of the zone. For each element, the value range is from 0 (indication that the zone is not heating) to "maxheatinglevel".

6.72.2 Example URI

/HeatingZoneResURI

6.72.3 Resource type

The Resource Type is defined as: "oic.r.heatingzone".

6.72.4 OpenAPI 2.0 definition

```yaml
{
"swagger": "2.0",
"info": {
"title": "Heating Zone",
"version": "20190215",
"license": {}
}
```
"name": "CCF Data Model License",
"url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
"x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved.",
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
"/HeatingZoneResURI": {
"get": {
"description": "This Resource provides information about the status of a (single) heating zone of a Cook-Top. It describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the device implements pot recognition). The Property "maxheatinglevel" defines the max level for the heating zone. The Property "heatinglevel" is the current heating level of the zone. For each element, the value range is from 0 (indication that the zone is not heating) to "maxheatinglevel".",
"parameters": [{$ref: "/parameters/interface"}],
"responses": {
"200": {
"description": "RETRIEVES the current heating zone information.",
"x-example": {
"rt": ["oic.r.heatingzone"],
"if": ["oic.if.s", "oic.if.baseline"],
"maxheatinglevel": 6,
"heatinglevel": 0
},
"schema": { $ref: "/definitions/HeatingZone" }
}
}
,"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.s", "oic.if.baseline"]
}
},
"definitions": {
"HeatingZone" : {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"enum": ["oic.r.heatingzone"],
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"heatinglevel": {
"description": "The current heating level for the zone.",
"readOnly": true,
"type": "integer"
},
"maxheatinglevel": {
"description": "The maximum heating level for the zone.",
"readOnly": true,
"type": "integer"
### Property definition

Table 147 defines the Properties that are part of the "oic.r.heatingzone" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>heatinglevel</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>The current heating level for the zone.</td>
</tr>
<tr>
<td>maxheatinglevel</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>The maximum heating level for the zone.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

### CRUDN behaviour

Table 148 defines the CRUDN operations that are supported on the "oic.r.heatingzone" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.73 Heating Zone Collection

6.73.1 Introduction

This Resource provides information about the status of the heating zones of a Cook-Top. It describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the device implements pot recognition).

The resource is a Collection of instances of oic.r.heatingzone detailing the individual cooktop zones.

Retrieves the current heating zone information.

6.73.2 Example URI

/HeatingZoneResURI

6.73.3 Resource type

The Resource Type is defined as: "oic.r.heatingzonecollection, oic.wk.col".

6.73.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Heating Zone Collection",
    "version": "20190613",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc686bb4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HeatingZoneResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource provides information about the status of the heating zones of a Cook-Top.
        It describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the device implements pot recognition).
        The resource is a Collection of instances of oic.r.heatingzone detailing the individual cooktop zones",
        "parameters": [
          {"$ref": "/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {"href": "/myZone1ResURI", "rt": ["oic.r.heatingzone"], "if": ["oic.if.s", "oic.if.baseline"], 
              "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
            },
            {"href": "/myZone2ResURI", "rt": ["oic.r.heatingzone"], "if": ["oic.if.s", "oic.if.baseline"], 
              "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
            },
            {"href": "/myZone3ResURI", "rt": ["oic.r.heatingzone"], "if": ["oic.if.s", 
              "oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
            },
            {"href": "/myZone4ResURI", "rt": ["oic.r.heatingzone"], "if": ["oic.if.s", 
              "oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
            }
          ]
        }
      }
    },
    "/HeatingZoneResURI?if=oic.if.b": {
      "get": {
        "description": ""
      }
    }
  }
}```
"description": "This Resource provides information about the status of the heating zones of a Cook-Top. It describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the device implements pot recognition). The resource is a Collection of instances of oic.r.heatingzone detailing the individual cooktop zones:

parameters": [
  {
    "$ref": "#/parameters/interface-all"
  },
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "href": "/heatingZoneLeftResURI",
        "rep": {
          "maxheatinglevel": 6,
          "heatinglevel": 0
        }
      },
      "href": "/heatingZoneRightResURI",
      "rep": {
        "maxheatinglevel": 6,
        "heatinglevel": 3
      }
    }
  },
  "schema": { "$ref": "#/definitions/HeatingZoneCollectionBatch-Retrieve" }
},

"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
  }
}
"definitions": {
  "HeatingZone-ll": {
    "items": [
      {
        "$ref": "#/definitions/oic.oic-link"
      }
    ],
    "type": "array",
    "minItems": 1,
    "uniqueItems": true,
    "readOnly": true
  },
  "oic.oic-link": {
    "type": "object",
    "properties": {
      "anchor": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
      },
      "di": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
      },
      "eps": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
      },
      "href": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
      },
      "ins": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic-links.properties.core-schema.json#/definitions/ins"
      },
      "p": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic-links.properties.core-schema.json#/definitions/p"
      },
      "rel": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic-links.properties.core-schema.json#/definitions/rel_array"
      },
      "title": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic-links.properties.core-schema.json#/definitions/title"
      },
      "type": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic-links.properties.core-schema.json#/definitions/type"
      },
    },
    "if": {
      "description": "The OCF Interfaces supported by the target Resource",
      "items": [
        {
          "enum": [
            "oic.if.s",
            "oic.if.baseline"
          ],
          "type": "string",
          "maxLength": 64
        },
        {
          "minItems": 2,
          "uniqueItems": true,
          "type": "array",
        }
      ],
      "minItems": 1
    }
  }
}
"readOnly": true,
"rt": {
  "description": "Resource Type of the target Resource",
  "items": {
    "maxLength": 64,
    "type": "string",
    "enum": ["oic.r.heatingzone"]
  },
  "minItems": 1,
  "type": "array",
  "uniqueItems": true,
  "readOnly": true
},
"required": [
  "href",
  "rt",
  "if"
],
"HeatingZone": {
  "properties": {
    "rt": {
      "items": {
        "enum": [
          "oic.r.heatingzonecollection",
          "oic.wk.col"
        ],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 2,
      "type": "array",
      "uniqueItems": true
    },
    "links": {
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      },
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true
    },
    "n": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
    },
    "id": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
    },
    "rts": {
      "items": {
        "enum": ["oic.r.heatingzone"],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 1,
      "type": "array",
      "readOnly": true,
      "uniqueItems": true
    }
  },
  "if": {
    "description": "The OCF Interfaces supported by this Resource",
    "items": {
      "enum": ["oic.if.ll",
                "oic.if.b",...
```
Table 149 – The Property definitions of the Resource with type "rt" = "oic.r.heatingzonecollection, oic.wk.col".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
6.73.6 CRUDN behaviour

Table 150 defines the CRUDN operations that are supported on the "oic.r.heatingzonecollection, oic.wk.col" Resource Type.

Table 150 – The CRUDN operations of the Resource with type "rt" = "oic.r.heatingzonecollection, oic.wk.col".

<table>
<thead>
<tr>
<th></th>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.74 Selectable Levels

6.74.1 Introduction

This Resource provides a set of device defined levels that can be selected for an operation. For example where a humidifier has a discrete set that model different humidity levels that can be set.

The Property "availablelevels" is an array of the levels that can be selected, these can be a number or an integer (as subset of integer).

The Property "targetlevel" is the level that has currently been selected and is written to in order to select a new level.

When retrieved the targetlevel provides the actual value that has been selected.

6.74.2 Example URI

/SelectableLevelsResURI

6.74.3 Resource type

The Resource Type is defined as: "oic.r.selectablelevels".
6.74.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Selectable Levels",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SelectableLevelsResURI": {
      "get": {
        "description": "This Resource provides a set of device defined levels that can be selected for an operation. For example where a humidifier has a discrete set that model different humidity levels that can be set. The Property "availablelevels" is an array of the levels that can be selected, these can be a number or an integer (as subset of integer). The Property "targetlevel" is the level that has currently been selected and is written to in order to select a new level. When retrieved the targetlevel provides the actual value that has been selected.",
        "parameters": [
          {"$ref": "/#/parameters/interface"},
        ],
        "responses": {
          "200": {
            "description": "Example is using integers for selection levels.",
            "x-example": {
              "rt": ["oic.r.selectablelevels"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "availablelevels": [0, 2, 4, 6, 8],
              "targetlevel": 2
            },
            "schema": {
              "$ref": "/#/definitions/SelectableLevels" }
          }
        }
      },
      "post": {
        "description": "Sets the current level from the set "availablelevels".",
        "parameters": [
          {"$ref": "/#/parameters/interface"},
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "targetlevel": 4
            },
            "schema": {
              "$ref": "#/definitions/UpdateSchema" }
          }
        }
      }
    },
    "/SelectableLevelsResURI": {
      "get": {
        "description": "This Resource provides a set of device defined levels that can be selected for an operation. For example where a humidifier has a discrete set that model different humidity levels that can be set. The Property "availablelevels" is an array of the levels that can be selected, these can be a number or an integer (as subset of integer). The Property "targetlevel" is the level that has currently been selected and is written to in order to select a new level. When retrieved the targetlevel provides the actual value that has been selected.",
        "parameters": [
          {"$ref": "/#/parameters/interface"},
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "targetlevel": 4
            },
            "schema": {
              "$ref": "#/definitions/UpdateSchema" }
          }
        }
      }
    }
  }
}
```
"targetlevel that is not in the set of availablelevels",
"x-example":
{
  "availablelevels":[0, 2, 4, 6, 8],
  "targetlevel": 2
},
"schema": { "$ref": "#/definitions/SelectableLevels" }
}
}

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
}

"definitions": {
  "SelectableLevels": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.selectablelevels"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "targetlevel": {
        "description": "The target level from the available selectable set.",
        "type": "number"
      },
      "availablelevels": {
        "description": "The set of levels to select from.",
        "items": {
          "type": "number"
        },
        "readOnly": true,
        "type": "array"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": [
            "oic.if.a",
            "oic.if.baseline"
          ],
          "type": "string"
        },
        "minItems": 2,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      }
    },
    "type": "object",
    "required": ["availablelevels", "targetlevel"]
  }
}

"UpdateSchema": {
  "properties": {
    "targetlevel": {
      "description": "The target level from the available selectable set",
      "type": "number"
    }
  }
}
6.74.5 Property definition

Table 151 defines the Properties that are part of the "oic.r.selectablelevels" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>targetlevel</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>The target level from the available selectable set.</td>
</tr>
<tr>
<td>availablelevels</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The set of levels to select from.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>targetlevel</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>The target level from the available selectable set.</td>
</tr>
</tbody>
</table>

6.74.6 CRUDN behaviour

Table 152 defines the CRUDN operations that are supported on the "oic.r.selectablelevels" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.75 Value Conditional

6.75.1 Introduction

This Resource specifies conditions that can be applied to an observed value in any Resource. These conditions are applied by the OCF Server exposing the Resource to any generated notifications because of subscriptions to the Resource. A unicast RETRIEVE to the Resource will receive the most recent value; which may not be the most recent notified value. An OCF Server exposes this Resource in association with the Resource conveying the observed value. This is done by means of a new Resource instance with an RT of ["oic.r.<thing being observed>", "oic.r.value.conditional"], e.g ["oic.r.temperature", "oic.r.value.conditional"]. The Property "threshold" is the amount by which the thing being observed must change before a notification is sent. The Property "minnotifyperiod" is the minimum time in ms (milliseconds) that must elapse before a notification is sent. If the maxnotifyperiod (time in ms (milliseconds)) elapses then a notification must be sent. The Property "maxnotifyperiod" is a timer that resets each time a notification is sent. A value of '0' for any of "threshold"," minnotifyperiod" or "maxnotifyperiod" means that the capability is supported but not active.
6.7.5.2 Example URI

/ValueConditionalResURI

6.7.5.3 Resource type

The Resource Type is defined as: "oic.r.value.conditional".

6.7.5.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Value Conditional",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e40fbce8bcd4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ValueConditionalResURI" : {
      "get": {
        "description": "This Resource specifies conditions that can be applied to an observed value in any Resource. The conditions are applied by the OCF Server exposing the Resource to any generated notifications because of subscriptions to the Resource. An unicast RETRIEVE to the Resource will receive the most recent value; which may not be the most recent notified value. An OCF Server exposes this Resource in association with the Resource conveying the observed value. This is done by means of a new Resource instance with an RT of ["oic.r.<thing being observed>", ["oic.r.value.conditional"]]. The Property "threshold" is the amount by which the thing being observed must change before a notification is sent. The Property "mindifityperiode" is the minimum time in ms (milliseconds) that must elapse before a notification is sent. If the maxnotifyperiod (time in ms (milliseconds)) elapses then a notification must be sent. The Property "maxnotifyperiod" is a timer that resets each time a notification is sent. A value of '0' for any of "threshold", "mindifityperiode" or "maxnotifyperiod" means that the capability is supported but not active.",
        "parameters": [
          {"$ref": "/#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.value.conditional"],
              "if": ["oic.if.rw", "oic.if.baseline"],
              "threshold": 2,
              "mindifityperiode": 2000,
              "maxnotifyperiod": 5000
            },
            "schema": { "$ref": "/#definitions/valueconditional" }
          }
        }
      }
    },
    "post": {
      "description": "",
      "parameters": [
        {"$ref": "/#parameters/interface"},
        {"name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "/#definitions/valueconditional" }}
      ]
    }
  }
}
```
"x-example":
  {
    "threshold": 2,
    "minnotifyperiod": 1500
  }
},
"responses": {
  "200": {
    "description": "",
    "x-example":
    {
      "threshold": 2,
      "minnotifyperiod": 1500
    },
    "schema": { "$ref": "#/definitions/valueconditional" }
  }
}
]
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"]
  }
},
"definitions": {
  "valueconditional": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "maxLength": 64,
          "type": "string",
          "enum": ["oic.r.value.conditional"]
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "maxnotifyperiod": {
        "description": "The maximum elapsed time in ms before a notification must be sent.",
        "minimum": 0,
        "type": "integer"
      },
      "minnotifyperiod": {
        "description": "The minimum elapsed time in ms before a notification is sent.",
        "minimum": 0,
        "type": "integer"
      },
      "threshold": {
        "description": "The amount by which the measured value must change before a notification is sent.",
        "minimum": 0,
        "type": "number"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource."
      }
    }
  }
}
"items": {
    "enum": [
        "oic.if.rw",
        "oic.if.baseline"
    ],
    "type": "string",
    "maxLength": 64
},
"minItems": 2,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
}
"anyOf": [
    {
        "required": ["threshold"]
    },
    {
        "required": ["minnotifyperiod"]
    },
    {
        "required": ["maxnotifyperiod"]
    }
],
"type": "object"
}

6.75.5 Property definition

Table 153 defines the Properties that are part of the "oic.r.value.conditional" Resource Type.

Table 153 – The Property definitions of the Resource with type "rt" = "oic.r.value.conditional".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>maxnotifyperiod</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The maximum elapsed time in ms before a notification must be sent.</td>
</tr>
<tr>
<td>minnotifyperiod</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The minimum elapsed time in ms before a notification is sent.</td>
</tr>
<tr>
<td>threshold</td>
<td>number</td>
<td>No</td>
<td>Read Write</td>
<td>The amount by which the measured value must change before a notification is sent.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.75.6 CRUDN behaviour

Table 154 defines the CRUDN operations that are supported on the "oic.r.value.conditional" Resource Type.
### 6.76 Colour Space Coordinates

#### 6.76.1 Introduction

This Resource describes the colour using colour space co-ordinates.

The Property "csc" is the colour space coordinates in CIE colour space.

The first item in the array is the X coordinate.

The second item in the array is the Y coordinate.

If the Property "precision" is provided it applies to both the X and Y coordinates.

The Resource provides the colour using colour space coordinates.

#### 6.76.2 Example URI

/example/ColourSpaceCoordinatesResURI

#### 6.76.3 Resource type

The Resource Type is defined as: "oic.r.colour.csc".

#### 6.76.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Colour Space Coordinates",
        "version": "20190215",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba383661e4c0fbc8bdc4ba/LICENCE.md",
            "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/example/ColourSpaceCoordinatesResURI" : {
            "get": {
                "description": "This Resource describes the colour using colour space co-ordinates.
The Property \"csc\" is the colour space coordinates in CIE colour space.\nThe first item in the array is the X coordinate.\nThe second item in the array is the Y coordinate.\nIf the Property \"precision\" is provided it applies to both the X and Y coordinates.\nThe Resource provides the colour using colour space coordinates.\n",
                "parameters": [
                    {"$ref": "#/parameters/interface"}
                ],
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": {
                            "rt": ["oic.r.colour.csc"],
                            "if": ["oic.if.a", "oic.if.baseline"],
                            "csc": [0.41, 0.51]
                        }
                    }
                }
            }
        }
    }
}
```

---

Table 154 – The CRUDN operations of the Resource with type "rt" = "oic.r.value.conditional".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
"post": {
  "description": "Sets current colour space coordinates",
  "parameters": [
    {
      "$ref": "#/parameters/interface"},
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/ColourCSC" },
      "x-example": {
        "csc": [0.40, 0.70]
      }
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "csc": [0.40, 0.70]
      },
      "schema": { "$ref": "#/definitions/ColourCSC" }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "ColourCSC": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.colour.csc"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "csc": {
        "description": "The X and Y coordinates of the colour in CIE colour space.",
        "items": {
          "maximum": 1,
          "minimum": 0,
          "type": "number"
        },
        "maxItems": 2,
        "minItems": 2,
        "type": "array"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      }
    }
  }
}
6.76.5 Property definition

Table 155 defines the Properties that are part of the "oic.r.colour.csc" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>csc</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The X and Y coordinates of the colour in CIE colour space.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.76.6 CRUDN behaviour

Table 156 defines the CRUDN operations that are supported on the "oic.r.colour.csc" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.77 Colour Temperature

6.77.1 Introduction
This Resource describes the colour using colour temperature conventions.
The Property "ct" is the Mired colour temperature.
The equivalent value in Kelvin is obtained by Colour Temp(K) = 1,000,000/Colour Temp(Mired)
The Resource provides the colour using colour temperature conventions.

6.77.2 Example URI
/example/ColourTemperatureResURI

6.77.3 Resource Type
The Resource Type is defined as: "oic.r.colour.colourtemperature".

6.77.4 OpenAPI 2.0 definition

```
   { "swagger": "2.0",
   "info": { "title": "Colour Temperature",
              "version": "20190215",
              "license": { "name": "OCF Data Model License",
                            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbe8bdc4ba/LICENSE.md",
                            "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
               }
   },
   "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
   "/example/ColourTemperatureResURI" : {
   "get": {
   "description": "This Resource describes the colour using colour temperature conventions.
The Property "ct" is the Mired colour temperature.
The equivalent value in Kelvin is obtained by Colour Temp(K) = 1,000,000/Colour Temp(Mired)
The Resource provides the colour using colour temperature conventions.",
   "parameters": [ {"$ref": "#/parameters/interface"} ],
   "responses": {
   "200": { "description" : "",
             "x-example": {
               "$ref": "#/definitions/ColourTemp" }
   }},
   "post": { "description": "Sets current colour temperature value",
             "parameters": [ {"$ref": "#/parameters/interface"} ],
             "name": "body",
             "in": "body",
             "required": true,
             "schema": { "$ref": "#/definitions/ColourTemp" },
             "x-example": {
               "rt": ["oic.r.colour.colourtemperature"],
               "if": ["oic.if.a", "oic.if.baseline"],
               "ct": 457
   },
             "schema": { "$ref": "#/definitions/ColourTemp" } }
   }
   }
```
"ct": 457
}
"responses": {
"200": {
"description": "",
"x-example": {
"ct": 467
},
"schema": { "$ref": "#/definitions/ColourTemp" }
}
}

"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"]
}
},
"definitions": {
"ColourTemp": {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"maxLength": 64,
"type": "string",
"enum": ["oic.r.colour.colourtemperature"]
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"ct": {
"description": "The Mired colour temperature.",
"minimum": 0,
"type": "integer"
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"range": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_integer"
},
"step": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_integer"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": ["oic.if.a", "oic.if.baseline"]
}
6.77.5 Property definition

Table 157 defines the Properties that are part of the "oic.r.colour.colourtemperature" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>ct</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The Mired colour temperature.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.77.6 CRUDN behaviour

Table 158 defines the CRUDN operations that are supported on the "oic.r.colour.colourtemperature" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.78 Colour Hue and Saturation

6.78.1 Introduction

This Resource describes the colour using hue-saturation conventions. The Property "hue" is the hue angle, it is a number value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]). A Device that does not support fractional hue angles can provide integer values. If Property "precision" is provided it applies to the hue angle. The Property "saturation" is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).
The Property "saturation" can be converted to a percentage by saturation/maximumsaturation \times 100; where maximumsaturation is 32767 if the Property itself is not present.

The Property "maximumsaturation" is the upper bound on the saturation supported by the Device. If not present the maximum value for saturation is 32767.

The Resource provides the colour using hue and saturation conventions.

6.78.2 Example URI

```
/example/ColourHueSaturationResURI
```

6.78.3 Resource type

The Resource Type is defined as: "oic.r.colour.hs".

6.78.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Hue and Saturation",
    "version": "20190215",
    "license": {
      "name": "CCB Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/example/ColourHueSaturationResURI" : {
      "get": {
        "description": "This Resource describes the colour using hue-saturation conventions. The Property "hue" is the hue angle, it is a number value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]). A Device that does not support fractional hue angles can provide integer values. If Property "precision" is provided it applies to the hue angle. The Property "saturation" is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]). The Property "saturation" can be converted to a percentage by saturation/maximumsaturation \times 100; where maximumsaturation is 32767 if the Property itself is not present. The Property "maximumsaturation" is the upper bound on the saturation supported by the Device. If not present the maximum value for saturation is 32767. The Resource provides the colour using hue and saturation conventions."
      },
      "parameters": [{$ref": "/definitions/ColourHS" },
      "responses": {
        "200": {
          "description": "",
          "example": {
            "rt": ["oic.r.colour.hs"],
            "if": ["oic.if.a", "oic.if.baseline"],
            "hue": 300.0,
            "saturation": 212,
            "maximumsaturation": 1000
          },
          "schema": { "$ref": "/definitions/ColourHS" }
        }
      },
      "post": {
        "description": "Sets current colour hue and saturation values. At least one of hue or saturation shall be provided in the payload."
      },
      "parameters": [{$ref": "/definitions/ColourHS" ]
    }
  }
}
```
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15320
15321
15322
15323
15324
15325
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{"$ref": "#/parameters/interface"},
{
"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "#/definitions/ColourHS" },
"x-example":
{
"hue": 300.0,
"saturation": 212
}
}
],
"responses": {
"200": {
"description" : "",
"x-example":
{
"hue": 300.0,
"saturation": 212
},
"schema": { "$ref": "#/definitions/ColourHS" }
}
}
}
}
},
"parameters": {
"interface" : {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"]
}
},
"definitions": {
"ColourHS" : {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"enum": ["oic.r.colour.hs"],
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"hue": {
"description": "The hue angle as defined by the CIECAM02 model definition.",
"maximum": 360.0,
"minimum": 0.0,
"type": "number"
},
"saturation": {
"description": "The saturation as defined by the CIECAM02 model definition.",
"maximum": 32767,
"minimum": 0,
"type": "integer"
},
"maximumsaturation": {
"description": "The maximum supported value of \"saturation\" for this Device.",
"maximum": 32767,
"minimum": 0,
"readOnly": true,
"type": "integer"
},
"n": {
"$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-

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Table 159 defines the Properties that are part of the "oic.r.colour.hs" Resource Type.

Table 159 – The Property definitions of the Resource with type "rt" = "oic.r.colour.hs".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>hue</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>The hue angle as defined by the CIECAM02 model definition.</td>
</tr>
<tr>
<td>saturation</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The saturation as defined by the CIECAM02 model definition.</td>
</tr>
<tr>
<td>maximumsaturation</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>The maximum supported value of &quot;saturation&quot; for this Device.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>
6.78.6 CRUDN behaviour

Table 160 defines the CRUDN operations that are supported on the "oic.r.colour.hs" Resource Type.

Table 160 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.hs".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.79 Battery Material

6.79.1 Introduction

This Resource describes the battery material represented as an enumerated set of strings.

6.79.2 Example URI

/BatteryMaterialResURI

6.79.3 Resource type

The Resource Type is defined as: "oic.r.batterymaterial".

6.79.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Battery Material",
    "version": "20190222",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbcee8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BatteryMaterialResURI": {
      "get": {
        "description": "This Resource describes the battery material represented as an enumerated set of strings."
      },
      "parameters": ["interface"]
    },
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "$ref": "#/definitions/BatteryMaterial"
        }
      }
    }
  }
}
```
"type": "string",
"enum": ["oic.if.s", "oic.if.baseline"]
}
}
"definitions": {
"BatteryMaterial": {
"properties": {
 "rt": { 
 "description": "The Resource Type.",
 "items": { 
 "enum": ["oic.r.batterymaterial"],
 "maxLength": 64,
 "type": "string"
 },
 "minItems": 1,
 "uniqueItems": true,
 "readOnly": true,
 "type": "array"
 },
 "material": {
 "description": "The battery construction material (type).",
 "enum": [ 
 "Alkaline",
 "Aluminium Air",
 "Aluminium Ion",
 "Atomic Betavoltaics",
 "Atomic Optoelectric Nuclear",
 "Atomic Nuclear",
 "Bunsen Cell",
 "Chromic Acid Cell",
 "Poggendorff Cell",
 "Clark Cell",
 "Daniell Cell",
 "Dry Cell",
 "Earth",
 "Flow",
 "Flow Vanadium Redox",
 "Flow Zinc Bromine",
 "Flow Zinc Cerium",
 "Frog",
 "Fuel",
 "Galvanic Cell",
 "Glass",
 "Grove Cell",
 "Lead Acid",
 "Lead Acid Deep Cycle",
 "Lead Acid VRLA",
 "Lead Acid AGM",
 "Lead Acid Gel",
 "Leclanche Cell",
 "Lemon Potato",
 "Lithium",
 "Lithium Air",
 "Lithium Ion",
 "Lithium Ion Cobalt Oxide (ICR)",
 "Lithium Ion Manganese Oxide (IMR)",
 "Lithium Ion Polymer",
 "Lithium Iron Phosphate",
 "Lithium Sulfur",
 "Lithium Titanate",
 "Lithium Ion Thin Film",
 "Magnesium",
 "Magnesium Ion",
 "Mercury",
 "Molten Salt",
 "Nickel Cadmium",
 "Nickel Cadmium Vented Cell",
 "Nickel Hydrogen",
 "Nickel Iron ",
 "Nickel Metal Hydride",
 "Nickel Metal Hydride Low Self-Discharge",
 "Nickel Oxyhydroxide",
 "nickel oxide"
 ]
 },
"Nickel Oxride",
"Nickel Zinc",
"Organic Radical",
"Paper",
"Polymer Based",
"Polysulfide Bromide",
"Potassium Ion",
"Pulvermachers Chain",
"Silicon Air",
"Silver Calcium",
"Silver Oxide",
"Silver Zinc",
"Sodium Ion",
"Sodium Sulfur",
"Solid State",
"Sugar",
"Super Iron",
"UltraBattery",
"Voltaic Pile",
"Voltaic Pile Penny",
"Voltaic Pile Trough",
"Water Activated",
"Weston Cell",
"Zinc Air",
"Zinc Carbon",
"Zinc Chloride",
"Zinc Ion",
"Unknown"
],
"readOnly": true,
"type": "string"
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {

"enum": [
"oic.if.s",
"oic.if.baseline"
],
"type": "string"
},
"minItems": 2,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
},
"required": ["material"]
}
}

### 6.79.5 Property definition

Table 161 defines the Properties that are part of the "oic.r.batterymaterial" Resource Type.
Table 161 – The Property definitions of the Resource with type "rt" = "oic.r.batterymaterial".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>material</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>The battery construction material (type).</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.79.6 CRUDN behaviour

Table 162 defines the CRUDN operations that are supported on the "oic.r.batterymaterial" Resource Type.

Table 162 – The CRUDN operations of the Resource with type "rt" = "oic.r.batterymaterial".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.80 Brewing

6.80.1 Introduction

This Resource describes the attributes associated with brewing. This resource is used for configuration only. The Operation of the Device is handled independently of this Resource. The amount requested is in ml. The strength of a brewed drink is an integer, the range of which may be enforced by the presence of a strengthrange Property.

6.80.2 Example URI

/BrewingResURI

6.80.3 Resource type

The Resource Type is defined as: "oic.r.brewing".

6.80.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Brewing",
    "version": "20190222",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BrewingResURI": {
      "get": {
      
    ```
"description": "This Resource describes the attributes associated with brewing. This resource is used for configuration only. The Operation of the Device is handled independently of this Resource. The amount requested is in ml. The strength of a brewed drink is an integer, the range of which may be enforced by the presence of a strengthrange Property."

"parameters": [

  {"$ref": "#/parameters/interface"}
],

"responses": {

  "200": {

    "description" : "",
    "x-example": {

      "rt": ["oic.r.brewing"],
      "if": ["oic.if.rw", "oic.if.baseline"],
      "amountrequested": 120,
      "strength": 8,
      "strengthrange": [1, 10]
    }
  },

  "schema": { "$ref": "#/definitions/Brewing" }
}

"post": {

  "description": "Sets the brewing values"

  "parameters": [ {

    "name": "body",
    "in": "body",
    "required": true,
    "schema": { "$ref": "#/definitions/Brewing" },
    "x-example": {

      "amountrequested": 120,
      "strength": 8
    }
  ]
},

"responses": {

  "200": {

    "description" : "",
    "x-example": {

      "amountrequested": 120,
      "strength": 8
    }
  }
}

"parameters": {

  "interface" : {

    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"]
  }
},

"definitions": {

  "Brewing" : {

    "properties": { 

      "rt": { "description": "The Resource Type."}
    }
  }
Table 163 defines the Properties that are part of the "oic.r.brewing" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>strength</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The strength of a brewed drink.</td>
</tr>
<tr>
<td>amountrequested</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The amount requested in ml.</td>
</tr>
<tr>
<td>strengthrange</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The amount requested in ml.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>---------------------------</td>
<td>----</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td></td>
</tr>
</tbody>
</table>

The OCF Interface set supported by this Resource.

### 6.80.6 CRUDN behaviour

Table 164 defines the CRUDN operations that are supported on the "oic.r.brewing" Resource Type.

**Table 164 – The CRUDN operations of the Resource with type "rt" = "oic.r.brewing".**

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.81 Energy

#### 6.81.1 Introduction

This Resource describes the attributes associated with electrical energy. This Resource can be used for either rated (read-only), desired (read-write) or measured (read-only) energy. The Property "voltage" is in Volts (V), The Property "current" in Amps (A), and The Property "frequency" is in Hertz (Hz).

#### 6.81.2 Example URI

`/EnergyResURI`

#### 6.81.3 Resource type

The Resource Type is defined as: "oic.r.energy.electrical".

#### 6.81.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Energy",
        "version": "20190215",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc88bc4b4a/LICENSE.md",
            "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/EnergyResURI": {
            "get": {
                "description": "This Resource describes the attributes associated with electrical energy. This Resource can be used for either rated (read-only), desired (read-write) or measured (read-only) energy. The Property "voltage" is in Volts (V), The Property "current" in Amps (A), and The Property "frequency" is in Hertz (Hz).",
                "parameters": [
                    {
                        "$ref": "#/parameters/interface"
                    }
                ],
                "responses": {
                    "200": {
                        "description": "Retrieves the current energy.",
                        "x-example": {
                            "rt": ["oic.r.energy.electrical"],
                            ...  // more fields
                        }
                    }
                }
            }
        }
    }
}
```
"if": ["oic.if.rw", "oic.if.baseline"],
"voltage": 120.0,
"current": 5.0,
"frequency": 60.0
},
"schema": { "$ref": "#/definitions/Energy" }
}
}
"post": {
"description": "Sets the desired energy values\n",
"parameters": [
{ "$ref": "#/parameters/interface"},

"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "#/definitions/EnergyUpdate" },
"x-example":

"desiredvoltage": 130.0,
"desiredcurrent": 6.0
}
],
"responses": {
"200": {
"description": "",
"x-example":

"desiredvoltage": 130.0,
"desiredcurrent": 6.0
}
}
}
"interfa": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.rw", "oic.if.baseline"
}
}
"definitions": {
"Energy": {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"enum": ["oic.r.energy.electrical"],
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"desiredcurrent": {
"description": "The desired electric current in Amps (A).",
"type": "number"
},
"current": {
"description": "The electric current in Amps (A).",
"readOnly": true,
"type": "number"
},
"frequency": {
"description": "The electric frequency in Hertz (Hz).",

"readOnly": true,
"type": "number"
},
"voltage": {
"description": "The electric voltage in Volts (V).",
"readOnly": true,
"type": "number"
},
"desiredfrequency": {
"description": "The desired electric frequency in Hertz (Hz).",
"type": "number"
},
"desiredvoltage": {
"description": "The desired electric voltage in Volts (V).",
"type": "number"
},
"n": {
"$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
},
"id": {
"$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": [
"oic.if.rw",
"oic.if.baseline"
],
"type": "string"
},
"minItems": 2,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
"type": "object",
"required": ["voltage", "current", "frequency"]
}
}

"EnergyUpdate" : {
"properties": {
"desiredcurrent": {
"description": "The desired electric current in Amps (A).",
"type": "number"
},
"desiredfrequency": {
"description": "The desired electric frequency in Hertz (Hz).",
"type": "number"
},
"desiredvoltage": {
"description": "The desired electric voltage in Volts (V).",
"type": "number"
}
"anyOf": [
{
"required": ["desiredvoltage"]
},
{
"required": ["desiredcurrent"]
},
{
"required": ["desiredfrequency"]
}
"type": "object"
### 6.81.5 Property definition

Table 165 defines the Properties that are part of the "oic.r.energy.electrical" Resource Type.

**Table 165 – The Property definitions of the Resource with type "rt" = "oic.r.energy.electrical".**

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>desiredcurrent</td>
<td>number</td>
<td>No</td>
<td>Read Write</td>
<td>The desired electric current in Amps (A).</td>
</tr>
<tr>
<td>current</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The electric current in Amps (A).</td>
</tr>
<tr>
<td>frequency</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The electric frequency in Hertz (Hz).</td>
</tr>
<tr>
<td>voltage</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The electric voltage in Volts (V).</td>
</tr>
<tr>
<td>desiredfrequency</td>
<td>number</td>
<td>No</td>
<td>Read Write</td>
<td>The desired electric frequency in Hertz (Hz).</td>
</tr>
<tr>
<td>desiredvoltage</td>
<td>number</td>
<td>No</td>
<td>Read Write</td>
<td>The desired electric voltage in Volts (V).</td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The desired electric current in Amps (A).</td>
</tr>
<tr>
<td>desiredcurrent</td>
<td>number</td>
<td>No</td>
<td>Read Write</td>
<td>The desired electric current in Amps (A).</td>
</tr>
<tr>
<td>desiredfrequency</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>The desired electric frequency in Hertz (Hz).</td>
</tr>
<tr>
<td>desiredvoltage</td>
<td>number</td>
<td>No</td>
<td>Read Write</td>
<td>The desired electric voltage in Volts (V).</td>
</tr>
</tbody>
</table>

### 6.81.6 CRUDN behaviour

Table 166 defines the CRUDN operations that are supported on the "oic.r.energy.electrical" Resource Type.

**Table 166 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.electrical".**

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.82  Energy Generation

6.82.1  Introduction

This Resource describes the attributes associated with energy generation.

The Property "energygenerated" is a number that provides the energy generated in Watt-hour (Wh).

6.82.2  Example URI

/EnergyGenerationResURI

6.82.3  Resource Type

The Resource Type is defined as: "oic.r.energy.generation".

6.82.4  OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Generation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyGenerationResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with energy generation. The Property "energygenerated" is a number that provides the energy generated in Watt-hour (Wh).",
        "parameters": {
          "$ref": "#/parameters/interface"
        },
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.energy.generation"],
              "if": ["oic.if.s", "oic.if.baseline"],
              "energygenerated": 3000.00
            },
            "schema": { "$ref": "#/definitions/EnergyGeneration" } 
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "EnergyGeneration" : {
      "properties": {
        "rt": {
          "$ref": "#/definitions/EnergyGeneration" } 
      }
    }
  }
}
```
6.82.5 Property definition

Table 167 defines the Properties that are part of the "oic.r.energy.generation" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>energygenerated</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The energy generated in Watt-hour(Wh).</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>
6.82.6 CRUDN behaviour

Table 168 defines the CRUDN operations that are supported on the "oic.r.energy.generation" Resource Type.

Table 168 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.generation".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.83 Foaming

6.83.1 Introduction

This Resource describes the attributes associated with foaming. The Property "foamstrength" of the liquid is represented as an integer. The foam strength is an integer, the range of which may be enforced by the presence of the Property "range".

6.83.2 Example URI

/foamingResURI

6.83.3 Resource type

The Resource Type is defined as: "oic.r.foaming".

