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

This 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.
4.3 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.

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 Default Interface associated with all Resource Types defined in this document shall be the supported interface listed first within the applicable enumeration in the definition of the Resource Type (see Clause 6 Resource Type definitions); with an exception being when a Resource Type definition has either Sensor or Actuator interfaces as the Default Interface, in this instance an implementation shall select one of them as the default. Thus a Server hosting such a Resource Type shall enable either oic.if.s (if a Sensor) or oic.if.a (if an Actuator) as the Interface that is exposed via “/oic/res” in addition to the mandated baseline interface (“oic.if.baseline”). A Server may also support other Interfaces in addition to the one specified as the default.

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)</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.
### Resource Properties

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>&lt;value&gt;, name may change dependent on the Resource</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</td>
<td>Linear range</td>
<td>Read-only</td>
<td>no</td>
<td>Range of input values, specified as a two element array.</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</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</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. 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.

5.4.3 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.

If minnotifyperiod expired:
  If observed value changed:
    If change amount >= threshold:
      Send notification with current value
      Reset minnotifyperiod, maxnotifyperiod

If maxnotifyperiod expired:
  Get current value
  Send notification with current value
  Reset minnotifyperiod, maxnotifyperiod

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": {
          "$ref": "#/parameters/interface-baseline"
        },
        "responses": {
          "200": {
            "description": "Success path response for the Resource",
            "x-example": {
              "rt": ["oic.r.example"],
              "if": ["oic.if.l1","oic.if.b","oic.if.baseline"],
              "id": "unique_example_id",
              "resources": [ {
                "href": "/TimeIntervalResURI",
                "rt": ["oic.r.time.period"],
                "if": ["oic.if.a","oic.if.baseline"],
                "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
              }, {
                "href": "/GasConsumptionResURI",
                "rt": ["oic.r.gas.consumption"],
                "if": ["oic.if.s","oic.if.baseline"],
                "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
              }]
            },
            "schema": { "$ref": "#/definitions/composite" }
          }
        }
      }
    }
  }
}
```

Figure 3 – Composite Resource Example

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.

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>
<td>6.88</td>
</tr>
<tr>
<td>Acceleration Sensor</td>
<td>oic.r.sensor.acceleration</td>
<td>6.56</td>
</tr>
<tr>
<td>Activity Count</td>
<td>oic.r.sensor.activity.count</td>
<td>6.24</td>
</tr>
<tr>
<td>Air Flow</td>
<td>oic.r.airflow</td>
<td>6.2</td>
</tr>
<tr>
<td>Air Flow Control</td>
<td>oic.r.airflowcontrol</td>
<td>6.3</td>
</tr>
<tr>
<td>Air Quality</td>
<td>oic.r.airquality</td>
<td>6.66</td>
</tr>
<tr>
<td>Air Quality Collection</td>
<td>oic.r.airqualitycollection</td>
<td>6.67</td>
</tr>
<tr>
<td>Altimeter</td>
<td>oic.r.altimeter</td>
<td>6.61</td>
</tr>
<tr>
<td>Atmospheric Pressure</td>
<td>oic.r.sensor.atmosphericpressure</td>
<td>6.25</td>
</tr>
<tr>
<td>Audio Controls</td>
<td>oic.r.audio</td>
<td>6.26</td>
</tr>
<tr>
<td>Auto Focus</td>
<td>oic.r.autofocus</td>
<td>6.27</td>
</tr>
<tr>
<td>Automatic Document Feeder</td>
<td>oic.r.automaticdocumentfeeder</td>
<td>6.28</td>
</tr>
<tr>
<td>Auto White Balance</td>
<td>oic.r.colour.autowhitebalance</td>
<td>6.32</td>
</tr>
<tr>
<td>Basic Resource Schema</td>
<td>Not Applicable</td>
<td>6.117</td>
</tr>
<tr>
<td>Battery</td>
<td>oic.r.energy.battery</td>
<td>6.4</td>
</tr>
<tr>
<td>Battery Material</td>
<td>oic.r.batterymaterial</td>
<td>6.79</td>
</tr>
<tr>
<td>Binary switch</td>
<td>oic.r.switch.binary</td>
<td>6.5</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>oic.r.blood.pressure</td>
<td>6.89</td>
</tr>
<tr>
<td>Blood Pressure Monitor Atomic Measurement</td>
<td>oic.r.bloodpressuremonitor-am</td>
<td>6.90</td>
</tr>
<tr>
<td>BMI</td>
<td>oic.r.bmi</td>
<td>6.91</td>
</tr>
<tr>
<td>Body Fat</td>
<td>oic.r.body.fat</td>
<td>6.92</td>
</tr>
<tr>
<td>Body Fat Free Mass</td>
<td>oic.r.body.ffm</td>
<td>6.93</td>
</tr>
<tr>
<td>Body Location</td>
<td>oic.r.body.location</td>
<td>6.94</td>
</tr>
<tr>
<td>Body Location Temperature</td>
<td>oic.r.body.location.temperature</td>
<td>6.95</td>
</tr>
<tr>
<td>Body Scale Atomic Measurement</td>
<td>oic.r.body.scale-am</td>
<td>6.96</td>
</tr>
<tr>
<td>Body Soft Lean Mass</td>
<td>oic.r.body.slim</td>
<td>6.97</td>
</tr>
<tr>
<td>Body Thermometer Atomic Measurement</td>
<td>oic.r.bodythermometer-am</td>
<td>6.98</td>
</tr>
<tr>
<td>Body Water</td>
<td>oic.r.body.water</td>
<td>6.99</td>
</tr>
<tr>
<td>Brewing</td>
<td>oic.r.brewing</td>
<td>6.80</td>
</tr>
<tr>
<td>Brightness</td>
<td>oic.r.light.brightness</td>
<td>6.6</td>
</tr>
<tr>
<td>Button Switch</td>
<td>oic.r.button</td>
<td>6.29</td>
</tr>
<tr>
<td>Carbon Dioxide Sensor</td>
<td>oic.r.sensor.carbondioxide</td>
<td>6.30</td>
</tr>
<tr>
<td>Carbon Monoxide Sensor</td>
<td>oic.r.sensor.carbonmonoxide</td>
<td>6.31</td>
</tr>
<tr>
<td>Clock</td>
<td>oic.r.clock</td>
<td>6.62</td>
</tr>
<tr>
<td>Term</td>
<td>Tag</td>
<td>Version</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Colour Chroma</td>
<td>oic.r.colour.chroma</td>
<td>6.7</td>
</tr>
<tr>
<td>Colour Hue Saturation</td>
<td>oic.r.colour.hs</td>
<td>6.78</td>
</tr>
<tr>
<td>Colour RGB</td>
<td>oic.r.colour.rgb</td>
<td>6.8</td>
</tr>
<tr>
<td>Colour Saturation</td>
<td>oic.r.colour.saturation</td>
<td>6.33</td>
</tr>
<tr>
<td>Colour Space Coordinates</td>
<td>oic.r.colour.csc</td>
<td>6.76</td>
</tr>
<tr>
<td>Colour Temperature</td>
<td>oic.r.colour.colourtemperature</td>
<td>6.77</td>
</tr>
<tr>
<td>Consumable</td>
<td>oic.r.consumable</td>
<td>6.68</td>
</tr>
<tr>
<td>Consumable Collection</td>
<td>oic.r.consumablecollection</td>
<td>6.69</td>
</tr>
<tr>
<td>Contact Sensor</td>
<td>oic.r.sensor.contact</td>
<td>6.34</td>
</tr>
<tr>
<td>Delay Defrost</td>
<td>oic.r.delaydefrost</td>
<td>6.70</td>
</tr>
<tr>
<td>Demand Response Load Control (DRLC)</td>
<td>oic.r.energy.drlc</td>
<td>6.35</td>
</tr>
<tr>
<td>Dimming</td>
<td>oic.r.light.dimming</td>
<td>6.9</td>
</tr>
<tr>
<td>Door</td>
<td>oic.r.door</td>
<td>6.10</td>
</tr>
<tr>
<td>Ecomode</td>
<td>oic.r.ecomode</td>
<td>6.71</td>
</tr>
<tr>
<td>Electric Vehicle Connector</td>
<td>oic.r.vehicle.connector</td>
<td>6.86</td>
</tr>
<tr>
<td>Electrical Energy</td>
<td>oic.r.energy.electrical</td>
<td>6.81</td>
</tr>
<tr>
<td>Energy Consumption</td>
<td>oic.r.energy.consumption</td>
<td>6.11</td>
</tr>
<tr>
<td>Energy Generation</td>
<td>oic.r.energy.generation</td>
<td>6.82</td>
</tr>
<tr>
<td>Energy Overload/Circuit Breaker</td>
<td>oic.r.energy.overload</td>
<td>6.36</td>
</tr>
<tr>
<td>Energy Usage</td>
<td>oic.r.energy.usage</td>
<td>6.12</td>
</tr>
<tr>
<td>Foaming</td>
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</tr>
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<td>Generic Sensor</td>
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</tr>
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<td>Geolocation Sensor</td>
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</tr>
<tr>
<td>Glass Break Sensor</td>
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<tr>
<td>Glucose</td>
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<td>Glucose Meter Complex Carbohydrates</td>
<td>oic.r.glucose.carb</td>
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</tr>
<tr>
<td>Glucose Meter Exercise</td>
<td>oic.r.glucose.exercise</td>
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<tr>
<td>Glucose Meter HbA1c</td>
<td>oic.r.glucose.hba1c</td>
<td>6.103</td>
</tr>
<tr>
<td>Glucose Meter Context Health</td>
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</tr>
<tr>
<td>Glucose Meter Context Meal</td>
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<td>6.105</td>
</tr>
<tr>
<td>Glucose Meter Context Medication</td>
<td>oic.r.glucose.medication</td>
<td>6.106</td>
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<tr>
<td>Glucose Meter Atomic Measurement</td>
<td>oic.r.glucosemeter-am</td>
<td>6.107</td>
</tr>
<tr>
<td>Glucose Meter Context Sample Location</td>
<td>oic.r.glucose.samplelocation</td>
<td>6.108</td>
</tr>
<tr>
<td>Glucose Meter Context Tester</td>
<td>oic.r.glucose.testler</td>
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<td>Grinder</td>
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</tr>
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<td>Heart Rate Zone Sensor</td>
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<td>6.39</td>
</tr>
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<td>Heating Zone</td>
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<td>6.72</td>
</tr>
<tr>
<td>Heating Zone Collection</td>
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</tr>
<tr>
<td>Height</td>
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<td>6.64</td>
</tr>
<tr>
<td>Property</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------------------------</td>
<td>------</td>
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<td>Humidity</td>
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<td>Icemaker</td>
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</tr>
<tr>
<td>Illuminance Sensor</td>
<td>oic.r.sensor.illuminance</td>
<td>6.40</td>
</tr>
<tr>
<td>Liquid Level</td>
<td>oic.r.liquid.level</td>
<td>6.85</td>
</tr>
<tr>
<td>Lock</td>
<td>oic.r.lock.status</td>
<td>6.15</td>
</tr>
<tr>
<td>Lock Code</td>
<td>oic.r.lock.code</td>
<td>6.16</td>
</tr>
<tr>
<td>Magnetic Field Direction</td>
<td>oic.r.sensor.magneticfielddirection</td>
<td>6.41</td>
</tr>
<tr>
<td>Media</td>
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<td>6.42</td>
</tr>
<tr>
<td>Media Source</td>
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<td>Media Source List</td>
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<td>6.44</td>
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<td>Media Source Input</td>
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<td>6.45</td>
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<tr>
<td>Media Source Output</td>
<td>oic.r.media.output</td>
<td>6.46</td>
</tr>
<tr>
<td>Mode</td>
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<td>6.17</td>
</tr>
<tr>
<td>Movement</td>
<td>oic.r.movement.linear</td>
<td>6.57</td>
</tr>
<tr>
<td>Motion Sensor</td>
<td>oic.r.sensor.motion</td>
<td>6.47</td>
</tr>
<tr>
<td>Night Mode</td>
<td>oic.r.nightmode</td>
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</tr>
<tr>
<td>Open Level</td>
<td>oic.r.openlevel</td>
<td>6.18</td>
</tr>
<tr>
<td>Operational State</td>
<td>oic.r.operational.state</td>
<td>6.19</td>
</tr>
<tr>
<td>Optical RFID Station</td>
<td>oic.r.orfid.station</td>
<td>6.110</td>
</tr>
<tr>
<td>Optical RFID Tag</td>
<td>oic.r.orfid.tag</td>
<td>6.111</td>
</tr>
<tr>
<td>Pan Tilt Zoom Movement</td>
<td>oic.r.ptz</td>
<td>6.50</td>
</tr>
<tr>
<td>Power Source</td>
<td>oic.r.powersource</td>
<td>6.112</td>
</tr>
<tr>
<td>Presence Sensor</td>
<td>oic.r.sensor.presence</td>
<td>6.49</td>
</tr>
<tr>
<td>Print Queue</td>
<td>oic.r.printer.queue</td>
<td>6.113</td>
</tr>
<tr>
<td>Pulse Rate</td>
<td>oic.r.pulserate</td>
<td>6.114</td>
</tr>
<tr>
<td>Ramp Time</td>
<td>oic.r.light.ramptime</td>
<td>6.20</td>
</tr>
<tr>
<td>Refrigeration</td>
<td>oic.r.refrigeration</td>
<td>6.21</td>
</tr>
<tr>
<td>Selectable Levels</td>
<td>oic.r.selectablelevels</td>
<td>6.74</td>
</tr>
<tr>
<td>Sensor Properties</td>
<td>oic.r.sensor.props</td>
<td>6.115</td>
</tr>
<tr>
<td>Signal Strength</td>
<td>oic.r.signalstrength</td>
<td>6.51</td>
</tr>
<tr>
<td>Sleep Sensor</td>
<td>oic.r.sensor.sleep</td>
<td>6.58</td>
</tr>
<tr>
<td>Smoke Sensor</td>
<td>oic.r.sensor.smoke</td>
<td>6.59</td>
</tr>
<tr>
<td>Speech Synthesis</td>
<td>oic.r.speech.tts</td>
<td>6.52</td>
</tr>
<tr>
<td>Temperature</td>
<td>oic.r.temperature</td>
<td>6.22</td>
</tr>
<tr>
<td>Three Axis Sensor</td>
<td>oic.r.sensor.threeaxis</td>
<td>6.60</td>
</tr>
<tr>
<td>Time Period</td>
<td>oic.r.time.period</td>
<td>6.23</td>
</tr>
<tr>
<td>Time Stamp</td>
<td>oic.r.time.stamp</td>
<td>6.87</td>
</tr>
<tr>
<td>Touch Sensor</td>
<td>oic.r.sensor.touch</td>
<td>6.53</td>
</tr>
<tr>
<td>UV Radiation</td>
<td>oic.r.sensor.radiation.uv</td>
<td>6.54</td>
</tr>
<tr>
<td>User ID</td>
<td>oic.r.userid</td>
<td>6.116</td>
</tr>
<tr>
<td>Value Conditional</td>
<td>oic.r.value.conditional</td>
<td>6.75</td>
</tr>
</tbody>
</table>
6.2 Air Flow

6.2.1 Introduction

This resource describes the properties associated with air flow.

The supporteddirections is the set of valid values for the direction property for a particular instance of this resource type.

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

Direction values are dependent on the capabilities of the unit.

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

The range (from oic.r.baseresource) is an array of the min,max values for the speed level. If not present the range defaults to [0,100].

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.

Retrieves the current air flow values.

6.2.2 Example URI

/AirFlowResURI

6.2.3 Resource type

The resource type (rt) is defined as: [‘oic.r.airflow’].

6.2.4 OpenAPI 2.0 definition