6.83.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Foaming",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8d4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/foamingResURI": {
      "get": {
        "description": "This Resource describes the attributes associated with foaming. The Property "foamstrength" of the liquid is represented as an integer. The foam strength is an integer, the range of which may be enforced by the presence of the Property "range"."
      },
      "parameters": [
        {"$ref": "/#/parameters/interface"}
      ],
      "responses": {
        "200": {
          "description": "RETRIEVES the state of foaming."
        }
      }
    }
  }
}
```
"post": {
  "description": "Sets foaming value\n",
  "parameters": [
    {
      "$ref": "#/parameters/interface"},
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/Foaming" },
      "x-example": {
        "foamstrength": 50
      }
    }
  ],
  "responses": {
    "200": {
      "description" : "",
      "x-example": {
        "foamstrength": 50
      }
    }
  }
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"],
    "x-example": "oic.if.rw"
  }
}
"definitions": {
  "Foaming": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": ["oic.r.foaming"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "foamstrength": {
        "description": "The desired foaminess of the liquid.",
        "type": "integer"
      }
    }
  }
}
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
}
"range": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_integer"
}
6.83.5 Property definition

Table 169 defines the Properties that are part of the "oic.r.foaming" Resource Type.

Table 169 – The Property definitions of the Resource with type "rt" = "oic.r.foaming".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>foamstrength</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The desired foaminess of the liquid.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
</tr>
</tbody>
</table>

6.83.6 CRUDN behaviour

Table 170 defines the CRUDN operations that are supported on the "oic.r.foaming" Resource Type.

Table 170 – The CRUDN operations of the Resource with type "rt" = "oic.r.foaming".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.84  Grinder

6.84.1 Introduction

This Resource describes the attributes associated with a grinder. The Property "coarseness" of the grounds is an integer. The higher the value, the less coarse. The Property "remaining" is a percentage that represents the unground material left.

6.84.2 Example URI

/GrinderResURI

6.84.3 Resource type

The Resource Type is defined as: "oic.r.grinder".

6.84.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Grinder",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GrinderResURI": {
      "get": {
        "description": "This Resource describes the attributes associated with a grinder. The Property "coarseness" of the grounds is an integer. The higher the value, the less coarse. The Property "remaining" is a percentage that represents the unground material left."
      
      "parameters": ["$ref": "/#/parameters/interface"],
      "responses": {
        "200": {
          "description": "RETRIEVES the state of a grinder."
        }
      }
    },
    "/GrinderResURI": {
      "post": {
        "description": "Sets grinding values."
      }
    }
  }
}
```

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"responses": {
  "200": {
    "description": "",
    "x-example": {
      "coarseness": 10
    },
    "schema": { "$ref": "#/definitions/GrinderUpdate" }
  }
}

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"]
  }
},

"definitions": {
  "Grinder": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": ["oic.r.grinder"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "coarseness": {
        "description": "The desired coarseness when grinding.",
        "type": "integer"
      },
      "remaining": {
        "description": "The percentage of unground material left.",
        "maximum": 100,
        "minimum": 0,
        "readOnly": true,
        "type": "integer"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_integer"
      },
      "step": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_integer"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": ["oic.if.rw", "oic.if.baseline"]
        }
      }
    }
  }
}
"enum": [
  "oic.if.rw",
  "oic.if.baseline"
],
"type": "string"
},
"minItems": 2,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
"type": "object",
"required": ["coarseness"]
}
"GrinderUpdate" : {
"properties": {
  "coarseness": {
    "description": "The desired coarseness when grinding.",
    "type": "integer"
  }
}
"type": "object",
"required": ["coarseness"]
}
Table 171 defines the Properties that are part of the "oic.r.grinder" Resource Type.

Table 171 – The Property definitions of the Resource with type "rt" = "oic.r.grinder".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>coarseness</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The desired coarseness when grinding.</td>
</tr>
<tr>
<td>remaining</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>The percentage of unground material left.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>coarseness</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The desired coarseness when grinding.</td>
</tr>
</tbody>
</table>

6.84.6 CRUDN behaviour

Table 172 defines the CRUDN operations that are supported on the "oic.r.grinder" Resource Type.
Table 172 – The CRUDN operations of the Resource with type "rt" = "oic.r.grinder".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.85 Liquid Level

6.85.1 Introduction

This Resource describes the attributes associated with liquid level. The Property "currentlevel" and "desiredlevel" are defined in terms of a percentage. The behaviour of when the currentlevel and desiredlevel are not equal is determined by the device manufacturer.

6.85.2 Example URI

/LiquidLevelResURI

6.85.3 Resource type

The Resource Type is defined as: "oic.r.liquid.level".

6.85.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Liquid Level",
        "version": "20190215",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc88bdc4ba/LICENSE.md",
            "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/LiquidLevelResURI": {
            "get": {
                "description": "This Resource describes the attributes associated with liquid level. The Property \"currentlevel\" and \"desiredlevel\" are defined in terms of a percentage. The behaviour of when the currentlevel and desiredlevel are not equal is determined by the device manufacturer.",
                "parameters": [
                    {
                        "$ref": "#/parameters/interface"
                    }
                ],
                "responses": {
                    "200": {
                        "description": "RETRIEVES the state of liquid level.",
                        "x-example":
                            {"rt": ["oic.r.liquid.level"],
                            "if": ["oic.if.rw", "oic.if.r", "oic.if.baseline"],
                            "currentlevel": 60,
                            "desiredlevel": 80
                        },
                        "schema": { "$ref": "#/definitions/LiquidLevel" }
                    }
                }
            },
            "post": {
                "description": "Sets liquid level value.",
                "parameters": [
                    {"$ref": "#/parameters/interface-rw"},
                    {"name": "body", "in": "body", "required": true}
                ],
                "responses": {
                    "200": {
                        "description": "SETS liquid level value.",
                        "x-example":
                            {"rt": ["oic.r.liquid.level"],
                            "if": ["oic.if.rw", "oic.if.r", "oic.if.baseline"],
                            "currentlevel": 80,
                            "desiredlevel": 65
                        },
                        "schema": { "$ref": "#/definitions/LiquidLevel" }
                    }
                }
            }
        }
    }
}
```
"in": "body",
"required": true,
"schema": { "$ref": "#/definitions/LiquidLevelUpdate" },
"x-example": {
  "desiredlevel": 80
}
},
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "desiredlevel": 80
    },
    "schema": { "$ref": "#/definitions/LiquidLevelUpdate" }
  }
}
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.r", "oic.if.baseline"]
  },
  "interface-rw": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"]
  }
},
"definitions": {
  "LiquidLevel": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.liquid.level"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "currentlevel": {
        "description": "The current level of the liquid in percentage.",
        "maximum": 100,
        "minimum": 0,
        "readOnly": true,
        "type": "integer"
      },
      "desiredlevel": {
        "description": "The desired level of the liquid in percentage.",
        "maximum": 100,
        "minimum": 0,
        "type": "integer"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      }
    }
  }
}
Table 173 defines the Properties that are part of the "oic.r.liquid.level" Resource Type.

Table 173 – The Property definitions of the Resource with type "rt" = "oic.r.liquid.level".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>currentlevel</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>The current level of the liquid in percentage.</td>
</tr>
<tr>
<td>desiredlevel</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The desired level of the liquid in percentage.</td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>
6.85.6 CRUDN behaviour

Table 174 defines the CRUDN operations that are supported on the "oic.r.liquid.level" Resource Type.

Table 174 – The CRUDN operations of the Resource with type "rt" = "oic.r.liquid.level".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.86 Vehicle Connector

6.86.1 Introduction

This Resource describes the attributes associated with an electric vehicle charging connector. The Property "connected" is a boolean indicating the status of the connector (False = disconnected, True = connected). The Property "ratedchargingcapacity" and "rateddischargingcapacity" are in Amps (A).

6.86.2 Example URI

/vehicleconnectorResURI

6.86.3 Resource type

The Resource Type is defined as: "oic.r.vehicle.connector".

6.86.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Vehicle Connector",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8b4cb/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
}
```

"description": "This Resource describes the attributes associated with an electric vehicle charging connector. The Property \"connected\" is a boolean indicating the status of the connector (False = disconnected, True = connected). The Property \"ratedchargingcapacity\" and \"rateddischargingcapacity\" are in Amps (A).",

"parameters": [
  {
    "$ref": "#/parameters/interface"
  }
],

"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.vehicle.connector"],
      "if": ["oic.if.s", "oic.if.baseline"],
      "connected": true,
      ...
    }
  }
}
```
"ratedchargingcapacity": 20.0,
"rateddischargingcapacity": 5.0,
"schema": { "$ref": "#/definitions/VehicleConnector" }
}
}

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
}

"definitions": {
  "VehicleConnector": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.vehicle.connector"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "connected": {
        "description": "The connection state.",
        "readOnly": true,
        "type": "boolean"
      },
      "ratedchargingcapacity": {
        "description": "The rated charging capacity in Amps (A).",
        "readOnly": true,
        "type": "number"
      },
      "rateddischargingcapacity": {
        "description": "The rated discharging capacity in Amps (A).",
        "readOnly": true,
        "type": "number"
      },
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"},
    "id": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"}
},
  "if": {
    "description": "The OCF Interface set supported by this Resource.",
    "items": {
      "enum": ["oic.if.s", "oic.if.baseline"]
    },
    "minItems": 2,
    "uniqueItems": true,
    "readOnly": true,
    "type": "array"
  }
}


6.86.5 Property definition

Table 175 defines the Properties that are part of the "oic.r.vehicle.connector" Resource Type.

Table 175 – The Property definitions of the Resource with type "rt" = "oic.r.vehicle.connector".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>connected</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The connection state.</td>
</tr>
<tr>
<td>ratedchargingcapacity</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The rated charging capacity in Amps (A).</td>
</tr>
<tr>
<td>rateddischargingcapacity</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The rated discharging capacity in Amps (A).</td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.86.6 CRUDN behaviour

Table 176 defines the CRUDN operations that are supported on the "oic.r.vehicle.connector" Resource Type.

Table 176 – The CRUDN operations of the Resource with type "rt" = "oic.r.vehicle.connector".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.87 Time Stamp

6.87.1 Introduction

This Resource describes Properties associated with a timestamp.

The "timestamp" Property is a string that captures a timestamp using the RFC3339 datetime format (e.g: 2007-04-05T14:30Z) (Time+Date+Timezone).

6.87.2 Example URI

/TimeStampResURI

6.87.3 Resource type

The Resource Type is defined as: "oic.r.time.stamp".
6.87.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Time Stamp",
    "version": "20190327",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc88dca4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/TimeStampResURI" : {
      "get": {
        "description": "This Resource describes Properties associated with a timestamp. The "timestamp" Property is a string that captures a timestamp using the RFC3339 datetime format (e.g: 2007-04-05T14:30Z) (Time+Date+Timezone).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.time.stamp"],
              "if": ["oic.if.s", "oic.if.r", "oic.if.baseline"],
              "timestamp": "2015-11-05T14:30:00Z"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "TimeStamp" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.time.stamp"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "timestamp": {
          "description": "An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00).",
          "format": "date-time",
          "readOnly": true,
        }
      }
    }
  }
}```
6.87.5 Property definition

Table 177 defines the Properties that are part of the "oic.r.time.stamp" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>timestamp</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00).</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.87.6 CRUDN behaviour

Table 178 defines the CRUDN operations that are supported on the "oic.r.time.stamp" Resource Type.
Table 178 – The CRUDN operations of the Resource with type "rt" = "oic.r.time.stamp".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>observe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.88 3D Printer

6.88.1 Introduction

This Resource describes the attributes associated with 3D Printer. The type of 3D printing technology is specified by an enumerated string value. The maximum sizes in mm are included for the x, y, and z dimensions. A designation of whether the device is capable of WAN connectivity is represented in a boolean. The memory capacity is captured in MB.

6.88.2 Example URI

/3DPrinterResURI

6.88.3 Resource type

The Resource Type is defined as: "oic.r.printer.3d".

6.88.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "3D Printer",
    "version": "20190222",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8e8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/3DPrinterResURI": {
      "get": {
        "description": "This Resource describes the attributes associated with 3D Printer. The type of 3D printing technology is specified by an enumerated string value. The maximum sizes in mm are included for the x, y, and z dimensions. A designation of whether the device is capable of WAN connectivity is represented in a boolean. The memory capacity is captured in MB.",
        "parameters": [
          {"$ref": "/#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.printer.3d"],
              "if": ["oic.if.r", "oic.if.baseline"],
              "3dprinttype": "Digital Light Processing",
              "printsizex": 300.00,
              "printsizey": 200.50,
              "printsizez": 250.75,
              "wanconnected": false,
              "memorysize": 120.5
            }
          },
          "schema": {
            "$ref": "/#/definitions/3DPrinter"}
        }
      }
    }
  }
}
```
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.r", "oic.if.baseline"]
  }
},
"definitions": {
  "3DPrinter": {
    "properties": {
      "rt": {
        "description": "The Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string",
          "enum": ["oic.r.printer.3d"]
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "printsizex": {
        "description": "This Property represents the maximum size of printing object in the
direction of X-axis. The unit is mm.",
        "readOnly": true,
        "type": "number"
      },
      "printsizez": {
        "description": "This Property represents the maximum size of printing object in the
direction of Z-axis. The unit is mm.",
        "readOnly": true,
        "type": "number"
      },
      "3dprinttype": {
        "description": "The type of 3D printing technology.",
        "enum": [
          "Fused Filament Fabrication",
          "Fused Deposition Modeling",
          "Digital Light Processing",
          "Powder Bed & inkjet head 3D Printing",
          "Photopolymer Jetting Technology",
          "Laminated Object Manufacturing",
          "Stereolithography Apparatus",
          "Selective Laser Sintering",
          "Unknown"
        ],
        "readOnly": true,
        "type": "string"
      },
      "wanconnected": {
        "description": "This Property indicates the connectivity capability of the 3D printer. If
the value is false, the printer does not have network facility to Wide Area Network such as internet
and GSM. If the value is true, the printer has network connectivity",
        "readOnly": true,
        "type": "boolean"
      },
      "printsizey": {
        "description": "This Property represents the maximum size of printing object in the
direction of Y-axis. The unit is mm.",
        "readOnly": true,
        "type": "number"
      },
      "memorysize": {
        "description": "This Property represents the total memory size of the printer. The unit is
MB (Mega Bytes)",
        "readOnly": true,
        "type": "number"
      }
    }
  }
}
6.88.5 Property definition

Table 179 defines the Properties that are part of the "oic.r.printer.3d" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type</td>
</tr>
<tr>
<td>printsizey</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property represents the maximum size of printing object in the direction of Y-axis. The unit is mm.</td>
</tr>
<tr>
<td>memorysize</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property represents the total memory size of the printer. The unit is MB(Mega Bytes)</td>
</tr>
<tr>
<td>3dprinttype</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>The type of 3D printing technology.</td>
</tr>
<tr>
<td>wanconnected</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property indicates the connectivity capability of the 3D printer. If the value is false, the printer does not have network facility to Wide Area Network such as internet and GSM. If the value is true, the printer has network connectivity.</td>
</tr>
</tbody>
</table>
6.88.6 CRUDN behaviour

Table 180 defines the CRUDN operations that are supported on the "oic.r.printer.3d" Resource Type.

Table 180 – The CRUDN operations of the Resource with type "rt" = "oic.r.printer.3d".

<table>
<thead>
<tr>
<th>Operation</th>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.89 Blood Pressure

6.89.1 Introduction

This Resource describes the Properties associated with a person's blood pressure.

The unit is a single value that is one of mmHg or kPa.

If the unit Property is missing the default is a millimeter of mercury [mmHg].

The bloodpressure and unit Properties are read-only values that are provided by the Server.

When range is omitted the default is 0 to +MAXFLOAT.

6.89.2 Example URI

/BloodPressureResURI

6.89.3 Resource type

The Resource Type is defined as: "oic.r.blood.pressure".

6.89.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Blood Pressure",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8edc4ba/LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
  },
  "schemes": [ "http" ]
}```
"consumes": [ "application/json" ],
"produces": [ "application/json" ],
"paths": {
"/BloodPressureResURI": {
"get": {
"description": "This Resource describes the Properties associated with a person's blood pressure. The unit is a single value that is one of mmHg or kPa. If the unit Property is missing the default is a millimeter of mercury [mmHg]. The bloodpressure and unit Properties are read-only values that are provided by the Server. When range is omitted the default is 0 to +MAXFLOAT."
,
"parameters": [ {
 "$ref": "/#/parameters/interface"
 }
 ],
"responses": {
"200": {
 "description": "",
 "x-example": { 
 
 "rt": [ 
  "oic.r.blood.pressure"
 ],
 "systolic": 110.0,
 "diastolic": 85.0,
 "map": 93.0,
 "range": [20.0, 300.0],
 "step": 1.0,
 "units": "mmHg"
 },
 "schema": { 
 "$ref": "/#/definitions/BloodPressure"
 }
 }
 }
 },
"parameters": { 
 "interface": { 
 "in": "query",
 "name": "if",
 "type": "string",
 "enum": [ 
  "oic.if.s",
  "oic.if.baseline"
 ]
 }
 }
 },
"definitions": { 
 "BloodPressure": { 
 "properties": { 
 "rt": { 
 "description": "Resource Type",
 "items": { 
 "enum": [ 
  "oic.r.blood.pressure"
 ],
 "type": "string",
 "maxLength": 64
 },
 "minItems": 1,
 "uniqueItems": true,
 "readOnly": true,
 "type": "array"
 },
 "map": { 
 "description": "Mean arterial pressure (MAP)",
 "minimum": 0.0,
"readOnly": true,
"type": "number"
},

"units": {
"description": "Blood pressure unit",
"enum": [
"mmHg",
"kPa"
],
"readOnly": true,
"type": "string",
"default": "mmHg"
},

"systolic": {
"description": "Systolic blood pressure",
"minimum": 0.0,
"readOnly": true,
"type": "number"
},

"diastolic": {
"description": "Diastolic blood pressure",
"minimum": 0.0,
"readOnly": true,
"type": "number"
},

"if": {
"description": "The OCF Interface set supported by this Resource",
"items": {
"enum": [
"oic.if.s",
"oic.if.baseline"
],
"type": "string",
"maxLength": 64
},

"minItems": 1,
"readOnly": true,
"uniqueItems": true,
"type": "array"
},

"range": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
},

"step": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
},

"precision": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
},

"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
}

"type": "object",
"required": [
"systolic",
"diastolic"
]
6.89.5 Property definition

Table 181 defines the Properties that are part of the "oic.r.blood.pressure" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>map</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Mean arterial pressure (MAP)</td>
</tr>
<tr>
<td>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Blood pressure unit</td>
</tr>
<tr>
<td>systolic</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Systolic blood pressure</td>
</tr>
<tr>
<td>diastolic</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Diastolic blood pressure</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.89.6 CRUDN behaviour

Table 182 defines the CRUDN operations that are supported on the "oic.r.blood.pressure" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>observe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.90 Blood Pressure Monitor Atomic Measurement

6.90.1 Introduction

This Resource describes the Properties associated with a blood pressure monitor. The Resource is an Atomic Measurement of blood pressure (oic.r.blood.pressure), pulse rate (oic.r.pulserate), observed time (oic.r.time.stamp), and user id (oic.r.userid).

6.90.2 Example URI

/BloodPressureMonitorAMResURI

6.90.3 Resource type

The Resource Type is defined as: "oic.r.bloodpressuremonitor-am, oic.wk.atomicmeasurement".

6.90.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Blood Pressure Monitor Atomic Measurement",
    "version": "2019-03-22",
  },
  ...
}``
"license": {
"name": "OCF Data Model License",
"url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
"x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
},
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
"schemes": [
"http"
],
"consumes": [
"application/json"
],
"produces": [
"application/json"
],
"paths": {
"/BloodPressureMonitorAMResURI?if=oic.if.b": {
"get": {
"description": "This Resource describes the Properties associated with a blood pressure
monitor. The Resource is an Atomic Measurement of blood pressure (oic.r.blood.pressure), pulse
rate (oic.r.pulserate), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
"parameters": [
{
"$ref": "#/parameters/interface-all"
}
],
"responses": {
"200": {
"description": "",
"x-example": [
{
"href": "/myBloodPressureResURI",
"rep": {
"systolic": 120.0,
"diastolic": 80.0,
"map": 93.0,
"range": [20.0, 300.0],
"step": 1,
"units": "mmHg"
}
},
{
"href": "/myPulseRateResURI",
"rep": {
"pulserate": 70,
"range": [20, 220],
"step": 1
}
},
{
"href": "/myUserId",
"rep": {
"userid": "USER1"
}
},
{
"href": "/myTimeStamp",
"rep": {
"timestamp": "2018-11-08T21:00+08:00"
}
}
],
"schema": {
"$ref": "#/definitions/batch-retrieve"
}
}
}
"/BloodPressureMonitorAMResURI?if=oic.if.ll": {
  "get": {
    "description": "This Resource describes the Properties associated with a blood pressure monitor. The Resource is an Atomic Measurement of blood pressure (oic.r.blood.pressure), pulse rate (oic.r.pulserate), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
    "parameters": [
      {
        "$ref": "#/parameters/interface-all"
      }
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": [
          {
            "href": "/myBloodPressureResURI",
            "rt": [
              "oic.r.blood.pressure"
            ],
            "if": [
              "oic.if.s",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myPulseRateResURI",
            "rt": [
              "oic.r.pulserate"
            ],
            "if": [
              "oic.if.s",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myUserId",
            "rt": [
              "oic.r.userid"
            ],
            "if": [
              "oic.if.r",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myTimeStamp",
            "rt": [
              "oic.r.time.stamp"
            ],
            "if": [
              "oic.if.r",
              "oic.if.baseline"
            ]
          }
        ],
        "schema": {
          "$ref": "#/definitions/links"
        }
      }
    },
  }
}
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": [
        "oic.r.bloodpressuremonitor-am",
        "oic.wk.atomicmeasurement"
      ],
      "if": [
        "oic.if.b",
        "oic.if.ll",
        "oic.if.baseline"
      ],
      "rts-m": [
        "oic.r.blood.pressure"
      ],
      "rts": [
        "oic.r.blood.pressure",
        "oic.r.pulserate",
        "oic.r.userid",
        "oic.r.time.stamp"
      ],
      "links": [
        {
          "href": "/myBloodPressureResURI",
          "rt": [
            "oic.r.blood.pressure"
          ],
          "if": [
            "oic.if.s",
            "oic.if.baseline"
          ]
        },
        {
          "href": "/myPulseRateResURI",
          "rt": [
            "oic.r.pulserate"
          ],
          "if": [
            "oic.if.s",
            "oic.if.baseline"
          ]
        },
        {
          "href": "/myUserId",
          "rt": [
            "oic.r.userid"
          ],
          "if": [
            "oic.if.r",
            "oic.if.baseline"
          ]
        },
        {
          "href": "/myTimeStamp",
          "rt": [
            "oic.r.time.stamp"
          ],
          "if": [
            "oic.if.r",
            "oic.if.baseline"
          ]
        }
      ],
      "schema": {
        "$ref": "#/definitions/baseline"
      }
    }
  }
}
"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b",
      "oic.if.ll",
      "oic.if.baseline"
    ]
  }
},

"definitions": {
  "batch-retrieve": {
    "minItems": 1,
    "items": {
      "properties": {
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
        },
        "rep": {
          "type": "object",
          "anyOf": [
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/BloodPressureResURI.swagger.json#/definitions/BloodPressure"
            },
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/PulseRateResURI.swagger.json#/definitions/PulseRate"
            },
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/UserID"
            },
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/TimeStamp"
            }
          ]
        }
      }
    },
    "required": [
      "href",
      "rep"
    ],
    "type": "object"
  },
  "links": {
    "type": "array",
    "items": {
      "$ref": "#definitions/oic.oic-link"
    }
  },
  "baseline": {
    "properties": {
      "rt": {
        "items": {
          "enum": [
            "oic.r.bloodpressuremonitor-am",
            "oic.r.atomicmeasurement"
          ],
          "type": "string",
        }
      }
    }
  }
}
"maxLength": 64,
"minItems": 2,
"uniqueItems": true,
"readOnly": true,
"type": "array"},
"rts": {
"description": "This contains all possible Resource Types for this Atomic Measurement.",
"items": {
"enum": [
  "oic.r.blood.pressure",
  "oic.r.pulserate",
  "oic.r.userid",
  "oic.r.time.stamp"
],
"type": "string",
"maxLength": 64
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"},
"rts-m": {
"description": "This contains all mandatory Resource Types for this Atomic Measurement.",
"items": {
"enum": [
  "oic.r.blood.pressure"
],
"type": "string",
"maxLength": 64
},
"maxItems": 1,
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"},
"if": {
"description": "The OCF Interface set supported by this Resource",
"items": {
"enum": [
  "oic.if.b",
  "oic.if.ll",
  "oic.if.baseline"
],
"type": "string"
},
"minItems": 3,
"uniqueItems": true,
"readOnly": true,
"type": "array"},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"links": {
"$ref": "#/definitions/links"
}
"oic.oic-link": {
  "properties": {
    "if": {
      "type": "array",
      "readOnly": true,
      "uniqueItems": true,
      "minItems": 1,
      "items": {
        "type": "string",
        "maxLength": 64,
        "enum": [
          "oic.if.s",
          "oic.if.r",
          "oic.if.baseline"
        ]
      }
    },
    "rt": {
      "type": "array",
      "readOnly": true,
      "uniqueItems": true,
      "minItems": 1,
      "items": {
        "type": "string",
        "maxLength": 64,
        "enum": [
          "oic.r.blood.pressure",
          "oic.r.pulserate",
          "oic.r.userid",
          "oic.r.time.stamp"
        ]
      }
    }
  },
  "anchor": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
  },
  "di": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
  },
  "eps": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
  },
  "href": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
  },
  "ins": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
  },
  "p": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
  },
  "rel": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/rel_array"
  },
  "title": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/title"
  }
}

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6.90.5 Property definition

Table 183 defines the Properties that are part of the "oic.r.bloodpressuremonitor-am, oic.wk.atomicmeasurement" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rep</td>
<td>object: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>This contains all possible Resource Types for this Atomic Measurement.</td>
</tr>
<tr>
<td>rts-m</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>This contains all mandatory Resource Types for this Atomic Measurement.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>links</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
6.90.6 CRUDN behaviour

Table 184 defines the CRUDN operations that are supported on the "oic.r.bloodpressurermonitor-am, oic.wk.atomicmeasurement" Resource Type.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.91 Body Mass Index (BMI)

6.91.1 Introduction

This Resource describes the Properties associated with a person’s Body Mass Index (BMI).
The unit, which is the default unit, is kg/m^2.
The bmi and unit Properties are read-only values that are provided by the server.
When range is omitted the default is 0 to +MAXFLOAT.

6.91.2 Example URI

/BMIResURI

6.91.3 Resource type

The Resource Type is defined as: "oic.r.bmi".

6.91.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Body Mass Index (BMI)",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
    },
    "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"
```
"paths": {
  "/BMIResURI": {
    "get": {
      "description": "This Resource describes the Properties associated with a person's Body Mass Index (BMI).
      The unit, which is the default unit, is kg/m^2.
      The bmi and unit Properties are read-only values that are provided by the server.
      When range is omitted the default is 0 to +MAXFLOAT.",
      "parameters": [ 
        { "$ref": "#/parameters/interface" }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": [ 
              "oic.r.bmi"
            ],
            "bmi": 20.0
          },
          "schema": {
            "$ref": "#/definitions/BMI"
          }
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [ "oic.if.s", "oic.if.baseline"
      ]
    }
  }
}
"definitions": {
  "BMI": { 
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": { 
          "enum": [ "oic.r.bmi"
        ],
        "type": "string",
        "maxLength": 64
      },
      "type": "string",
      "maxLength": 64
    },
    "bmi": {
      "description": "Body Mass Index (BMI) in kg/m^2",
      "minimum": 0.0,
      "readOnly": true,
      "type": "number"
    },
    "range": {
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
    },
    "step": { "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
  }
}
Table 185 defines the Properties that are part of the "oic.r.bmi" Resource Type.

Table 185 – The Property definitions of the Resource with type "rt" = "oic.r.bmi".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>bmi</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Body Mass Index (BMI) in kg/m²</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>
Table 186 defines the CRUDN operations that are supported on the "oic.r.bmi" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>observe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 6.92 Body Fat

#### 6.92.1 Introduction

This Resource describes the Properties associated with a person's body fat.

The unit is a single value that is one of kg, lb or percent.

If the unit Property is missing the default is kilograms [kg].

The bodyfat and unit Properties are read-only values that are provided by the Server.

When range is omitted the default is 0 to +MAXFLOAT.

#### 6.92.2 Example URI

/BetaFatResURI

#### 6.92.3 Resource type

The Resource Type is defined as: "oic.r.body.fat".

#### 6.92.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Body Fat",
        "version": "2019-03-22",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/ LICENCE.md",
            "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
        }
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/BodyFatResURI": {
            "get": {
                "description": "This Resource describes the Properties associated with a person's body fat.

The unit is a single value that is one of kg, lb or percent.

If the unit Property is missing the default is kilograms [kg].

The bodyfat and unit Properties are read-only values that are provided by the Server.

When range is omitted the default is 0 to +MAXFLOAT."
            }
        }
    }
}
```
"oic.r.body.fat",
"bodyfat": 20.0,
"units": "kg",
"schema": {
  "$ref": "#/definitions/BodyFat"
}
}
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
}
"definitions": {
  "BodyFat": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": [
            "oic.r.body.fat"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "bodyfat": {
        "description": "Body fat.",
        "minimum": 0.0,
        "readOnly": true,
        "type": "number"
      },
      "units": {
        "description": "Fat unit",
        "enum": [
          "kg",
          "lb",
          "percent"
        ],
        "readOnly": true,
        "type": "string",
        "default": "kg"
      }
    }
  }
}
"range": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
},
"step": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
},
"precision": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
6.92.5 Property definition

Table 187 defines the Properties that are part of the "oic.r.body.fat" Resource Type.

**Table 187 – The Property definitions of the Resource with type "rt" = "oic.r.body.fat".**

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>bodyfat</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Body fat.</td>
</tr>
<tr>
<td>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Body fat units</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td></td>
<td>schema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td></td>
<td>schema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td></td>
<td>schema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td></td>
<td>schema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td></td>
<td>schema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.92.6 CRUDN behaviour

Table 188 defines the CRUDN operations that are supported on the "oic.r.body.fat" Resource Type.
Table 188 – The CRUDN operations of the Resource with type "rt" = "oic.r.body.fat".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.93 Body Fat Free Mass

6.93.1 Introduction

This Resource describes the Properties associated with a person's body fat free mass. The unit is a single value that is one of kg, lb or percent. If the unit Property is missing the default is kilograms [kg]. The ffm and unit Properties are read-only values that are provided by the Server. When range is omitted the default is 0 to +MAXFLOAT.

6.93.2 Example URI

/BodyFatFreeMassResURI

6.93.3 Resource type

The Resource Type is defined as: "oic.r.body.ffm".

6.93.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Body Fat Free Mass",
        "version": "2019-03-22",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e8366e4c0fbce8bd4ba/LICENSE.md",
            "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": [
        "http"
    ],
    "consumes": [
        "application/json"
    ],
    "produces": [
        "application/json"
    ],
    "paths": {
        "/BodyFatFreeMassResURI": {
            "get": {
                "description": "This Resource describes the Properties associated with a person's body fat free mass. The unit is a single value that is one of kg, lb or percent. If the unit Property is missing the default is kilograms [kg]. The ffm and unit Properties are read-only values that are provided by the Server. When range is omitted the default is 0 to +MAXFLOAT.",
                "parameters": [
                    {"$ref": "#/parameters/interface"}
                ],
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": {
                            "rt": ["oic.r.body.ffm"
                        },
                    "ffm": 40.0,
                    "units": "kg"
                }
            }
        }
    }
}```
"schema": {
  "$ref": "#/definitions/BodyFatFreeMass"
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
}
"definitions": {
  "BodyFatFreeMass": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": [
            "oic.r.body.ffm"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "ffm": {
        "description": "Body fat free mass.",
        "minimum": 0.0,
        "readOnly": true,
        "type": "number"
      },
      "units": {
        "description": "Body fat free mass units",
        "enum": [
          "kg",
          "lb",
          "percent"
        ],
        "readOnly": true,
        "type": "string",
        "default": "kg"
      }
    }
  }
}
"range": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
}
"step": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
}
"precision": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
}
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
6.93.5 Property definition

Table 189 defines the Properties that are part of the "oic.r.body.ffm" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>ffm</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Body fat free mass.</td>
</tr>
<tr>
<td>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Body fat free mass units</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.93.6 CRUDN behaviour

Table 190 defines the CRUDN operations that are supported on the "oic.r.body.ffm" Resource Type.
<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.94 Body Location Temperature

#### 6.94.1 Introduction

This Resource describes the Properties associated with body location for temperature measurement of a person. The bloc Property is a read-only value that is provided by the Server.

#### 6.94.2 Example URI

/BodyLocationTemperatureResURI

#### 6.94.3 Resource type

The Resource Type is defined as: "oic.r.body.location.temperature".

#### 6.94.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Body Location Temperature",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BodyLocationTemperatureResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with body location for temperature measurement of a person. The bloc Property is a read-only value that is provided by the Server."
      },
      "parameters": [],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.body.location.temperature"
          ],
          "bloc": "ear"
        },
        ""schema": {
          "$ref": "#/definitions/BodyLocationTemperature"
        }
      }
    }
  }
}
```
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
}

"definitions": {
  "BodyLocationTemperature": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": [
            "oic.r.body.location.temperature"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "bloc": {
        "description": "A list specific to temperature site",
        "enum": [
          "axillary",
          "body",
          "ear",
          "finger",
          "giract",
          "mouth",
          "rectum",
          "toe",
          "tympanum"
        ],
        "readOnly": true,
        "type": "string"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource",
        "items": {
          "enum": [
            "oic.if.s",
            "oic.if.baseline"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "readOnly": true,
        "uniqueItems": true,
        "type": "array"
      }
    }
  }
}
6.94.5 Property definition

Table 191 defines the Properties that are part of the "oic.r.body.location.temperature" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>bloc</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>A list specific to temperature site</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.94.6 CRUDN behaviour

Table 192 defines the CRUDN operations that are supported on the "oic.r.body.location.temperature" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.95 Body Scale Atomic Measurement

6.95.1 Introduction

This Resource describes the Properties associated with body scale. The Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI) (oic.r.bmi), height (oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body soft lean mass (oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time (oic.r.time.stamp), and user id (oic.r.userid).

6.95.2 Example URI

/BodyScaleAMResURI

6.95.3 Resource type

The Resource Type is defined as: "oic.r.bodyscale-am, oic.wk.atomicmeasurement".

6.95.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
```
"info": {
  "title": "Body Scale Atomic Measurement",
  "version": "2019-03-22",
  "license": {
    "name": "OCF Data Model License",
    "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
    "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
},

"schemes": [ "http" ],
"consumes": [ "application/json" ],
"produces": [ "application/json" ],
"paths": {
  "/BodyScaleAMResURI?if=oic.if.b": {
    "get": {
      "description": "This Resource describes the Properties associated with body scale. The Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI) (oic.r.bmi), height (oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body soft lean mass (oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
      "parameters": [ {
        "$ref": "#/parameters/interface-all"
      } ],
      "responses": { "200": { "description": "", "x-example": [ {
          "href": "/myWeight",
          "rep": { "weight": 80.0,
                   "units": "kg"
                       }
                },
          {
          "href": "/myBMI",
          "rep": { "bmi": 20.0
                       }
                },
          {
          "href": "/myHeight",
          "rep": { "height": 1.8,
                   "units": "m"
                       }
                },
          {
          "href": "/myBodyFat",
          "rep": { "bodyfat": 20.0,
                   "units": "kg"
                       }
                },
          {
          "href": "/myBodyWater",
          "rep": { "bwater": 20.0,
                   "units": "kg"
                       }
                } ]
      } ]
    }
  }
}
"href": "/myBodySoftLeanMass",
"rep": {
"slm": 20.0,
"units": "kg"
}
},

{  
"href": "/myBodyFatFreeMass",
"rep": {
"ffm": 40.0,
"units": "kg"
}
},

{  
"href": "/myUserId",
"rep": {
"userid": "USER1"
}
},

{  
"href": "/myTimeStamp",
"rep": {
"timestamp": "2018-11-09T12:15+08:00"
}
}
},

"schema": {
"$ref": "/definitions/batch-retrieve"
}
}
"rt": [
  "oic.r.height"
],
"if": [
  "oic.if.s",
  "oic.if.baseline"
]
],
"href": "/myBodyFat",
"rt": [
  "oic.r.body.fat"
],
"if": [
  "oic.if.s",
  "oic.if.baseline"
]
],
"href": "/myBodyWater",
"rt": [
  "oic.r.body.water"
],
"if": [
  "oic.if.s",
  "oic.if.baseline"
]
],
"href": "/myBodySoftLeanMass",
"rt": [
  "oic.r.body.slm"
],
"if": [
  "oic.if.s",
  "oic.if.baseline"
]
],
"href": "/myBodyFatFreeMass",
"rt": [
  "oic.r.body.ffm"
],
"if": [
  "oic.if.s",
  "oic.if.baseline"
]
],
"href": "/myUserId",
"rt": [
  "oic.r.userid"
],
"if": [
  "oic.if.r",
  "oic.if.baseline"
]
],
"href": "/myTimeStamp",
"rt": [
  "oic.r.time.stamp"
],
"if": [
  "oic.if.r",
  "oic.if.baseline"
]
]
}
"schema": {
  "$ref": "#/definitions/links"}
"BodyScaleAMResURI?if=oic.if.baseline": {  
  "get": {  
    "description": "This Resource describes the Properties associated with body scale. This Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI) (oic.r.bmi), height (oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body soft lean mass (oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
    "parameters": [  
      "$ref": "#/parameters/interface-all"
    ],  
    "responses": {  
      "200": {  
        "description": "",  
        "x-example": {  
          "rt": [  
            "oic.r.bodyscale-am",
            "oic.wk.atomicmeasurement"
          ],  
          "if": [  
            "oic.if.b",
            "oic.if.ll",
            "oic.if.baseline"
          ],  
          "rts": [  
            "oic.r.weight",
            "oic.r.bmi",
            "oic.r.height",
            "oic.r.body.fat",
            "oic.r.body.water",
            "oic.r.body.slm",
            "oic.r.body.ffm",
            "oic.r.userid",
            "oic.r.time.stamp"
          ],  
          "rts-m": [  
            "oic.r.weight"
          ],  
          "links": [  
            {  
              "href": "/myWeight",
              "rt": [  
                "oic.r.weight"
              ],  
              "if": [  
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {  
              "href": "/myBMI",
              "rt": [  
                "oic.r.bmi"
              ],  
              "if": [  
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {  
              "href": "/myHeight",
              "rt": [  
                "oic.r.height"
              ],  
              "if": [  
                "oic.if.s",
                "oic.if.baseline"
              ]
            }
          ]
        }
      }
    }
  }
}
"href": "/myBodyFat",
"rt": {
"oic.r.body.fat"
},
"if": [
"oic.if.s",
"oic.if.baseline"
]
},

"href": "/myBodyWater",
"rt": [
"oic.r.body.water"
],
"if": [
"oic.if.s",
"oic.if.baseline"
]
},

"href": "/myBodySoftLeanMass",
"rt": {
"oic.r.body.slm"
},
"if": [
"oic.if.s",
"oic.if.baseline"
]
},

"href": "/myBodyFatFreeMass",
"rt": {
"oic.r.body.ffm"
},
"if": [
"oic.if.s",
"oic.if.baseline"
]
},

"href": "/myUserId",
"rt": {
"oic.r.userid"
},
"if": [
"oic.if.r",
"oic.if.baseline"
]
},

"href": "/myTimeStamp",
"rt": {
"oic.r.time.stamp"
},
"if": [
"oic.if.r",
"oic.if.baseline"
]
}

"schema": {
"$ref": "/#definitions/baseline"
}
"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b",
      "oic.if.ll",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "links": {
    "type": "array",
    "items": {
      "$ref": "#/definitions/oic.oic-link"
    }
  },
  "baseline": {
    "properties": {
      "rt": {
        "items": {
          "enum": [
            "oic.r.bodyscale-am",
            "oic.wk.atomicmeasurement"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 2,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "rts": {
        "description": "This contains all possible Resource Types for this Atomic Measurement.",
        "items": {
          "enum": [
            "oic.r.weight",
            "oic.r.bmi",
            "oic.r.height",
            "oic.r.body.fat",
            "oic.r.body.water",
            "oic.r.body.slm",
            "oic.r.body_ffm",
            "oic.r.time.stamp",
            "oic.r.userid"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "rts-m": {
        "description": "This contains all mandatory Resource Types for this Atomic Measurement.",
        "items": {
          "enum": [
            "oic.r.weight"
          ],
          "maxItems": 1,
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      }
    }
  }
},
"if": {
  "description": "The OCF Interface set supported by this Resource",
  "items": {
    "enum": [
      "oic.if.b",
      "oic.if.ll",
      "oic.if.baseline"
    ],
    "type": "string",
    "maxLength": 64
  },
  "minItems": 3,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"links": {
  "$ref": "#/definitions/links"
},
"type": "object",
"required": [
  "rt","if","links","rts","rts-m"
],
"batch-retrieve": {
  "minItems": 1,
  "items": {
    "properties": {
      "href": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
      },
      "rep": {
        "type": "object",
        "anyOf": [
          {
            "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/WeightResURI.swagger.json#/definitions/Weight"
          },
          {
            "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/BMIResURI.swagger.json#/definitions/BMI"
          },
          {
            "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/HeightResURI.swagger.json#/definitions/Height"
          },
          {
            "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/BodyFatResURI.swagger.json#/definitions/BodyFat"
          },
          {
            "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/BodyWaterResURI.swagger.json#/definitions/BodyWater"
          }
        ]
      }
    }
  }
}
  },
  },
  { "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/UserID",
  },
  { "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/TimeStamp"
}
"href",
"rep"
],
"type": "object"
},
"type": "array"
],
"properties": {
  "rt": {
    "description": "Resource Type of the target Resource",
    "items": {
      "enum": [
        "oic.r.weight",
        "oic.r.bmi",
        "oic.r.height",
        "oic.r.body.fat",
        "oic.r.body.water",
        "oic.r.body.slm",
        "oic.r.body.ffm",
        "oic.r.time.stamp",
        "oic.r.userid"
      ],
    "type": "string",
    "maxLength": 64
    },
    "minItems": 1,
    "uniqueItems": true,
    "readOnly": true,
    "type": "array"
  },
  "if": {
    "description": "The OCF Interface set supported by the target Resource",
    "items": {
      "enum": [
        "oic.if.s",
        "oic.if.r",
        "oic.if.baseline"
      ],
    "type": "string",
    "maxLength": 64
    },
    "minItems": 1,
    "uniqueItems": true,
    "readOnly": true,
    "type": "array"
  },
  "anchor": {
6.95.5 Property definition

Table 193 defines the Properties that are part of the “oic.r.bodyscale-am, oic.wk.atomicmeasurement” Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>This contains all possible Resource Types for this</td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td></td>
</tr>
</tbody>
</table>

Table 193 – The Property definitions of the Resource with type "rt" = "oic.r.bodyscale-am, oic.wk.atomicmeasurement".
Table 194 defines the CRUDN operations that are supported on the "oic.r.bodyscale-am, oic.wk.atomicmeasurement" Resource Type.