```

```

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feature; Off means automode is not enabled, On means automode is active and the speed is
automatically controlled by the device.
Retrieves the current air flow values.

```
parameters: [
   {"$ref": "/parameters/interface"},
],
responses: {
   "200": {
      "description": "",
      "x-example": {
         "rt": ["oic.r.airflow"],
         "id": "unique example id",
         "supporteddirections": ["left","right","centre"],
         "direction": "left",
         "speed": 5,
         "range": [1,7],
         "automode": "Off"
      }
   },
   "schema": { "$ref": "/definitions/AirFlow" }
},
```

```
post: {
   "description": "Sets the current air flow values. Only direction and speed may be set by an
update operation."
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": {
            "id": "unique_example_id",
            "direction": "right",
            "speed": 3
         }
      },
      "schema": { "$ref": "/definitions/AirFlow" }
      },
      "403": {
         "description": "This response is generated by the OCF Server when the client sends: An
update with an invalid property value for direction. An update with an out of range property
value for speed. The server may respond with the current resource representation",
         "x-example": {
            "id": "unique_example_id",
            "supporteddirections": ["left","right","centre"],
            "direction": "right",
            "speed": 3
         }
      },
      "schema": { "$ref": "/definitions/AirFlow" }
   }
},
parameters: {
   "interface" : 
```

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.
```
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.a", "oic.if.baseline"]
}
,"definitions": {
"AirFlow": {
"properties": {
"rt": {
"description": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"direction": {
"description": "Directionality of the air flow",
"type": "string"
},
"automode": {
"description": "Status of the automode feature, if on speed is set by the device",
"enum": ["On", "Off"],
"type": "string"
},
"precision": {
"description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number"
},
"n": {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"range": {
"description": "The valid range for the value Property",
"items": {
"anyOf": ["number"
]},
"type": "integer"
}
},
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"step": {
"anyOf": ["integer"
],
"type": "integer"
}
6.2.5 Property definition

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

Table 7 – The Property definitions of the Resource with type 'rt' = ['oic.r.airflow']

<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>supporteddirections</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Array of possible direction settings for this instance of the Resource Type</td>
</tr>
</tbody>
</table>
Table 8 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.airflow']

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Read/Write</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>automode</td>
<td>string</td>
<td>No</td>
<td>Status of the automode feature, if on speed is set by the device.</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Friendly name of the resource.</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Instance ID of this specific resource.</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Step value across the defined range.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>No</td>
<td>The interface set supported by this resource.</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>The valid range for the value Property.</td>
</tr>
<tr>
<td>speed</td>
<td>integer</td>
<td>Yes</td>
<td>Current speed level.</td>
</tr>
<tr>
<td>precision</td>
<td>number</td>
<td>No</td>
<td>Accuracy granularity of the exposed value.</td>
</tr>
<tr>
<td>direction</td>
<td>string</td>
<td>No</td>
<td>Directionality of the air flow.</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 composite resource being made up as a collection of:

AirFlow Resource

BinarySwitch Resource

Retrieves the current air flow control values.

6.3.2 Example URI

/AirFlowControlResURI

6.3.3 Resource type

The resource type (rt) is defined as: ['oic.r.airflowcontrol'].