Table 194 – The CRUDN operations of the Resource with type "rt" = "oic.r.bodyscale-am, oic.wk.atomicmeasurement".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
### 6.96 Body Soft Lean Mass

#### 6.96.1 Introduction
This Resource describes the Properties associated with a person’s body soft lean mass. The unit is a single value that is one of kg, lb or percent. If the unit Property is missing the default is kilograms [kg]. The slm and unit Properties are read-only values that are provided by the Server. When range is omitted the default is 0 to +MAXFLOAT.

#### 6.96.2 Example URI

```
/BodySoftLeanMassResURI
```

#### 6.96.3 Resource type
The Resource Type is defined as: "oic.r.body.slm".

#### 6.96.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Body Soft Lean Mass",
        "version": "2019-03-22",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4b/LICENSE.md",
            "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/BodySoftLeanMassResURI": {
            "get": {
                "description": "This Resource describes the Properties associated with a person's body soft
                lean mass. The unit is a single value that is one of kg, lb or percent. If the unit Property
                is missing the default is kilograms [kg]. The slm and unit Properties are read-only values
                that are provided by the Server. When range is omitted the default is 0 to +MAXFLOAT.",
                "parameters": {
                    "$ref": "#/parameters/interface"
                },
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": {
                            "rt": ["oic.r.body.slm"],
                            "slm": 20.0,
                            "units": "kg"
                        }
                    },
                    "schema": {
                        "$ref": "#/definitions/BodySoftLeanMass"
                    }
                }
            }
        }
    }
}
```
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "BodySoftLeanMass": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": [
            "oic.r.body.slm"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "slm": {
        "description": "Body soft lean mass.",
        "minimum": 0.0,
        "readOnly": true,
        "type": "number"
      },
      "units": {
        "description": "Body soft lean mass units",
        "enum": [
          "kg",
          "lb",
          "percent"
        ],
        "readOnly": true,
        "type": "string",
        "default": "kg"
      },
      "range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
      },
      "step": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
      },
      "precision": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      }
    }
  }
}
6.96.5 Property definition

Table 195 defines the Properties that are part of the "oic.r.body.slm" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>slm</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Body soft lean mass.</td>
</tr>
<tr>
<td>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Body soft lean mass units</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.96.6 CRUDN behaviour

Table 196 defines the CRUDN operations that are supported on the "oic.r.body.slm" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.97 Body Thermometer Atomic Measurement

6.97.1 Introduction

This Resource describes the Properties associated with body thermometer. The Resource is an Atomic Measurement of temperature (oic.r.temperature), body location for temperature (oic.r.body.location.temperature), observed time (oic.r.time.stamp), and user id (oic.r.userid).

6.97.2 Example URI

/BodyThermometerAMResURI

6.97.3 Resource type

The Resource Type is defined as: "oic.r.bodythermometer-am, oic.wk.atomicmeasurement".

6.97.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Body Thermometer Atomic Measurement",
        "version": "2019-03-22",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
            "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
        }
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
    "schemes": [
        "http"
    ],
    "consumes": [
        "application/json"
    ],
    "produces": [
        "application/json"
    ],
    "paths": {
        "/BodyThermometerAMResURI?if=oic.if.b": {
            "get": {
                "description": "This Resource describes the Properties associated with body thermometer. The Resource is an Atomic Measurement of temperature (oic.r.temperature), body location for temperature (oic.r.body.location.temperature), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
                "parameters": [
                    {
                        "$ref": "#/parameters/interface-all"
                    }
                ],
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": [
                            {
                                "href": "/myTemperature",
                                "rep": {
                                    "temperature": 38.0,
                                    "units": "C"
                                }
                            },
                            {
                                "href": "/myBodyLocationForTemperature",
                                "rep": {
                                    "bloc": "mouth"
                                }
                            }
                        ]
                    }
                }
            }
        }
    }
}
```
"href": "/myUserId",
"rep": {
  "userid": "USER1"
}
],

"href": "/myTimeStamp",
"rep": {
  "timestamp": "2018-11-09T12:15+08:00"
}
"

"schema": {
  "$ref": "/definitions/batch-retrieve"
}
"/BodyThermometerAMResURI?if=oic.if.ll": {
  "get": {
    "description": "This Resource describes the Properties associated with body
thermometer. The Resource is an Atomic Measurement of temperature (oic.r.temperature), body
location for temperature (oic.r.body.location.temperature), observed time (oic.r.time.stamp), and
user id (oic.r.userid).",
    "parameters": [
      "$ref": "/parameters/interface-all"
    ],
    "responses": {
      "200": {
        "description": 
        "x-example": {
          "href": "/myTemperature",
          "rt": [oic.r.temperature]
        },
        "href": "/myBodyLocationForTemperature",
        "rt": [oic.r.body.location.temperature]
      },
      "href": "/myUserId",
      "rt": [oic.r.userid]
    },
    "href": "/myTimeStamp",
    "rt": [oic.r.time.stamp]
  }
}
"oic.if.baseline"

"schema": {
"$ref": "#/definitions/links"
}

"get": {
"description": "This Resource describes the Properties associated with body thermometer. The Resource is an Atomic Measurement of temperature (oic.r.temperature), body location for temperature (oic.r.body.location.temperature), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
"parameters": [
  {
    "$ref": "#/parameters/interface-all"
  }
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": [
        "oic.r.bodythermometer-am",
        "oic.wk.atomicmeasurement"
      ],
      "$if": [
        "oic.if.b",
        "oic.if.ll",
        "oic.if.baseline"
      ],
      "$ts": [
        "oic.r.temperature",
        "oic.r.body.location.temperature",
        "oic.r.userid",
        "oic.r.time.stamp"
      ],
      "$ts-m": [
        "oic.r.temperature"
      ],
      "links": {
        "href": "/myTemperature",
        "rt": [
          "oic.r.temperature"
        ],
        "$if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      "href": "/myBodyLocationForTemperature",
      "rt": [
        "oic.r.body.location.temperature"
      ],
      "$if": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    },
    "href": "/myUserId",
    "rt": [
      "oic.r.userid"
    ],
    "$if": [
      "oic.if.r",
      "oic.if.baseline"
    ]
  }
}
"oic.if.baseline"
],
],
"href": "/myTimeStamp",
"rt": [
"oic.r.time.stamp"
],
"if": [
"oic.if.r",
"oic.if.baseline"
]
}

"schema": {
"$ref": "/#/definitions/baseline"
}

"parameters": {
"interface-all": {
"in": "query",
"name": "if",
"type": "string",
"enum": [
"oic.if.b",
"oic.if.ll",
"oic.if.baseline"
]
}
}

"definitions": {
"batch-retrieve": {
"minItems": 1,
"items": {
"properties": {
"href": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
}
"rep": {
"type": "object",
"anyOf": [
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/TemperatureResURI.swagger.json#/definitions/Temperature"
]
}
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/BodyLocationTemperatureResURI.swagger.json#/definitions/BodyLocationTemperature"
]
]
]
,"required": [
"href",
"rep"
],
"type": "object"
},
"type": "array"
],
"links": {
"type": "array",
"items": {
"$ref": "#/definitions/oic.oic-link"
}
}
},
"baseline": {
"properties": {
"rt": {
"items": {
"enum": [
"oic.r.bodythermometer-am",
"oic.wk.atomicmeasurement"
],
"type": "string",
"maxLength": 64
},
"minItems": 2,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"rts": {
"description": "This contains all possible Resource Types for this Atomic Measurement.",
"items": {
"enum": [
"oic.r.temperature",
"oic.r.body.location.temperature",
"oic.r.time.stamp",
"oic.r.userid"
],
"type": "string",
"maxLength": 64
],
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"rts-m": {
"description": "This contains all mandatory Resource Types for this Atomic Measurement.",
"items": {
"enum": [
"oic.r.temperature"
],
"type": "string",
"maxLength": 64
},
"maxItems": 1,
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"if": {
"description": "The OC Interface set supported by this Resource",
"items": {
"enum": [
"oic.if.b",
"oic.if.ll",
"oic.if.baseline"
],
"type": "string",
"maxLength": 64
},
"maxItems": 1,
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"}
"minItems": 3,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}

"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
}

"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
}

"links": {
"$ref": "#/definitions/links"
}

"rt": "string",
"maxLength": 64

"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}

"rt": {
"description": "The OCF Interface set supported by target Resource",
"items": {
"enum": ["oic.if.baseline", "oic.if.s", "oic.if.r"]
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}

"rt": {"description": "Resource Type of the target Resource",
"items": {
"enum": ["oic.r.temperature", "oic.r.body.location.temperature", "oic.r.time.stamp", "oic.r.userid"]
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}

"anchor": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
}

"di": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
}

"eps": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-sch
6.97.5 Property definition

Table 197 defines the Properties that are part of the "oic.r.bodythermometer-am, oic.wk.atomicmeasurement" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rep</td>
<td>object: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>This contains all possible Resource Types for this Atomic Measurement.</td>
</tr>
<tr>
<td>rts-m</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>This contains all mandatory Resource Types for this Atomic Measurement.</td>
</tr>
</tbody>
</table>
6.97.6 CRUDN behaviour

Table 198 defines the CRUDN operations that are supported on the "oic.r.bodythermometer-am, oic.wk.atomicmeasurement" Resource Type.

<table>
<thead>
<tr>
<th>Property</th>
<th>Multiplied Types: See Schema</th>
<th>Default</th>
<th>Read/Write</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create</td>
<td>Read</td>
<td>Update</td>
<td>Delete</td>
</tr>
<tr>
<td>get</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.98 Body Water

6.98.1 Introduction

This Resource describes the Properties associated with a person's body water. The unit is a single value that is one of kg or lb. If the unit Property is missing the default is kilograms [kg]. The bwater and unit Properties are read-only values that are provided by the Server. When range is omitted the default is 0 to +MAXFLOAT.

6.98.2 Example URI

/BodyWaterResURI
6.98.3 Resource type

The Resource Type is defined as: "oic.r.body.water".

6.98.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Body Water",
        "version": "2019-03-22",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
            "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/BodyWaterResURI": {
            "get": {
                "description": "This Resource describes the Properties associated with a person's body water.\nThe unit is a single value that is one of kg or lb.\nIf the unit Property is missing the default is kilograms [kg].\nThe bwater and unit Properties are read-only values that are provided by the Server.\nWhen range is omitted the default is 0 to MAXFLOAT."
            },
            "parameters": {
                "$ref": "#/parameters/interface"
            },
            "responses": {
                "200": {
                    "description": "",
                    "x-example": {
                        "rt": ["oic.r.body.water"],
                        "bwater": 20.0,
                        "units": "kg"
                    },
                    "schema": {
                        "$ref": "#/definitions/BodyWater"
                    }
                }
            }
        }
    },
    "parameters": {
        "interface": {
            "in": "query",
            "name": "if",
            "type": "string",
            "enum": ["oic.if.s", "oic.if.baseline"
        }
    },
    "definitions": {
        "BodyWater": {
```
}
"properties": {
  "rt": {
    "description": "Resource Type",
    "items": {
      "enum": [
        "oic.r.body.water"
      ],
      "type": "string",
      "maxLength": 64
    },
    "minItems": 1,
    "uniqueItems": true,
    "readOnly": true,
    "type": "array"
  },
  "bwater": {
    "description": "Body water.",
    "minimum": 0.0,
    "readOnly": true,
    "type": "number"
  },
  "units": {
    "description": "Body water unit",
    "enum": [
      "kg",
      "lb"
    ],
    "readOnly": true,
    "type": "string",
    "default": "kg"
  },
  "range": {
    "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
  },
  "step": {
    "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
  },
  "precision": {
    "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
  },
  "n": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
  },
  "id": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
  },
  "if": {
    "description": "The OCF Interface set supported by this Resource",
    "items": {
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ],
      "type": "string",
      "maxLength": 64
    },
    "minItems": 1,
    "readOnly": true,
    "uniqueItems": true,
    "type": "array"
  }
}
6.98.5 Property definition

Table 199 defines the Properties that are part of the "oic.r.body.water" Resource Type.

Table 199 – The Property definitions of the Resource with type "rt" = "oic.r.body.water".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>bwater</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Body water.</td>
</tr>
<tr>
<td>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Body water unit</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.98.6 CRUDN behaviour

Table 200 defines the CRUDN operations that are supported on the "oic.r.body.water" Resource Type.

Table 200 – The CRUDN operations of the Resource with type "rt" = "oic.r.body.water".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.99 Glucose

6.99.1 Introduction

This Resource describes the Properties associated with a person's glucose level.

The unit is a single value that is one of mg/dL, mmol/L.

If the unit Property is missing the default is milligrams per decilitre [mg/dL].

The glucose and unit Properties are read-only values that are provided by the Server.

When range is omitted the default is 0 to +MAXFLOAT.

6.99.2 Example URI

/GlucoseResURI

6.99.3 Resource type

The Resource Type is defined as: "oic.r.glucose".
6.99.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Glucose",
        "version": "2019-03-22",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
            "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
        }
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/GlucoseResURI": {
            "get": {
                "description": "This Resource describes the Properties associated with a person's glucose level. The unit is a single value that is one of mg/dL, mmol/L. If the unit Property is missing the default is milligrams per decilitre [mg/dL]. The glucose and unit Properties are read-only values that are provided by the Server. When range is omitted the default is 0 to +MAXFLOAT.",
                "parameters": [
                    {
                        "$ref": "#/parameters/interface"
                    }
                ],
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": {
                            "rt": ["oic.r.glucose"],
                            "glucose": 90.0,
                            "units": "mg/dL",
                            "range": [20.0, 600.0],
                            "step": 1
                        },
                        "schema": {
                            "$ref": "#/definitions/Glucose"
                        }
                    }
                }
            }
        }
    },
    "parameters": {
        "interface": {
            "in": "query",
            "name": "if",
            "type": "string",
            "enum": ["oic.if.s", "oic.if.baseline"
        ]
    },
    "definitions": {
```
"Glucose": {
  "properties": {
    "rt": {
      "description": "Resource Type",
      "items": {
        "enum": [
          "oic.r.glucose"
        ],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    },
    "glucose": {
      "description": "A measurement of glucose concentration in the blood",
      "minimum": 0.0,
      "readOnly": true,
      "type": "number"
    },
    "units": {
      "description": "Glucose unit",
      "enum": [
        "mg/dL",
        "mmol/L"
      ],
      "readOnly": true,
      "type": "string",
      "default": "mg/dL"
    },
    "range": {
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
    },
    "step": {
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
    },
    "precision": {
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
    },
    "n": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
    },
    "id": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
    },
    "if": {
      "description": "The OCF Interface set supported by this Resource",
      "items": {
        "enum": [
          "oic.if.s",
          "oic.if.baseline"
        ],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 1,
      "readOnly": true,
      "uniqueItems": true,
      "type": "array"
    }
  }
}
6.99.5 Property definition

Table 201 defines the Properties that are part of the "oic.r.glucose" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>glucose</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>A measurement of glucose concentration in the blood</td>
</tr>
<tr>
<td>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Glucose unit</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.99.6 CRUDN behaviour

Table 202 defines the CRUDN operations that are supported on the "oic.r.glucose" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.100 Context Carbohydrates for Glucose Meter

6.100.1 Introduction

This Resource describes the Properties associated with a context carbohydrates.

The carb Property has a default unit of grams[g].

The carb and meal Properties are read-only values that are provided by the Server.

When range is omitted the default is 0 to +MAXFLOAT.

6.100.2 Example URI

/GlucoseCarbResURI

6.100.3 Resource type

The Resource Type is defined as: "oic.r.glucose.carb".
6.100.4 OpenAPI 2.0 definition

```json
{
"swagger": "2.0",
"info": {
  "title": "Context Carbohydrates for Glucose Meter",
  "version": "2019-03-22",
  "license": {
    "name": "OCF Data Model License",
    "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bd4ba/LICENSE.md",
    "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
},
"schemes": [
  "https"
],
"consumes": [
  "application/json"
],
"produces": [
  "application/json"
],
"paths": {
  "/GlucoseCarbResURI": {
    "get": {
      "description": "This Resource describes the Properties associated with a context carbohydrates. The carb Property has a default unit of grams[g]. The carb and meal Properties are read-only values that are provided by the Server. When range is omitted the default is 0 to MAXFLOAT."
    "parameters": {
      "$ref": "#/parameters/interface"
    },
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.glucose.carb"
        },
        "carb": 100.0,
        "meal": "breakfast"
        },
        "schemas": {
        "$ref": "#/definitions/GlucoseCarb"
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"
  }
}
"definitions": {
  "GlucoseCarb": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
        }""...
```
"carb": {
  "description": "The amount of carbohydrates undertaken in grams",
  "readOnly": true,
  "type": "number",
  "minimum": 0.0
},
"meal": {
  "description": "Recorded time of carbohydrates intake",
  "enum": [
    "breakfast",
    "lunch",
    "dinner",
    "snack",
    "drink",
    "supper",
    "brunch",
    "undetermined",
    "other",
    "no_entry",
    "no_ingestion"
  ],
  "readOnly": true,
  "type": "string"
},
"range": {
  "description": "The range applies to the carb property only",
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
},
"step": {
  "description": "The step applies to the carb property only",
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
},
"precision": {
  "description": "The precision applies to the carb property only",
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
},
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
  "description": "The OCF Interface set supported by this Resource",
  "items": {
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ],
    "type": "string",
    "maxLength": 64
  }
}
6.100.5 Property definition

Table 203 defines the Properties that are part of the "oic.r.glucose.carb" Resource Type.

Table 203 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.carb".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>carb</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The amount of carbohydrates undertaken in grams</td>
</tr>
<tr>
<td>meal</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>Recorded time of carbohydrates intake</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The range applies to the carb property only</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The step applies to the carb property only</td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The precision applies to the carb property only</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.100.6 CRUDN behaviour

Table 204 defines the CRUDN operations that are supported on the "oic.r.glucose.carb" Resource Type.

Table 204 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.carb".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.101 Exercise for Glucose Meter

6.101.1 Introduction

This Resource describes the Properties associated with glucose exercise.
The exercise Property has a default unit of percentage.
The exercise Property is a read-only value that is provided by the Server.

6.101.2 Example URI

/ExerciseResURI

6.101.3 Resource type

The Resource Type is defined as: "oic.r.glucose.exercise".

6.101.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Exercise for Glucose Meter",
        "version": "2019-03-22",
        "license": {
            "name": "CCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
            "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/ExerciseResURI": {
            "get": {
                "description": "This Resource describes the Properties associated with glucose exercise.
The exercise Property has a default unit of percentage.
The exercise Property is a read-only value that is provided by the Server."
            }
        }
    },
    "parameters": [
        {
            "$ref": "#/parameters/interface"
        }
    ],
    "responses": {
        "200": {
            "description": "",
            "x-example": {
                "rt": ["oic.r.glucose.exercise"],
                "exercise": 30.0
            },
            "schema": {
                "$ref": "#/definitions/Exercise"
            }
        }
    }
}
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"name": "if",
"type": "string",
"enum": [
  "oic.if.s",
  "oic.if.baseline"
]
"if": {
  "description": "The OCF Interface set supported by this Resource",
  "items": {
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ],
    "type": "string",
    "maxLength": 64
  },
  "minItems": 1,
  "uniqueItems": true,
  "readOnly": true,
  "uniqueItems": true,
  "type": "array"
},
"definitions": {
  "Exercise": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": [
            "oic.r.glucose.exercise"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "exercise": {
        "description": "The level of exercise undertaken in percentage",
        "maximum": 100.0,
        "minimum": 0.0,
        "readOnly": true,
        "type": "number"
      }
    }
  }
}
6.101.5 Property definition

Table 205 defines the Properties that are part of the "oic.r.glucose.exercise" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>exercise</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The level of exercise undertaken in percentage</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.101.6 CRUDN behaviour

Table 206 defines the CRUĐN operations that are supported on the "oic.r.glucose.exercise" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.102 Hemoglobin Bound to Glucose A1c Form (HbA1c) for Glucose Meter

6.102.1 Introduction

This Resource describes the Properties associated with a person's hba1c level.
The unit is a single value that is percentage.
The hba1c Property is a read-only value that is provided by the Server.

6.102.2 Example URI

/GlucoseHbA1cResURI

6.102.3 Resource type

The Resource Type is defined as: "oic.r.glucose.hba1c".
6.102.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Hemoglobin Bound to Glucose A1c Form (HbA1c) for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bd64ba/LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseHbA1cResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's hba1c level. The unit is a single value that is percentage. The hba1c Property is a read-only value that is provided by the Server."
      },
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": [
              "oic.r.glucose.hba1c"
            ],
            "hba1c": 5.0
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "HbA1c": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.hba1c"
            ]
          }
        }
      }
    }
  }
}
```
6.102.5 Property definition

Table 207 defines the Properties that are part of the "oic.r.glucose.hba1c" Resource Type.
Table 207 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.hba1c".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>hba1c</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Current HbA1c measurement in percentage</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.102.6 CRUDN behaviour

Table 208 defines the CRUDN operations that are supported on the "oic.r.glucose.hba1c" Resource Type.

Table 208 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.hba1c".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.103 Context Health for Glucose Meter

6.103.1 Introduction

This Resource describes the Properties associated with context health.

The health Property is a read-only value that is provided by the Server where

minor and major are related to the general health or the level of illness of the person;

menses refers to the female menstrual cycle;

stress refers to physiological or psychological stress.

6.103.2 Example URI

/GlucoseHealthResURI

6.103.3 Resource type

The Resource Type is defined as: "oic.r.glucose.health".

6.103.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Context Health for Glucose Meter",
        "version": "2019-03-22",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
            "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
}
```
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
"/GlucoseHealthResURI": {
"get": {
"description": "This Resource describes the Properties associated with context health. The health Property is a read-only value that is provided by the Server where 'minor' and 'major' are related to the general health or the level of illness of the person; 'menses' refers to the female menstrual cycle; 'stress' refers to physiological or psychological stress."
"parameters": [
  "$ref": "#/parameters/interface"
],
"responses": {
"200": {
"description": "",
"x-example": {
"rt": [
"oic.r.glucose.health"
],
"health": "major"
},
"schema": {
"$ref": "#/definitions/GlucoseHealth"
}
}
},
"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": [
"oic.if.s",
"oic.if.baseline"
]
}
},
"definitions": {
"GlucoseHealth": {
"properties": {
"rt": {
"description": "Resource Type",
"items": {
"enum": [
"oic.r.glucose.health"
],
"type": "string",
"maxLength": 64
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"health": {
"description": "The various levels of health a person feels when taking a glucose."
"enum": [
"minor",
"major",
"menses",
"stress"
]
}
}
}
6.103.5 Property definition

Table 209 defines the Properties that are part of the "oic.r.glucose.health" Resource Type.

Table 209 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.health".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>health</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>The various levels of health a person feels when taking a glucose.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>
6.103.6 CRUDN behaviour

Table 210 defines the CRUDN operations that are supported on the "oic.r.glucose.health" Resource Type.

Table 210 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.health".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>get</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.104 Context Meal for Glucose Meter

6.104.1 Introduction

This Resource describes the Properties associated with context meal.

Preprandial means pre-meal.

Postprandial means post-meal.

Fasting means the effect of long-term absence of food intake (overnight).

The meal Property is a read-only value that is provided by the Server.

6.104.2 Example URI

/GlucoseMealResURI

6.104.3 Resource type

The Resource Type is defined as: "oic.r.glucose.meal".

6.104.4 OpenAPI 2.0 definition

```yaml
{"swagger": "2.0",
 "info": {
 "title": "Context Meal for Glucose Meter",
 "version": "2019-03-22",
 "license": {
 "name": "OCF Data Model License",
 "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdd34ba/LICENSE.md",
 "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
 },
 "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
 },
 "schemes": ["http"],
 "consumes": ["application/json"],
 "produces": ["application/json"],
 "paths": {
 "/GlucoseMealResURI": {
 "get": {
 "description": "This Resource describes the Properties associated with context meal.
 Preprandial means pre-meal.
 Postprandial means post-meal.
 Fasting means the effect of long-term absence of food intake (overnight).
 The meal Property is a read-only value that is provided by the Server."
 "parameters": ["$ref": "/parameters/interface"
 ],
 "responses": {
 "200": {
 "description": "",
 "x-example": {
 }
 }
 }
 }
 }
 ```
"rt": [
  "oic.r.glucose.meal"
],
"meal": "preprandial"
},
"schema": {
  "$ref": "#/definitions/GlucoseMeal"
}
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
}
"definitions": {
  "GlucoseMeal": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": [
            "oic.r.glucose.meal"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "meal": {
        "description": "Time of day when the measurement is taken.",
        "enum": [
          "preprandial",
          "postprandial",
          "fasting",
          "bedtime",
          "casual"
        ],
        "readOnly": true,
        "type": "string"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource",
        "items": {
          "enum": [
            "oic.if.s",
            "oic.if.baseline"
          ],
          "type": "string",
          "maxLength": 64
        }
      }
    }
  }
}

6.104.5 Property definition

Table 211 defines the Properties that are part of the "oic.r.glucose.meal" Resource Type.

Table 211 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.meal".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>meal</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>Time of day when the measurement is taken.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.104.6 CRUDN behaviour

Table 212 defines the CRUDN operations that are supported on the "oic.r.glucose.meal" Resource Type.

Table 212 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.meal".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.105 Context Medication for Glucose Meter

6.105.1 Introduction

This Resource describes the Properties associated with context medication.

The unit is a single value that is one of mg and mL.

The medication Property has a default unit of milligrams[mg].

The medication, unit and regimen Properties are read-only values that are provided by the Server.

When range is omitted the default is 0 to +MAXFLOAT.

6.105.2 Example URI

例 /GlucoseMedicationResURI

6.105.3 Resource type

The Resource Type is defined as: "oic.r.glucose.medication".
6.105.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Context Medication for Glucose Meter",
        "version": "2019-03-22",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bcd4ba/LICENSE.md",
            "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": [
        "http"
    ],
    "consumes": [
        "application/json"
    ],
    "produces": [
        "application/json"
    ],
    "paths": {
        "/GlucoseMedicationResURI": {
            "get": {
                "description": "This Resource describes the Properties associated with context medication. The unit is a single value that is one of mg and mL. The medication Property has a default unit of milligrams[mg]. The medication, unit and regimen Properties are read-only values that are provided by the Server. When range is omitted the default is 0 to +MAXFLOAT.",
                "parameters": [
                    {
                        "$ref": "#/parameters/interface"
                    }
                ],
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": {
                            "rt": ["oic.r.glucose.medication"],
                            "medication": 100.0,
                            "units": "mg",
                            "regimen": "rapidacting"
                        },
                        "schema": {
                            "$ref": "#/definitions/GlucoseMedication"
                        }
                    }
                }
            }
        }
    },
    "parameters": {
        "interface": {
            "in": "query",
            "name": "if",
            "type": "string",
            "enum": [
                "oic.if.s",
                "oic.if.baseline"
            ]
        }
    },
    "definitions": {
        "GlucoseMedication": {
            "properties": {
                "rt": {
                    "description": "Resource Type",
                }
            }
        }
    }
}
```
"items": {
  "enum": [
    "oic.r.glucose.medication"
  ],
  "type": "string",
  "maxLength": 64
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"regimen": {
  "description": "Medication regimen",
  "enum": [
    "rapidacting",
    "shortacting",
    "intermediateacting",
    "longacting",
    "premix"
  ],
  "readOnly": true,
  "type": "string"
},
"medication": {
  "description": "The amount of medication taken",
  "readOnly": true,
  "type": "number",
  "minimum": 0.0
},
"units": {
  "description": "Unit for the amount of medication taken",
  "enum": [
    "mg",
    "mL"
  ],
  "readOnly": true,
  "type": "string",
  "default": "mg"
},
"range": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
},
"step": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
},
"precision": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
},
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
  "description": "The OCF Interface set supported by this Resource",
  "items": {
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
}
6.105.5 Property definition

Table 213 defines the Properties that are part of the "oic.r.glucose.medication" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>regimen</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Medication regimen</td>
</tr>
<tr>
<td>medication</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The amount of medication taken</td>
</tr>
<tr>
<td>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Unit for the amount of medication taken</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.105.6 CRUDN behaviour

Table 214 defines the CRUDN operations that are supported on the "oic.r.glucose.medication" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.106 Glucose Meter Atomic Measurement

6.106.1 Introduction

This Resource describes the Properties associated with glucose meter. The Resource is an Atomic Measurement of glucose (oic.r.glucose), context carbohydrates (oic.r.glucose.carb), context exercise (oic.r.glucose.exercise), Hemoglobin Bound to glucose a1c Form (HbA1c) (oic.r.glucose.hba1c), context health (oic.r.glucose.health), context meal (oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location (oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time (oic.r.time.stamp), and user id (oic.r.userid).

6.106.2 Example URI

/GlucoseMeterAMResURI

6.106.3 Resource type

The Resource Type is defined as: "oic.r.glucosemeter-am, oic.wk.atomicmeasurement".

6.106.4 OpenAPI 2.0 definition

```yaml
"swagger": "2.0",
"info": {
  "title": "Glucose Meter Atomic Measurement",
  "version": "2019-03-22",
  "license": {
    "name": "OCF Data Model License",
    "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc88dcd4ba/LICENSE.md",
    "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
},
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/GlucoseMeterAMResURI?if=oic.if.b": {
    "get": {
      "description": "This Resource describes the Properties associated with glucose meter. The Resource is an Atomic Measurement of glucose (oic.r.glucose), context carbohydrates (oic.r.glucose.carb), context exercise (oic.r.glucose.exercise), Hemoglobin Bound to glucose a1c Form (HbA1c) (oic.r.glucose.hba1c), context health (oic.r.glucose.health), context meal (oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location (oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": [
            {
              "href": "/myGlucose",
              "rep": {
                "glucose": 100.0,
                "units": "mg/dL",
                "range": ["50.0", "500.0"]
              }
            }
          ]
        }
      }
    }
  }
}
```
"href": "/myGlucoseCarb",
"rep": {
  "carb": 100.0,
  "meal": "breakfast"
}
},
"href": "/myGlucoseExercise",
"rep": {
  "exercise": 30.0
}
},
"href": "/myGlucoseHbA1c",
"rep": {
  "hba1c": 5.0
}
},
"href": "/myGlucoseMeal",
"rep": {
  "meal": "preprandial"
}
},
"href": "/myGlucoseMeditation",
"rep": {
  "medication": 100.0,
  "units": "mg",
  "regimen": "rapidacting"
}
},
"href": "/myGlucoseSampleLocation",
"rep": {
  "samplelocation": "finger"
}
},
"href": "/myGlucoseTester",
"rep": {
  "tester": "self"
}
},
"href": "/myUserId",
"rep": {
  "userid": "USER1"
}
},
"href": "/myTimeStamp",
"rep": {
  "timestamp": "2018-11-09T12:15+08:00"
}
},
"schema": {
  "$ref": "/definitions/batch-retrieve"
"/GlucoseMeterAMResURI?if=oic.if.ll": {
  "get": {
    "description": "This Resource describes the Properties associated with glucose meter. The Resource is an Atomic Measurement of glucose (oic.r.glucose), context carbohydrates (oic.r.glucose.carb), context exercise (oic.r.glucose.exercise), hemoglobin bound to glucose a1c (oic.r.glucose.hba1c), context meal (oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location (oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
    "parameters": [
      "$ref": "#/parameters/interface-all"
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "$ref": "#/parameters/interface-all"
        }
      },
      "href": "/myGlucose",
      "rt": [ "oic.r.glucose"
    ],"if": [ "oic.if.s",
      "oic.if.baseline"
    ]
      }
  },
  "href": "/myGlucoseCarb",
  "rt": [ "oic.r.glucose.carb"
    ],"if": [ "oic.if.s",
      "oic.if.baseline"
    ]
      }
  },
  "href": "/myGlucoseExercise",
  "rt": [ "oic.r.glucose.exercise"
    ],"if": [ "oic.if.s",
      "oic.if.baseline"
    ]
      }
  },
  "href": "/myGlucoseHbA1c",
  "rt": [ "oic.r.glucose.hba1c"
    ],"if": [ "oic.if.s",
      "oic.if.baseline"
    ]
      }
  },
  "href": "/myGlucoseHealth",
  "rt": [ "oic.r.glucose.health"
    ],"if": [ "oic.if.s",
      "oic.if.baseline"
    ]
      }
  },
"href": "/myGlucoseMeal",
"rt": [ 
"oic.r.glucose.meal"
],
"if": [ 
"oic.if.s",
"oic.if.baseline"
]
},
"href": "/myGlucoseMedication",
"rt": [ 
"oic.r.glucose.medication"
],
"if": [ 
"oic.if.s",
"oic.if.baseline"
]
},
"href": "/myGlucoseSampleLocation",
"rt": [ 
"oic.r.glucose.samplelocation"
],
"if": [ 
"oic.if.r",
"oic.if.baseline"
]
},
"href": "/myGlucoseTester",
"rt": [ 
"oic.r.glucose.tester"
],
"if": [ 
"oic.if.r",
"oic.if.baseline"
]
},
"href": "/myUserId",
"rt": [ 
"oic.r.userid"
],
"if": [ 
"oic.if.r",
"oic.if.baseline"
]
},
"href": "/myTimeStamp",
"rt": [ 
"oic.r.time.stamp"
],
"if": [ 
"oic.if.r",
"oic.if.baseline"
]
},
"schema": { "$ref": "/definitions/links"
}
Resource is an Atomic Measurement of glucose (oic.r.glucose), context carbohydrates (oic.r.glucose.carb), context exercise (oic.r.glucose.exercise), Hemoglobin Bound to glucose a1c Form (HbA1c) (oic.r.glucose.hba1c), context health (oic.r.glucose.health), context meal (oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location (oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time (oic.r.time.stamp), and user id (oic.r.userid).

parameters": [  
   "$ref": "/parameters/interface-all"
],
  
"responses": {
   "200": {  
   "description": "",
   "x-example": {  
   "rt": [  
   "oic.r.glucosemeter-am",
   "oic.wk.atomicmeasurement"
   ],  
   "if": [  
   "oic.if.b",
   "oic.if.ll",
   "oic.if.baseline"
   ],  
   "rts": [  
   "oic.r.glucose",
   "oic.r.glucose.carb",
   "oic.r.glucose.exercise",
   "oic.r.glucose.hba1c",
   "oic.r.glucose.health",
   "oic.r.glucose.meal",
   "oic.r.glucose.medication",
   "oic.r.glucose.samplelocation",
   "oic.r.glucose.tester",
   "oic.r.userid",
   "oic.r.time.stamp"
   ],  
   "rts-m": [  
   "oic.r.glucose"
   ],  
   "links": [  
   {  
   "href": "/myGlucose",
   "rt": [  
   "oic.r.glucose"
   ],  
   "if": [  
   "oic.if.s",
   "oic.if.baseline"
   ]
   },  
   {  
   "href": "/myGlucoseCarb",
   "rt": [  
   "oic.r.glucose.carb"
   ],  
   "if": [  
   "oic.if.s",
   "oic.if.baseline"
   ]
   },  
   {  
   "href": "/myGlucoseExercise",
   "rt": [  
   "oic.r.glucose.exercise"
   ],  
   "if": [  
   "oic.if.s",
   "oic.if.baseline"
   ]
   },  
   {  
   
   Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved 356
"href": "/myGlucoseHbA1c",
"rt": [
  "oic.r.glucose.hba1c"
],
"if": [
  "oic.if.s",
  "oic.if.baseline"
]
},

{"href": "/myGlucoseHealth",
"rt": [
  "oic.r.glucose.health"
],
"if": [
  "oic.if.s",
  "oic.if.baseline"
]
},

{"href": "/myGlucoseMeal",
"rt": [
  "oic.r.glucose.meal"
],
"if": [
  "oic.if.s",
  "oic.if.baseline"
]
},

{"href": "/myGlucoseMedication",
"rt": [
  "oic.r.glucose.medication"
],
"if": [
  "oic.if.s",
  "oic.if.baseline"
]
},

{"href": "/myGlucoseSampleLocation",
"rt": [
  "oic.r.glucose.samplelocation"
],
"if": [
  "oic.if.r",
  "oic.if.baseline"
]
},

{"href": "/myGlucoseTester",
"rt": [
  "oic.r.glucose.teste"
],
"if": [
  "oic.if.r",
  "oic.if.baseline"
]
},

{"href": "/myUserId",
"rt": [
  "oic.r.userid"
],
"if": [
  "oic.if.r",
  "oic.if.baseline"
]
},

{"href": "/myTimeStamp",
"rt": [

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{
  "schema": {
    "$ref": "#/definitions/baseline"
  }
}

"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b",
      "oic.if.ll",
      "oic.if.baseline"
    ]
  }
},

"definitions": {
  "links": {
    "type": "array",
    "items": {
      "$ref": "#/definitions/oic.oic-link"
    }
  },

  "batch-retrieve": {
    "minItems": 1,
    "items": {
      "properties": {
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
        },
        "rep": {
          "type": "object",
          "anyOf": [
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseResURI.swagger.json#/definitions/Glucose"
            },
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseCarbResURI.swagger.json#/definitions/GlucoseCarb"
            },
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/ExerciseResURI.swagger.json#/definitions/Exercise"
            },
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseHbA1cResURI.swagger.json#/definitions/HbA1c"
            },
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseHealthResURI.swagger.json#/definitions/GlucoseHealth"
            }
          ]
        }
      }
    }
  }
}
"rt": {
  "items": {
    "enum": [
      "oic.r.glucosemeter-am",
      "oic.wk.atomicmeasurement"
    ],
    "type": "string",
    "maxLength": 64
  },
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},
"rts": {
  "description": "This contains all possible Resource Types for this Atomic Measurement.",
  "items": {
    "enum": [
      "oic.r.glucose",
      "oic.r.glucose.carb",
      "oic.r.glucose.exercise",
      "oic.r.glucose.hba1c",
      "oic.r.glucose.health",
      "oic.r.glucose.meal",
      "oic.r.glucose.medication",
      "oic.r.glucose.samplelocation",
      "oic.r.glucose.test",
      "oic.r.time.stamp",
      "oic.r.time.stam"}
"oic.r.userid"
"type": "string",
"maxLength": 64
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
"rts-m": {
"description": "This contains all mandatory Resource Types for this Atomic Measurement.",
"items": {
"enum": [
"oic.r.glucose"
],
"type": "string",
"maxItems": 1,
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"if": {
"description": "The OCF Interface set supported by this Resource",
"items": {
"enum": [
"oic.if.b",
"oic.if.ll",
"oic.if.baseline"
],
"type": "string",
"maxItems": 1,
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"links": {
"$ref": "#/definitions/links"
}
},
"type": "object",
"required": [
"rt","if","links","rts","rts-m"
]
},
"oic.oic-link": {
"properties": {
"if": {
"description": "The OCF Interface set supported by the target Resource",
"items": {
"enum": [
"oic.if.s",
"oic.if.r",
"oic.if.baseline"
],
"type": "string",
"maxLength": 64
}
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"rt": {
"description": "Resource Type of the target Resource",
"items": {
"enum": [
"oic.r.glucose",
"oic.r.glucose.carb",
"oic.r.glucose.exercise",
"oic.r.glucose.hbA1c",
"oic.r.glucose.health",
"oic.r.glucose.meal",
"oic.r.glucose.medication",
"oic.r.glucose.samplelocation",
"oic.r.glucose.tester",
"oic.r.time.stamp",
"oic.r.userid"
],
"type": "string",
"maxLength": 64
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"anchor": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
},
"di": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
},
"eps": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
},
"href": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
},
"ins": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
},
"p": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
},
"rel": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/rel_array"
},
"title": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/title"
},
"type": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/type"
6.106.5 Property definition

Table 215 defines the Properties that are part of the "oic.r.glucosemeter-am, oic.wk.atomicmeasurement" Resource Type.

Table 215 – The Property definitions of the Resource with type "rt" = "oic.r.glucosemeter-am, oic.wk.atomicmeasurement".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rep</td>
<td>object: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>This contains all possible Resource Types for this Atomic Measurement.</td>
</tr>
<tr>
<td>rts-m</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>This contains all mandatory Resource Types for this Atomic Measurement.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>links</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The OCF Interface set supported by the target Resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>Resource Type of the target Resource</td>
</tr>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
6.106.6 CRUDN behaviour

Table 216 defines the CRUDN operations that are supported on the "oic.r.glucosemeter-am, oic.wk.atomicmeasurement" Resource Type.

<table>
<thead>
<tr>
<th>Property</th>
<th>Multiple Types</th>
<th>Read</th>
<th>Write</th>
</tr>
</thead>
<tbody>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>p</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>title</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>type</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
</tbody>
</table>

Table 216 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucosemeter-am, oic.wk.atomicmeasurement".

Create | Read | Update | Delete | Notify
---|---|---|---|---
get | | | | observe

6.107 Context Sample Location for Glucose Meter

6.107.1 Introduction

This Resource describes the Properties associated with context sample Location. AST means Alternative Site Test specifying that the location of test performed was from an alternative site on the body. The samplelocation Property is a read-only value that is provided by the Server.

6.107.2 Example URI

/GlucoseSampleLocationResURI

6.107.3 Resource type

The Resource Type is defined as: "oic.r.glucose.samplelocation".

6.107.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Context Sample Location for Glucose Meter",
        "version": "2019-03-22",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bd4ba/LICENSE.md",
            "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/GlucoseSampleLocationResURI": 
    }
}
```
This Resource describes the Properties associated with context sample Location. "AST" means Alternative Site Test specifying that the location of test performed was from an alternative site on the body. The samplelocation Property is a read-only value that is provided by the Server.

```
"get": {
  "description": "This Resource describes the Properties associated with context sample Location. "AST" means Alternative Site Test specifying that the location of test performed was from an alternative site on the body. The samplelocation Property is a read-only value that is provided by the Server.
  
  
  "parameters": [
    {
      "$ref": "#/parameters/interface"
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "rt": [
          "oic.r.glucose.samplelocation"
        ],
        "samplelocation": "finger"
      },
      "schema": {
        "$ref": "#/definitions/GlucoseSampleLocation"
      }
    }
  }
},

  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.r",
        "oic.if.baseline"
      ]
    }
  },

  "definitions": {
    "GlucoseSampleLocation": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.samplelocation"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "samplelocation": {
          "description": "The possible blood locations where the blood sample may be taken.",
          "enum": [
            "finger",
            "ast",
            "earlobe",
            "ctrlsolution"
          ],
          "readOnly": true,
          "type": "string"
        }
      }
    }
  }
}

"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
```

6.107.5 Property definition

Table 217 defines the Properties that are part of the "oic.r.glucose.samplelocation" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>samplelocation</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>The possible blood locations where the blood sample may be taken.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.107.6 CRUDN behaviour

Table 218 defines the CRUDN operations that are supported on the "oic.r.glucose.samplelocation" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.108 Context Tester for Glucose Meter

6.108.1 Introduction
This Resource describes the Properties associated with context tester. The tester Property is a read-only value that is provided by the Server where especially hcp stands for HealthCare Professional.

6.108.2 Example URI
/GlucoseTesterResURI

6.108.3 Resource type
The Resource Type is defined as: "oic.r.glucose.tester".

6.108.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Context Tester for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GlucoseTesterResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with context tester. The tester Property is a read-only value that is provided by the Server where especially hcp stands for HealthCare Professional.",
        "parameters": [],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.glucose.tester"],
              "tester": "self"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseTester"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "$ref": "#/parameters/interface"
    }
  }
}
```
"name": "if",
"type": "string",
"enum": [
  "oic.if.r",
  "oic.if.baseline"
]
}

"definitions": {
  "GlucoseTester": {
  "properties": {
    "rt": {
      "description": "Resource Type",
      "items": {
        "enum": [
          "oic.r.glucose.tester"
        ],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    },
    "tester": {
      "description": "The possible cases of testers who may perform the blood sugar measurement.",
      "enum": [
        "self",
        "hcp",
        "lab"
      ],
      "readOnly": true,
      "type": "string"
    },
    "n": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
    },
    "id": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
    },
    "if": {
      "description": "The OCF Interface set supported by this Resource",
      "items": {
        "enum": [
          "oic.if.r",
          "oic.if.baseline"
        ],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 1,
      "readOnly": true,
      "uniqueItems": true,
      "type": "array"
    }
  },
  "required": [
    "tester"
  ]
}

6.108.5 Property definition

Table 219 defines the Properties that are part of the "oic.r.glucose.tester" Resource Type.

Table 219 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.tester".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>tester</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>The possible cases of testers who may perform the blood sugar measurement.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>

6.108.6 CRUDN behaviour

Table 220 defines the CRUDN operations that are supported on the "oic.r.glucose.tester" Resource Type.

Table 220 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.tester".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.109 Optical RFID Station

6.109.1 Introduction

The Property "process" represents the stage of the product in the product line which has an optical RFID tag on its body.

The Property "event" is represented by a Boolean value set to "true" and "false" alarming the issue when additional action is requested for the tagged product.

The Property "actionrequest" represent necessary actions like the isolation of the product, to send the product back to other specific line to modify or fix the issue.

6.109.2 Example URI

/ORFIDStationResURI

6.109.3 Resource type

The Resource Type is defined as: "oic.r.orfid.station".

6.109.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Optical RFID Station",
        "version": "20190215",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
            "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
        }
    }
}
```
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",

"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],

"paths": {
"/ORFIDStationResURI": {
"get": {
"description": "The Property "process" represents the stage of the product in the product line which has an optical RFID tag on its body. The Property "event" is represented by a Boolean value set to "true" and "false" alarming the issue when additional action is requested for the tagged product. The Property "actionrequest" represent necessary actions like the isolation of the product, to send the product back to other specific line to modify or fix the issue.",

"parameters": [
{"$ref": "#/parameters/interface"}
],

"responses": {
"200": {
"description": "RETRIEVES the station information from optical augmented RFID reader in smart factory environment.",

"x-example": {
"rt": ["oic.r.orfid.station"],
"if": ["oic.if.rw", "oic.if.baseline"],
"process": 17,
"event": true,
"actionrequest": 2
},

"schema": { "$ref": "#/definitions/ORFID" }
}

"post": {
"description": "Sets necessary action in accordance with Tag Information.",

"parameters": [
{"$ref": "#/parameters/interface"},

{"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "#/definitions/ORFID" },

"x-example": {
"event": false,
"actionrequest": 0
}

"responses": {
"200": {
"description": "",

"x-example": {
"event": false,
"actionrequest": 0
}

"schema": { "$ref": "#/definitions/ORFID" }
}
}

"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.rw", "oic.if.baseline"]
}
}

"definitions": {
"ORFID": {
"type": "object",
"properties": {
"rt": {"type": "string"},
"if": {"type": "string"},
"process": {"type": "number"},
"event": {"type": "boolean"},
"actionrequest": {"type": "number"}
"required": ["rt", "if", "process", "event", "actionrequest"]
}.

"description": "The ORFID (Optical RFID) is an augmented RFID tag that uses an optical sensor to read and write data. It is used in smart factories to track and manage products."

"title": "ORFID"
}

"ORFIDStation": {
"type": "object",
"properties": {
"rt": {"type": "string"},
"if": {"type": "string"},
"process": {"type": "number"},
"event": {"type": "boolean"},
"actionrequest": {"type": "number"}
"required": ["rt", "if", "process", "event", "actionrequest"]
}.

"description": "The ORFIDStation (Optical RFID Station) is a station in the factory where the ORFID tags are read and processed."

"title": "ORFIDStation"
}

"interface": {"type": "object", "required": ["if"]

"description": "The interface is a set of functions and properties that can be accessed by other devices in the factory."

"title": "interface"
}

"DISCLAIMER.md": {"description": "This document contains information about the ORFIDStationResURI resource, including the allowed HTTP methods and the parameters that can be sent."

"title": "DISCLAIMER.md"
}

"copyright": "Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved"
6.109.5 Property definition

Table 221 defines the Properties that are part of the "oic.r.orfid.station" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>process</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>The process step that is being performed at this station.</td>
</tr>
</tbody>
</table>

Table 221 – The Property definitions of the Resource with type "rt" = "oic.r.orfid.station".
<table>
<thead>
<tr>
<th>actionrequest</th>
<th>integer</th>
<th>Yes</th>
<th>Read Write</th>
<th>The action request identifier.</th>
</tr>
</thead>
<tbody>
<tr>
<td>event</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>The Event indicator, when True, the action request should be applied to the product identified by the tagId.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.109.6 CRUDN behaviour

Table 222 defines the CRUDN operations that are supported on the "oic.r.orfid.station" Resource Type.

Table 222 – The CRUDN operations of the Resource with type "rt" = "oic.r.orfid.station".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.110 Optical RFID Tag

6.110.1 Introduction

The Property "tagid" is an integer showing the currently read optical augmented RFID tag's identity information.

6.110.2 Example URI

/ORFIDTagResURI

6.110.3 Resource type

The Resource Type is defined as: "oic.r.orfid.tag".

6.110.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Optical RFID Tag",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ORFIDTagResURI" : {
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"get": {
  "description": "The Property "tagid" is an integer showing the currently read optical
  augmented RFID tag's identity information.",
  "parameters": [
    {"$ref": "/parameters/interface"}
  ],
  "responses": {
    "200": {
      "description": "RETRIEVES the tag information from optical augmented RFID reader in
  smart factory environment.",
      "x-example": {
        "rt": ["oic.r.orfid.tag"],
        "if": ["oic.if.r", "oic.if.baseline"],
        "tagid": 10965742,
        "reading": true
      },
      "schema": { "$ref": "/definitions/ORFID" }
    }
  }
},
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.r", "oic.if.baseline"]
  }
},
  "definitions": {
    "ORFID" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.orfid.tag"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "tagid": {
          "description": "The tag read by the RFID reader.",
          "readOnly": true,
          "type": "integer"
        },
        "reading": {
          "description": "The reading indication. true: the tag is read e.g. being valid. false:
  the tag is invalid.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
          "$ref": 
          "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
  schema.json#/definitions/n"
        },
        "id": {
          "$ref": 
          "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
  schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": ["oic.if.r"]
          }
        }
      }
    }
  }
}
6.110.5 Property definition

Table 223 defines the Properties that are part of the "oic.r.orfid.tag" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>tagid</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>The tag read by the RFID reader.</td>
</tr>
<tr>
<td>reading</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The reading indication. true: the tagid is read e.g. being valid. false: the tagid is invalid.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.110.6 CRUDN behaviour

Table 224 defines the CRUDN operations that are supported on the "oic.r.orfid.tag" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.111 PowerSource

6.111.1 Introduction

This Resource list the available power sources for the Device. The Property "powersources" is a list that is read only and is informative only. If there is more than 1 power source active, use multiple Resources to indicate the active power sources. If the power source is unknown use the value "unknown".

6.111.2 Example URI

/PowerSourceResURI

6.111.3 Resource type

The Resource Type is defined as: "oic.r.powersource".
6.111.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "PowerSource",
    "version": "20190513",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbcce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved.
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PowerSourceResURI" : {
      "get": {
        "description": "This Resource list the available power sources for the Device. The Property "powersources\" is a list that is read only and is informative only.\n\nIf there is more than 1 power source active, use multiple Resources to indicate the active power sources. If the power source is unknown use the value "unknown\".",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "Retrieves the list of available power sources.\n            "x-example": {
              "rt": ["oic.r.powersource"],
              "if": ["oic.if.r", "oic.if.baseline"],
              "powersources": ["DC power",
              "Internal Battery",
              "External Battery",
              "Power over Ethernet",
              "USB",
              "AC (Mains) Power",
              "Solar"
              ],
              "sourcefault": false
            }
          }
        },
        "schema": { "$ref": "#/definitions/powerSourceSchema" }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "powerSourceSchema": {
      "properties": {
        "rt": {
          "description": "The Resource Type.\n        "items": {
          "enum": ["oic.r.powersource"],
          "maxLength": 64,
          "type": "string"
        }
      }
    }
  }
}
```
6.111.5 Property definition

Table 225 defines the Properties that are part of the "oic.r.powersource" Resource Type.

Table 225 – The Property definitions of the Resource with type "rt" = "oic.r.powersource".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>powersources</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>sourcefault</td>
<td>boolean</td>
<td>No</td>
<td>Read Only</td>
<td>Fault detected in currently active power source. True = fault detected</td>
</tr>
<tr>
<td>--------------</td>
<td>---------</td>
<td>----</td>
<td>-----------</td>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.111.6 CRUDN behaviour

Table 226 defines the CRUDN operations that are supported on the "oic.r.powersource" Resource Type.

Table 226 – The CRUDN operations of the Resource with type "rt" = "oic.r.powersource".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.112 Print Queue

6.112.1 Introduction

This Resource describes the items in a Printer Queue. The Properties "uri" and "status" are read only items that cannot be changed through this resource.

6.112.2 Example URI

/PrintQueueResURI

6.112.3 Resource type

The Resource Type is defined as: "oic.r.printer.queue".

6.112.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Print Queue",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bd4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PrintQueueResURI": {
      "get": {
        "description": "This Resource describes the items in a Printer Queue. The Properties \"uri\" and \"status\" are read only items that cannot be changed through this resource.\",
        "parameters": [
          {"$ref": "/#/parameters/interface"}
        ],
        "responses": {
          "200": {
          
```
"description": "Retrieves the current Print Queue.",
"x-example": {
  "rt": ["oic.r.printer.queue"],
  "if": ["oic.if.r", "oic.if.baseline"],
  "queue": [
    {
      "uri": "file://10.10.10.10/3dprinter/queueitem/1",
      "status": "Printing"
    },
    {
      "uri": "file://10.10.10.10/3dprinter/queueitem/2",
      "status": "Pending"
    }
  ],
  "schema": { "$ref": "/definitions/PrintQueue" }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.r", "oic.if.baseline"]
  }
},
"definitions": {
  "PrintQueue": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.printer.queue"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "queue": {
        "description": "The array of queue items for the printer.",
        "items": {
          "properties": {
            "status": {
              "description": "The status of the queue item.",
              "enum": ["Printing", "Pending", "Paused", "Error", "Unknown"
            ],
            "readOnly": true,
            "type": "string"
          },
          "uri": {
            "description": "The uri of the queue item (i.e. the actual file).",
            "format": "uri",
            "maxLength": 256,
            "readOnly": true,
            "type": "string"
          }
        },
        "required": ["uri", "status"]
      }
    }
  }
}
Table 227 – The Property definitions of the Resource with type "rt" = "oic.r.printer.queue".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>queue</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The array of queue items for the printer.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

Table 228 – The CRUDN operations of the Resource with type "rt" = "oic.r.printer.queue".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.112.5 Property definition

Table 227 defines the Properties that are part of the "oic.r.printer.queue" Resource Type.

6.112.6 CRUDN behaviour

Table 228 defines the CRUDN operations that are supported on the "oic.r.printer.queue" Resource Type.
6.113 Pulse Rate

6.113.1 Introduction
This Resource describes the Properties associated with a person's pulse rate.
The unit, which is the default unit, is bpm.
The pulserate and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

6.113.2 Example URI
/PulseRateResURI

6.113.3 Resource type
The Resource Type is defined as: "oic.r.pulserate".

6.113.4 OpenAPI 2.0 definition
```json
{
   "swagger": "2.0",
   "info": {
      "title": "Pulse Rate",
      "version": "2019-03-22",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
         "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
   },
   "schemes": [
      "http"
   ],
   "consumes": [
      "application/json"
   ],
   "produces": [
      "application/json"
   ],
   "paths": {
      "/PulseRateResURI": {
         "get": {
            "description": "This Resource describes the Properties associated with a person's pulse rate.
The unit, which is the default unit, is bpm.
The pulserate and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT."
         },
         "parameters": [{$ref: "/#/parameters/interface"}],
         "responses": {
            "200": {
               "description": "",
               "x-example": {
                  "rt": [
                     "oic.r.pulserate"
                  ],
                  "pulserate": 80,
                  "range": [20, 220],
                  "step": 1
               }
            },
            "schema": {
               "$ref": "#/definitions/PulseRate"
            }
         }
      }
   }
}
```
6.113.5 Property definition

Table 229 defines the Properties that are part of the "oic.r.pulserate" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>pulserate</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>Pulse rate in bpm.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.113.6 CRUDN behaviour

Table 230 defines the CRUDN operations that are supported on the "oic.r.pulserate" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.114 Sensor Properties

6.114.1 Introduction

This Resource describes the properties which guide the reporting of a state change of a Sensor. The Property "silenttime" represents the period after which a state change report was sent where the Sensor state change is not reported. The Property "sensitivity" represents the level at which the sensor detects a state change. These values are completely dependent on the type of Sensor and the manufacturer capability, so no range restrictions are used. The Properties "range", "step" and "precision" are only applied to the "sensitivity" Property.

6.114.2 Example URI

/SensorPropsResURI

6.114.3 Resource type

The Resource Type is defined as: "oic.r.sensor.props".

6.114.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Sensor Properties",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE"
    }
  }
}
"x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
"/SensorPropsResURI": {
"get": {
"description": "This Resource describes the properties which guide the reporting of a state change of a Sensor. The Property "silenttime" represents the period after which a state change report was sent where the Sensor state change is not reported. The Property "sensitivity" represents the level at which the sensor detects a state change. These values are completely dependent on the type of Sensor and the manufacturer capability, so no range restrictions are used. The Properties "range", "step" and "precision" are only applied to the "sensitivity" property.",
"parameters": [
{"$ref": "#/parameters/interface"}
],
"responses": {
"200": {
"description": "Gets current Sensor Property values.",
"x-example": {
"rt": ["oic.r.sensor.props"],
"if": ["oic.if.rw", "oic.if.baseline"],
"silenttime": 10,
"sensitivity": 20.5
},
"schema": { "$ref": "#/definitions/SensorProps" }
}
},
"post": {
"description": "Sets Sensor Property values",
"parameters": [
{"$ref": "#/parameters/interface"},
{
"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "#/definitions/SensorProps" },
"x-example": {
"silenttime": 20,
"sensitivity": 10.75
}
],
"responses": {
"200": {
"description": "",
"x-example": {
"silenttime": 20,
"sensitivity": 10.75
},
"schema": { "$ref": "#/definitions/SensorProps" }
}
}
},
"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.rw", "oic.if.baseline"]
}
"definitions": {
  "SensorProps": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.sensor.props"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "silenttime": {
        "description": "The time in seconds from the previous report that the Sensor restrains
from sending a state change. This is used to avoid repeated state change reports.",
        "type": "integer"
      },
      "sensitivity": {
        "description": "The level of the detection accuracy of the Sensor. This is used to control
the level at which the Sensor detects a state change. The \"range\" Property should be specified per
manufacturer device capabilities.",
        "type": "number"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
      },
      "range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
      },
      "step": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
      },
      "precision": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": ["oic.if.rw", "oic.if.baseline"],
          "type": "string"
        },
        "minItems": 2,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      }
    },
    "type": "object",
    "required": ["silenttime", "sensitivity"]
  }
}
6.114.5 Property definition

Table 231 defines the Properties that are part of the "oic.r.sensor.props" Resource Type.

Table 231 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.props".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>silenttime</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The time in seconds from the previous report that the Sensor restrains from sending a state change. This is used to avoid repeated state change reports.</td>
</tr>
<tr>
<td>sensitivity</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>The level of the detection accuracy of the Sensor. This is used to control the level at which the Sensor detects a state change. The &quot;range&quot; Property should be specified per manufacturer device capabilities.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.114.6 CRUDN behaviour

Table 232 defines the CRUDN operations that are supported on the "oic.r.sensor.props" Resource Type.

Table 232 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.props".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.115 User ID

6.115.1 Introduction

This Resource describes the Properties associated with user id of an OCF Client.

The userid Property is a single value of type string.

The userid Property is a read-only value that is provided by the Server.
6.115.2 Example URI

/UserIDResURI

6.115.3 Resource type

The Resource Type is defined as: "oic.r.userid".

6.115.4 OpenAPI 2.0 definition

```json
{  "swagger": "2.0",
   "info": {
      "title": "User ID",
      "version": "2019-03-22",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8e8bdc4ba/LICENSE.md",
         "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
   },
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
      "/UserIDResURI": {
         "get": {
            "description": "This Resource describes the Properties associated with user id of an OCF Client. The userid Property is a single value of type string. The userid Property is a read-only value that is provided by the Server."
            "parameters": [  
               {  "$ref": "#/parameters/interface"
                
               },  
               "responses": {
                   "200": {
                      "description": "",
                      "x-example": {
                        "rt": ["oic.r.userid"],
                        "userid": "USER1"
                      }
                   }
               },  
               "parameters": {
                  "interface": {
                     "in": "query",
                     "name": "if",
                     "type": "string",
                     "enum": ["oic.if.r", "oic.if.baseline"
                  }
               }
            
           }
       }
    }
}
```
"definitions": {
  "UserID": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": [
            "oic.r.userid"
          ],
          "type": "string",
          "maxLength": 64
        }
      },
      "userid": {
        "description": "Id of a patient/user of healthcare devices",
        "readOnly": true,
        "type": "string"
      },
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
    }
  }
}

6.115.5 Property definition

Table 233 defines the Properties that are part of the "oic.r.userid" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>userid</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>Id of a patient/user of healthcare devices</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
</tbody>
</table>
6.115.6 CRUDN behaviour

Table 234 defines the CRUDN operations that are supported on the "oic.r.userid" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.116 Calorific Value

6.116.1 Introduction

This Resource describes Properties associated with the energy associated with the consumption of different fuels (including natural gas).

The calorific value is a number, the calorific value is a measure of the available heat energy, used as part of the calculation to convert a volume of a fuel (e.g. m³) to an energy value (e.g. KWh).

6.116.2 Example URI

/CalorificValueResURI

6.116.3 Resource type

The Resource Type is defined as: "oic.r.calorificvalue".

6.116.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Calorific Value",
    "version": "2019-03-18",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://openconnectivityfoundation.github.io/core/LICENSE.md"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CalorificValueResURI": {
      "get": {
        "parameters": [],
        "responses": {
          "200": {
            "description": "Success path response for the Resource",
            "x-example": {
              "rt": ["oic.r.calorificvalue"],
              "calorific": 39.2
            }
          }
        }
      }
    }
  }
}
```
6.116.5 Property definition

Table 235 defines the Properties that are part of the "oic.r.calorificvalue" Resource Type.
Table 235 – The Property definitions of the Resource with type "rt" = "oic.r.calorificvalue".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interfaces supported by this Resource</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>calorific</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Calorific value of fuel</td>
</tr>
</tbody>
</table>

6.116.6 CRUDN behaviour

Table 236 defines the CRUDN operations that are supported on the "oic.r.calorificvalue" Resource Type.

Table 236 – The CRUDN operations of the Resource with type "rt" = "oic.r.calorificvalue".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.117 Conversion Factor

6.117.1 Introduction

This Resource describes Properties associated with the energy associated with the consumption of different fuels (including natural gas). The conversion factor is a number used as part of the calculation to convert gas volume to gas energy. The value used for this calculation is generally defined by local regulations and the conversion factor resource is therefore configurable.

Provides the conversion factor used/required as part of the calculation to convert from fuel volume (m3) to fuel energy (kWh).

6.117.2 Example URI

/ConversionFactorResURI

6.117.3 Resource type

The Resource Type is defined as: "oic.r.conversionfactor".

6.117.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Conversion Factor",
      "version": "2019-03-18",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://openconnectivityfoundation.github.io/core/LICENSE.md",
         "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
   },
   "schemes": ["http"],
   "consumes": ["application/json"],
   "parameters": [
      ...]
}
```
"produces": ["application/json"],
"paths": {
  "/ConversionFactorResURI": {
    "get": {
      "description": "This Resource describes Properties associated with the energy associated
with the consumption of different fuels (including natural gas)\nThe conversion factor is a number
used as part of the calculation to convert gas volume to gas energy. The value used for this
calculation is generally defined by local regulations and the conversion factor resource is
therefore configurable.\nProvides the conversion factor used/required as part of the calculation to
convert from fuel volume (m3) to fuel energy (kWh).\n",
    "parameters": [{
      "$ref": "#/parameters/interface"
    },
    "responses": {
      "200": {
        "description": "Success path response for the Resource",
        "x-example": {
          "rt": ["oic.r.conversionfactor"],
          "conversion": 1.02264
        },
        "schema": { "$ref": "#/definitions/Conversion" }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.r", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Conversion": {
        "properties": {
          "rt": {
            "description": "Resource Type",
            "items": {
              "maxLength": 64,
              "type": "string",
              "enum": ["oic.r.conversionfactor"]
            },
            "minItems": 1,
            "readOnly": true,
            "uniqueItems": true,
            "type": "array"}
        },
        "if": {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": ["oic.if.r", "oic.if.baseline"]
          },
          "type": "string",
          "maxLength": 64
        },
        "minItems": 2,
        "readOnly": true,
        "uniqueItems": true,
        "type": "array"}
      }
    }
  }
}
6.117.5 Property definition

Table 237 defines the Properties that are part of the "oic.r.conversionfactor" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interfaces supported by this Resource</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>conversion</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Conversion factor to convert a volume of a fuel to energy consumption</td>
</tr>
<tr>
<td>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
</tbody>
</table>

6.117.6 CRUDN behaviour

Table 238 defines the CRUDN operations that are supported on the "oic.r.conversionfactor" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.118 Gas Consumption

6.118.1 Introduction

This Resource describes Properties associated with the energy associated with the consumption of natural gas.

The gas value is in kilowatt hours [kWh].

The volume value is in metres cubed [m³].
Provides the cumulative gas energy, the cumulative gas volume and the calorific value and conversion factor used/required to convert from gas volume (m3[TB1]) to gas energy (KWh).

6.118.2 Example URI
/GasConsumptionResURI

6.118.3 Resource type
The Resource Type is defined as: "oic.r.gas.consumption".

6.118.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Gas Consumption",
    "version": "2019-03-18",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://openconnectivityfoundation.github.io/core/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
  }},
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GasConsumptionResURI" : {
      "get": {
        "description": "This Resource describes Properties associated with the energy associated with the consumption of natural gas\nThe gas value is in kilowatt hours [kWh].\nThe volume value is in metres cubed [m3].\nProvides the cumulative gas energy, the cumulative gas volume and the calorific value and conversion factor used/required to convert from gas volume (m3[TB1]) to gas energy (KWh).\n",
        "parameters": [
          {"$ref": "/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "Success path response for the Resource",
            "x-example": {
              "rt": ["oic.r.gas.consumption"],
              "gas": 11135.41,
              "volume": 1000.0
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  }
}
```
"if": {  
  "description": "The OCF Interfaces supported by this Resource",
  "items": {  
    "enum": ["oic.if.r", "oic.if.baseline"],
    "type": "string"
  },  
  "minItems": 1,
  "readOnly": true,
  "uniqueItems": true,
  "type": "array"
},

"n": {  
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},

"id": {  
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},

"gas": {  
  "description": "gas energy consumed in kWh",
  "readOnly": true,
  "type": "number",
  "minimum": 0
},

"precision": {  
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},

"volume": {  
  "description": "gas volume consumed in m3 (metres cubed)",
  "readOnly": true,
  "type": "number",
  "minimum": 0
}

"type": "object",

"required": ["gas"]
}

6.118.5 Property definition

Table 239 defines the Properties that are part of the "oic.r.gas.consumption" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interfaces supported by this Resource</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

Table 239 – The Property definitions of the Resource with type "rt" = "oic.r.gas.consumption".
Table 240 defines the CRUDN operations that are supported on the "oic.r.gas.consumption" Resource Type.

<table>
<thead>
<tr>
<th>CRUDN Operations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create</td>
<td>Get</td>
</tr>
<tr>
<td>Read</td>
<td>Observe</td>
</tr>
<tr>
<td>Update</td>
<td></td>
</tr>
<tr>
<td>Delete</td>
<td>Notify</td>
</tr>
</tbody>
</table>

6.119 Gas Usage

6.119.1 Introduction

This Resource describes a cumulative time-based gas usage query. The Resource is a Collection of:
- TimePeriod Resource
- Gas Consumption Resource

6.119.2 Example URI

/GasUsageResURI

6.119.3 Resource type

The Resource Type is defined as: "oic.r.gas.usage".

6.119.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Gas Usage",
    "version": "2019-03-18",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://openconnectivityfoundation.github.io/core/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GasUsageResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes a cumulative time-based gas usage query. The Resource is a Collection of: TimePeriod Resource\n        Gas Consumption Resource\nThe Collection has a single instance of a Link per Resource Type."
        "parameters": {
          "$ref": "#/parameters/interface-all"
        },
        "responses": {
          "200": {"description": "Success path response for the Resource",
                    "x-example": ""}
        }
      }
    }
  }
}
```
"/GasUsageResURI?if=oic.if.baseline" : {
"get": {
"description": "This Resource describes a cumulative time-based gas usage query. The Resource is a Collection of:
  TimePeriod Resource
  Gas Consumption Resource",
"parameters": [
"href": "/TimeIntervalResURI",
"rt": ["oic.r.time.period"],
"if": ["oic.if.a","oic.if.baseline"],
"eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
},
"href": "/GasConsumptionResURI",
"rt": ["oic.r.gas.consumption"],
"if": ["oic.if.a","oic.if.baseline"],
"eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
},
"schema": { "$ref": "/definitions/Usage" }
}
"/GasUsageResURI?if=oic.if.b" : {
"get": {
"description": "This Resource describes a cumulative time-based gas usage query. The Resource is a Collection of:
  TimePeriod Resource
  Gas Consumption Resource",
"parameters": [
"href": "/TimeIntervalResURI",
"rt": ["oic.r.time.period"],
"if": ["oic.if.a","oic.if.baseline"],
"eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
},
"href": "/GasConsumptionResURI",
"rt": ["oic.r.gas.consumption"],
"if": ["oic.if.a","oic.if.baseline"],
"eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
},
"schema": { "$ref": "/definitions/Usage" }
}
"href": "/GasConsumptionResURI",
  "rep": {
    "gas": 11135.41,
    "volume": 1000.0
  }
},
"schema": { "$ref": "/#/definitions/batch" }
],
"schema": { "$ref": "/#/definitions/batch" }
},
"post": {
  "description": "Sets the current time period. A Client may also post directly to the exposed URL for the Time Period Resource."
,  "x-method": ["optional"],
  "parameters": [{
    "$ref": "/#/parameters/interface-b"},
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "/#/definitions/batchupdate" },
      "x-example": [
        {
          "href": "/TimePeriodResURI",
          "rep": {
            "startTime": "2018-01-15T16:30Z",
            "stopTime": "2018-01-16T16:30Z"
          }
        }
      ],
      "responses": {
        "200": {
          "description": "Success path response code"
        }
      }
    }
  ]
},
"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
  },
  "interface-b": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.b"]
  }
}
],
"definitions": {
  "links": {
    "type": "array",
    "items": {
      "$ref": "/#/definitions/oic.oic-link"
    },
    "minItems": 2,
    "maxItems": 4
  },
  "oic.oic-link": {
    "properties": {
      "if": {
        "description": "The interface set supported by the Linked Resource",
        "enum": ["oic.if.b"]
      }
    }
  }
}
"oic.if.baseline",
"oic.if.a",
"oic.if.s"
},
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"

"rt": {
"description": "Resource Type of the linked Resource",
"items": {
"enum": [
"oic.r.time.period",
"oic.r.gas.consumption",
"oic.r.conversionfactor",
"oic.r.calorificvalue"
],
"type": "string",
"maxLength": 64
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"anchor": {
"$ref": 

"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
},
"di": {
"$ref": 

"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
},
"eps": {
"$ref": 

"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
},
"href": {
"$ref": 

"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions(href"
},
"ins": {
"$ref": 

"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
},
"p": {
"$ref": 

"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
},
"rel": {
"$ref": 

"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/rei_array"
},
"title": {
"$ref": 

"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/title"
},
"type": {
"$ref": 

"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/type"
"required": ["href", "rt", "if"],
"type": "object"
}],
"batch": {
"title": "Collection Batch Retrieve Format",
"minItems": 2,
"maxItems": 4,
"type": "array",
"items": {
  "additionalProperties": true,
  "type": "object",
  "properties": {
    "href": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
    },
    "rep": {
      "anyOf": [
        {
          "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/TimePeriodResURI.swagger.json#/definitions/TimePeriod"
        },
        {
          "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/GasConsumptionResURI.swagger.json#/definitions/Consumption"
        },
        {
          "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/CalorificValueResURI.swagger.json#/definitions/Calorific"
        },
        {
          "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/ConversionFactorResURI.swagger.json#/definitions/Conversion"
        }
      ]
    }
  }
},
"required": ["href","rep"]
}],
"batchupdate": {
"title": "Collection Batch Update Format",
"minItems": 1,
"type": "array",
"items": {
  "additionalProperties": true,
  "type": "object",
  "properties": {
    "href": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
    },
    "rep": {
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/TimePeriodResURI.swagger.json#/definitions/TimePeriod"
    }
  }
},
"required": ["href", "rep"]
}
"Usage": {
  "properties": {
    "rt": {
      "description": "Resource Type",
      "items": {
        "type": "string",
        "enum": ["oic.r.gas.usage"],
        "maxLength": 64
      },
      "minItems": 1,
      "readOnly": true,
      "uniqueItems": true,
      "type": "array"
    },
    "rts": {
      "description": "Allowed Resource Type",
      "items": {
        "type": "string",
        "enum": ["oic.r.gas.consumption","oic.r.time.period","oic.r.calorificvalue","oic.r.conversionfactor"],
        "maxLength": 64
      },
      "minItems": 2,
      "readOnly": true,
      "uniqueItems": true,
      "type": "array"
    },
    "rts-m": {
      "description": "Mandatory Resource Type",
      "items": {
        "type": "string",
        "enum": ["oic.r.gas.consumption","oic.r.time.period"],
        "maxLength": 64
      },
      "minItems": 2,
      "readOnly": true,
      "uniqueItems": true,
      "type": "array"
    },
    "n": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
    },
    "id": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
    },
    "resources": {
      "$ref": "#/definitions/links"
    },
    "if": {
      "description": "The interface set supported by this resource",
      "items": {
        "enum": ["oic.if.ll","oic.if.b","oic.if.baseline"],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 1,
      "readOnly": true,
      "uniqueItems": true,
      "type": "array"
    }
  },
  "type": "object",
  "required": ["resources"]
}

### 6.119.5 Property definition

Table 241 defines the Properties that are part of the "oic.r.gas.usage" Resource Type.