6.3.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Air Flow Control",
```
"version": "v1.1.0-20160519",
"license": {
  "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
  "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.
2. Redistributions in binary form must reproduce the above
   copyright notice, this list of conditions and the following disclaimer in the documentation and/or
   other materials provided with the distribution.

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LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE."
}
},
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/AirFlowControlResURI" : {
    "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 composite resource being made up as a collection of:
  AirFlow Resource
  BinarySwitch Resource
Retrieves the current air flow control values.",
      "parameters": [
        {"$ref": "#/parameters/interface-all"}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.airflowcontrol"],
            "id": "unique_example_id",
            "AirFlowControl": {
              "href": "/BinarySwitchResURI",
              "rel": "contains",
              "rt": ["oic.r.switch.binary"],
              "if": ["oic.if.a"],
              "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
            },
            "href": "/AirFlowResURI",
            "rel": "contains",
            "rt": ["oic.r.airflow"],
            "if": ["oic.if.a"],
            "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
          }
        }
      }
    },
    "post": {
      "description": "Sets the current air flow control values using the batch interface",
      "parameters": [
        {"$ref": "#/parameters/interface-b"},
        {"name": "body", "in": "body", "required": true,
        "schema": { "$ref": "#/definitions/AirFlowControlBatch" },
        "x-example": ""
      }
    }
  }
}
```json
{
    "id": "unique_example_id",
    "airFlowControl": [
        {
            "id": "unique_example_id",
            "value": true
        },
        {
            "id": "unique_example_id",
            "direction": "right",
            "speed": 3
        }
    ],
    "responses": {
        "200": {
            "description": "",
            "x-example": {
                "id": "unique_example_id",
                "airFlowControl": [
                    {
                        "id": "unique_example_id",
                        "value": true
                    },
                    {
                        "id": "unique_example_id",
                        "direction": "right",
                        "speed": 3
                    }
                ]
            },
            "schema": {
                "$ref": "#/definitions/AirFlowControlBatch"
            }
        },
        "403": {
            "description": "This response is generated by the OIC Server when the client sends:
An update with an invalid property value for direction.\nAn update with an out of range property value for speed.\nThe server responds with the current resource representation.\"
            "x-example": {
                "id": "unique_example_id",
                "airFlowControl": [
                    {
                        "id": "unique_example_id",
                        "value": true
                    },
                    {
                        "id": "unique_example_id",
                        "direction": "right",
                        "speed": 3
                    }
                ]
            },
            "schema": {
                "$ref": "#/definitions/AirFlowControlBatch"
            }
        }
    },
    "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" : {
"properties": {
"rt" : {
"description": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"airFlowControl" : {
"items": {
"properties": {
"anchor": {
"description": "This is used to override the context URI e.g. override the URI of the containing collection",
"format": "uri",
"maxLength": 256,
"type": "string"
},
"di": {
"description": "An identifier formatted according to IETF RFC 4122.",
"pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}\$",
"type": "string"
},
"eps": {
"description": "the Endpoint information of the target Resource",
"items": {
"properties": {
"ep": {
"description": "URI with Transport Protocol Suites + Endpoint Locator as specified in 10.2.1",
"format": "uri",
"type": "string"
},
"pri": {
"description": "The priority among multiple Endpoints as specified in 10.2.3",
"minimum": 1,
"type": "integer"
}
},
"type": "object"
},
"type": "array"
},
"href": {
"description": "This is the target URI, it can be specified as a Relative Reference or fully-qualified URI. Relative Reference should be used along with the di parameter to make it unique.",
"format": "uri",
"maxLength": 256,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": {
"enum": ["oic.if.baseline",
"oic.if.ll",
"oic.if.b"]
}
"type": "string"
},
"minItems": 1,
"type": "array"
},
"ins": {
"description": "The instance identifier for this web link in an array of web links used in collections",
"oneOf": [
{"description": "An ordinal number that is not repeated - must be unique in the collection context",
"type": "integer"
},
{"description": "Any unique string including a URI",
"format": "uri",
"maxLength": 256,
"type": "string"
},
{"description": "An identifier formatted according to IETF RFC 4122.",
"pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$/",
"type": "string"
}
],
"p": {
"description": "Specifies the framework policies on the Resource referenced by the target URI",
"properties": {
"bm": {
"description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
"type": "integer"
}
},
"required": [
"bm"
],
"type": "object"
},
"rel": {
"description": "The relation of the target URI referenced by the link to the context URI",
"oneOf": [
{"default": ["hosts"],
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
},
{"default": "hosts",
"maxLength": 64,
"type": "string"
}
],
"rt": {
"description": "Resource Type",}
"items": [
  "maxLength": 64,
  "type": "string"
],
"minItems": 1,
"type": "array"
},
"title": {
  "description": "A title for the link relation. Can be used by the UI to provide a context",
  "maxLength": 64,
  "type": "string"
},
"type": {
  "default": "application/cbor",
  "description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting",
  "items": [
    "maxLength": 64,
    "type": "string"
  ],
  "minItems": 1,
  "type": "array"
},
"required": [
  "href",
  "rt",
  "if"
],
"maxItems": 2,
"minItems": 2,
"type": "array"
},
"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},
"value": {
  "anyOf": [
    "type": "array"
  ],
  "type": "string"
},
"type": "boolean"
],
"type": "integer"
],
"type": "number"
],
"type": "object"
],
"description": "The value sensed or actuated by this Resource"
},
"n": {
  "description": "Friendly name of the resource",}
"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      { "type": "number" },
      { "type": "integer" }
    ]
  },
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},

"step": {
  "anyOf": [
    { "type": "integer" },
    { "type": "number" }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},

"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}
"AirFlowControlBatch" : {
  "properties": {
    "rt": {
      "description": "Resource Type",
      "items": {
        "maxLength": 64,
        "type": "string",
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "maxItems": 1
    },
    "airFlowControl": {
      "items": {
        "anyOf": [
          {
            "properties": {
              "value": {
                "description": "Status of the switch",
                "type": "boolean"
              },
              "type": "object"
            }
          },
          {
            "properties": {
              "automode": {
                "description": "Status of the automode feature, if on speed is set by the device",
                "enum": ["On", "Off"],
                "type": "string"
              },
              "direction": {
                "description": "Directionality of the air flow",
                "type": "string"
              },
              "speed": {
                "description": "Current speed level",
                "type": "integer"
              },
              "supporteddirections": {
                "description": "Array of possible direction settings for this instance of the Resource Type",
                "items": {
                  "minItems": 1,
                  "type": "string",
                  "uniqueItems": true
                },
                "readOnly": true,
                "type": "array"
              }
            }
          }
        ],
        "precision": {
          "description": "Accuracy granularity of the exposed value",
          "readOnly": true,
          "type": "number"
        }
      }
    }
  }
}
"value":
{
  "anyOf": [ 
    { "type": "array" }
  ]
},

"n":
{
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"range":
{
  "description": "The valid range for the value Property",
  "items": [ 
    { "anyOf": [ 
      { "type": "number" }
    ]
  ]
},

"step":
{
  "anyOf": [ 
    { "type": "integer" }
  ]
},

"id":
{
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
"if" : {
    "description": "The interface set supported by this resource",
    "items": {
        "enum": [
            "oic.if.baseline",
            "oic.if.ll",
            "oic.if.b",
            "oic.if.lb",
            "oic.if.rw",
            "oic.if.r",
            "oic.if.a",
            "oic.if.s"
        ],
        "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
}

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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>value</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The value sensed or actuated by this Resource</td>
</tr>
<tr>
<td>airflowControl</td>
<td>array: 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 interface set supported by this resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
</tbody>
</table>
range | array: see schema | No | Read Only | The valid range for the value Property
--- | --- | --- | --- | ---
id | string | No | Read Only | Instance ID of this specific resource
precision | number | No | Read Only | Accuracy granularity of the exposed value
rt | array: see schema | No | Read Only | Resource Type
step | multiple types: see schema | No | Read Only | Step value across the defined range
value | multiple types: see schema | No | Read Only | The value sensed or actuated by this Resource
airFlowControl | array: see schema | Yes | Read Write | 
if | array: see schema | No | Read Only | The interface set supported by this resource
n | string | No | Read Only | Friendly name of the resource

### 6.3.6 CRUDN behaviour
Table 10 defines the CRUDN operations that are supported on the ['oic.r.airflowcontrol'] Resource Type

#### 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>post</td>
<td>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 6.4 Battery

#### 6.4.1 Introduction
This resource describes the attributes associated with a battery. The charge is an integer showing the current battery charge level as a percentage in the range 0 (fully discharged) to 100 (fully charged). The 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. Retrieves the state of the battery.