#### Table 241 – The Property definitions of the Resource with type "rt" = "oic.r.gas.usage".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>If supported by the Linked Resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>Resource Type of the linked Resource</td>
</tr>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Anchor</td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Di</td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Eps</td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Href</td>
</tr>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Ins</td>
</tr>
<tr>
<td>p</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>P</td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Rel</td>
</tr>
<tr>
<td>title</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Title</td>
</tr>
<tr>
<td>type</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Type</td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Href</td>
</tr>
<tr>
<td>rep</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Rep</td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td></td>
<td>Read Write</td>
<td>Href</td>
</tr>
<tr>
<td>rep</td>
<td>multiple types: see schema</td>
<td></td>
<td>Read Write</td>
<td>Rep</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Allowed Resource Type</td>
</tr>
<tr>
<td>rts-m</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Mandatory Resource Type</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>N</td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Id</td>
</tr>
<tr>
<td>resources</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Resources</td>
</tr>
</tbody>
</table>
6.119.6 CRUDN behaviour

Table 242 defines the CRUDN operations that are supported on the "oic.r.gas.usage" Resource Type.

Table 242 – The CRUDN operations of the Resource with type "rt" = "oic.r.gas.usage".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.120 Impact Sensor

6.120.1 Introduction

This Resource provides a status and properties of an impact sensor. Included is the current status (boolean), horizontal and vertical direction (in degrees) and impact level (g force).

6.120.2 Example URI

/ImpactSensorResURI

6.120.3 Resource type

The Resource Type is defined as: "oic.r.impactsensor".

6.120.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Impact Sensor",
    "version": "2019-03-21",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbcde8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ImpactSensorResURI": {
      "get": {
        "description": "This Resource provides a status and properties of an impact sensor. Included is the current status (boolean), horizontal and vertical direction (in degrees) and impact level (g force).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "The success path response for the Resource.",
            "x-example": {
              "rt": ["oic.r.impactsensor"],
              "if": ["oic.if.s", "oic.if.baseline"],
              "impactstatus": true,
              "impactlevel": 2.25,
              "impactdirectionhorizontal": 120.0,
              "impactdirectionvertical": 240.0
            }
          }
        }
      }
    }
  }
}
```

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"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "ImpactSensor": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "maxLength": 64,
          "type": "string",
          "enum": ["oic.r.impactsensor"]
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "impactstatus": {
        "type": "boolean",
        "readOnly": true,
        "description": "The \"impactstatus\" Property indicates the impact as: \"true\" A physical impact is detected, \"false\" Normal status, an impact is not detected."
      },
      "impactlevel": {
        "type": "number",
        "readOnly": true,
        "description": "The \"impactlevel\" Property provides the level of impact. The unit is in \"G\" (G-force)."
      },
      "impactdirectionhorizontal": {
        "type": "number",
        "readOnly": true,
        "description": "The \"impactdirectionhorizontal\" Property 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.",
        "minimum": 0,
        "maximum": 360
      },
      "impactdirectionvertical": {
        "type": "number",
        "readOnly": true,
        "description": "The \"impactdirectionvertical\" Property 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.",
        "minimum": 0,
        "maximum": 360
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "is": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": ["oic.if.s", "oic.if.baseline"]
        }
      }
    }
  }
}
Table 243 defines the Properties that are part of the "oic.r.impactsensor" Resource Type.

### Table 243 – The Property definitions of the Resource with type "rt" = "oic.r.impactsensor"

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>impactstatus</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The &quot;impactstatus&quot; Property indicates the impact as: &quot;true&quot; A physical impact is detected, &quot;false&quot; Normal status, an impact is not detected.</td>
</tr>
<tr>
<td>impactlevel</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The &quot;impactlevel&quot; Property provides the level of impact. The unit is in &quot;G&quot; (G-force).</td>
</tr>
<tr>
<td>impactdirectionhorizontal</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The &quot;impactdirectionhorizontal&quot; Property 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.</td>
</tr>
<tr>
<td>impactdirectionvertical</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The &quot;impactdirectionvertical&quot; Property 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.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>
6.120.6 CRUDN behaviour

Table 244 defines the CRUDN operations that are supported on the "oic.r.impactsensor" Resource Type.

Table 244 – The CRUDN operations of the Resource with type "rt" = "oic.r.impactsensor".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.121 KeyPadChar

6.121.1 Introduction

This Resource describes a char (0-9,*,#) which is selected on a number keypad.

6.121.2 Example URI

/KeyPadCharResURI

6.121.3 Resource type

The Resource Type is defined as: "oic.r.keypadchar".

6.121.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "KeyPadChar",
    "version": "12122018",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/KeyPadCharResURI": {
      "get": {
        "description": "This Resource describes a char (0-9,*,#) which is selected on a number keypad.
        "parameters": ["$ref": "/#/parameters/interface"],
        "responses": {
          "200": {
            "description": "Success path response for the Resource",
            "x-example": {
              "rt": ["oic.r.keypadchar"],
              "if": ["oic.if.rw", "oic.if.baseline"],
              "keyvalue": "7"
            },
            "schema": { "$ref": "/#/definitions/KeyPadChar" }
          }
        }
      }
    }
  }
}
```
"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "/#definitions/KeyPadChar" },
"x-example": {
   "keyvalue": "4"
}
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "keyvalue": "4"
    },
    "schema": { "$ref": "/#definitions/KeyPadChar" }
  }
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"]
  }
}
"definitions": {
  "KeyPadChar": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "maxLength": 64,
          "type": "string",
          "enum": ["oic.r.keypadchar"]
        },
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    },
    "keyvalue": {
      "type": "string",
      "enum": ["0", "1", "2", "3", "4", "5", "6", "7", "8", "9", "*", "]
    },
    "description": "The value of the key pad char.”
  },
  "n": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
  },
  "id": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
6.121.5 Property definition

Table 245 defines the Properties that are part of the "oic.r.keypadchar" Resource Type.

Table 245 – The Property definitions of the Resource with type "rt" = "oic.r.keypadchar".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>keyvalue</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>The value of the keypad char.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.121.6 CRUDN behaviour

Table 246 defines the CRUDN operations that are supported on the "oic.r.keypadchar" Resource Type.

Table 246 – The CRUDN operations of the Resource with type "rt" = "oic.r.keypadchar".

<table>
<thead>
<tr>
<th></th>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.122 Opaque Data

6.122.1 Introduction

This Resource defines opaque data that can be transferred between endpoints where the data itself is not interpretable by the OCF endpoints.

The stringdata is a string of ASCII characters.

6.122.2 Example URI

/OpaqueDataResURI
6.122.3 Resource type

The Resource Type is defined as: "oic.r.opaquedata".

6.122.4 OpenAPI 2.0 definition

```
{
    "swagger": "2.0",
    "info": {
        "title": "Opaque Data",
        "version": "12122018",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc88bd04ba/LICENSE.md",
            "x-copyright": "copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/OpaqueDataResURI": {
            "get": {
                "description": "This Resource defines opaque data that can be transferred between endpoints where the data itself is not interpretable by the OCF endpoints. The stringData is a string of ASCII characters.",
                "parameters": [
                    {"$ref": "/#/parameters/interface"}
                ],
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": {
                            "rt": ["oic.r.opaquedata"],
                            "if": ["oic.if.rw", "oic.if.baseline"],
                            "payload": "asdf0123",
                            "payloadtype": "switch-get",
                            "encoding": "base64",
                            "size": 8,
                            "hash": "A1A1",
                            "system": "foreign system"
                        }
                    }
                }
            }
        }
    }
}
```
"payload": "asdf0123",
"payloadtype": "switch-get",
"encoding": "base64",
"size": 8,
"hash": "A1A1",
"system": "foreign system"
},
"schema": { "$ref": "#/definitions/OpaqueData" }
}

"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.rw", "oic.if.baseline"]
}
",
"definitions": {
"OpaqueData" : {
"properties": {
"rt": {
"description": "The Resource Type.",
"items": {
"maxLength": 64,
"type": "string",
"enum": ["oic.r.opaquedata"]
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"payload": {
"type": "string",
"description": "This Property contains the opaque data."
},
"encoding": {
"type": "string",
"description": "This Property describes the encoding of the payload, e.g. binary as base64, json, xml, utf-8."
},
"payloadtype": {
"type": "string",
"description": "This Property describes the identification of the payload, e.g. what the payload is representing."
},
"size": {
"type": "integer",
"description": "The size in bytes of the decoded binary object."
},
"hash": {
"type": "string",
"description": "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."
},
"system": {
"type": "string",
"description": "The eco system that is using the payload."
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": ["oic.if.baseline",}
6.122.5 Property definition

Table 247 defines the Properties that are part of the "oic.r.opaquedata" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>payload</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>This Property contains the opaque data.</td>
</tr>
<tr>
<td>encoding</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>This Property describes the encoding of the payload, e.g. binary as base64, json, xml, utf-8.</td>
</tr>
<tr>
<td>payloadtype</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>This Property describes the identification of the payload, e.g. what the payload is representing.</td>
</tr>
<tr>
<td>size</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The size in bytes of the decoded binary object.</td>
</tr>
<tr>
<td>hash</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>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.</td>
</tr>
<tr>
<td>system</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>The eco system that is using the payload.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>
6.122.6 CRUDN behaviour

Table 248 defines the CRUDN operations that are supported on the "oic.r.opaquedata" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.123 User Info for Application Layer

6.123.1 Introduction

This Resource defines credentials for user to application layer login. This does not relate to OCF Device to Device or Device to Cloud authentication. The username, password and token are strings.

6.123.2 Example URI

/UserInfoResURI

6.123.3 Resource type

The Resource Type is defined as: "oic.r.userinfo".

6.123.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "User Info for Application Layer",
        "version": "12122018",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
            "x-copyright": "copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/UserInfoResURI": {
            "get": {
                "description": "This Resource defines credentials for user to application layer login. This does not relate to OCF Device to Device or Device to Cloud authentication. The username, password and token are strings."
            },
            "parameters": [
                {"$ref": "/#/parameters/interface"}
            ],
            "responses": {
                "200": {
                    "description": "Success path response for the Resource, note that the info supplied is NOT returned on RETRIEVE",
                    "x-example": {
                        "rt": ["oic.r.userinfo"],
                        "if": ["oic.if.rw", "oic.if.baseline"]
                    },
                    "schema": { "$ref": "/#/definitions/UserInfo-retrieve" }
                }
            }
        }
    }
}
```
and token are strings.

"parameters": [
    {"$ref": "#/parameters/interface"},
    
    
    "name": "body",
    "in": "body",
    "required": true,
    "schema": { "$ref": "#/definitions/UserInfo-update" },
    "x-example": {
        "username": "username",
        "password": "password",
        "token": "A1A1"
    }

    

],

"responses": {
    "200": {
        "description": "The success path response for the Resource.",
        "x-example": {
            "username": "username",
            "password": "password",
            "token": "A1A1"
        }
    }

    

}

"parameters": {
    "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.rw", "oic.if.baseline"]
    }

    

},

"definitions": {
    "UserInfo-update": {
        "properties": {
            "rt": {
                "description": "The Resource Type.",
                "items": {
                    "maxLength": 64,
                    "type": "string",
                    "enum": ["oic.r.userinfo"]
                },
                "minItems": 1,
                "uniqueItems": true,
                "readOnly": true,
                "type": "array"
            },
            "n": {
                "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
            },
            "id": {
                "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
            },
            "if": {
                "description": "The OCF Interface set supported by this Resource.",
                "items": {
                    "enum": ["oic.if.rw", "oic.if.baseline"
                }
            },
            "type": "string"
        }
    }

    

}
6.123.5 Property definition

Table 249 defines the Properties that are part of the "oic.r userinfo" Resource Type.

Table 249 – The Property definitions of the Resource with type "rt" = "oic.r userinfo".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td></td>
<td>schema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td></td>
<td>schema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>username</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>password</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>token</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.123.6 CRUDN behaviour

Table 250 defines the CRUDN operations that are supported on the "oic.r userinfo" Resource Type.

Table 250 – The CRUDN operations of the Resource with type "rt" = "oic.r userinfo".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>get</td>
<td>post</td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.124 IAS Zone Info

6.124.1 Introduction

This Resource describes information associated with an Intruder Alert System (IAS) Zone. Zone Type provides the information about the type of device/alarm. Zone Status provides an array which has 10 items representing various status information (e.g., battery status, mode, alarm [Up to two], supervision of IAS network, etc.). A Device implementing this Resource can be enrolled to IAS Control and Indicator Equipment (CIE). IAS CIE can allocate an ID for the Device and update this Resource on the Device. This Resource may provide multiple sensitivity levels (>2). NumberofZoneSensitivityLevelSupported provides the number of the levels. A specific level can be selected as currentzonesensitivityLevel.

6.124.2 Example URI

/IASZoneInfoResURI

6.124.3 Resource type

The Resource Type is defined as: "oic.r.iaszoneinfo".

6.124.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "IAS Zone Info",
    "version": "20190513",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/IASZoneInfoResURI" : {
      "get": {
        "description": "This Resource describes information associated with an Intruder Alert System (IAS) Zone. Zone Type provides the information about the type of device/alarm. Zone Status provides an array which has 10 items representing various status information (e.g., battery status, mode, alarm [Up to two], supervision of IAS network, etc.). A Device implementing this Resource can be enrolled to IAS Control and Indicator Equipment (CIE). IAS CIE can allocate an ID for the Device and update this Resource on the Device. This Resource may provide multiple sensitivity levels (>2). NumberofZoneSensitivityLevelSupported provides the number of the levels. A specific level can be selected as currentzonesensitivityLevel."
      
      "parameters": [ {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.iaszoneinfo"],
            "zonetype": "motionsensor",
            "zonestatus": { 
              "alarms": ["presence"],
              "tamper": false,
              "zonestatusreports": "statuschangeonly",
              "fault": false,
              "test": false
            },
            "iascieaddress": "ACDE9F56A3FE6B98"
          }
        }
      }
    }
  }
}
```
"zonestate": true,
"zoneid": 64,
"numzonesensitivitylevel": 3,
"currentzonesensitivitylevel": 2
},
"schema": { "$ref": "/definitions/IASZoneInfo" }
}  

"post": {  
  "description": "Sets the current sensitivity level of the IASZone."
  "parameters": [  
    { "$ref": "/parameters/interface-rw" },  
    {  
      "name": "body",  
      "in": "body",  
      "required": true,  
      "schema": { "$ref": "/definitions/IASZoneInfo-Update" },  
      "x-example": {  
        "currentzonesensitivitylevel": 3  
      }  
    }  
  ],  
  "responses": {  
    "200": {  
      "description": "Success path response code"  
    }  
  }  
},  

"parameters": {  
  "interface-all": {  
    "in": "query",  
    "name": "if",  
    "type": "string",  
    "enum": ["oic.if.rw", "oic.if.baseline"],  
  },  
  "interface-rw": {  
    "in": "query",  
    "name": "if",  
    "type": "string",  
    "enum": ["oic.if.rw"]  
  }  
},  

"definitions": {  
  "IASZoneInfo": {  
    "properties": {  
      "rt": {  
        "description": "Resource Type",  
        "items": {  
          "type": "string",  
          "enum": ["oic.r.iaszoneinfo"]  
        },  
        "minItems": 1,  
        "readOnly": true,  
        "type": "array"  
      },  
      "zonestate": {  
        "description": "The IAS zone state. True = enrolled, False = not enrolled.",  
        "readOnly": true,  
        "type": "boolean"  
      },  
      "zonestatus": {  
        "description": "Set of alarm indicators.",  
        "properties": {  
          "alarms": {  
            "type": "array",  
            "description": "Array of alarms. The alarms exposed are dependent on the zonetype."
          }  
        }  
      }  
    }  
  }  
}
"maxItems": 2,
  "items": {
    "type": "string",
    "enum": [
      "system",
      "intrusion",
      "presence",
      "1stportalopenclose",
      "2ndportalopenclose",
      "fire",
      "wateroverflow",
      "CO",
      "cooking",
      "fall",
      "emergencybutton",
      "movement",
      "vibration",
      "panic",
      "emergency",
      "glassbreak"
    ]
  },
  "zonestatusreports": {
    "description": "Controls the generation of status indications",
    "type": "string",
    "enum": [
      "none",
      "statuschangeonly",
      "alarmclearonly",
      "statuschangeandalarmclear"
    ]
  },
  "tamper": {
    "description": "Tamper status. True = tampered, False = not tampered.",
    "readOnly": true,
    "type": "boolean"
  },
  "test": {
    "description": "Test mode indicator. True = sensor is in test mode, False = sensor is in operational mode",
    "readOnly": true,
    "type": "boolean"
  },
  "fault": {
    "description": "Fault indicator. True = fault detected, False = no fault detected",
    "readOnly": true,
    "type": "boolean"
  }
},
  "readOnly": true,
  "type": "object"
},
  "numzonesensitivitylevel" : {
    "description": "Number of supported zone sensitivity levels",
    "minimum": 2,
    "readOnly": true,
    "type": "integer"
  },
  "zoneid" : {
    "description": "ID allocated by the IAS CIE",
    "readOnly": true,
    "type": "integer"
  },
  "iascieaddress" : {
    "description": "EUI-64 Address of the enrolled IAS Control and Indicating Equipment (CIE)",
    "readOnly": true,
    "type": "string"
  },
  "zonetype" : {
    "description": "IAS zone type. See OCF enumeration map for set of valid values.",
    "readOnly": true,
    "type": "string"
  },
  "currentzonesensitivitylevel" : {
    "description": "Current zone sensitivity level",
    "minimum": 0,
    "type": "integer"
  }
},
  "n": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
  },
  "id": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
  },
  "if" : {
    "description": "The OCF Interface set supported by this Resource",}
6.124.5 Property definition

Table 251 defines the Properties that are part of the "oic.r.iaszoneinfo" Resource Type.

Table 251 – The Property definitions of the Resource with type "rt" = "oic.r.iaszoneinfo".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>zonestate</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>The IAS zone state. True = enrolled, False = not enrolled.</td>
</tr>
<tr>
<td>zonestatus</td>
<td>object: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>Set of alarm indicators.</td>
</tr>
<tr>
<td>numzonesensitivitylevel</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>Number of supported zone sensitivity levels</td>
</tr>
<tr>
<td>zoneid</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>ID allocated by the IAS CIE</td>
</tr>
<tr>
<td>iascieaddress</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>EUI-64 Address of the enrolled IAS Control and Indicating Equipment (CIE)</td>
</tr>
<tr>
<td>zonetype</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>IAS zone type. See OCF enumeration map for set of valid values.</td>
</tr>
<tr>
<td>currentzonesensitivitylevel</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>Current zone sensitivity level</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
6.124.6 CRUDN behaviour

Table 252 defines the CRUDN operations that are supported on the "oic.r.iaszoneinfo" Resource Type.

Table 252 – The CRUDN operations of the Resource with type "rt" = "oic.r.iaszoneinfo".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.125 IAS Zone Collection

6.125.1 Introduction

6.125.2 Example URI

/IASZoneCollectionResURI

6.125.3 Resource type

6.125.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "IAS Zone Collection",
    "version": "20190513",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/IASZoneResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This Resource is Collection that fully describes an Intruder Alert System (IAS) Zone. It is made up of an instance of IAS Zone Info, Battery, and Power Source."
      },
      "parameters": ["$ref": "/#/parameters/interface-baseline"],
      ":responses": {
        "200": {
          "description": "",
          "schema": { "$ref": "/#/definitions/baseline"},
          "x-example": {
            "rt": ["oic.r.iaszone"],
            "if": ["oic.if.ll","oic.if.b","oic.if.baseline"],
            "links": {
              "href": "/myIASZoneInfoResURI",
              "rt": ["oic.r.iaszoneinfo"],
```
"if": ["oic.if.rw", "oic.if.baseline"]
},
"href": "/myBatteryResURI",
"rt": ["oic.r.energy.battery"],
"if": ["oic.if.rw", "oic.if.baseline"]
},
"href": "/myPowersourceResURI",
"rt": ["oic.r.powersource"],
"if": ["oic.if.r", "oic.if.baseline"]
}
]
},
"/IASZoneResURI?if=oic.if.ll" : {
"get": {
"description": "This Resource is Collection that fully describes an Intruder Alert System (IAS) Zone. It is made up of an instance of IAS Zone Info, Battery, and Power Source.",
"parameters": [
{"$ref": "/#parameters/interface-ll"}
]
},
"responses": {
"200": {
"description" : ",
"schema": { "$ref": "/#definitions/links"},
"x-example": {
  "href": "/myIASZoneInfoResURI",
  "rt": ["oic.r.iaszoneinfo"],
  "if": ["oic.if.rw", "oic.if.baseline"]
}
},
,...
"/IASZoneResURI?if=oic.if.b" : {
"get": {
"description": "This Resource is Collection that fully describes an Intruder Alert System (IAS) Zone. It is made up of an instance of IAS Zone Info, Battery, and Power Source.",
"parameters": [
{"$ref": "/#parameters/interface-b"}
]
},
"responses": {
"200": {
"description" : ",
"schema": { "$ref": "/#definitions/IASZoneCollectionBatch-Retrieve" },
"x-example": 
  ["href": "/myIASZoneInfoResURI",
   "rep": {
     "zonetype": "motionsensor",
     "zonestatus": {
       "alarms": ["presence"],
       "tamper": false,
       "zonestatusreports": "statuschangeonly",
   },
"fault": false,
"test": false
},
"iascieaddress": "ACDE9F56A3FE6B98",
"zonestate": true,
"zoneid": 64,
"numzonesensitivitylevel": 3,
"currentzonesensitivitylevel": 2
}
],
"href": "/myBatteryResURI",
"rep": {
"charge": 70,
"defect": false
}
},
"href": "/myPowersourceResURI",
"rep": {
"powersources": ["AC (Mains) Power"],
"sourcefault": false
}
}
],
"post": {
"description": "Sets the current sensitivity level of the IASZone.
",
"parameters": [
{"$ref": "/#/parameters/interface-b"},
{
"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "/#/definitions/IASZoneCollectionBatch-Update" },
"x-example":
]
},
"href": "/myIASZoneInfoResURI",
"rep": {
"currentzonesensitivitylevel": 3
}
}
],
"responses": {
"200": {
"description": "Success path response code"
}
}
]
,"parameters": {
"interface-all" : {
"in" : "query",
"name" : "if",
"type" : "string",
"enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
},
"interface-ll" : {
"in" : "query",
"name" : "if",
"type" : "string",
"enum" : ["oic.if.ll"]
},
"interface-b" : {
"in" : "query",
"name" : "if",
"type" : "string",
"enum" : ["oic.if.b"]
}
}
"type": "string",
"enum": ["oic.if.b"]
},
"interface-baseline": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.baseline"]
}
},
"definitions": {
"baseline": {
"properties": {
"rt": {
"description": "Resource Type",
"items": {
"type": "string",
"enum": ["oic.r.iaszone"]
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"rts": {
"description": "Allowed Resources",
"type": "array",
"minItems": 3,
"maxItems": 3,
"items": {
"type": "string",
"enum": ["oic.r.iaszoneinfo","oic.r.energy.battery","oic.r.powersource"]
}
}
},
"rts-m": {
"description": "Mandatory Resources",
"type": "array",
"minItems": 3,
"maxItems": 3,
"items": {
"type": "string",
"enum": ["oic.r.iaszoneinfo","oic.r.energy.battery","oic.r.powersource"]
}
}
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"links": {
"$ref": "#/definitions/links"
},
"if": {
"description": "The OCF Interface set supported by this Resource",
"items": {
"enum": ["oic.if.ll","oic.if.b","oic.if.baseline"]
},
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
}
},
"type": "object"
"required": ["links"]

"links": {
  "type": "array",
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  }
},

"oic.oic-link": {
  "properties": {
    "if": {
      "description": "The OCF Interface set supported by this resource",
      "items": {
        "enum": [
          "oic.if.baseline",
          "oic.if.rw",
          "oic.if.r"
        ],
        "type": "string"
      },
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    },
    "rt": {
      "description": "Resource Type of the Resource",
      "items": {
        "enum": [
          "oic.r.iaszoneinfo",
          "oic.r.energy.battery",
          "oic.r.powersource"
        ],
        "type": "string"
      },
      "minItems": 1,
      "maxItems": 1,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    },
    "anchor": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
    },
    "di": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
    },
    "eps": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
    },
    "href": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions(href"
    },
    "ins": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
    },
    "p": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
    },
    "rel": {null}
"title": "Collection Batch Retrieve Format",
"minItems": 3,
"maxItems": 3,
"type": "array",
"uniqueItems": true,
"items": {
  "additionalProperties": true,
  "type": "object",
  "properties": {
    "href": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
    }
  }
},
"rep": {
  "anyOf": [
    {
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/IASZoneInfoResURI.swagger.json#/definitions/IASZoneInfo"
    },
    {
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/BatteryResURI.swagger.json#/definitions/Battery"
    },
    {
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/PowerSourcesResourceURI.swagger.json#/definitions/powerSourceSchema"
    }
  }
},
"required": ["href","rep"]
}]
},
"IASZoneCollectionBatch-Update" : {
  "title": "Collection Batch Update Format",
  "minItems": 1,
  "type": "array",
  "items": {
    "additionalProperties": true,
    "type": "object",
    "properties": {
      "href": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
      }
    }
  }
},
"required": ["href"]
}]
}
6.125.5 Property definition

Table 253 defines the Properties that are part of the "oic.r.iaszone" Resource Type.

Table 253 – The Property definitions of the Resource with type "rt" = "None".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Allowed Resources</td>
</tr>
<tr>
<td>rts-m</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Mandatory Resources</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>links</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>Resource Type of the Resource</td>
</tr>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
6.125.6 CRUDN behaviour

Table 254 defines the CRUDN operations that are supported on the "oic.r.iaszone" Resource Type.

Table 254 – The CRUDN operations of the Resource with type "rt" = "None".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
</table>

6.126 Window Covering

6.126.1 Introduction

This Resource describes the information of a window covering, i.e., type, configuration status, and mode.

Velocity associated with lifting the window covering can be changed by updating Lift_Velocity(cm/sec).

Ramp up/down times to reaching the velocity setting can be changed by updating Lift_Acceleration Time/Lift_Deceleration Time (0.1sec).

6.126.2 Example URI

/WindowCoveringResURI

6.126.3 Resource type

The Resource Type is defined as: "oic.r.windowcovering".

6.126.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Window Covering",
      "version": "20190513",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
         "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      }
   },
   "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
      "/WindowCoveringResURI": {
         "get": {
            "description": "This Resource describes the information of a window covering, i.e., type,
```
configuration status, and mode.

Velocity associated with lifting the window covering can be changed by updating `Lift_Velocity(cm/sec)`.
Ramp up/down times to reaching the velocity setting can be changed by updating `Lift_Acceleration Time/Lift_Deceleration Time (0.1sec)`.

```
"parameters": [
  {"$ref": "/parameters/interface-all"}
],
"responses": {
  "200": {
    "description": 
    "x-example": {
      "rt": ["oic.r.windowcovering"],
      "windowcoveringtype": "shutter",
      "configstatus": {
        "operational": true,
        "online": true,
        "rotationdirection": "normal",
        "controllift": "closedloop",
        "controltilt": "closedloop",
        "closedloopliftcontrol": "encoder",
        "closedloopoptimilcontrol": "encoder"
      },
      "mode": {
        "motordirection": false,
        "calibration": false,
        "maintenance": false,
        "ledfeedback": true
      },
      "liftvelocity": 5,
      "liftaccelerationtime": 200,
      "liftdecelerationtime": 200
    }
  }
},
"post": {
  "description": "Update window covering settings.\n",
  "parameters": [
  {"$ref": "/parameters/interface-all"},
  {"name": "body",
   "in": "body",
   "required": true,
   "schema": { "$ref": "/definitions/WindowCovering-Update" },
   "x-example": {
     "mode": {
       "motordirection": true,
       "calibration": false,
       "maintenance": false,
       "ledfeedback": true
     },
     "liftvelocity": 10,
     "liftaccelerationtime": 500,
     "liftdecelerationtime": 500
   }
  }
],
"responses": {
  "200": {
    "description": "Success path response code\n"
  }
}
```

"enum": ["oic.if.rw", "oic.if.baseline"]
}
"definitions": {
"WindowCovering": {
"properties": {
"rt": {
"description": "Resource Type",
"items": {
"maxLength": 64,
"type": "string",
"enum": ["oic.r.windowcovering"]
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"windowcoveringtype": {
"description": "Window covering type. See OCF enumeration map for set of valid values.",
"readOnly": true,
"type": "string"
},
"liftvelocity": {
"description": "Velocity in cm/sec associated with lifting the covering",
"type": "integer"
},
"configstatus": {
"description": "Set of config status indicators.",
"properties": {
"controllift": {
"description": "Closed loop control allows for intermediate settings, open loop supports only up or down",
"readOnly": true,
"type": "string",
"enum": ["closedloop","openloop"]
},
"controltilt": {
"description": "Closed loop control allows for intermediate settings, open loop supports only tilted or not tilted",
"readOnly": true,
"type": "string",
"enum": ["closedloop","openloop"]
},
"closedloopliftcontrol": {
"description": "Encoder or timer controlled",
"readOnly": true,
"type": "string",
"enum": ["encoder","timer"]
},
"closedloopoptiltcontrol": {
"description": "Encoder or timer controlled",
"readOnly": true,
"type": "string",
"enum": ["encoder","timer"]
},
"online": {
"description": "True = online, False = not online",
"readOnly": true,
"type": "boolean"
},
"operational": {
"description": "True = operational, False = not operational",
"readOnly": true,
"type": "boolean"
},
"rotationdirection": {
"description": "Identifies if the direction of rotation has been reversed to match physical installation.",
"readOnly": true,
"type": "string",
"enum": ["normal","reversed"]
}
"liftaccelerationtime": {
  "description": "Ramp up time to reach lift velocity (ms)",
  "type": "integer"
},
"liftdecelerationtime": {
  "description": "Ramp down time from the velocity setting (ms)",
  "type": "integer"
},
"mode": {
  "description": "Set of operational modes.",
  "properties": {
    "calibration": {
      "description": "True = calibration mode, False = normal mode",
      "type": "boolean"
    },
    "ledfeedback": {
      "description": "True = feedback enabled, False = LEDs are off",
      "type": "boolean"
    },
    "maintenance": {
      "description": "True = maintenance mode, False = normal mode",
      "type": "boolean"
    },
    "motordirection": {
      "description": "True = direction reversed, False = direction normal",
      "type": "boolean"
    }
  }
},
"type": "object"}

"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n",
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id",
  "description": "The interface set supported by this resource",
  "items": {
    "enum": ["oic.if.rw", "oic.if.baseline"],
    "type": "string"
  },
  "minItems": 2,
  "maxItems": 2,
  "readOnly": true,
  "type": "array"
}
"required": ["windowcoveringtype", "configstatus", "mode"]
"WindowCovering-Update": {
  "properties": {
    "liftaccelerationtime": {
      "description": "Ramp up time to reach lift velocity (ms)",
      "type": "integer"
    },
    "liftdecelerationtime": {
      "description": "Ramp down time from the velocity setting (ms)",
      "type": "integer"
    },
    "liftvelocity": {
      "description": "Ramp down time from the velocity setting (ms)",
      "type": "integer"
    }
  }
}
"description": "Velocity in cm/sec associated with lifting the covering",
"type": "integer"
},
"mode": {
"description": "Set of operational modes.",
"properties": {
"calibration": {
"description": "True = calibration mode, False = normal mode",
"type": "boolean"
},
"ledfeedback": {
"description": "True = feedback enabled, False = LEDs are off",
"type": "boolean"
},
"maintenance": {
"description": "True = maintenance mode, False = normal mode",
"type": "boolean"
},
"motordirection": {
"description": "True = direction reversed, False = direction normal",
"type": "boolean"
}
},
"type": "object"
}

6.126.5 Property definition
Table 255 defines the Properties that are part of the "oic.r.windowcovering" Resource Type.

Table 255 – The Property definitions of the Resource with type "rt" = "oic.r.windowcovering".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>windowcoveringtype</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>Window covering type. See OCF enumeration map for set of valid values.</td>
</tr>
<tr>
<td>liftvelocity</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>Velocity in cm/sec associated with lifting the covering</td>
</tr>
<tr>
<td>configstatus</td>
<td>object: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>Set of config status indicators.</td>
</tr>
<tr>
<td>liftaccelerationtime</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>Ramp up time to reach lift velocity (ms)</td>
</tr>
<tr>
<td>liftdecelerationtime</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>Ramp down time from the velocity setting (ms)</td>
</tr>
<tr>
<td>mode</td>
<td>object: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Set of operational modes.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>Property</td>
<td>Type</td>
<td>Access</td>
<td>Read/Write</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------</td>
<td>--------</td>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>liftaccelerationtime</td>
<td>integer</td>
<td>No</td>
<td>Read/Write</td>
<td>Ramp up time to reach lift velocity (ms)</td>
</tr>
<tr>
<td>liftdecelerationtime</td>
<td>integer</td>
<td>No</td>
<td>Read/Write</td>
<td>Ramp down time from the velocity setting (ms)</td>
</tr>
<tr>
<td>liftvelocity</td>
<td>integer</td>
<td>No</td>
<td>Read/Write</td>
<td>Velocity in cm/sec associated with lifting the covering</td>
</tr>
<tr>
<td>mode</td>
<td>object</td>
<td>Yes</td>
<td>Read/Write</td>
<td>Set of operational modes.</td>
</tr>
</tbody>
</table>

6.126.6 CRUDN behaviour

Table 256 defines the CRUDN operations that are supported on the "oic.r.windowcovering" Resource Type.

Table 256 – The CRUDN operations of the Resource with type "rt" = "oic.r.windowcovering".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.127 Activity

6.127.1 Introduction

This Resource describes the Properties associated with a person's physical activity. All Properties are read-only values that are provided by the server. When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

6.127.2 Example URI

Example URI

/ActivityResURI

6.127.3 Resource type

The Resource Type is defined as: "oic.r.activity".