#### 6.4.2 Example URI
/BatteryResURI

#### 6.4.3 Resource type
The resource type (rt) is defined as: ['oic.r.energy.battery'].
"version": "v1.2.0-20170814",
"license": {
  "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
},
"x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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},
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/BatteryResURI" : {
    "get": {
      "description": "This resource describes the attributes associated with a battery. The charge is an integer showing the current battery charge level as a percentage in the range 0 (fully discharged) to 100 (fully charged). The 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.\nRetrieves the state of the battery.\n",
      "parameters": [
        {$ref: "/parameters/interface"}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.energy.battery"],
            "id": "unique_example_id",
            "charge": 50,
            "capacity": 3000,
            "charging": true,
            "discharging": false,
            "lowbattery": false,
            "batterythreshold": 20
          }
        }
      },
      "schema": {
        "$ref": "#/definitions/Battery"
      }
    }
  },
  "post": {
    "description": "Sets current battery values\n",
    "parameters": [
      {$ref: "/parameters/interface"},
      {
        "name": "body",
        "in": "body",
        "required": true,
        "schema": {
          "$ref": "#/definitions/BatteryUpdate"
        },
        "x-example": {
          "batterythreshold": 20
        }
      }
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.energy.battery"],
          "id": "unique_example_id",
          "charge": 50,
          "capacity": 3000,
          "charging": true,
          "discharging": false,
          "lowbattery": false,
          "batterythreshold": 20
        }
      }
    }
  }
}
"200": {
    "description": "",
    "x-example": {
        "id": "unique_example_id",
        "batterythreshold": 20
    }
},
"schema": { "$ref": "#/definitions/BatteryUpdate" }
}

"parameters": {
    "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.rw", "oic.if.baseline"],
        "readOnly": true,
        "type": "array"
    },
    "definitions": {
        "Battery": {
            "properties": {
                "rt": {
                    "description": "Resource Type",
                    "items": {
                        "maxLength": 64,
                        "type": "string"
                    },
                    "minItems": 1,
                    "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"
                },
                "precision": {
                    "description": "Accuracy granularity of the exposed value",
                    "readOnly": true,
                    "type": "number"
                },
                "id": {
                    "description": "Instance ID of this specific resource",
                    "maxLength": 64,
                    "readOnly": true,
                    "type": "string"
                },
                "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"
},
"step": {
   "anyOf": [
   {
   "type": "integer"
   },
   {
   "type": "number"
   }
   ],
   "description": "Step value across the defined range",
   "readOnly": true
},
"range": {
   "description": "The valid range for the value Property",
   "items": {
   "anyOf": [
   {
   "type": "number"
   },
   {
   "type": "integer"
   }
   ],
   "maxItems": 2,
   "minItems": 2,
   "readOnly": true,
   "type": "array"
   },
   "n": {
   "description": "Friendly name of the resource",
   "maxLength": 64,
   "readOnly": true,
   "type": "string"
   },
   "charging": {
   "description": "The status of charging.",
   "readOnly": true,
   "type": "boolean"
   },
   "if": {
   "description": "The interface set supported by this resource",
   "items": [
   "enum": [
   "oic.if.baseline",
   "oic.if.ll",
   "oic.if.b",
   "oic.if.lb",
   "oic.if.rw",
   "oic.if.r",
   "oic.if.a",
   "oic.if.s"
   ],
   "type": "string"
   ],
   "minItems": 1,
   "readOnly": true,
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>batterythreshold</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The threshold percentage for the low battery warning.</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>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>lowbattery</td>
<td>boolean</td>
<td>No</td>
<td>Read Only</td>
<td>The status of the low battery warning based upon the defined threshold.</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>discharging</td>
<td>boolean</td>
<td>No</td>
<td>Read Only</td>
<td>The status of discharging.</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>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>

6.5 Binary Switch

6.5.1 Introduction

This resource describes a binary switch (on/off). The 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 (rt) is defined as: ['oic.r.switch.binary'].

6.5.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Binary Switch",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
        },
        "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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    },
    "schemes": ["http"],
    "tags": [
        {
            "name": "Binary Switch",
            "description": "This resource describes a binary switch (on/off). The value is a boolean. A value of 'true' means that the switch is on. A value of 'false' means that the switch is off."
        }
    ],
    "paths": {
        "/BinarySwitchResURI": {
            "get": {
                "description": "Get the status of the binary switch",
                "operationId": "getBinarySwitchStatus",
                "parameters": [
                    {
                        "in": "query",
                        "name": "id",
                        "description": "The ID of the binary switch",
                        "required": true,
                        "type": "string"
                    }
                ],
                "responses": {
                    "200": {
                        "description": "OK",
                        "schema": {
                            "type": "object",
                            "properties": {
                                "status": {
                                    "type": "boolean"
                                }
                            }
                        }
                    }
                }
            }
        }
    }
}
```
"consumes": ["application/json"],
"produces": ["application/json"],

"paths": {
  "/BinarySwitchResURI": {
    "get": {
      "description": "This resource describes a binary switch (on/off). The 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": [
      {"$ref": "#/parameters/interface"}
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.switch.binary"],
          "id": "unique_example_id",
          "value": false
        }
      }
    }
  },
  "schema": { "$ref": "#/definitions/BinarySwitch" }
}

"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": {
        "id": "unique_example_id",
        "value": true
      }
    }
  }
}

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

"definitions": {
  "BinarySwitch": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        }
      }
    }
  }
}


6.5.5 Property definition

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

Table 13 – The Property definitions of the Resource with type 'rt' = ['oic.r.switch.binary']

<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>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>Status of the switch</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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>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>
### 6.5.6 CRUDN behaviour

Table 14 defines the CRUDN operations that are supported on the ['oic.r.switch.binary'] 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>

### 6.6 Brightness

#### 6.6.1 Introduction

This resource describes the brightness of a light or lamp. 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.

Retrieves the current brightness level.

#### 6.6.2 Example URI

/BrightnessResURI

#### 6.6.3 Resource type

The resource type (rt) is defined as: ['oic.r.light.brightness'].

#### 6.6.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Brightness",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
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"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/BrightnessResURI": {
            "get": {
                "description": "This resource describes the brightness of a light or lamp.

                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.

                Retrieves the current brightness level.
"
            }
        }
    }
}
```
"$ref": "#/parameters/interface"}
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.light.brightness"],
      "id": "unique_example_id",
      "brightness": 50
    }
    
},
"schema": { "$ref": "#/definitions/Brightness" }  

}
},
"post": {
"description": "Sets the desired brightness level.\n",
"parameters": {
  "$ref": "#/parameters/interface"},
  
  "name": "body",
  "in": "body",
  "required": true,
  "schema": { "$ref": "#/definitions/Brightness" },
  "x-example": {
    "brightness": 10
  }
}
},
"responses": {
  "200": {
  "description": "Indicates that the brightness was changed.\nThe new brightness level is provided in the response.\n",
  "x-example": {
    "id": "unique_example_id",
    "brightness": 10
  }
}
"schema": { "$ref": "#/definitions/Brightness" }

"parameters": {
  "interface" : {
    "in": "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "Brightness" : {
  "properties": {
    "rt" : {
      "description": "Resource Type",
      "items": {
        "maxLength": 64,
        "type": "string"
      },
      "minItems": 1,
      "readOnly": true,
      "type": "array"
    },
    "brightness" : {
      "description": "Quantized representation in the range 0-100 of the current sensed or set
value for Brightness",
"maximum": 100,
"minimum": 0,
"type": "integer"
},
"precision": {
"description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number"
},
"n": {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"range": {
"description": "The valid range for the value Property",
"items": {
"anyOf": [
{"type": "number"},
{"type": "integer"}
]
},
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"step": {
"anyOf": [
{"type": "integer"},
{"type": "number"}
]
},
"id": {
"description": "Instance ID of this specific resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": {
"enum": [
"oic.if.baseline",
"oic.if.ll",
"oic.if.b",
"oic.if.lb",
"oic.if.rw",
"oic.if.r",
"oic.if.a",
"oic.if.s"
],
"type": "string"}}}
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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>brightness</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>Quantized representation in the range 0-100 of the current sensed or set value for Brightness</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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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. hue is the hue angle, it is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).
saturation is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).
maximumsaturation is the upper bound on the saturation supported by the Device.

If not present the maximum value for saturation is 32767.
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.
cit is the Mired colour temperature.
Provides the colour using chroma conventions.

6.7.2  Example URI
/example/ColourChromaResURI

6.7.3  Resource type
The resource type (rt) is defined as: ['oic.r.colour.chroma'].

6.7.4  OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Chroma",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."",
      "x-description": "Redistribution and use in source and binary forms, with or without
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CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
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ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.\n"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/example/ColourChromaResURI" : {
      "get": {
        "description": "This resource describes the colour using chroma conventions.\nProperties are
hue, saturation, csc, and cit.\nhue is the hue angle, it is an integer value as defined by the
CIECAM02 model definition (see reference [CIE CIE159:2004]).\nsaturation is an integer value as
defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).\nmaximumsaturation is
the upper bound on the saturation supported by the Device.\nIf not present the maximum value for
saturation is 32767.\ncsc 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.\ncit is the Mired
colour temperature.\nProvides the colour using chroma conventions.\n",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {"rt": ["oic.r.colour.chroma"],
                          "id": "unique_example_id",
                          "hue": 256.0,
                          "saturation": 212,
                          "ct": 2121
                      }
```
"maximumsaturation": 1000,
"csc":  [0.41,0.51],
"ct": 457
}

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

"post": {
"description": "Sets current colour chroma values\n",
"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":

{ "id": "unique_example_id",
 "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": "Resource Type",
"items": { "maxLength": 64,
"type": "string" },
"minItems": 1,
"readOnly": true,
"type": "array"
},
"hue": {
"description": "Hue angle as defined by the CIECAM02 model definition",
"maximum": 360.0,
"minimum": 0.0,
"type": "number",
},
"saturation": {
  "description": "Saturation as defined by the CIECAM02 model definition",
  "maximum": 32767,
  "minimum": 0,
  "type": "integer"
},
"maximumsaturation": {
  "description": "Maximum supported value of Saturation for this Device",
  "maximum": 32767,
  "minimum": 0,
  "readOnly": true,
  "type": "integer"
},
"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},
"csc": {
  "description": "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": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      { "type": "number" },
      { "type": "integer" }
    ]
  },
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},
"step": {
  "anyOf": [
    { "type": "integer" },
    { "type": "number" }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
}
```json
{
  "ct": {
    "description": "Mired colour temperature",
    "minimum": 0,
    "type": "integer"
  },
  "id": {
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },
  "if": {
    "description": "The interface set supported by this resource",
    "items": {
      "enum": [
        "oic.if.baseline",
        "oic.if.ll",
        "oic.if.b",
        "oic.if.lb",
        "oic.if.rw",
        "oic.if.r",
        "oic.if.a",
        "oic.if.s"
      ],
      "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
  }
}
```

### 6.7.5 Property definition

Table 17 defines the Properties that are part of the ['oic.r.colour.chroma'] 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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>csc</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>X and Y coordinates of the colour in CIE colour space</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>saturation</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>Saturation as defined by the CIECAM02 model definition</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>ct</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>Mired colour temperature</td>
</tr>
<tr>
<td>maximumsaturation</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>Maximum supported value of Saturation for this Device</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>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>hue</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>Hue angle as defined by the CIECAM02 model definition</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>observe</td>
<td></td>
<td></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 range (from oic.r.baseresource). When range (from oic.r.baseresource) is omitted, then the range is [0,255]. Retrieves the current colour in RGB. Value is an array of integer values in the order R,G,B.

#### 6.8.2 Example URI

/ColourRGBResURI

#### 6.8.3 Resource type

The resource type (rt) is defined as: ['oic.r.colour.rgb'].

#### 6.8.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Colour RGB",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or
```
other materials provided with the distribution.

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},

"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 values per component may be described by range (from oic.r.baseresource). When range (from oic.r.baseresource) is omitted, then the range is [0,255]. Retrieves the current colour in RGB. Value is an array of integer values in the order R,G,B.",
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.colour.rgb"],
            "id": "unique_example_id",
            "rgbValue": [255,255,255],
            "range": [0,255]
          }
        }
      },
      "post": {
        "description": "Sets the current ColourRGB value",
        "parameters": [
          {
            "$ref": "#/parameters/interface"},
          {"name": "body", "in": "body", "required": true, "schema": { "$ref": "#/definitions/ColourRGB" }, "x-example": {
            "rgbValue": [255,0,0]
          }
        ]
      }
    }
  }
},

"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 values per component may be described by range (from oic.r.baseresource). When range (from oic.r.baseresource) is omitted, then the range is [0,255]. Retrieves the current colour in RGB. Value is an array of integer values in the order R,G,B.",
  "parameters": [
    {"$ref": "#/parameters/interface"}]
},

"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.colour.rgb"],
      "id": "unique_example_id",
      "rgbValue": [255,255,255],
      "range": [0,255]
    }
  }
},

"post": {
  "description": "Sets the current ColourRGB value",
  "parameters": [
    {"$ref": "#/parameters/interface"},
    {
      "name": "body", 
      "in": "body", 
      "required": true, 
      "schema": { "$ref": "#/definitions/ColourRGB" }, 
      "x-example": { 
        "rgbValue": [255,0,0]
      }
    }
  ]
},

"responses": {
  "200": {
    "description": "",
    "x-example": {
      "id": "unique_example_id",
      "rgbValue": [255,0,0]
    }
  }
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "ColourRGB": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "step": {
        "anyOf": [
          {
            "type": "integer"
          },
          {
            "type": "number"
          }
        ],
        "description": "Step value across the defined range",
        "readOnly": true
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "range": {
        "description": "The valid range for the value Property",
        "items": {
          "anyOf": [
            {
              "type": "number"
            },
            {
              "type": "integer"
            }
          ],
          "maxItems": 2,
          "minItems": 2,
          "readOnly": true,
          "type": "array"
        },
        "rgbValue": {
          "description": "RGB value; the first item is the R, second the G, third the B."
        }
      }
    }
  }
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>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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>rgbValue</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>RGB value; the first item is the R, second the G, third the B.</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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>
<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 value is an integer showing the current dimming level.
If step (from oic.r.baseresource) is present then it represents the increment between dimmer values.
When range (from oic.r.baseresource) is omitted, then the range is [0,100].
A value of 0 means total dimming; a value of 100 means no dimming.
Retrieves the current dimming level.

6.9.2 Example URI

/DimmingResURI

6.9.3 Resource type

The resource type (rt) is defined as: ['oic.r.light.dimming'].