6.127.4 OpenAPI 2.0 definition

```json
{
"swagger": "2.0",
"info": {
"title": "Activity",
"version": "2019-03-04",
"license": {
"name": "OCF Data Model License",
"url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
"x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
},
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
},
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"]
}
```
"paths": {  
  "/ActivityResURI": {  
    "get": {  
      "description": "This Resource describes the Properties associated with a person's physical activity. All Properties are read-only values that are provided by the server. When range (from \"oic.r.baseresource\") is omitted the default is 0 to +MAXFLOAT.\",  
      "parameters": [  
        {  
          "$ref": "/parameters/interface"  
        }  
      ],  
      "responses": {  
        "200": {  
          "description": "",  
          "x-example": {  
            "rt": [  
              "oic.r.activity"  
            ],  
            "activity": "sleep",  
            "steps_day": 1000,  
            "steps_reset": 500,  
            "ccal_day": 3000.0,  
            "ccal_reset": 1500.0  
          },  
          "schema": {  
            "$ref": "/definitions/Activity"  
          }  
        }  
      }  
    },  
    "parameters": {  
      "interface": {  
        "in": "query",  
        "name": "if",  
        "type": "string",  
        "enum": [  
          "oic.if.s",  
          "oic.if.baseline"  
        ]  
      }  
    },  
    "definitions": {  
      "Activity": {  
        "properties": {  
          "activity": {  
            "description": "This Property describes the recognized current activity type of user",  
            "type": "string",  
            "enum": [  
              "sleep",  
              "sit",  
              "stand",  
              "walk",  
              "run",  
              "unknown"  
            ],  
            "readOnly": true  
          },  
          "steps_day": {  
            "description": "This Property describes the user's step count that measures the number of steps the user has taken since the beginning of the day.\",  
            "type": "integer",  
            "minimum": 0,  
            "readOnly": true  
          },  
          "steps_reset": {  
            "description": "This Property describes the user's step count that measures the number of steps the user has taken since the last reset.\",  
            "type": "integer",  
            "minimum": 0,  
            "readOnly": true  
          }  
        }  
      }  
    }  
  }  
}
"readOnly": true
},
"ccal_day": {
  "description": "This Property describes the burned off calories of user since the beginning of the day.",
  "type": "number",
  "minimum": 0.0,
  "readOnly": true
},
"ccal_reset": {
  "description": "This Property describes the burned off calories of user since the last reset.",
  "type": "number",
  "minimum": 0.0,
  "readOnly": true
},
"rt": {
  "description": "The Resource Type.",
  "items": {
    "enum": [
      "oic.r.r.activity"
    ],
    "type": "string"
  },
  "minItems": 1,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
}
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": {
    "enum": [
      "oic.if.s", "oic.if.baseline"
    ],
    "type": "string"
  },
  "minItems": 1,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},
"steps_day_range": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_integer"
},
"steps_day_step": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_integer"
},
"steps_reset_range": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_integer"
},
"steps_reset_step": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_integer"
},
"ccal_day_range": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
},
6.127.5 Property definition

Table 257 defines the Properties that are part of the "oic.r.activity" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>activity</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the recognized current activity type of user.</td>
</tr>
<tr>
<td>steps_day</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>This Property describes the user's step count that measures the number of steps the user has taken since the beginning of the day.</td>
</tr>
<tr>
<td>steps_reset</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>This Property describes the user's step count that measures the number of steps the user has taken since the last reset.</td>
</tr>
<tr>
<td>ccal_day</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>This Property describes the burned off calories of user since the beginning of the day.</td>
</tr>
<tr>
<td>ccal_reset</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>This Property describes the burned off calories of user since the last reset.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------</td>
<td>------</td>
<td>-----------</td>
<td>--------------------</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>steps_day_range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>steps_day_step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>steps_reset_range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>steps_reset_step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ccal_day_range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ccal_day_step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ccal_day_precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ccal_reset_range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ccal_reset_step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ccal_reset_precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

### 6.127.6 CRUDN behaviour

Table 258 defines the CRUDN operations that are supported on the "oic.r.activity" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.128 Activity Tracker Atomic Measurement Representation

#### 6.128.1 Introduction

This Resource describes the Properties associated with Activity Tracker.

The Resource is an Atomic Measurement of activity ("oic.r.activity"), heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").

#### 6.128.2 Example URI

/ActivityTrackerAMResURI

#### 6.128.3 Resource type

The Resource Type is defined as: "oic.r.activitytracker-am, oic.wk.atomicmeasurement".

#### 6.128.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Activity Tracker Atomic Measurement Representation"
  }
}
```
"version": "2019-03-04",
"license": { "name": "OCF Data Model License",
"url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc3e8b2c4ba/LICENSE.md",
"x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved." },
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
"schemes": [ "http" ],
"consumes": [ "application/json" ],
"produces": [ "application/json" ],
"paths": {
"/ActivityTrackerAMResURI?if=oic.if.b": {
"get": {
"description": "This Resource describes the Properties associated with Activity Tracker."
The Resource is an Atomic Measurement of activity ("oic.r.activity"), heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").",
"parameters": [ {
"$ref": "#/parameters/interface-all"
} ],
"responses": {
"200": {
"description": "",
"x-example": [
{
"href": "/myActivity",
"rep": {
"activity": "sleep",
"steps_day": 1000,
"steps_reset": 500,
"ccal_day": 3000.0,
"ccal_reset": 1500.0
}
},
{
"href": "/myHeartRate",
"rep": {
"heartrate": 80
}
},
{
"href": "/myUserId",
"rep": {
"userid": "USER1"
}
},
{
"href": "/myTimeStamp",
"rep": {
"timestamp": "2018-11-09T12:15:00+08:00"
}
},
"schema": {
"$ref": "#/definitions/batch-retrieve"
}
},
"/ActivityTrackerAMResURI?if=oic.if.ll": {"get":
}
"description": "This Resource describes the Properties associated with Activity Tracker. The Resource is an Atomic Measurement of activity ("oic.r.activity"), heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").", "parameters": [   { "$ref": "#/parameters/interface-all"   }   ], "responses": { "200": {   "description": "", "x-example": [   { "href": "/myActivity", "rt": [   "oic.r.activity"   ], "if": [   "oic.if.s", "oic.if.baseline"   ]   },   { "href": "/myHeartRate", "rt": [   "oic.r.heartrate"   ], "if": [   "oic.if.s", "oic.if.baseline"   ]   },   { "href": "/myUserId", "rt": [   "oic.r.userid"   ], "if": [   "oic.if.r", "oic.if.baseline"   ]   },   { "href": "/myTimeStamp", "rt": [   "oic.r.time.stamp"   ], "if": [   "oic.if.r", "oic.if.baseline"   ]   ]   }   },   "schema": { "$ref": "#/definitions/links"   }   }   },   "/ActivityTrackerAMResURI?if=oic.if.baseline": {   "description": "This Resource describes the Properties associated with Activity Tracker. The Resource is an Atomic Measurement of activity ("oic.r.activity"), heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").", "parameters": [   { "$ref": "#/parameters/interface-all"   }   ], "responses": { "200": {   "description": "", "x-example": [   { "href": "/myActivity", "rt": [   "oic.r.activity"   ], "if": [   "oic.if.s", "oic.if.baseline"   ]   },   { "href": "/myHeartRate", "rt": [   "oic.r.heartrate"   ], "if": [   "oic.if.s", "oic.if.baseline"   ]   },   { "href": "/myUserId", "rt": [   "oic.r.userid"   ], "if": [   "oic.if.r", "oic.if.baseline"   ]   },   { "href": "/myTimeStamp", "rt": [   "oic.r.time.stamp"   ], "if": [   "oic.if.r", "oic.if.baseline"   ]   ]   }   }   }   }   },   "/ActivityTrackerAMResURI?if=oic.if.baseline": {   "description": "This Resource describes the Properties associated with Activity Tracker. The Resource is an Atomic Measurement of activity ("oic.r.activity"), heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").", "parameters": [   { "$ref": "#/parameters/interface-all"   }   ], "responses": { "200": {   "description": "", "x-example": [   { "href": "/myActivity", "rt": [   "oic.r.activity"   ], "if": [   "oic.if.s", "oic.if.baseline"   ]   },   { "href": "/myHeartRate", "rt": [   "oic.r.heartrate"   ], "if": [   "oic.if.s", "oic.if.baseline"   ]   },   { "href": "/myUserId", "rt": [   "oic.r.userid"   ], "if": [   "oic.if.r", "oic.if.baseline"   ]   },   { "href": "/myTimeStamp", "rt": [   "oic.r.time.stamp"   ], "if": [   "oic.if.r", "oic.if.baseline"   ]   ]   }   }   }   }   },
"description": "",
"x-example": {
  "rt": [
    "oic.r.activitytracker-am",
    "oic.wk.atomicmeasurement"
  ],
  "if": [
    "oic.if.b",
    "oic.if.lst",
    "oic.if.baseline"
  ],
  "rts-m": [
    "oic.r.activity"
  ],
  "rts": [
    "oic.r.activity", "oic.r.heartrate", "oic.r.userid", "oic.r.time.stamp"
  ],
  "links": [
    {
      "href": "/myActivity",
      "rt": [
        "oic.r.activity"
      ],
      "if": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    },
    {
      "href": "/myHeartRate",
      "rt": [
        "oic.r.heartrate"
      ],
      "if": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    },
    {
      "href": "/myUserId",
      "rt": [
        "oic.r.userid"
      ],
      "if": [
        "oic.if.r",
        "oic.if.baseline"
      ]
    },
    {
      "href": "/myTimeStamp",
      "rt": [
        "oic.r.time.stamp"
      ],
      "if": [
        "oic.if.r",
        "oic.if.baseline"
      ]
    }
  ],
  "schema": {
    "$ref": "/definitions/baseline"
  }
},
"parameters": {
  "interface-all": {
    "in": "query",
    "description": "",
    "type": "string",
    "required": false
  },
  "method": {
    "in": "query",
    "description": "",
    "type": "string",
    "required": false
  },
  "service": {
    "in": "query",
    "description": "",
    "type": "string",
    "required": false
  },
  "version": {
    "in": "query",
    "description": "",
    "type": "string",
    "required": false
  }
"name": "if",
"type": "string",
"enum": [
  "oic.if.b",
  "oic.if.il",
  "oic.if.baseline"
]
}

"definitions": {
  "batch-retrieve": {
    "title": "Collection Batch Retrieve Format",
    "minItems": 1,
    "items": {
      "additionalProperties": true,
      "properties": {
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
        },
        "rep": {
          "type": "object",
          "anyOf": [
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/Activity.swagger.json#/definitions/Activity"
            },
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/HeartRate.swagger.json#/definitions/HeartRate"
            },
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/UserID"
            },
            {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/TimeStamp"
            }
          ]
        }
      }
    }
  }
  "baseline": {
    "properties": {
      "rt": {
        "items": {
          "enum": [
            "oic.r.activitytracker-am",
            "oic.wk.atomicmeasurement"
          ]
        }
      }
    }
  }
}}
"uniqueItems": true,
"readOnly": true
},
"links": {
"$ref": "#/definitions/links"
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"rts": {
"description": "This Property contains all possible Resource Types for this Atomic Measurement.",
"items": {
"enum": [
"oic.r.activity",
"oic.r.heartrate",
"oic.r.time.stamp",
"oic.r.userid"
]
},
"minItems": 1,
"type": "array",
"uniqueItems": true
},
"id": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"rts-m": {
"description": "This Property contains all mandatory Resource Types for this Atomic Measurement.",
"items": {
"enum": [
"oic.r.activity"
]
},
"maxItems": 1,
"minItems": 1,
"type": "array",
"readOnly": true,
"uniqueItems": true
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": [
"oic.if.baseline",
"oic.if.ll",
"oic.if.b"
]
},
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": [
"oic.if.baseline",
"oic.if.ll",
"oic.if.b"
]
},
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"type": "object",
"required": [
"rts-m"
]
},
"oic.oic-link": {
"properties": {
"anchor": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
}
"di": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
},
"eps": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
},
"href": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
},
"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": [
    "enum": [
      "oic.if.baseline",
      "oic.if.s",
      "oic.if.r"
    ],
    "type": "string"
  ],
  "minItems": 1,
  "uniqueItems": true,
  "type": "array"
},
"ins": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
},
"p": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
},
"rel": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/rel_array"
},
"rt": {
  "description": "The Resource Type.",
  "items": [
    "enum": [
      "oic.r.activity",
      "oic.r.heartrate",
      "oic.r.time.stamp",
      "oic.r.userid"
    ],
    "type": "string"
  ],
  "minItems": 1,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
},
"title": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/title"
},
"type": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/type"
6.128.5 Property definition

Table 259 defines the Properties that are part of the "oic.r.activitytracker-am, oic.wk.atomicmeasurement" Resource Type.

Table 259 – The Property definitions of the Resource with type "rt" = "oic.r.activitytracker-am, oic.wk.atomicmeasurement".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rep</td>
<td>object: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>links</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>This Property contains all possible Resource Types for this Atomic Measurement.</td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rts-m</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property contains all mandatory Resource Types for this Atomic Measurement.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------</td>
<td>----</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>title</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>type</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

### 6.128.6 CRUDN behaviour

Table 260 defines the CRUDN operations that are supported on the "oic.r.activitytracker-am, oic.wk.atomicmeasurement" Resource Type.

**Table 260 – The CRUDN operations of the Resource with type "rt" = "oic.r.activitytracker-am, oic.wk.atomicmeasurement".**

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>get</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.129 Alarm

#### 6.129.1 Introduction

This Resource describes the Properties associated with alarm status.

#### 6.129.2 Example URI

```
/AlarmResURI
```

#### 6.129.3 Resource type

The Resource Type is defined as: "oic.r.alarm".

#### 6.129.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Alarm",
        "version": "2019-03-04",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
            "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": [
        "http"
    ],
    "consumes": [
        "application/json"
    ],
    "produces": [
        "application/json"
    ],
    "paths": {
        "/AlarmResURI": {
            "get": {
                "description": "This Resource describes the Properties associated with alarm status.",
                "parameters": [
                    {
                        "$ref": "#/parameters/interface"
                    }
                ]
            }
        }
    }
}
```
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": [ "oic.r.alarm" ],
      "if": [ "oic.if.rw", "oic.if.baseline" ],
      "status": false,
      "duration": 0.0,
      "time": "2018-06-20T14:30Z",
      "alarmtype": "General"
    },
    "schema": {
      "$ref": "#/definitions/Alarm"
    }
  }
},
"post": {
  "description": "This Resource describes the Properties associated with alarm status.",
  "parameters": [
    {
      "$ref": "#/parameters/interface"
    },
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/Alarm" },
      "x-example": {
        "status": true,
        "duration": 30.0,
        "time": "2019-01-31T14:30Z"
      }
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "rt": [ "oic.r.alarm" ],
        "status": true,
        "duration": 30.0,
        "time": "2019-01-31T14:30Z",
        "alarmtype": "General"
      },
      "schema": {
        "$ref": "#/definitions/Alarm"
      }
    }
  }
},
"interface": {
  "in": "query",
  "name": "if",
  "type": "string",
  "enum": [ "oic.if.rw", "oic.if.baseline" ]
}
"items": {
  "enum": ["oic.r.alarm"],
  "type": "string"},
  "minItems": 1,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"},
  "status": {
  "description": "This Property describes the status of the alarm: true - on, false - off. ",
  "type": "boolean",
  "readOnly": false,
},
  "duration": {
  "description": "This Property describes the alarm duration (seconds). ",
  "type": "number",
  "minimum": 0.0,
  "readOnly": false
},
  "time": {
  "description": "This Property describes the alarm time using ISO 8601 datetime format
  (e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00). ",
  "type": "string",
  "readOnly": false
},
  "alarmtype": {
  "description": "The Alarm Type. ",
  "type": "string",
  "enum": [
    "General",
    "Fire",
    "Flood",
    "Weather",
    "Security"
  ],
  "readOnly": true
},
  "n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
  schema.json#/definitions/n"
},
  "id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
  schema.json#/definitions/id"
},
  "if": {
  "description": "The OCF Interface set supported by this Resource. ",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.rw"
    ],
    "type": "string"},
    "minItems": 1,
    "uniqueItems": true,
    "readOnly": true,
    "type": "array"},
    "range": {
    "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
    schema.json#/definitions/range_number"
},
  "step": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
  schema.json#/definitions/range_number"}
6.129.5 Property definition

Table 261 defines the Properties that are part of the "oic.r.alarm" Resource Type.

Table 261 – The Property definitions of the Resource with type "rt" = "oic.r.alarm".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>status</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>This Property describes the status of the alarm: true - on, false - off.</td>
</tr>
<tr>
<td>duration</td>
<td>number</td>
<td>No</td>
<td>Read Write</td>
<td>This Property describes the alarm duration (seconds).</td>
</tr>
<tr>
<td>time</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>This Property describes the alarm time using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00).</td>
</tr>
<tr>
<td>alarmtype</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>The Alarm Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.129.6 CRUDN behaviour

Table 262 defines the CRUDN operations that are supported on the "oic.r.alarm" Resource Type.

Table 262 – The CRUDN operations of the Resource with type "rt" = "oic.r.alarm".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.130 Continuous Glucose Meter (CGM) Atomic Measurement Representation

6.130.1 Introduction
This Resource describes the Properties associated with Continuous Glucose Meter. The Resource is an Atomic Measurement of glucose ("oic.r.glucose"), sensor ("oic.r.cgm.sensor"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").

6.130.2 Example URI
/ContinuousGlucoseMeterAMResURI

6.130.3 Resource type
The Resource Type is defined as: "oic.r.cgm-am, oic.wk.atomicmeasurement".

6.130.4 OpenAPI 2.0 definition

```json
{

  "swagger": "2.0",
  "info": {
    "title": "Continuous Glucose Meter (CGM) Atomic Measurement Representation",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbec8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ContinuousGlucoseMeterAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with Continuous Glucose Meter.
        The Resource is an Atomic Measurement of glucose ("oic.r.glucose"), sensor ("oic.r.cgm.sensor"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "$ref": "#/parameters/resource-all"
            }
          }
        }
      }
    }
  }
}
```

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"rep": {
"userid": "USER1"
}
"href": "/myTimeStamq",
"rep": {
"timestamp": "2018-11-09T12:15:00+08:00"
}
"schema": {
"$ref": "/definitions/batch-retrieve"
}

"/ContinuousGlucoseMeterAMResURIf-oic.if.ll": 

"get": {
"description": "This Resource describes the Properties associated with Continuous Glucose
Meter. The Resource is an Atomic Measurement of glucose ("oic.r.glucose"), sensor
("oic.r.cgm.sensor"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid"),",
"parameters": [

"$ref": "/#parameters/interface-all"
]
"responses": {
"200": {
"description": "",
"x-example": [

"href": "/myGlucose",
"rt": [
"oic.r.glucose"
],
"if": [
"oic.if.s",
"oic.if.baseline"
]
},

"href": "/myContinuousGlucoseMeterSensor",
"rt": [
"oic.r.cgm.sensor"
],
"if": [
"oic.if.s",
"oic.if.baseline"
]
},

"href": "/myUserId",
"rt": [
"oic.r.userid"
],
"if": [
"oic.if.r",
"oic.if.baseline"
]
},

"href": "/myTimeStamq",
"rt": [
"oic.r.time.stamp"
],
"if": [
"oic.if.r",
"oic.if.baseline"
]
"schema": { "$ref": "#/definitions/links" }
"get": { "description": "This Resource describes the Properties associated with Continuous Glucose Meter. The Resource is an Atomic Measurement of glucose ("oic.r.glucose"), sensor ("oic.r.cgm.sensor"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").", "parameters": [ { "$ref": "#/parameters/interface-all" } ], "responses": { "200": { "description": "", "x-example": [ { "rt": [ "oic.r.cgm-am", "oic.wk.atomicmeasurement" ], "if": [ "oic.if.b", "oic.if.l", "oic.if.baseline" ], "rts-m": [ "oic.r.glucose" ], "rts": [ "oic.r.glucose", "oic.r.cgm.sensor" ] }, { "href": "/myGlucose", "rt": [ "oic.r.glucose" ], "if": [ "oic.if.s", "oic.if.baseline" ] }, { "href": "/myContinuousGlucoseMeterSensor", "rt": [ "oic.r.cgm.sensor" ], "if": [ "oic.if.s", "oic.if.baseline" ] }, { "href": "/myUserId", "rt": [ "oic.r.userid" ], "if": [ "oic.if.r", "oic.if.baseline" ] }, { "href": "/myTimeStamp", "rt": ["
"oic.r.time.stamp"

{"if": {
    "oic.if.r",
    "oic.if.baseline"
}

"schema": {
    "$ref": "#/definitions/baseline"
}

"parameters": {
    "interface-all": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [
            "oic.if.b",
            "oic.if.ll",
            "oic.if.baseline"
        ]
    }

    "definitions": {
        "batch-retrieve": {
            "title": "Collection Batch Retrieve Format",
            "minItems": 1,
            "items": {
                "properties": {
                    "href": {
                        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-scheme.json#/definitions/href"
                    },
                    "rep": {
                        "type": "object",
                        "anyOf": [
                            {
                                "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseResURI.swagger.json#/definitions/Glucose"
                            },
                            {
                                "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/ContinuousGlucoseMeterSensor.swagger.json#/definitions/ContinuousGlucoseMeterSensor"
                            },
                            {
                                "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/UserID"
                            },
                            {
                                "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/TimeStamp"
                            }
                        ]
                    }
                }
            }
        }
    }
}
"type": "array",
"links": {
  "type": "array",
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  }
},
"baseline": {
  "properties": {
    "rt": {
      "items": {
        "enum": [
          "oic.r.cgm-am",
          "oic.wk.atomicmeasurement"
        ]
      },
      "minItems": 2,
      "type": "array",
      "uniqueItems": true,
      "readOnly": true
    },
    "links": {
      "$ref": "#/definitions/links"
    },
    "n": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
    },
    "rts": {
      "description": "This Property contains all possible Resource Types for this Atomic Measurement."
    },
    "items": {
      "enum": [
        "oic.r.glucose",
        "oic.r.cgm.sensor",
        "oic.r.time.stamp",
        "oic.r.userid"
      ]
    },
    "minItems": 1,
    "type": "array",
    "uniqueItems": true
  },
  "id": {
    "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
  },
  "rts-m": {
    "description": "This Property contains all mandatory Resource Types for this Atomic Measurement."
  },
  "items": {
    "enum": [
      "oic.r.glucose"
    ],
    "maxItems": 1,
    "minItems": 1,
    "type": "array",
    "readOnly": true,
    "uniqueItems": true
  },
  "if": {
    "description": "The OCF Interface set supported by this Resource."
  },
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b"
"type": "string",
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
]
"type": "object",
"required": [
"rts-m"
]
"oic.oic-link": {
"properties": {
"anchor": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
},
"di": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
},
"eps": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
},
"href": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": [
"oic.if.baseline",
"oic.if.s",
"oic.if.r"
],
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"type": "array"
},
"ins": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
},
"p": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
},
"rel": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/rel_array"
},
"rt": {
"description": "The Resource Type.",
"items": {
"enum": [
"oic.r.glucose",
"oic.r.cgm.sensor",
"oic.r.time.stamp",
"oic.r.userid"}
### 6.130.5 Property definition

Table 263 defines the Properties that are part of the "oic.r.cgm-am, oic.wk.atomicmeasurement" Resource Type.

Table 263 – The Property definitions of the Resource with type "rt" = "oic.r.cgm-am, oic.wk.atomicmeasurement".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rep</td>
<td>object: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>links</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>This Property contains all possible Resource Types for this Atomic Measurement.</td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rts-m</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property contains all mandatory Resource Types for this Atomic Measurement.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>
6.130.6 CRUDN behaviour

Table 264 defines the CRUDN operations that are supported on the "oic.r.cgm-am, oic.wk.atomicmeasurement" Resource Type.

<table>
<thead>
<tr>
<th>Anchor</th>
<th>multiple types: see schema</th>
<th>No</th>
<th>Read Write</th>
</tr>
</thead>
<tbody>
<tr>
<td>de</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
</tr>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>p</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
</tr>
<tr>
<td>title</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>type</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

Table 264 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm-am, oic.wk.atomicmeasurement".

6.131 Calibrate for Continuous Glucose Meter (CGM)

6.131.1 Introduction

This Resource describes the Properties associated with Calibrate for Continuous Glucose Meter (CGM).

6.131.2 Example URI

/ContinuousGlucoseMeterCalibrateResURI

6.131.3 Resource type

The Resource Type is defined as: "oic.r.cgm.calibrate".

6.131.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Calibrate for Continuous Glucose Meter (CGM)",
        "version": "2019-03-04",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bd1b4ba/LICENSE.md",
            "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
        }
    }
}
```
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",

"schemes": [
  "http"
],

"consumes": [
  "application/json"
],

"produces": [
  "application/json"
],

"paths": {
  "/ContinuousGlucoseMeterCalibrateResURI": {
    "get": {
      "description": "This Resource describes the Properties associated with Calibrate for Continuous Glucose Meter (CGM).",

      "parameters": [
        {
          "$ref": "#/parameters/interface"
        }
      ],

      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.cgm.calibrate"],
            "Cvalue": 128.0,
            "Cstatus": true
          },
          "schema": {
            "$ref": "#/definitions/ContinuousGlucoseMeterCalibrate"
          }
        }
      }
    },

    "post": {
      "description": "This Resource describes the Properties associated with Calibrate for Continuous Glucose Meter (CGM).",

      "parameters": [
        {
          "$ref": "#/parameters/interface"
        },

        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": {
            "$ref": "#/definitions/ContinuousGlucoseMeterCalibrate"
          },
          "x-example": {
            "Cvalue": 130.0,
            "Cstatus": true
          }
        }
      ],

      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.cgm.calibrate"],
            "Cvalue": 130.0,
            "Cstatus": true
          },
          "schema": {
            "$ref": "#/definitions/ContinuousGlucoseMeterCalibrate"
          }
        }
      }
    }
  }
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.rw",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "ContinuousGlucoseMeterCalibrate": {
    "properties": {
      "Cvalue": {
        "description": "This Property describes the Sensor Calibration Value in mg/dL units. This
blood glucose measurement using other external glucose meter."
      },
      "type": "number",
      "minimum": 0,
      "readOnly": false
    },
    "Cstatus": {
      "description": "Sensor calibration required flag",
      "type": "boolean",
      "readOnly": true
    },
    "rt": {
      "description": "The Resource Type.",
      "items": {
        "enum": [
          "oic.r.cgm.calibrate"
        ],
        "type": "string"
      }
    },
    "n": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
    },
    "if": {
      "description": "The OCF Interface set supported by this Resource.",
      "items": {
        "enum": [
          "oic.if.rw",
          "oic.if.baseline"
        ],
        "type": "string"
      }
    },
    "range": {
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
    },
    "step": {
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
    },
    "precision": {
      "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision_number"
    }
  }
}
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"

6.131.5 Property definition

Table 265 defines the Properties that are part of the "oic.r.cgm.calibrate" Resource Type.

Table 265 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.calibrate".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cvalue</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>This Property describes the Sensor Calibration Value in mg/dL units. This blood glucose measurement using other external glucose meter.</td>
</tr>
<tr>
<td>Cstatus</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>Sensor calibration required flag</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.131.6 CRUDN behaviour

Table 266 defines the CRUDN operations that are supported on the "oic.r.cgm.calibrate" Resource Type.

Table 266 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.calibrate".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.132 Sampling Interval for Continuous Glucose Meter (CGM)

6.132.1 Introduction

This Resource describes the Properties associated with Sampling Interval for Continuous Glucose Meter (CGM).

6.132.2 Example URI

/ContinuousGlucoseMeterSamplingIntervalResURI
6.132.3 Resource type

The Resource Type is defined as: "oic.r.cgm.samplinginterval".

6.132.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Sampling Interval for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url": 
        "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bd4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ContinuousGlucoseMeterSamplingIntervalResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Sampling Interval for Continuous Glucose Meter (CGM).",
        "parameters": [ ]
      },
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.cgm.samplinginterval"
          },
          "interval": 10.0
        },
        "schema": {
          "$ref": "/definitions/ContinuousGlucoseMeterSamplingInterval"
        }
      }
    },
    "post": {
      "description": "This Resource describes the Properties associated with Sampling Interval for Continuous Glucose Meter (CGM).",
      "parameters": [ ]
    },
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
      "/ContinuousGlucoseMeterSamplingIntervalResURI": {
        "get": {
          "description": "",
          "parameters": [ ]
        },
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "interval": 20.0
            }
          }
        }
      },
      "post": {
        "description": "",
        "parameters": [ ]
      },
      "consumes": ["application/json"],
      "produces": ["application/json"],
      "paths": {
        "/ContinuousGlucoseMeterSamplingIntervalResURI": {
          "get": {
            "description": "",
            "parameters": [ ]
          },
          "responses": {
            "200": {
              "description": "",
              "x-example": {
                "interval": 30.0
              }
            }
          }
        }
      }
    }
```
"200": {
  "description": "",
  "x-example": {
    "rt": [
      "oic.r.cgm.samplinginterval"
    ],
    "interval": 20.0
  },
  "schema": {
    "$ref": "#/definitions/ContinuousGlucoseMeterSamplingInterval"
  }
}
}

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.a",
      "oic.if.baseline"
    ]
  }
}

"definitions": {
  "ContinuousGlucoseMeterSamplingInterval": {
    "properties": {
      "interval": {
        "description": "This Property describes the Sampling interval in seconds.",
        "type": "number",
        "minimum": 0.0,
        "readOnly": false
      },
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": [
            "oic.r.cgm.samplinginterval"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": [
            "oic.if.a",
            "oic.if.baseline"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      }
    }
  }
}
6.132.5 Property definition

Table 267 defines the Properties that are part of the "oic.r.cgm.samplinginterval" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>interval</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>This Property describes the Sampling interval in seconds.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.132.6 CRUDN behaviour

Table 268 defines the CRUDN operations that are supported on the "oic.r.cgm.samplinginterval" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
### 6.133 Sensor for Continuous Glucose Meter (CGM)

#### 6.133.1 Introduction

This Resource describes the Properties associated with Sensor for Continuous Glucose Meter (CGM).

#### 6.133.2 Example URI

/ContinuousGlucoseMeterSensorResURI

#### 6.133.3 Resource type

The Resource Type is defined as: "oic.r.cgm.sensor".

#### 6.133.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Sensor for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
      "name": "CCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ContinuousGlucoseMeterSensorResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Sensor for Continuous Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.sensor"
              ],
              "starttime": "2018-06-20T14:30Z",
              "runtime": 7.0
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "description": "",
      "x-example": "",
      "schema": {
        "$ref": "#/definitions/ContinuousGlucoseMeterSensor"
      }
    }
  }
}
```
"type": "string",
"enum": [
  "oic.if.s",
  "oic.if.baseline"
],

"definitions": {
  "ContinuousGlucoseMeterSensor": {
    "properties": {
      "starttime": {
        "description": "This Property describes the Sensor start time using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00)",
        "type": "string",
        "readOnly": true
      },
      "runtime": {
        "description": "This Property describes the recommended runtime days using CGM",
        "type": "number",
        "minimum": 0.0,
        "readOnly": true
      },
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": [
            "oic.r.cgm.sensor"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "$ref": 
        "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": [
            "oic.if.s",
            "oic.if.baseline"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "range": {
        "$ref": 
        "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
      },
      "step": {
        "$ref": 
        "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
      },
      "precision": {
        "$ref": 
        "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
      }
    },
    "type": "object",
    "required": [
6.133.5 Property definition

Table 269 defines the Properties that are part of the "oic.r.cgm.sensor" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>starttime</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the Sensor start time using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00)</td>
</tr>
<tr>
<td>runtime</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the recommended runtime days using CGM</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.133.6 CRUDN behaviour

Table 270 defines the CRUDN operations that are supported on the "oic.r.cgm.sensor" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.134 Status for Continuous Glucose Meter (CGM)

6.134.1 Introduction

This Resource describes the Properties associated with Status for Continuous Glucose Meter (CGM).

6.134.2 Example URI

/ContinuousGlucoseMeterStatusResURI

6.134.3 Resource type

The Resource Type is defined as: "oic.r.cgm.status".
6.134.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Status for Continuous Glucose Meter (CGM)",
        "version": "2019-03-04",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
            "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": [
        "http"
    ],
    "consumes": [
        "application/json"
    ],
    "produces": [
        "application/json"
    ],
    "paths": {
        "/ContinuousGlucoseMeterStatusResURI": {
            "get": {
                "description": "This Resource describes the Properties associated with Status for Continuous Glucose Meter (CGM).",
                "parameters": [
                    {
                        "$ref": "#/parameters/interface"
                    }
                ],
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": {
                            "rt": [
                                "oic.r.cgm.status"
                            ],
                            "cgmtype": "Interstitial Fluid",
                            "cgmstatus": "working",
                            "gtrend": 100.0,
                            "malfunction": false
                        ]
                    }
                }
            }
        }
    },
    "parameters": {
        "interface": {
            "in": "query",
            "name": "if",
            "type": "string",
            "enum": [
                "oic.if.s",
                "oic.if.baseline"
            ]
        }
    },
    "definitions": {
        "ContinuousGlucoseMeterStatus": {
            "properties": {
                "cgmtype": {
                    "description": "This Property describes the CGM measurement type."
                }
            }
        }
    }
}
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"enum": [
  "Capillary Whole blood",
  "Capillary Plasma",
  "Venous Plasma",
  "Arterial Whole blood",
  "Arterial Plasma",
  "Undetermined Whole blood",
  "Undetermined Plasma",
  "Interstitial Fluid"
],
"readOnly": true
},
"cgmstatus": {
  "description": "This Property describes the specific notifications given by the CGM device including, but not limited to, warnings, errors, and handling events.",
  "type": "string",
  "readOnly": true
},
"gtrend": {
  "description": "This Property describes the rate of change in glucose measurements at a time instant."
},
"type": "number",
"minimum": 0.0,
"readOnly": true
},
"malfunction": {
  "description": "This Property describes the sensor malfunction detection check."
},
"type": "boolean",
"readOnly": true
},
"rt": {
  "description": "The Resource Type."
},
"items": [
  "enum": [
    "oic.r.cgm.status"
  ],
  "type": "string"
],
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
],
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"if": {
  "description": "The OCF Interface set supported by this Resource."
},
"items": [
  "enum": [
    "oic.if.s",
    "oic.if.baseline"
  ],
  "type": "string"
],
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
],
"range": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
},
"step": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
}
6.134.5 Property definition

Table 271 defines the Properties that are part of the "oic.r.cgm.status" Resource Type.

Table 271 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.status".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cgmtype</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the CGM measurement type.</td>
</tr>
<tr>
<td>cgmstatus</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the specific notifications given by the CGM device including, but not limited to, warnings, errors, and handling events.</td>
</tr>
<tr>
<td>gtrend</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the rate of change in glucose measurements at a time instant.</td>
</tr>
<tr>
<td>malfunction</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the sensor malfunction detection check.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.134.6 CRUDN behaviour

Table 272 defines the CRUDN operations that are supported on the "oic.r.cgm.status" Resource Type.
Table 272 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.status".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.135 Threshold for Continuous Glucose Meter (CGM)

6.135.1 Introduction

This Resource describes the Properties associated with Threshold for Continuous Glucose Meter (CGM).

6.135.2 Example URI

/ContinuousGlucoseMeterThresholdResURI

6.135.3 Resource type

The Resource Type is defined as: "oic.r.cgm.threshold".

6.135.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Threshold for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ContinuousGlucoseMeterThresholdResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Threshold for Continuous Glucose Meter (CGM).",
        "parameters": [
          
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              
            },
            "rt": ["oic.r.cgm.threshold"],
            "plow": 100.0,
            "phigh": 180.0,
            "dhypo": 80.0,
            "dhyper": 125.0,
            "gir": 5.0,
            "gdr": 5.0
          }
        }
      }
    }
  }
}
```
"$ref": "/definitions/ContinuousGlucoseMeterThreshold"
}
},

"post": {
"description": "This Resource describes the Properties associated with Threshold for Continuous Glucose Meter (CGM).",
"parameters": [
  {
    "$ref": "/parameters/interface"
  },
  {
    "name": "body",
    "in": "body",
    "required": true,
    "schema": {
      "$ref": "/definitions/ContinuousGlucoseMeterThreshold"
    },
    "x-example": {
      "plow": 70.0,
      "phigh": 150.0,
      "dhypo": 60.0,
      "dhyper": 90.0,
      "gir": 3.0,
      "gdr": 3.0
    }
  }
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.cgm.threshold"],
      "plow": 70.0,
      "phigh": 150.0,
      "dhypo": 60.0,
      "dhyper": 90.0,
      "gir": 3.0,
      "gdr": 3.0
    },
    "schema": {
      "$ref": "/definitions/ContinuousGlucoseMeterThreshold"
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"
  ]
},
"definitions": {
  "ContinuousGlucoseMeterThreshold": {
    "properties": {
      "plow": {
        "description": "This Property describes the Patient low threshold (mg/dL)",
        "type": "number",
        "minimum": 0.0,
        "readOnly": false
      }
    },
    "phigh": {
      "description": "This Property describes the Patient high threshold (mg/dL)",
      "type": "number",
      "readOnly": false
    }
  }
}
"minimum": 0.0,
"readOnly": false
},
"dhypo": {
"description": "This Property describes the Device hypoglycemia threshold (mg/dL)",
"type": "number",
"minimum": 0.0,
"readOnly": false
},
"dhyper": {
"description": "This Property describes the Device hyperglycemia threshold (mg/dL)",
"type": "number",
"minimum": 0.0,
"readOnly": false
},
"gir": {
"description": "This Property describes the Glucose Increase rate of change threshold (%)",
"type": "number",
"minimum": 0.0,
"readOnly": false
},
"gdr": {
"description": "This Property describes the Glucose Decrease rate of change threshold (%)",
"type": "number",
"minimum": 0.0,
"readOnly": false
},
"rt": {
"description": "The Resource Type.",
"items": {
"enum": [
  "oic.r.cgm.threshold"
],
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": [
  "oic.if.rw",
  "oic.if.baseline"
],
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"range": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
},
"step": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
},
"precision": {
"minimum": 0.0,
"readOnly": false
}
6.135.5 Property definition

Table 273 defines the Properties that are part of the "oic.r.cgm.threshold" Resource Type.