6.9.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Dimming",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
            1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
            2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
            THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE."
        }
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/DimmingResURI": {
            "get": {
                "description": "This resource describes a dimming function. The value is an integer showing the current dimming level. If step (from oic.r.baseresource) is present then it represents the increment between dimmer values. When range (from oic.r.baseresource) is omitted, then the range is [0,100]. A value of 0 means total dimming; a value of 100 means no dimming. Retrieves the current"
            }
        }
    }
}
```
dimming level.

"parameters": [
  {"$ref": "#/parameters/interface"}
],
"responses": {
  "200": {
    "description" : "",
    "x-example": {
      "rt": ["oic.r.light.dimming"],
      "id": "unique_example_id",
      "dimmingSetting": 30,
      "step": 5,
      "range": [0,100]
    }
  },
  "schema": { "$ref": "#/definitions/Dimming" }
}

},
"post": {
  "description": "Sets the desired dimming level.
  "parameters": [
    {"$ref": "#/parameters/interface"},
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/Dimming" },
      "x-example": {
        "dimmingSetting": 40
      }
    }
  ],
  "responses": {
    "200": {
      "description" : "Indicates that the dimming was changed. The new dimming level is
      provided in the response."
    },
    "403": {
      "description" : "This response is generated by the OIC Server when the client sends:
      An update with an out of range property value for dimmingSetting. The server responds with the
      current resource representation."
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Dimming": {
      "type": "object",
      "properties": {
        "id": { "type": "string" },
        "dimmingSetting": { "type": "integer", "minimum": 0, "maximum": 100 }
      },
"Dimming": {
  "properties": {
    "rt": {
      "description": "Resource Type",
      "items": {
        "maxLength": 64,
        "type": "string"
      },
      "minItems": 1,
      "readOnly": true,
      "type": "array"
    },
    "precision": {
      "description": "Accuracy granularity of the exposed value",
      "readOnly": true,
      "type": "number"
    },
    "n": {
      "description": "Friendly name of the resource",
      "maxLength": 64,
      "readOnly": true,
      "type": "string"
    },
    "range": {
      "description": "The valid range for the value Property",
      "items": {
        "anyOf": [
          {"type": "number"},
          {"type": "integer"}
        ],
        "maxItems": 2,
        "minItems": 2,
        "readOnly": true,
        "type": "array"
      },
      "step": {
        "anyOf": [
        {"type": "integer"},
        {"type": "number"}
      ],
      "description": "Step value across the defined range",
      "readOnly": true
    },
    "dimmingSetting": {
      "description": "Current dimming value",
      "type": "integer"
    },
    "id": {
      "description": "Instance ID of this specific resource",
      "maxLength": 64,
      "readOnly": true,
      "type": "string"
    },
    "if": {
      "description": "The interface set supported by this resource",
      /*...*/
    }
  }
}
6.9.5 Property definition

Table 21 defines the Properties that are part of the ['oic.r.light.dimming'] 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>dimmingSetting</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>Current dimming value</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>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>

6.9.6 CRUDN behaviour

Table 22 defines the CRUDN operations that are supported on the ['oic.r.light.dimming'] 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>
6.10 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 openState, the value 'Open' indicates the door is open.
The value 'Closed' indicates the door is closed.
The type of openDuration is an ISO 8601 Time encoded string.
The 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 (rt) is defined as: ['oic.r.door'].

6.10.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Door",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without
            modification, are permitted provided that the following conditions are met:
            1. Redistributions of source code must retain the above copyright notice, this list of conditions and
            the following disclaimer.
            2. Redistributions in binary form must reproduce the above
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            ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
            OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
            SUCH DAMAGE.""
        }
    },
    "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).\nFor openState, the value 'Open' indicates the door is open.\nThe value 'Closed' indicates the door is closed.\nThe type of openDuration is an ISO 8601 Time encoded string.\nThe openAlarm value 'true' indicates that the open alarm is active.\nThe openAlarm value 'false' indicates that open alarm is not active.\nretrieves the state of the Door."
            },
            "parameters": [
                {"$ref": "/parameters/interface-all"}
            ],
            "responses": {
                "200": {
                    "description": "",
                    "x-example": {
                        "rt": ["oic.r.door"],
                        "id": "unique_example_id",
                        "openState": "Open",
                        "openDuration": "P0Y0M0DT2H25M5S"
                    }
                }
            }
        }
    }
}
```
"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 the openAlarm. This can be made active (true) or inactive (false)."
  "$ref": "/parameters/interface-actuator",
  "name": "body",
  "in": "body",
  "required": true,
  "schema": { "$ref": "/definitions/DoorUpdate" },
  "x-example":
    "openAlarm": false
}

"responses": {
  "200": {
    "description":",
    "x-example":
      "id": "unique_example_id",
      "openAlarm": false
  }
}

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

"definitions": {
  "Door": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
Table 23 defines the Properties that are part of the ['oic.r.door'] Resource Type

6.10.5 Property definition
Table 23 – The Property definitions of the Resource with type 'rt' = ['oic.r.door']

<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>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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>openDuration</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>The time duration the door has been open</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>openAlarm</td>
<td>boolean</td>
<td>No</td>
<td>Read Write</td>
<td>The state of the door open alarm</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>openAlarm</td>
<td>boolean</td>
<td></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 24 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.door']

<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 power value is in Watts [W]. The energy value is in Watt Hours [Wh]. Provides the current power draw and cumulative energy usage.

6.11.2 Example URI
/EnergyConsumptionResURI

6.11.3 Resource type
The resource type (rt) is defined as: ['oic.r.energy.consumption'].

6.11.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Consumption",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
```

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"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 power value is in Watts [W]. The energy value is in Watt Hours [Wh]. Provides the current power draw and cumulative energy usage."
    
    "parameters": [ {
      "$ref": "/parameters/interface"
    } ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.energy.consumption"],
          "id": "unique_example_id",
          "power": 2000.1,
          "energy": 3500.4
        }
      }
    }
  }
}

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

"definitions": {
  "Consumption": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "power": {
        "description": "Instantaneous Power",
        "readOnly": true,
        "type": "number"
      }
    }
  }
}
"type": "number",
]
"energy": {
  "description": "Energy consumed",
  "readOnly": true,
  "type": "number"
},
"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      {
        "type": "number"
      },
      {
        "type": "integer"
      }
    ],
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
  },
  "step": {
    "anyOf": [
      {
        "type": "integer"
      },
      {
        "type": "number"
      }
    ],
    "description": "Step value across the defined range",
    "readOnly": true
  },
  "id": {
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },
  "if": {
    "description": "The interface set supported by this resource",
    "items": {
      "enum": [
        "oic.if.baseline",
        "oic.if.l1",
        "oic.if.b",
        "oic.if.lb",
        "oic.if.rb",
        "oic.if.r",
        "oic.if.a",
        "oic.if.s"
      ]
    }
  }
}
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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>power</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Instantaneous Power</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>energy</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Energy consumed</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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 composite resource being made up as a collection of: TimePeriod Resource
EnergyConsumption Resource
Retrieves the energy usage information as a composite of consumption over time.

6.12.2 Example URI
/EnergyUsageResURI

6.12.3 Resource type
The resource type (rt) is defined as: ['oic.r.energy.usage'].

6.12.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Usage",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
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ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE."
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyUsageResURI" : {
      "get": {
        "description": "This resource describes a cumulative time-based energy usage query...
The
resource is a composite resource being made up as a collection of:
  TimeInterval Resource

EnergyConsumption Resource
Retrieves the energy usage information as a composite of consumption
over time.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.energy.usage"],
              "id": "unique_example_id",
              "resources": {
                [href": "/TimeIntervalResURI",
                "rel": "contains",
                "rt": ["oic.r.time.period"],
                "if": ["oic.if.a"],
                "eps": [{"ep": "coaps://[fe80::b1d6]:1122"]}
              },
              [href": "/EnergyConsumptionResURI",
                "rel": "contains",
                "rt": ["oic.r.energy.consumption"],
                "if": ["oic.if.s"],
                "eps": [{"ep": "coaps://[fe80::b1d6]:1122"]}
              ]
            }
          }
        }
      }
    }
  }
}
```
"schema": { "$ref": "/definitions/Usage" }