Table 273 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.threshold".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>plow</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>This Property describes the Patient low threshold (mg/dL)</td>
</tr>
<tr>
<td>phigh</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>This Property describes the Patient high threshold (mg/dL)</td>
</tr>
<tr>
<td>dhypo</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>This Property describes the Device hypoglycemia threshold (mg/dL)</td>
</tr>
<tr>
<td>dhyper</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>This Property describes the Device hyperglycemia threshold (mg/dL)</td>
</tr>
<tr>
<td>gir</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>This Property describes the Glucose Increase rate of change threshold (%)</td>
</tr>
<tr>
<td>gdr</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
6.135.6 CRUDN behaviour

Table 274 defines the CRUDN operations that are supported on the "oic.r.cgm.threshold" Resource Type.

Table 274 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.threshold".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.136 Heart Rate

6.136.1 Introduction

This Resource describes the Properties associated with a person's heart rate.

The unit, which is the default unit, is bpm.

The heartrate Property is a read-only value that is provided by the server.

When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

6.136.2 Example URI

/HeartRateResURI

6.136.3 Resource type

The Resource Type is defined as: "oic.r.heartrate".

6.136.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Heart Rate",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc68bd24ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HeartRateResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's heart rate. The unit, which is the default unit, is bpm. The heartrate Property is a read-only value that is provided by the server. When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT."
      }
    },
    "$ref": "/#/parameters/interface"
  }
}```

6.136.5 Property definition

Table 275 defines the Properties that are part of the "oic.r.heartrate" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>heartrate</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the heart rate in bpm.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.136.6 CRUDN behaviour

Table 276 defines the CRUDN operations that are supported on the "oic.r.heartrate" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.137 Heart Rate Monitor Atomic Measurement Representation

6.137.1 Introduction

This Resource describes the Properties associated with Heart Rate Monitor.
The Resource is an Atomic Measurement of heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").

6.137.2 Example URI

°HeartRateMonitorAMResURI

6.137.3 Resource type

The Resource Type is defined as: "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement".

6.137.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Heart Rate Monitor Atomic Measurement Representation",
        "version": "2019-03-04",
        "description": "This Resource describes the Properties associated with Heart Rate Monitor.
The Resource is an Atomic Measurement of heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid")",
        "contact": {
            "name": "Open Connectivity Foundation, Inc.",
            "url": "https://www.openconnectivity.org"
        },
        "license": {
            "name": "Apache 2.0",
            "url": "https://www.apache.org/licenses/LICENSE-2.0"
        }
    }
}
```
"license": {
  "name": "OCF Data Model License",
  "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc68bdc4ba/LICENSE.md",
  "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
},
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"},
"schemes": [
  "http",
],
"consumes": [
  "application/json"
],
"produces": [
  "application/json"
],
"paths": {
  "/HeartRateMonitorAMResURI?if=oic.if.b": {
    "get": {
      "description": "This Resource describes the Properties associated with Heart Rate Monitor. The Resource is an Atomic Measurement of heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": [
            {
              "href": "/myHeartrate",
              "rep": {
                "heartrate": 80
              }
            },
            {
              "href": "/myUserId",
              "rep": {
                "userid": "USER1"
              }
            },
            {
              "href": "/myTimeStamp",
              "rep": {
                "timestamp": "2018-11-09T12:15:00+08:00"
              }
            }
          ],
          "schema": {
            "$ref": "#/definitions/batch-retrieve"
          }
        }
      }
    }
  },
  "/HeartRateMonitorAMResURI?if=oic.if.ll": {
    "get": {
      "description": "This Resource describes the Properties associated with Heart Rate Monitor. The Resource is an Atomic Measurement of heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": [
            {
              "href": "/myHeartrate",
              "rep": {
                "heartrate": 80
              }
            },
            {
              "href": "/myUserId",
              "rep": {
                "userid": "USER1"
              }
            },
            {
              "href": "/myTimeStamp",
              "rep": {
                "timestamp": "2018-11-09T12:15:00+08:00"
              }
            }
          ],
          "schema": {
            "$ref": "#/definitions/batch-retrieve"
          }
        }
      }
    }
  }
}
"x-example": [
  {
    "href": "/myHeartrate",
    "rt": [
      "oic.r.heartrate"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myUserId",
    "rt": [
      "oic.r.userid"
    ],
    "if": [
      "oic.if.r",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myTimeStamp",
    "rt": [
      "oic.r.time.stamp"
    ],
    "if": [
      "oic.if.r",
      "oic.if.baseline"
    ]
  }
],
"schema": {
  "$ref": "#/definitions/links"
}
}/HeartRateMonitorAMResURI?if=oic.if.baseline": {
  "get": {
    "description": "This Resource describes the Properties associated with Heart Rate Monitor.

    The Resource is an Atomic Measurement of heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").",
    "parameters": [
      {
        "$ref": "#/parameters/interface-all"
      }
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example":
      }
    }
  }
}

{
  "href": "/myHeartRateMonitor",
  "rt": [
    "oic.r.heartrate"
  ],
  "if": [
    "oic.if.s",
    "oic.if.baseline"
  ]
},
{
  "href": "/myUserId",
  "rt": [
    "oic.r.userid"
  ],
  "if": [
    "oic.if.r",
    "oic.if.baseline"
  ]
}
{
  "href": "/myTimeStamp",
  "rt": [
    "oic.r.time.stamp"
  ],
  "if": [
    "oic.if.r",
    "oic.if.baseline"
  ]
}
]
}

"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b",
      "oic.if.ll",
      "oic.if.baseline"
    ]
  }
}

"definitions": {
  "batch-retrieve": {
    "title": "Collection Batch Retrieve Format",
    "minItems": 1,
    "items": {
      "properties": {
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
        }
      }
    },
    "type": "object",
    "anyOf": [
      {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/HeartRate.swagger.json#/definitions/Heartrate"
      }
    ]
  }
}
{
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/UserID",
},
{
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/TimeStamp"
}
]
},
"required": [
  "href",
  "rep"
],
"type": "object"
},
"type": "array",
"items": {
  "$ref": "#/definitions/oic.oic-link"
}
},
"baseline": {
  "properties": {
    "rt": {
      "items": {
        "enum": [
          "oic.r.heartrate",
          "oic.r.userid",
          "oic.r.time.stamp"
        ]
      },
      "minItems": 2,
      "type": "array",
      "uniqueItems": true,
      "readOnly": true
    },
    "links": {
      "$ref": "#/definitions/links"
    },
    "n": {
      "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
    },
    "rts": {
      "description": "This Property contains all possible Resource Types for this Atomic Measurement.",
      "items": {
        "enum": [
          "oic.r.heartrate",
          "oic.r.userid",
          "oic.r.time.stamp"
        ]
      },
      "minItems": 1,
      "type": "array",
      "uniqueItems": true,
      "readOnly": true
    },
    "rts-m": {
      "description": "This Property contains all mandatory Resource Types for this Atomic Measurement.",
      "items": {
        "enum": ["oic.r.heartrate"
      }
    }
  }
}
}
"maxItems": 1,
"minItems": 1,
"type": "array",
"readOnly": true,
"uniqueItems": true
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": ["oic.if.b", "oic.if.ll", "oic.if.baseline"],
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
,"oic.oic-link": {
"properties": {
"anchor": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
},
"di": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
},
"eps": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
},
"href": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": ["oic.if.baseline", "oic.if.s", "oic.if.r"],
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"ins": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
},
"p": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
}
6.137.5 Property definition

Table 277 defines the Properties that are part of the "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rep</td>
<td>object: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>links</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td></td>
</tr>
</tbody>
</table>

This Property contains all possible Resource Types for this Atomic Measurement.
<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Read/Write</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rts-m</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
</tr>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
</tr>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>p</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
</tr>
<tr>
<td>title</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>type</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
</tbody>
</table>

6.137.6 CRUDN behaviour

Table 278 defines the CRUDN operations that are supported on the "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement" Resource Type.

<table>
<thead>
<tr>
<th>CRUDN Operation</th>
<th>Resource Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create</td>
<td>oic.r.pulsatilecharacteristic</td>
</tr>
<tr>
<td>Read</td>
<td>oic.r.pulsatilecharacteristic</td>
</tr>
<tr>
<td>Update</td>
<td>oic.r.pulsatilecharacteristic</td>
</tr>
<tr>
<td>Delete</td>
<td>oic.r.pulsatilecharacteristic</td>
</tr>
<tr>
<td>Notify</td>
<td>oic.r.pulsatilecharacteristic</td>
</tr>
</tbody>
</table>

6.138 Pulsatile Characteristic for Pulse Oximeter

6.138.1 Introduction

This Resource describes the Properties associated with a pulsatile characteristic of the pulsative wave of a Pulse Oximeter.

The characteristic Property is a read-only value that is provided by the server.

When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

6.138.2 Example URI

/PulsatileCharacteristicResURI

6.138.3 Resource type

The Resource Type is defined as: "oic.r.pulsatilecharacteristic".
6.138.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Pulsatile Characteristic for Pulse Oximeter",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PulsatileCharacteristicResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a pulsatile characteristic of the pulsative wave of a Pulse Oximeter. The characteristic Property is a read-only value that is provided by the server. When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [ ]
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "pulsatilecharacteristic": {
        "properties": {
          "characteristic": {
            "description": "This Property describes the current pulsatile characteristic measurement. The value is an integer bit mapped value. The following describes what each integer means. 0 - Quality of the detected pulse is nominal, in that there are no recognized abnormalities in the ...
```
detected pulse. 1 - Perfusion or quality of the detected pulse is marginal. 2 - Perfusion or quality of the detected pulse is minimal. 3 - Perfusion or quality of the detected pulse is unacceptable."

```
{  
    "type": "integer",  
    "minimum": 0,  
    "maximum": 3,  
    "readOnly": true
},
```

rt: {
   "description": "The Resource Type.",
   "items": [
     "oic.r.pulsatilecharacteristic"
   ],
   "type": "string"
},

```
if: {  
   "description": "The OCF Interface set supported by this Resource.",  
   "items": [
     "oic.if.s",  
     "oic.if.baseline"
   ],
   "type": "string"
},

```

range: {
   "$ref":  
   "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_integer"
},

```
step: {  
   "$ref":  
   "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_integer"
}

```

}  
}
```

6.138.5 Property definition

Table 279 defines the Properties that are part of the "oic.r.pulsatilecharacteristic" Resource Type.

Table 279 - The Property definitions of the Resource with type "rt" = "oic.r.pulsatilecharacteristic".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>characteristic</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the current pulsatile characteristic measurement. The</td>
</tr>
</tbody>
</table>
The value is an integer bit mapped value. The following describes what each integer means.

- **0**: Quality of the detected pulse is nominal, in that there are no recognized abnormalities in the detected pulse.
- **1**: Perfusion or quality of the detected pulse is marginal.
- **2**: Perfusion or quality of the detected pulse is minimal.
- **3**: Perfusion or quality of the detected pulse is unacceptable.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>rt</strong></td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
</tr>
<tr>
<td><strong>n</strong></td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td><strong>if</strong></td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
</tr>
<tr>
<td><strong>range</strong></td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td><strong>step</strong></td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.138.6 CRUDN behaviour

Table 280 defines the CRUDN operations that are supported on the "oic.r.pulsatilecharacteristic" Resource Type.

Table 280 – The CRUDN operations of the Resource with type "rt" = "oic.r.pulsatilecharacteristic".

### 6.139 Pulsatile Occurrence for Pulse Oximeter

#### 6.139.1 Introduction

This Resource describes the Properties associated with a Pulsatile Occurrence detected by a Pulse Oximeter. The occurrence Property is a read-only value that is provided by the server. When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

#### 6.139.2 Example URI

/PulsatileOccurrenceResURI

#### 6.139.3 Resource type

The Resource Type is defined as: "oic.r.pulsatileoccurrence".

#### 6.139.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
```
"title": "Pulsatile Occurrence for Pulse Oximeter",
"version": "2019-03-04",
"license": {
    "name": "OCF Data Model License",
    "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbcce8bd4ba/LICENSE.md",
    "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
},
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"}
}
}
}
]
"consumes": [
    "application/json"
],
"produces": [
    "application/json"
],
"paths": {
    "/PulsatileOccurrenceResURI": {
        "get": {
            "description": "This Resource describes the Properties associated with a Pulsatile Occurrence detected by a Pulse Oximeter. The occurrence Property is a read-only value that is provided by the server. When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.",
            "parameters": [
                
            ],
            "responses": {
                "200": {
                    "description": "",
                    "x-example": {
                        "rt": [
                            "oic.r.pulsatileoccurrence"
                        ],
                        "occurrence": "BEAT"
                    },
                    "schema": {
                        "$ref": "#/definitions/pulsatileoccurrence"
                    }
                }
            }
        },
        "parameters": {
            "interface": {
                "in": "query",
                "name": "if",
                "type": "string",
                "enum": [
                    "oic.if.s",
                    "oic.if.baseline"
                ]
            }
        }
    }
}
"definitions": {
    "pulsatileoccurrence": {
        "properties": {
            "occurrence": {
                "type": "string",
                "readOnly": true,
                "enum": [
                    "BEAT",
                    "BEAT_MAX_INRUSH",
                    "NOS"
                ]
            }
        },
        "description": "This Property describes the Pulsatile Occurrence detected by a Pulse Oximeter."
    }
}
Oximeter. BEAT - Pulsatile occurrence has occurred. BEAT_MAX_INRUSH - Maximal inrush of the pulsatile wave has occurred. NOS - No pulsatile event occurred.

```json
"default": "NOS"
}
"rt": {
"description": "The Resource Type.",
"items": {
"enum": [
"oic.r.pulsatileoccurrence"
],
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": [
"oic.if.s",
"oic.if.baseline"
],
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
```

6.139.5 Property definition

Table 281 defines the Properties that are part of the "oic.r.pulsatileoccurrence" Resource Type.

**Table 281 – The Property definitions of the Resource with type "rt" = "oic.r.pulsatileoccurrence".**

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>occurrence</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the Pulsatile Occurrence detected by a Pulse Oximeter. BEAT - Pulsatile occurrence has occurred. BEAT_MAX_INRUSH - Maximal inrush of the pulsatile wave has occurred. NOS - No pulsatile event occurred.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

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6.139.6 CRUDN behaviour

Table 282 defines the CRUDN operations that are supported on the "oic.r.pulsatileoccurrence" Resource Type.

<table>
<thead>
<tr>
<th>CRUDN Operations</th>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.140 Pulse Oximeter Atomic Measurement Representation

6.140.1 Introduction

This Resource describes the Properties associated with Pulse Oximeter. The Resource is an Atomic Measurement of SpO2 ("oic.r.spo2"), pulse rate ("oic.r.pulserate"), pulsatile characteristic ("oic.r.pulsatilecharacteristic"), pulsatileoccurrence ("oic.r.pulsatileoccurrence"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").

6.140.2 Example URI

/PulseOximeterAMResURI

6.140.3 Resource type

The Resource Type is defined as: "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement".

6.140.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Pulse Oximeter Atomic Measurement Representation",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PulseOximeterAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with Pulse Oximeter. The Resource is an Atomic Measurement of SpO2 ("oic.r.spo2"), pulse rate ("oic.r.pulserate"), pulsatile characteristic ("oic.r.pulsatilecharacteristic"), pulsatileoccurrence ("oic.r.pulsatileoccurrence"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid")",
        "parameters": [],
        "$ref": "/parameters/interface-all"
      }
    }
  }
}
```
"responses": {
  "200": {
    "description": "",
    "x-example": [
      {
        "href": "/mySpO2",
        "rep": {
          "spo2": 99.0,
          "perfusion": 20.0
        }
      },
      {
        "href": "/myPulseRate",
        "rep": {
          "pulserate": 80
        }
      },
      {
        "href": "/myPulsatileOccurrence",
        "rep": {
          "occurrence": "BEAT"
        }
      },
      {
        "href": "/myPulsatileCharacteristic",
        "rep": {
          "characteristic": 1
        }
      },
      {
        "href": "/myUserId",
        "rep": {
          "userid": "USER1"
        }
      },
      {
        "href": "/myTimeStamp",
        "rep": {
          "timestamp": "2018-11-09T12:15:00+08:00"
        }
      }
    ]
  }
}
"oic.if.s",
"oic.if.baseline"
},
"href": "/myPulseRate",
"rt": [
"oic.r.pulserate"
],
"if": [
"oic.if.s",
"oic.if.baseline"
]
},
"href": "/myPulsatileOccurrence",
"rt": [
"oic.r.pulsatileoccurrence"
],
"if": [
"oic.if.s",
"oic.if.baseline"
]
},
"href": "/myPulsatileCharacteristic",
"rt": [
"oic.r.pulsatilecharacteristic"
],
"if": [
"oic.if.s",
"oic.if.baseline"
]
},
"href": "/myUserId",
"rt": [
"oic.r.userid"
],
"if": [
"oic.if.r",
"oic.if.baseline"
]
},
"href": "/myTimeStamp",
"rt": [
"oic.r.time.stamp"
],
"if": [
"oic.if.r",
"oic.if.baseline"
]
}
],
"schema": {
"$ref": "#/definitions/links"
}

"/PulseOximeterAMResURI?if=oic.if.baseline": {
"get": {
"description": "This Resource describes the Properties associated with Pulse Oximeter. The
Resource is an Atomic Measurement of SpO2 ("oic.r.spo2"), pulse rate ("oic.r.pulserate"),
pulsatile characteristic ("oic.r.pulsatilecharacteristic"), pulsatileoccurrence
("oic.r.pulsatileoccurrence"), observed time ("oic.r.time.stamp"), and user ID
("oic.r.userid"), "
"parameters": [
"$ref": "#/parameters/interface-all"
"responses": {
    "200": {
        "description": "",
        "x-example": {
            "rt": ["oic.r.pulseoximeter-am", "oic.wk.atomicmeasurement"],
            "if": ["oic.if.b", "oic.if.ll", "oic.if.baseline"],
            "rts-m": {
                "rt": ["oic.r.spo2", "oic.r.pulserate"],
                "rts": ["oic.r.spo2", "oic.r.pulserate", "oic.r.pulsatileoccurrence", "oic.r.pulsatilecharacteristic", "oic.r.userid", "oic.r.time.stamp"],
            "links": {
                "href": "/mySpO2",
                "rt": ["oic.r.spo2"],
                "if": ["oic.if.s", "oic.if.baseline"],
            },
            "href": "/myPulseRate",
            "rt": ["oic.r.pulserate"],
            "if": ["oic.if.s", "oic.if.baseline"],
            "href": "/myPulsatileOccurrence",
            "rt": ["oic.r.pulsatileoccurrence"],
            "if": ["oic.if.s", "oic.if.baseline"],
            "href": "/myPulsatileCharacteristic",
            "rt": ["oic.r.pulsatilecharacteristic"],
            "if": ["oic.if.s", "oic.if.baseline"],
            "href": "/myUserId",
            "rt": ["oic.r.userid"],
            "if": ["oic.if.s", "oic.if.baseline"],
        },
    }
}
"oic.r.userid"
  ],
  "if": {
    "oic.if.r",
    "oic.if.baseline"
  }
},
  "href": "/myTimeStamp",
  "rt": {
    "oic.r.time.stamp"
  },
  "if": {
    "oic.if.r",
    "oic.if.baseline"
  }
}
],
"schema": {
  "$ref": "/#/definitions/baseline
}
"
  }
}]
],
"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.b", "oic.if.ll", "oic.if.baseline"
  ]
  }
},
"definitions": {
  "batch-retrieve": {
    "title": "Collection Batch Retrieve Format",
    "minItems": 1,
    "items": {
      "additionalProperties": true,
      "properties": {
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions(href"
        },
        "rep": {
          "type": "object",
          "anyOf": [
            "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/SpO2.swagger.json#/definitions/SpO2" 28670
          ],
          "rep": {
            "type": "object",
            "anyOf": [
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/PulseRateResURI.swagger.json#/definitions/PulseRate"
            ],
            "rep": {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/PulsatileCharacteristic.swagger.json#/definitions/pulsatilecharacteristic"
            },
            "rep": {
              "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/PulsatileOccurrence.swagger.json#/definitions/pulsatileoccurrence"
            }
          ]
        }
      }
    }
  }
}
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/TimeStamp"  
},

"required": ["href", "rep"],

type": "object"  
},

type": "array"  
]}

"links": {
"type": "array",
"items": {
"$ref": "#/definitions/oic.oic-link"  
}  
]

"baseline": {
"properties": {
"rt": {
"items": {
"enum": ["oic.r.pulseoximeter-am", "oic.wk.atomicmeasurement"
]
},
"minItems": 2,
"type": "array",
"uniqueItems": true,
"readOnly": true
},
"links": {
"$ref": "#/definitions/links"  
},

"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},

"rts": {
"description": "This Property contains all possible Resource Types for this Atomic Measurement.",
"items": {
"enum": ["oic.r.spo2", "oic.r.pulserate", "oic.r.pulsatilecharacteristic", "oic.r.pulsatileoccurrence", "oic.r.time.staemp", "oic.r.userid"
]  
},

"minItems": 1,
"type": "array",
"uniqueItems": true
},

"rts-m": {
"description": "This Property contains all mandatory Resource Types for this Atomic Measurement.",
"items": {
"enum": ["
"oic.r.spo2", "oic.r.pulserate"
],
"maxItems": 2,
"minItems": 2,
"type": "array",
"readOnly": true,
"uniqueItems": true
},
"if": {
"description": "The OCF Interface set supported by this Resource."
},
"items": {
"enum": [
 "oic.if.b",
 "oic.if.ll",
 "oic.if.baseline"
],
"type": "string"
},
"minItems": 1,
"uniqueItems": true,
"readOnly": true,
"type": "array"
}
}
"oic.oic-link": {
"properties": {
"anchor": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
},
"di": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
},
"eps": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
},
"href": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
}
},
"if": {
"description": "The interface set supported by this resource",
"items": {
"enum": [
 "oic.if.baseline",
 "oic.if.s",
 "oic.if.z"
],
"type": "string"
},
"minItems": 1,
"type": "array"
},
"ins": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
},
"p": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
}
6.140.5 Property definition

Table 283 defines the Properties that are part of the "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement" Resource Type.

Table 283 – The Property definitions of the Resource with type "rt" = "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rep</td>
<td>object: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>links</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>This Property contains all possible</td>
</tr>
<tr>
<td>Property</td>
<td>Type</td>
<td>Create</td>
<td>Read</td>
<td>Update</td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
<td>--------</td>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>rts-m</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>title</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>type</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.140.6 CRUDN behaviour

Table 284 defines the CRUDN operations that are supported on the "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement" Resource Type.

Table 284 – The CRUDN operations of the Resource with type "rt" = "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement".

<table>
<thead>
<tr>
<th>CRUDN Operations</th>
<th>Resource Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create</td>
<td>Read</td>
</tr>
<tr>
<td>get</td>
<td></td>
</tr>
</tbody>
</table>

6.141 Sleep

6.141.1 Introduction

This Resource describes the Properties associated with Sleep.

Sleep shows the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep score indicating the quality of sleep.

6.141.2 Example URI

/SleepResURI
6.141.3 Resource type

The Resource Type is defined as: "oic.r.sleep".

6.141.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Sleep",
    "version": "2018-07-12",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc88dc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SleepResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Sleep. Sleep shows
        the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep,
        deep sleep), along with a sleep score indicating the quality of sleep.",
        "parameters": {
          "$ref": "#/parameters/interface"
        },
        "responses": {
          "200": {
            "description": "Retrieves the sleep information.",
            "x-example": {
              "rt": ["oic.r.sleep",
              "oic.if.s",
              "oic.if.baseline"],
              "awake": 1440,
              "nrem1": 1440,
              "nrem2": 14400,
              "nrem3": 1440,
              "nrem4": 4320,
              "rem": 5760,
              "lightsleep": 15840,
              "deepsleep": 5760,
              "sleepscore": 70.0
            }
          }
        },
        "schema": {
          "$ref": "#/definitions/Sleep"
        }
      }
    }
  }
}
```

"name": "if",
"type": "string",
"enum": [
  "oic.if.s",
  "oic.if.baseline"
]
},
"definitions": {
  "Sleep": {
    "properties": {
      "awake": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Awake stage (in seconds)"
      },
      "nrem1": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Non Rapid Eye Movement stage 1 (in seconds)"
      },
      "nrem2": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Non Rapid Eye Movement stage 2 (in seconds)"
      },
      "nrem3": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Non Rapid Eye Movement stage 3 (in seconds)"
      },
      "nrem4": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Non Rapid Eye Movement stage 4 (in seconds)"
      },
      "rem": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Rapid Eye Movement (in seconds)"
      },
      "lightsleep": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Light Sleep stage, consisting in NREM stages 1 and 2 (in seconds)"
      },
      "deepsleep": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Deep Sleep stage, consisting in NREM stages 3 and 4 (in seconds)"
      },
      "sleepscore": {
        "type": "number",
        "minimum": 0,
        "readOnly": true,
        "description": "Score computed from the time spent in each sleep stage, indicative of the quality of sleep"
      }
    },
    "if": {
      "description": "The Interface set supported by this Resource",
      "type": "array",
      "minItems": 1,
"uniqueItems": true,
"readOnly": true,
"items": [
  "type": "string",
  "enum": [
    "oic.if.s",
    "oic.if.baseline"
  ]
]
},
"rt": {
  "description": "Resource Type",
  "type": "array",
  "minItems": 1,
  "uniqueItems": true,
  "readOnly": true,
  "items": [
    "type": "string",
    "enum": [
      "oic.r.sleep"
    ]
  ]
}
},
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"range_phases": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_integer"
},
"step_phases": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_integer"
},
"range_score": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
},
"step_score": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
},
"precision": {
  "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
}
},
"type": "object",
"required": ["awake", "nrem1", "nrem2", "nrem3", "rem"
]
}
},

6.141.5 Property definition

Table 285 defines the Properties that are part of the "oic.r.sleep" Resource Type.
## Table 285 – The Property definitions of the Resource with type "rt" = "oic.r.sleep".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>awake</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>Time spent in Awake stage (in seconds)</td>
</tr>
<tr>
<td>nrem1</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>Time spent in Non Rapid Eye Movement stage 1 (in seconds)</td>
</tr>
<tr>
<td>nrem2</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>Time spent in Non Rapid Eye Movement stage 2 (in seconds)</td>
</tr>
<tr>
<td>nrem3</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>Time spent in Non Rapid Eye Movement stage 3 (in seconds)</td>
</tr>
<tr>
<td>nrem4</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>Time spent in Non Rapid Eye Movement stage 4 (in seconds)</td>
</tr>
<tr>
<td>rem</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>Time spent in Rapid Eye Movement (in seconds)</td>
</tr>
<tr>
<td>lightsleep</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>Time spent in Light Sleep stage, consisting in NREM stages 1 and 2 (in seconds)</td>
</tr>
<tr>
<td>deepsleep</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>Time spent in Deep Sleep stage, consisting in NREM stages 3 and 4 (in seconds)</td>
</tr>
<tr>
<td>sleepscore</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Score computed from the time spent in each sleep stage, indicative of the quality of sleep</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Interface set supported by this Resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range_phases</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step_phases</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>range_score</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step_score</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
6.141.6 CRUDN behaviour

Table 286 defines the CRUDN operations that are supported on the "oic.r.sleep" Resource Type.

Table 286 – The CRUDN operations of the Resource with type "rt" = "oic.r.sleep".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>observe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.142 Sleep Monitor Atomic Measurement Batch Representation

6.142.1 Introduction

This Resource describes the Properties associated with Sleep Monitor. The Resource is an Atomic Measurement of sleep (oic.r.sleep).

Sleep shows the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep score indicating the quality of sleep.

6.142.2 Example URI

/SleepMonitorAMResURI

6.142.3 Resource type

The Resource Type is defined as: "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement".

6.142.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Sleep Monitor Atomic Measurement Batch Representation",
    "version": "2018-08-29",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/openconnectivityfoundation/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SleepMonitorAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with Sleep Monitor. The Resource is an Atomic Measurement of sleep (oic.r.sleep). Sleep shows the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep score indicating the quality of sleep."
      },
      "parameters": ["$ref": "/#parameters/interface-b"
      ],
      "responses": {
        "200": {
          "description": "Retrieves the sleep monitor's information."
        }
      }
    }
  }
}
```
"awake": 1440,
"nrem1": 1440,
"nrem2": 14400,
"nrem3": 1440,
"nrem4": 4320,
"rem": 5760,
"lightsleep": 15840,
"deepsleep": 5760,
"sleepscore": 70.0
}
]
"schema": {
"$ref": "#/definitions/batch-retrieve"
}

"/SleepMonitorAMResURI?if=oic.if.ll": {
"get": {
"description": "This Resource describes the Properties associated with Sleep Monitor.
The Resource is an Atomic Measurement of sleep (oic.r.sleep).
Sleep shows the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep score indicating the quality of sleep.",
"parameters": [
  {
"$ref": "#/parameters/interface-ll"
  }
],
"responses": {
  "200": {
"description": "Retrieves the sleep monitor's information.",
"x-example": [
  {
"href": "/mySleepMonitor",
"rt": [
  "oic.r.sleep"
  ],
"if": [
  "oic.if.s",
  "oic.if.baseline"
  ]
  },
  {
"href": "/myHeartRate",
"rt": [
  "oic.r.heartrate"
  ],
"if": [
  "oic.if.s",
  "oic.if.baseline"
  ]
  }
]"}
"href": "/myUserID",
"rt": [
"oic.r.userid"
],
"if": [
"oic.if.r",
"oic.if.baseline"
]
},
"href": "/myTimeStamp",
"rt": [
"oic.r.time.stamp"
],
"if": [
"oic.if.r",
"oic.if.baseline"
]
},
"schema": {
"$ref": "/definitions/links"
}
}  
"/SleepMonitorAMResURI?if=oic.if.baseline": {
  "get": {
    "description": "This Resource describes the Properties associated with Sleep Monitor.\nThe Resource is an Atomic Measurement of sleep (oic.r.sleep).\nSleep shows the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep score indicating the quality of sleep.\n",
    "parameters": [
      "$ref": "/parameters/interface-baseline"
    ],
    "responses": {
      "200": {
        "description": "Retrieves the sleep monitor's information.",
        "x-example": {
          "rt": [
            "oic.r.sleepmonitor-am",
            "oic.wk.atomicmeasurement"
          ],
          "if": [
            "oic.if.b",
            "oic.if.ll",
            "oic.if.baseline"
          ],
          "rts-m": [
            "oic.r.sleep"
          ],
          "rts": [
            "oic.r.sleep",
            "oic.r.heartrate",
            "oic.r.time.stamp",
            "oic.r.userid"
          ],
          "links": [
            "$ref": "/mySleepMonitor",
            "rt": [
              "oic.r.sleep"
            ],
            "if": [
              "oic.if.s",
              "oic.if.baseline"
            ]
          ]
        }
      }
    }  
}


```json
{
  "href": "/myHeartRate",
  "rt": {
    "oic.r.heartrate"
  },
  "if": {
    "oic.if.s",
    "oic.if.baseline"
  }
},
{
  "href": "/myUserId",
  "rt": {
    "oic.r.userid"
  },
  "if": {
    "oic.if.r",
    "oic.if.baseline"
  }
},
{
  "href": "/myTimeStamp",
  "rt": {
    "oic.r.time.stamp"
  },
  "if": {
    "oic.if.r",
    "oic.if.baseline"
  }
}
```

"schema": {
  "$ref": "#/definitions/baseline"
}

"parameters": {
  "interface-ll": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.ll"
  ]
  },
  "interface-b": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.b"
  ]
  },
  "interface-baseline": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.baseline"
  ]
  },
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.b",
      "oic.if.ll"
  ]
}


"definitions": {
  "batch-retrieve": {
    "title": "Atomic Measurement Batch Retrieve Format",
    "minItems": 1,
    "uniqueItems": true,
    "readOnly": true,
    "items": {
      "properties": {
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
        },
        "rep": {
          "description": "The response payload from an Atomic Measurement (batch) resource",
          "type": "object",
          "items": {
            "anyOf": [
              {
                "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/Sleep.swagger.json#/definitions/Sleep"
              },
              {
                "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/HeartRate.swagger.json#/definitions/HeartRate"
              },
              {
                "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/UserID"
              },
              {
                "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/TimeStamp"
              }
            ]
          }
        }
      }
    },
    "required": [
      "href",
      "rep"
    ],
    "type": "object"
  },
  "links": {
    "type": "array",
    "items": {
      "$ref": "#/definitions/oic.oic-link"
    }
  }
},
  "baseline": {
    "properties": {
      "rt": {
        "type": "array",
        "readOnly": true,
        "uniqueItems": true,
        "minItems": 2,
        "items": {
          "type": "string",
          "enum": ["oic.r.sleepmonitor-am", "oic.wk.atomicmeasurement"
        }
      }
    }
  }
}
"rts": {  
  "description": "This contains all possible resource types for this atomic measurement.",  
  "type": "array",  
  "uniqueItems": true,  
  "minItems": 1,  
  "readOnly": true,  
  "items": {  
    "type": "string",  
    "enum": [  
      "oic.r.sleep",  
      "oic.r.heartrate",  
      "oic.r.userid",  
      "oic.r.time.stamp"  
    ]  
  }  
},  

"rts-m": {  
  "description": "This contains all mandatory resource types for this atomic measurement.",  
  "type": "array",  
  "uniqueItems": true,  
  "minItems": 1,  
  "maxItems": 1,  
  "readOnly": true,  
  "items": {  
    "type": "string",  
    "enum": [  
      "oic.r.sleep"  
    ]  
  }  
},  

"if": {  
  "description": "The interface set supported by this resource",  
  "type": "array",  
  "readOnly": true,  
  "uniqueItems": true,  
  "minItems": 3,  
  "items": {  
    "type": "string",  
    "enum": [  
      "oic.if.b",  
      "oic.if.ll",  
      "oic.if.baseline"  
    ]  
  }  
},  

"links": {  
  "$ref": "#/definitions/links"  
},  

"n": {  
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"  
},  

"oic.oic-link": {  
  "properties": {  
    "if": {  
      "type": "array",  
      "readOnly": true,  
      "uniqueItems": true,  
      "minItems": 1,  
      "items": {  
        "type": "string",  
      }  
    }  
  }  
}
"enum": [
  "oic.if.baseline",
  "oic.if.s",
  "oic.if.r"
]
"rt": {
  "type": "array",
  "readOnly": true,
  "uniqueItems": true,
  "minItems": 1,
  "items": {
    "type": "string",
    "enum": [
      "oic.r.sleep",
      "oic.r.heartbeat",
      "oic.r.userid",
      "oic.r.time.stamp"
    ]
  }},
"anchor": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/anchor"
},
"di": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/di"
},
"eps": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/eps"
},
"href": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
},
"ins": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/ins"
},
"p": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/p"
},
"rel": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/rel_array"
},
"title": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/title"
},
"type": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/type"
}
6.142.5 Property definition

Table 287 defines the Properties that are part of the "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement" Resource Type.

Table 287 – The Property definitions of the Resource with type "rt" = "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rep</td>
<td>object: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The response payload from an Atomic Measurement (batch) resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>This contains all possible resource types for this atomic measurement.</td>
</tr>
<tr>
<td>rts-m</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>This contains all mandatory resource types for this atomic measurement.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>links</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>anchor</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>di</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>eps</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>href</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>ins</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>title</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>type</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
6.142.6 CRUDN behaviour

Table 288 defines the CRUDN operations that are supported on the "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement" Resource Type.

Table 288 – The CRUDN operations of the Resource with type "rt" = "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.143 SpO2 for Pulse Oximeter

6.143.1 Introduction

This Resource describes the Properties associated with a person's blood oxygen saturation level. The spo2 and perfusion Properties are read-only value that is provided by the server. When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

6.143.2 Example URI

/Spo2ResURI

6.143.3 Resource type

The Resource Type is defined as: "oic.r.spo2".

6.143.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "SpO2 for Pulse Oximeter",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc3e8bd4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SpO2ResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's blood oxygen saturation level. The spo2 and perfusion Properties are read-only value that is provided by the server. When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT."
      }
    }
  },
  "parameters": ["$ref": "/parameters/interface"
    ]
}
```

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"spo2": 99.0,
"perfusion": 20.0,
"schema": {
"$ref": "#/definitions/SpO2"
}
}

"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": [
"oic.if.s",
"oic.if.baseline"
]
}

"definitions": {
"SpO2": {
"properties": {
"spo2": {
"description": "This Property describes the estimation of the oxygen saturation level in percentage.",
"type": "number",
"minimum": 0.0,
"maximum": 100.0,
"readOnly": true
},
"perfusion": {
"description": "This Property describes the ratio of AC over DC of PPG.",
"type": "number",
"minimum": 0.0,
"readOnly": true
},
"rt": {
"description": "The Resource Type.",
"items": {
"enum": [
"oic.r.spo2"
],
"type": "string"
}
},
"n": {
"$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"if": {
"description": "The OCF Interface set supported by this Resource.",
"items": {
"enum": [
"oic.if.s",
"oic.if.baseline"
],
"type": "string"
}
}
```
  "spo2_range": {  
    "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
  },
  "perfusion_range": {  
    "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
  },
  "spo2_step": {  
    "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
  },
  "perfusion_step": {  
    "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
  },
  "spo2_precision": {  
    "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
  },
  "perfusion_precision": {  
    "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/precision"
  }
},
  "type": "object",
  "required": [  
    "spo2"
  ]
}
```

### 6.143.5 Property definition

Table 289 defines the Properties that are part of the "oic.r.spo2" Resource Type.

Table 289 – The Property definitions of the Resource with type "rt" = "oic.r.spo2".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>spo2</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the estimation of the oxygen saturation level in percentage.</td>
</tr>
<tr>
<td>perfusion</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>This Property describes the ratio of AC over DC of PPG.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>spo2_range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>perfusion_range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>Property</td>
<td>Multiple Types: See Schema</td>
<td>Read/Write</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------</td>
<td>------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>spo2_step</td>
<td>No</td>
<td>Read Write</td>
<td></td>
<td></td>
</tr>
<tr>
<td>perfusion_step</td>
<td>No</td>
<td>Read Write</td>
<td></td>
<td></td>
</tr>
<tr>
<td>spo2_precision</td>
<td>No</td>
<td>Read Write</td>
<td></td>
<td></td>
</tr>
<tr>
<td>perfusion_precision</td>
<td>No</td>
<td>Read Write</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.143.6 CRUDN behaviour

Table 290 defines the CRUDN operations that are supported on the "oic.r.spo2" Resource Type.

Table 290 – The CRUDN operations of the Resource with type "rt" = "oic.r.spo2".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.144 Cadence

6.144.1 Introduction

This Resource describes the cadence, which is the number of revolutions of crank per minute when cyclists pedal the pedals.

The unit, which is the default unit, is rpm.

The cadence Property is a read-only value that is provided by the server.

When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

6.144.2 Example URI

/CadenceResURI

6.144.3 Resource type

The Resource Type is defined as: "oic.r.cadence".

6.144.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Cadence",
        "version": "2019-06-11",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e3666e4c0fbce8bdc4ba/LICENSE.md",
            "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/CadenceResURI": {
            "get": {
                "description": "This Resource describes the cadence, which is the number of revolutions of crank per minute when cyclists pedal the pedals.\nThe unit, which is the default unit, is rpm.\nThe cadence Property is a read-only value that is provided by the server.\nWhen range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT."
            }
        }
    }
}
```
"oic.r.baseresource\"} is omitted the default is 0 to +MAXFLOAT.\", 29847
"parameters": [ 29848
    { 29849
        "$ref": "#/parameters/interface" 29850
    } 29851
], 29852
"responses": { 29853
    "200": { 29854
        "description": "", 29855
        "x-example": { 29856
            "rt": [ 29857
                "oic.r.cadence" 29858
            ], 29859
            "cadence": 60 29860
        }, 29861
        "schema": { 29862
            "$ref": "#/definitions/Cadence" 29863
        } 29864
    } 29865
}, 29866
"parameters": { 29867
    "interface": { 29868
        "in": "query", 29869
        "name": "if", 29870
        "type": "string", 29871
        "enum": [ 29872
            "oic.if.s", 29873
            "oic.if.baseline" 29874
        ] 29875
    } 29876
}, 29877
"definitions": { 29878
    "Cadence": { 29879
        "properties": { 29880
            "cadence": { 29881
                "description": "This Property describes the rate at which a cyclist is pedalling/turning 29882
                the pedals.\", 29883
                "type": "integer", 29884
                "minimum": 0, 29885
                "readOnly": true 29886
            }, 29887
            "rt": { 29888
                "description": "The Resource Type.\", 29889
                "items": { 29890
                    "enum": [ 29891
                        "oic.r.cadence" 29892
                    ], 29893
                    "type": "string" 29894
                }, 29895
                "minItems": 1, 29896
                "uniqueItems": true, 29897
                "readOnly": true, 29898
                "type": "array" 29899
            }, 29900
            "n": { 29901
                "$ref": 29902
                "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core- 29903
                schema.json#/definitions/n" 29904
            }, 29905
            "if": { 29906
                "description": "The OCF Interface set supported by this Resource.\", 29907
                "items": { 29908
                    "enum": [ 29909
                        "oic.if.s", 29910
                        "oic.if.baseline" 29911
                    ], 29912
                    "type": "string" 29913
                }, 29914
                "minItems": 1,
Table 291 defines the Properties that are part of the "oic.r.cadence" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cadence</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the rate at which a cyclist is pedalling/turning the pedals.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.144.6 CRUDN behaviour

Table 292 defines the CRUDN operations that are supported on the "oic.r.cadence" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.145 Circuit Breaker (IEC 61850)

6.145.1 Introduction

This Resource describes functions for the control and monitoring of IEC 61850 based circuit breaker.

6.145.2 Example URI

/CircuitBreakerResURI
6.145.3 Resource type

The Resource Type is defined as: "oic.r.circuitbreaker".

6.145.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Circuit Breaker (IEC 61850)",
      "version": "20190613",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbcce8bdc4ba/LICENSE.md",
         "x-copyright": "copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
   },
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
      "/CircuitBreakerResURI" : {
         "get": {
            "description": "This Resource describes functions for the control and monitoring of IEC 61850 based circuit breaker."
         },
         "parameters": {
            "$ref": "#/parameters/interface"
         },
         "responses": {
            "200": {
               "description": "",
               "x-example": {
                  "rt": ["oic.r.circuitbreaker"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "status": "on",
                  "ratedcurrent": 10.0,
                  "ratedbreakingcurrent": 2500.0,
                  "ratedvoltage": 460.0,
                  "leakagecurrent": 0.5,
                  "insulationresistance": 0.3,
                  "timestamp": "2015-11-05T14:30:00.10Z"
               }
            }
         },
         "parameters": {
            "interface" : {
               "in": "query",
               "name": "if",
               "type": "string",
               "enum": ["oic.if.s", "oic.if.baseline"]
            }
         },
         "definitions": {
            "CircuitBreaker" : {
               "properties": {
                  "rt" : {
                     "description": "The Resource Type",
                     "items": {
                        "enum": ["oic.r.circuitbreaker"],
                        "maxLength": 64,
                        "type": "string"
                     },
                     "minItems": 1,
                     "uniqueItems": true,
```
"readOnly": true,
"type": "array",
"status" : {
  "description": "The circuit breaker status. The status can only be reset out of bounds.",
  "readOnly": true,
  "type": "string",
  "enum" : [ "on", "off", "trip"]
},
"ratedcurrent" : {
  "description": "The rated current in Ampere, defined at manufacturing time.",
  "readOnly": true,
  "type": "number"
},
"ratedbreakingcurrent" : {
  "description": "The rated breaking current in Ampere, defined at manufacturing time.",
  "readOnly": true,
  "type": "number"
},
"ratedvoltage" : {
  "description": "The rated voltage in Volts, defined at manufacturing time.",
  "readOnly": true,
  "type": "number"
},
"leakagecurrent" : {
  "description": "The leakage current in mA.",
  "readOnly": true,
  "type": "number"
},
"insulationresistance" : {
  "description": "Insulation resistance of circuit breaker (M Ohm).",
  "readOnly": true,
  "type": "number"
},
"timestamp": {
  "description": "An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Note that 1/100 time resolution should be used.",
  "format": "date-time",
  "readOnly": true,
  "type": "string"
},
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": {
    "enum": [ "oic.if.s", "oic.if.baseline" ],
    "type": "string"
  },
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
}
6.145.5 Property definition
Table 293 defines the Properties that are part of the "oic.r.circuitbreaker" Resource Type.

**Table 293 – The Property definitions of the Resource with type "rt" = "oic.r.circuitbreaker".**

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type</td>
</tr>
<tr>
<td>status</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>The circuit breaker status. The status can only be reset out of bounds.</td>
</tr>
<tr>
<td>ratedcurrent</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The rated current in Ampere, defined at manufacturing time.</td>
</tr>
<tr>
<td>ratedbreakingcurrent</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The rated breaking current in Ampere, defined at manufacturing time.</td>
</tr>
<tr>
<td>ratedvoltage</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The rated voltage in Volts, defined at manufacturing time.</td>
</tr>
<tr>
<td>leakagecurrent</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The leakage current in mA.</td>
</tr>
<tr>
<td>insulationresistance</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Insulation resistance of circuit breaker (M Ohm).</td>
</tr>
<tr>
<td>timestamp</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Note that 1/100 time resolution should be used.</td>
</tr>
</tbody>
</table>

n                                 multiple types: see schema | No        | Read Write                                                                 |
| id                              multiple types: see schema | No        | Read Write                                                                 |
| if array: see schema            No        | Read Only   | The OCF Interface set supported by this Resource.                          |

6.145.6 CRUDN behaviour
Table 294 defines the CRUDN operations that are supported on the "oic.r.circuitbreaker" Resource Type.

**Table 294 – The CRUDN operations of the Resource with type "rt" = "oic.r.circuitbreaker".**

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.146 Cycling Power
6.146.1 Introduction
This Resource describes the cycling power, which is the amount of energy transferred or converted per unit time.
The unit, which is the default SI unit, is W (which is equal to one joule per second).

The power Property is a read-only value that is provided by the server.

When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

### 6.146.2 Example URI

/CyclingPowerResURI

### 6.146.3 Resource type

The Resource Type is defined as: "oic.r.cyclingpower".

### 6.146.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Cycling Power",
    "version": "2019-06-11",
    "license": {
      "name": "OCF Data Model License",
      "url": 
        "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CyclingPowerResURI": {
      "get": {
        "description": "This Resource describes the cycling power, which is the amount of energy transferred or converted per unit time.\n        The unit, which is the default SI unit, is W (which is equal to one joule per second).\n        The power Property is a read-only value that is provided by the server.\n        When range (from \"oic.r.baseresource\") is omitted the default is 0 to +MAXFLOAT.\",
        "parameters": [
          {
            "$ref": "/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.cyclingpower"
              ],
              "power": 200.0,
              "power-left": 100.0,
              "power-right": 100.0
            },
            "schema": {
              "$ref": "/definitions/CyclingPower"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "description": "",
      "x-example": {
        "rt": ["oic.r.cyclingpower"
        ],
        "power": 200.0,
        "power-left": 100.0,
        "power-right": 100.0
      },
      "schema": {
        "$ref": "/definitions/CyclingPower"
      }
    }
  }
}
```
"name": "if",
"type": "string",
"enum": [
  "oic.if.s",
  "oic.if.baseline"
]
},
"definitions": {
  "CyclingPower": {
    "properties": {
      "power": {
        "description": "The current overall power output in watts.",
        "$ref": "#/definitions/power"
      },
      "power-left": {
        "description": "The current power output in watts from the left pedal.",
        "$ref": "#/definitions/power"
      },
      "power-right": {
        "description": "The current power output in watts from the right pedal.",
        "$ref": "#/definitions/power"
      },
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": [
            "oic.r.cyclingpower"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": [
            "oic.if.s",
            "oic.if.baseline"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
      },
      "step": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
      },
      "type": "object",
      "required": ["power"]
    }
  }
}
"description": "This Resource describes the power, which is the amount of energy transferred
or converted per unit time, in W (which is equal to one joule per second).",
"type": "number",
"minimum": 0.0,
"readOnly": true
}

6.146.5 Property definition

Table 295 defines the Properties that are part of the "oic.r.cyclingpower" Resource Type.

Table 295 – The Property definitions of the Resource with type "rt" = "oic.r.cyclingpower".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>power</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The current overall power output in watts.</td>
</tr>
<tr>
<td>power-left</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The current power output in watts from the left pedal.</td>
</tr>
<tr>
<td>power-right</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The current power output in watts from the right pedal.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.146.6 CRUDN behaviour

Table 296 defines the CRUDN operations that are supported on the "oic.r.cyclingpower" Resource Type.

Table 296 – The CRUDN operations of the Resource with type "rt" = "oic.r.cyclingpower".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.147 Inverter (IEC 61850)

6.147.1 Introduction

This Resource describes functions for the control and monitoring of IEC 61850 based circuit breaker.

6.147.2 Example URI

/InverterResURI

6.147.3 Resource type

The Resource Type is defined as: "oic.r.inverter".

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6.147.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Inverter (IEC 61850)",
        "version": "20190613",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
            "x-copyright": "copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/InverterResURI": {
            "get": {
                "description": "This Resource describes functions for the control and monitoring of IEC 61850 based circuit breaker.",
                "parameters": [
                    {"$ref": "#/parameters/interface"}
                ],
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": {
                            "rt": ["oic.r.inverter"],
                            "if": ["oic.if.s", "oic.if.baseline"],
                            "status": "on",
                            "ratedpower": 36.0,
                            "minvoltmpt": 200.0,
                            "maxvoltmpt": 1000.0,
                            "inputvoltage": 980.0,
                            "inputcurrent": 22.0,
                            "outputpower": 61.0,
                            "timestamp": "2015-11-05T14:30:00.13Z"
                        }
                    }
                }
            }
        },
        "parameters": {
            "interface": {
                "in": "query",
                "name": "if",
                "type": "string",
                "enum": ["oic.if.s", "oic.if.baseline"]
            }
        },
        "definitions": {
            "Inverter": {
                "properties": {
                    "rt": {
                        "description": "The Resource Type",
                        "items": {
                            "enum": ["oic.r.inverter"],
                            "maxLength": 64,
                            "type": "string"
                        },
                        "minItems": 1,
                        "uniqueItems": true,
                        "readOnly": true,
                        "type": "array"
                    }
                }
            }
        }
    }
}
```
"status": {
  "description": "The inverter status. The status can only be reset out of bounds. ",
  "readOnly": true,
  "type": "string",
  "enum": [ "on", "off", "trip" ]
},
"ratedpower": {
  "description": "The rated power in kW, defined at manufacturing time. ",
  "readOnly": true,
  "type": "number"
},
"minvoltmppt": {
  "description": "Minimum voltage for MPPT (Maximum power point tracking) control method (V), defined at manufacturing time. ",
  "readOnly": true,
  "type": "number"
},
"maxvoltmppt": {
  "description": "Maximum voltage for MPPT (Maximum power point tracking) control method (V), defined at manufacturing time. ",
  "readOnly": true,
  "type": "number"
},
"inputvoltage": {
  "description": "input voltage in Volts. ",
  "readOnly": true,
  "type": "number"
},
"inputcurrent": {
  "description": "input current in Amperes. ",
  "readOnly": true,
  "type": "number"
},
"outputpower": {
  "description": "output power in kW. ",
  "readOnly": true,
  "type": "number"
},
"timestamp": {
  "description": "An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Resolution in 1/100 second. ",
  "format": "date-time",
  "readOnly": true,
  "type": "string"
},
"n": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
},
"id": {
  "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
},
"if": {
  "description": "The OCF Interface set supported by this Resource. ",
  "items": {
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ],
    "type": "string"
  },
  "minItems": 2,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
  },
  "type": "object",
  "required": [ "status", "ratedpower", "minvoltmppt", "maxvoltmppt" ]
6.147.5 Property definition

Table 297 defines the Properties that are part of the "oic.r.inverter" Resource Type.

Table 297 – The Property definitions of the Resource with type "rt" = "oic.r.inverter".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type</td>
</tr>
<tr>
<td>status</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>The inverter status. The status can only be reset out of bounds.</td>
</tr>
<tr>
<td>ratedpower</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The rated power in kW, defined at manufacturing time.</td>
</tr>
<tr>
<td>minvoltmppt</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Minimum voltage for MPPT (Maximum power point tracking) control method (V),</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>defined at manufacturing time.</td>
</tr>
<tr>
<td>maxvoltmppt</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Maximum voltage for MPPT (Maximum power point tracking) control method (V),</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>defined at manufacturing time.</td>
</tr>
<tr>
<td>inputvoltage</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>input voltage in Volts.</td>
</tr>
<tr>
<td>inputcurrent</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>input current in Amperes.</td>
</tr>
<tr>
<td>outputpower</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>output power in kW.</td>
</tr>
<tr>
<td>timestamp</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Resolution in 1/100 second.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

6.147.6 CRUDN behaviour

Table 298 defines the CRUDN operations that are supported on the "oic.r.inverter" Resource Type.
### Table 298 – The CRUDN operations of the Resource with type "rt" = "oic.r.inverter".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>observe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 6.148 PV array system connection terminal (IEC 61850)

##### 6.148.1 Introduction

This Resource describes functions for the control and monitoring of IEC 61850 based PV Array system connection terminal.

##### 6.148.2 Example URI

/PVConnectionTerminalResURI

##### 6.148.3 Resource type

The Resource Type is defined as: "oic.r.pvconnectionterminal".

##### 6.148.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "PV array system connection terminal (IEC 61850)",
    "version": "20190613",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PVConnectionTerminalResURI": {
      "get": {
        "description": "This Resource describes functions for the control and monitoring of IEC 61850 based PV Array system connection terminal.",
        "parameters": [{"$ref": "/#/parameters/interface"}],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.pvconnectionterminal"],
              "if": ["oic.if.s", "oic.if.baseline"],
              "ratedarrayvoltage": 46.6,
              "ratedarraycurrent": 10.2,
              "arrayvoltage": 37.0,
              "arraycurrent": 9.1,
              "leakagecurrent": 0.5,
              "insulationresistance": 0.3,
              "timestamp": "2015-11-05T14:30:00.15Z"
            }
          }
        }
      }
    }
  }
}``
```
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "PVArrayConnectionTerminal": {
    "properties": {
      "rt": {
        "description": "The Resource Type",
        "items": {
          "enum": ["oic.r.pvconnectionterminal"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "ratedarrayvoltage": {
        "description": "Rated voltage of array (Nominal values of maximum power voltage * number of modules) (V)",
        "readOnly": true,
        "type": "number"
      },
      "ratedarraycurrent": {
        "description": "Rated current of array (Nominal values of maximum power current * number of modules) (A), defined at manufacturing time.",
        "readOnly": true,
        "type": "number"
      },
      "arrayvoltage": {
        "description": "Output voltage of array in volts (V)",
        "readOnly": true,
        "type": "number"
      },
      "arraycurrent": {
        "description": "Output current of array in Ampere (A)",
        "readOnly": true,
        "type": "number"
      },
      "leakagecurrent": {
        "description": "The leakage current in mA.",
        "readOnly": true,
        "type": "number"
      },
      "insulationresistance": {
        "description": "Insulation resistance of circuit breaker (M Ohm)",
        "readOnly": true,
        "type": "number"
      },
      "timestamp": {
        "description": "An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Note that 1/100 time resolution should be used.",
        "format": "date-time",
        "readOnly": true,
        "type": "string"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "id": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id"
      }
    }
  }
}
Table 299 – The Property definitions of the Resource with type "rt" = "oic.r.pvconnectionterminal".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type</td>
</tr>
<tr>
<td>ratedarrayvoltage</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Rated voltage of array (Nominal values of maximum power voltage * number of modules) (V)</td>
</tr>
<tr>
<td>ratedarraycurrent</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Rated current of array (Nominal values of maximum power current * number of modules) (A), defined at manufacturing time.</td>
</tr>
<tr>
<td>arrayvoltage</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Output voltage of array in volts (V).</td>
</tr>
<tr>
<td>arraycurrent</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Output current of array in Ampere (A).</td>
</tr>
<tr>
<td>leakagecurrent</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The leakage current in mA.</td>
</tr>
<tr>
<td>insulationresistance</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Insulation resistance of circuit breaker (M Ohm).</td>
</tr>
<tr>
<td>timestamp</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Note that 1/100 time resolution should be used.</td>
</tr>
</tbody>
</table>
Table 300 defines the CRUDN operations that are supported on the "oic.r.pvconnectionterminal" Resource Type.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>get</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.149 Speed

6.149.1 Introduction

This Resource describes the speed of an object, which is the magnitude of its velocity. The unit, which is the default SI unit, is metre per second. The speed Property is a read-only value that is provided by the server. When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

6.149.2 Example URI

/SpeedResURI

6.149.3 Resource type

The Resource Type is defined as: "oic.r.speed".

6.149.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Speed",
        "version": "2019-05-13",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/LICENSE.md",
            "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
        }
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
}
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"parameters": [
  {
    "$ref": "#/parameters/interface"
  }
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": [
        "oic.r.speed"
      ],
      "speed": 10.0
    },
    "schema": {
      "$ref": "#/definitions/Speed"
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "Speed": {
    "properties": {
      "speed": {
        "description": "This Property describes the speed of an object in metre per second (SI Unit). It should be noted, however, that the most common unit of speed everyday usage is the kilometre per hour or, in the US and the UK, miles per hour.",
        "type": "number",
        "minimum": 0.0,
        "readOnly": true
      },
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": [
            "oic.r.speed"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": [
            "oic.if.s",
            "oic.if.baseline"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      }
    }
  }
}
"uniqueItems": true,
"readOnly": true,
"type": "array",

"range": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
},

"step": {
"$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
}

---

### 6.149.5 Property definition

Table 301 defines the Properties that are part of the "oic.r.speed" Resource Type.

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>speed</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the speed of an object in metre per second (SI Unit). It should be noted, however, that the most common unit of speed everyday usage is the kilometre per hour or, in the US and the UK, miles per hour.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

### 6.149.6 CRUDN behaviour

Table 302 defines the CRUDN operations that are supported on the "oic.r.speed" Resource Type.

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>
6.150 Torque

6.150.1 Introduction
This Resource describes the torque, which is the rotational equivalent of linear force.
The unit, which is the default SI unit, is N\(\cdot\)m (Newton metre).
The torque Property is a read-only value that is provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

6.150.2 Example URI
/TorqueResURI

6.150.3 Resource type
The Resource Type is defined as: "oic.r.torque".

6.150.4 OpenAPI 2.0 definition
```json
{
   "swagger": "2.0",
   "info": {
      "title": "Torque",
      "version": "2019-09-25",
      "license": {
         "name": "OCF Data Model License",
         "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
         "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      }
   },
   "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
      "/TorqueResURI": {
         "get": {
            "description": "This Resource describes the torque, which is the rotational equivalent of linear force. The unit, which is the default SI unit, is N\(\cdot\)m (Newton metre). The torque Property is a read-only value that is provided by the server. When range (from \"oic.r.baseresource\") is omitted the default is 0 to +MAXFLOAT."
         },
      },
      "$ref": "/#parameters/interface",
   },
   "responses": {
      "200": {
         "description": "",
         "x-example": {
            "rt": ["oic.r.torque"],
            "torque": 10.0
         },
         "schema": {
            "$ref": "/#definitions/Torque"
         }
      }
   }
}
```
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
}
"definitions": {
  "Torque": {
    "properties": {
      "torque": {
        "description": "This Resource describes the torque, which is the rotational equivalent of linear force, in N*m (Newton metre)",
        "type": "number",
        "minimum": 0.0,
        "readOnly": true
      },
      "rt": {
        "description": "The Resource Type",
        "items": {
          "enum": [
            "oic.r.torque"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource",
        "items": {
          "enum": [
            "oic.if.s",
            "oic.if.baseline"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "range": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/range_number"
      },
      "step": {
        "$ref": "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-schema.json#/definitions/step_number"
      },
      "required": ["torque"]
    }
  }
}
6.150.5 Property definition

Table 303 defines the Properties that are part of the "oic.r.torque" Resource Type.

Table 303 – The Property definitions of the Resource with type "rt" = "oic.r.torque".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>torque</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Resource describes the torque, which is the rotational equivalent of linear force, in N*m (Newton metre).</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.150.6 CRUDN behaviour

Table 304 defines the CRUDN operations that are supported on the "oic.r.torque" Resource Type.

Table 304 – The CRUDN operations of the Resource with type "rt" = "oic.r.torque".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.151 Water Info

6.151.1 Introduction

This Resource describes the water information to indicate type of water currently provided by the device. The water type can be read or set.

The Property "supportedwatertypes" is an array of the possible water types are defined by the enumeration ["cold", "hot", "ambient", "ice"].

The Property "supportedadditivetypes" is an array of the possible additive types for water. The additive types mean optional types that can be added to the specific water type according to Client's preference and are defined by the enumeration ["none", "soda", "mineral"]. If absent, the default value is "none".

The Property "currentwatertype" is the currently desired water type.
The Property "currentadditivetypes" is the currently desired additive type(s).

For example, if "cold" is selected with the "currentwatertype", "soda" and "mineral" or both can be selected as "currentadditivetypes". Note that if "hot" is selected with the "currentwatertype", "soda" and "mineral" may be restricted for the "currentadditivetypes".

6.151.2 Example URI

/WaterInfoResURI

6.151.3 Resource type

The Resource Type is defined as: "oic.r.waterinfo".
6.151.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Water Info",
    "version": "2019-06-13",
    "license": {
      "name": "OCF Date Model License",
      "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e8365e4c0fbc8be8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/WaterInfoResURI": {
      "get": {
        "description": "This Resource describes the water information to indicate type of water currently provided by the device. The water type can be read or set. The Property "supportedwatertypes" is an array of the possible water types are defined by the enumeration ["cold", "hot", "ambient", "ice"]. The Property "supportedadditivetypes" is an array of the possible additive types for water. The additive types mean optional types that can be added to the specific water type according to Client’s preference and are defined by the enumeration ["none", "soda", "mineral"]. If absent, the default value is "none". The Property "currentwatertype" is the currently desired water type. The Property "currentadditivetypes" is the currently desired additive type(s). For example, if "cold" is selected with the "currentwatertype", "soda" and "mineral" or both can be selected as "currentadditivetypes". Note that if "hot" is selected with the "currentwatertype", "soda" and "mineral" may be restricted for the "currentadditivetypes".",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "RETRIEVES the set of supported water type information and current desired water type information.",
            "x-example": {
              "rt": ["oic.r.waterinfo"],
              "if": ["oic.if.rw", "oic.if.baseline"],
              "supportedwatertypes": ["cold", "hot", "ambient", "ice"],
              "supportedadditivetypes": ["none", "soda", "mineral"],
              "currentwatertype": "cold",
              "currentadditivetypes": ["soda", "mineral"]
            }
          }
        }
      },
      "schema": {"$ref": "#/definitions/WaterInfo" }
    }
  }
}
```

"200": {
  "description": "Indicates that the current desired water type and additive type(s) were changed. The new desired water type info is provided in the response."
},
  "x-example": {
    "currentwatertype": "hot",
    "currentadditivetypes": ["none"]
  },
  "schema": { "$ref": "#/definitions/WaterInfoUpdate" }
},
"403": {
  "description": "This response is generated by the OCF Server when the client sends an UPDATE with an invalid property value for "currentwatertype".
The OCF Server responds with the current resource representation."
},
  "x-example": {
    "supportedwatertypes": ["cold", "hot", "ambient", "ice"],
    "supportedadditivetypes": ["none", "soda", "mineral"],
    "currentwatertype": "cold",
    "currentadditivetypes": ["soda", "mineral"]
  },
  "schema": { "$ref": "#/definitions/WaterInfo" }
}
}
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"]
  }
},
"definitions": {
  "WaterInfo": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.waterinfo"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "supportedwatertypes": {
        "description": "The array of the possible water types.",
        "items": {
          "type": "string"
        },
        "readOnly": true,
        "type": "array"
      },
      "supportedadditivetypes": {
        "description": "The array of the possible additive types.",
        "items": {
          "type": "string"
        },
        "readOnly": true,
        "type": "array"
      },
      "currentwatertype": {
        "description": "The currently desired water type.",
        "type": "string"
      },
      "currentadditivetypes": {
        "description": "The currently desired additive type(s) according to Client's preference.",
        "items": {
          "type": "string"
        }
      }
    }
  }
}
### Property definition

Table 305 defines the Properties that are part of the "oic.r.waterinfo" Resource Type.

**Table 305 – The Property definitions of the Resource with type "rt" = "oic.r.waterinfo".**

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>supportedwatertypes</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>The array of the possible water types.</td>
</tr>
</tbody>
</table>
Table 306 – The CRUDN operations of the Resource with type "rt" = "oic.r.waterinfo".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.152 Deodorization

6.152.1 Introduction

This Resource describes a deodorization function, which can be supported by controlling on air filter.

The Property "mode" is a mode of the deodorization function. The supported modes are defined by the enumeration ["off", "on", "auto"].

"off" means that the deodorization function is not enabled.

"on" means that the deodorization function is active.

"auto" means that the deodorization function is automatically controlled depending on sensed air condition in the device inside.

The Property "currentstate" is the current state of the deodorization function. In the case of "auto" mode, if the sensed air condition is determined to be bad, the function will be "on". Then, "mode" value is "auto" and "currentstate" value is "on". If not, the function is remaining "off" state. Then, "currentstate" value is "off".

6.152.2 Example URI

/DeodorizationResURI

6.152.3 Resource type

The Resource Type is defined as: "oic.r.deodorization".

6.152.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Deodorization",
```
"version": "20190820",
"license": {
  "name": "OCF Data Model License",
  "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bd64ba/LICENSE.md",
  "x-copyright": "copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
},
"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md",
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/DeodorizationResURI": {
  "get": {
  "description": "This Resource describes a deodorization function, which can be supported by controlling on air filter. The Property \"mode\" is a mode of the deodorization function. The supported modes are defined by the enumeration \[\"off\", \"on\", \"auto\\]. \n\"off\" means that the deodorization function is not enabled. \n\"on\" means that the deodorization function is active. \n\"auto\" means that the deodorization function is automatically controlled depending on sensed air condition in the device inside. \nThe Property \"currentstate\" is the current state of the deodorization function. In the case of \"auto\" mode, if the sensed air condition is determined to be bad, the function will be \"on\". Then, \"mode\" value is \"auto\" and \"currentstate\" value is \"on\". If not, the function is remaining \"off\" state. Then, \"currentstate\" value is \"off\".",
  "parameters": [
    {"$ref": "/parameters/interface"}
  ],
  "responses": {
    "200": {
      "description": "RETRIEVES the current deodorization function state.",
      "x-example": {
        "rt": ["oic.r.deodorization"],
        "if": ["oic.if.a", "oic.if.baseline"],
        "mode": "auto",
        "currentstate": "off"
      },
      "schema": { "$ref": "/definitions/Deodorization" }
    }
  }
},
"post": {
  "description": "Sets the desired deodorization function state.",
  "parameters": [
    {"$ref": "/parameters/interface"},
    {"name": "body",
     "in": "body",
     "required": true,
     "schema": { "$ref": "/definitions/DeodorizationUpdate" },
    "x-example": {
      "mode": "on"
    }
  ],
  "responses": {
    "200": {
      "description": "Indicates that the Deodorization function state was changed. The new state is provided in the response. \n",
      "url": "/DeodorizationResURI",
      "x-example": {
        "mode": "on",
        "currentstate": "on"
      },
      "schema": { "$ref": "/definitions/Deodorization" }
    }
  }
}
"parameters": { "interface": { "in": "query", "name": "if", "type": "string", "enum": ["oic.if.a", "oic.if.baseline"] } },

"definitions": { "Deodorization": { "properties": { "rt": { "description": "The Resource Type.", "items": { "enum": ["oic.r.deodorization"], "maxLength": 64, "type": "string" }, "minItems": 1, "uniqueItems": true, "readOnly": true, "type": "array" }, "mode": { "description": "The modes of the Deodorization function.", "enum": [ "off", "on", "auto" ], "type": "string" }, "currentState": { "description": "The current state of the Deodorization function.", "enum": [ "off", "on" ], "readOnly": true, "type": "string" }, "n": { "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n" }, "id": { "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/id" }, "if": { "description": "The OCF Interface set supported by this Resource.", "items": { "enum": [ "oic.if.a", "oic.if.baseline" ], "type": "string" }, "minItems": 2, "uniqueItems": true, "readOnly": true, "type": "array" }, "type": "object", "required": ["mode", "currentState"] }, "DeodorizationUpdate": { "properties": { } } },
6.152.5 Property definition

Table 307 defines the Properties that are part of the "oic.r.deodorization" Resource Type.

Table 307 – The Property definitions of the Resource with type "rt" = "oic.r.deodorization".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>Mode</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>The modes of the Deodorization function.</td>
</tr>
<tr>
<td>currentstate</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>The current state of the Deodorization function.</td>
</tr>
<tr>
<td>N</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>Id</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>If</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
<tr>
<td>Mode</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>The modes of the Deodorization function.</td>
</tr>
</tbody>
</table>

6.152.6 CRUDN behaviour

Table 308 defines the CRUDN operations that are supported on the "oic.r.deodorization" Resource Type.

Table 308 – The CRUDN operations of the Resource with type "rt" = "oic.r.deodorization".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td>post</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.153 KeyCard Switch

6.153.1 Introduction

This Resource describes the operation of a KeyCard style switch. It has one mandatory Property,"stateofcard", which is a string enum type. It has two enum values: "validCardInserted", "validCardNotInserted". "validCardInserted" means that a keycard was inserted and passed validation check. "validCardNotInserted" means that a keycard is not inserted or it was inserted but failed to pass validation check.
6.153.2 Example URI

/KeyCardSwitchResURI

6.153.3 Resource type

The Resource Type is defined as: "oic.r.keycardswitch".

6.153.4 OpenAPI 2.0 definition

{
    "swagger": "2.0",
    "info": {
        "title": "KeyCard Switch",
        "version": "20190807",
        "license": {
            "name": "OCF Data Model License",
            "url": "https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
            "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/KeyCardSwitchResURI": {
            "get": {
                "description": "This Resource describes the operation of a KeyCard style switch. It has one mandatory Property, \\
"stateofcard", which is a string enum type. It has two
            enum values: \\
"validCardInserted", \\
"validCardNotInserted". \\
"validCardInserted" means that a
            keycard was inserted and passed validation check. \\
"validCardNotInserted" means that a keycard is
            not inserted or it was inserted but failed to pass validation check.",
                "parameters": [
                    {"$ref": "/#/parameters/interface"}
                ],
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": {
                            "rt": ["oic.r.keycardswitch"],
                            "if": ["oic.if.s", "oic.if.baseline"],
                            "stateofcard": "validCardInserted"
                        }
                    }
                },
                "schema": { "$ref": "/#/definitions/KeyCardSwitch" }
            }
        }
    },
    "parameters": {
        "interface": {
            "in": "query",
            "name": "if",
            "type": "string",
            "enum": ["oic.if.s", "oic.if.baseline"]
        }
    },
    "definitions": {
        "KeyCardSwitch": {
            "properties": {
                "rt": {
                    "description": "The Resource Type of KeyCardSwitch",
                    "items": {
                        "enum": ["oic.r.keycardswitch"],
                        "maxLength": 64,
                        "type": "string"
                    }
                }
            }
        }
    }
}
Property name | Value type         | Mandatory | Access mode   | Description                                                                                                                                                                                                 |
---------------|--------------------|-----------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
rt             | array: see schema  | No        | Read Only     | The Resource Type of KeyCardSwitch                                                                                                                                                                           |
stateofcard    | string             | Yes       | Read Only     | The status of the keycardswitch. "validCardInserted" means that a keycard was inserted and passed validation check. "validCardNotInserted" means that a keycard is not inserted or it was inserted but failed to pass validation check. |

6.153.5 Property definition

Table 309 defines the Properties that are part of the "oic.r.keycardswitch" Resource Type.
was inserted but failed to pass validation check.

<table>
<thead>
<tr>
<th></th>
<th>multiple types: see schema</th>
<th>No</th>
<th>Read Write</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>id</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

### 6.153.6 CRUDN behaviour

Table 310 defines the CRUDN operations that are supported on the "oic.r.keycardswitch" Resource Type.

**Table 310 – The CRUDN operations of the Resource with type "rt" = "oic.r.keycardswitch".**

### 6.154 Muscle Oxygen Saturation

#### 6.154.1 Introduction

This Resource describes the muscle oxygen saturation (SmO2), which is the percentage of hemoglobin that is saturated with oxygen in the capillaries of a muscle.

The unit is percentage.

The smo2 Property is a read-only value that is provided by the server.

#### 6.154.2 Example URI

/MuscleOxygenSaturationResURI

#### 6.154.3 Resource type

The Resource Type is defined as: "oic.r.muscleoxygensaturation".

#### 6.154.4 OpenAPI 2.0 definition

```json
documentation
```
percentage of hemoglobin that is saturated with oxygen in the capillaries of a muscle. The unit is percentage. The smo2 Property is a read-only value that is provided by the server.

```json
"parameters": [
  "$ref": "#/parameters/interface"
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": [
        "oic.r.muscleoxygensaturation"
      ],
      "muscleoxygensaturation": 80.0
    },
    "schema": {
      "$ref": "#/definitions/MuscleOxygenSaturation"
    }
  }
}

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
}

"definitions": {
  "MuscleOxygenSaturation": {
    "properties": {
      "muscleoxygensaturation": {
        "description": "This Property describes the muscle oxygen saturation (SmO2), which is the percentage of hemoglobin that is saturated with oxygen in the capillaries of a muscle. The unit is percentage."
      },
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": [
            "oic.r.muscleoxygensaturation"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-schema.json#/definitions/n"
      }
    },
    "if": {
      "description": "The OCF Interface set supported by this Resource."
    }
  }
}
Table 311 – The Property definitions of the Resource with type "rt" = "oic.r.muscleoxygensaturation".

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>muscleoxygensaturation</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>This Property describes the muscle oxygen saturation (SmO2), which is the percentage of hemoglobin that is saturated with oxygen in the capillaries of a muscle. The unit is percentage.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The Resource Type.</td>
</tr>
<tr>
<td>n</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The OCF Interface set supported by this Resource.</td>
</tr>
</tbody>
</table>

Table 312 – The CRUDN operations of the Resource with type "rt" = "oic.r.muscleoxygensaturation".

<table>
<thead>
<tr>
<th>Create</th>
<th>Read</th>
<th>Update</th>
<th>Delete</th>
<th>Notify</th>
</tr>
</thead>
<tbody>
<tr>
<td>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>