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

"definitions": {
  "Usage": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "resources": {
        "items": {
          "properties": {
            "anchor": {
              "description": "This is used to override the context URI e.g. override the URI of the containing collection",
              "format": "uri",
              "maxLength": 256,
              "type": "string"
            },
            "di": {
              "description": "An identifier formatted according to IETF RFC 4122.",
              "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
              "type": "string"
            },
            "eps": {
              "description": "the Endpoint information of the target Resource",
              "items": {
                "properties": {
                  "ep": {
                    "description": "URI with Transport Protocol Suites + Endpoint Locator as specified in 10.2.1",
                    "format": "uri",
                    "type": "string"
                  }
                }
              }
            }
          }
        }
      }
    }
  }
}


"pri": {  
    "description": "The priority among multiple Endpoints as specified in 10.2.3",  
    "minimum": 1,  
    "type": "integer"  
},  
"type": "object"  
},  
"type": "array"  
},  
"href": {  
    "description": "This is the target URI, it can be specified as a Relative Reference  
    or fully-qualified URI. Relative Reference should be used along with the di parameter to make it  
    unique.",  
    "format": "uri",  
    "maxlength": 256,  
    "type": "string"  
},  
"if": {  
    "description": "The interface set supported by this resource",  
    "items": {  
        "enum": [  
            "oic.if.baseline",  
            "oic.if.ll",  
            "oic.if.b",  
            "oic.if.rw",  
            "oic.if.r",  
            "oic.if.a",  
            "oic.if.s"  
        ],  
        "type": "string"  
    },  
    "minItems": 1,  
    "type": "array"  
},  
"ins": {  
    "description": "The instance identifier for this web link in an array of web links -  
    used in collections",  
    "oneOf": [  
        {  
            "description": "An ordinal number that is not repeated - must be unique in the  
            collection context",  
            "type": "integer"  
        },  
        {  
            "description": "Any unique string including a URI",  
            "format": "uri",  
            "maxlength": 256,  
            "type": "string"  
        },  
        {  
            "description": "An identifier formatted according to IETF RFC 4122.",  
            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-  
            F0-9]{12}$",  
            "type": "string"  
        }  
    ]  
},  
"p": {  
    "description": "Specifies the framework policies on the Resource referenced by the  
    target URI",  
    "properties": {  
        "bm": {  
            "description": "Specifies the framework policies on the Resource referenced by  
            the target URI for e.g. observable and discoverable",  
            "type": "integer"  
        }  
    },  
    "required": [  
        "bm"  
    ]  
},
"type": "object",
},
"rel": {
"description": "The relation of the target URI referenced by the link to the context URI",
"oneOf": [
{
"default": [
"hosts",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
},
{
"default": "hosts",
"maxLength": 64,
"type": "string"
}
},
"rt": {
"description": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
},
"title": {
"description": "A title for the link relation. Can be used by the UI to provide a context",
"maxLength": 64,
"type": "string"
},
"type": {
"default": "application/cbor",
"description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
},
"required": [
"href",
"rt",
"if"
],
"type": "object",
"maxItems": 2,
"minItems": 2,
"type": "array"
},
"if": {
"description": "The interface set supported by this resource",
"items": {
"enum": [
"oic.if.baseline",
"oic.if.ll",
"oic.if.b",
"oic.if.lb",
"oic.if.rw",
"oic.if.rw"]
}
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>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 interface set supported by this resource</td>
</tr>
<tr>
<td>resources</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>
<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 value humidity is an integer describing the percentage measured relative humidity.
The value desiredHumidity is an integer showing the desired target relative humidity.
Retrieves the current (relative) humidity level.

6.13.2 Example URI

/HumidityResURI

6.13.3 Resource type

The resource type (rt) is defined as: ['oic.r.humidity'].
6.13.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Humidity",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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        }
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/HumidityResURI" : {
            "get": {
                "description": "This resource describes a sensed or desired humidity. The value humidity is an integer describing the percentage measured relative humidity. The value desiredHumidity is an integer showing the desired target relative humidity. Retrieves the current (relative) humidity level.",
                "response": {
                    "description": "",
                    "x-example": {
                        "rt": ["oic.r.humidity"],
                        "id": "unique_example_id",
                        "humidity": 40,
                        "desiredHumidity": 40
                    }
                },
                "schema": { "$ref": "#/definitions/Humidity" }
            }
        },
        "post": {
            "description": "Sets the desired relative humidity level.",
            "parameters": [
                { "$ref": "#/parameters/interface"},
            ],
            "responses": {
                "200": { "description": "", "x-example": {
                    "desiredHumidity": 45
                }
            },
            "schema": { "$ref": "#/definitions/HumidityUpdate" }
        }
    }
}
```

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relative humidity level is provided in the response.

`x-example`:
```json
{
  "id": "unique_example_id",
  "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": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "desiredHumidity": {
        "description": "Desired value for Humidity",
        "maximum": 100,
        "minimum": 0,
        "type": "integer"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "range": {
        "description": "The valid range for the value Property",
        "items": {
          "anyOf": [
            { "type": "number" },
            { "type": "integer" }
          ]
        },
        "maxItems": 2,
        "minItems": 2,
        "readOnly": true,
        "type": "array"
      }
    }
  }
```
"step": {
  "anyOf": [
    { "type": "integer" },
    { "type": "number" }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},

"humidity": {
  "description": "Current sensed value for Humidity",
  "maximum": 100,
  "minimum": 0,
  "readOnly": true,
  "type": "integer"
},

"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

@if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": ["oic.if.baseline", "oic.if.ll", "oic.if.lb", "oic.if.ib", "oic.if.nb", "oic.if.nb", "oic.if.r", "oic.if.rw", "oic.if.a", "oic.if.e"],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
},

"HumidityUpdate": {
  "properties": {
    "desiredHumidity": {
      "description": "Desired value for Humidity",
      "maximum": 100,
      "minimum": 0,
      "type": "integer"
    }
  },
  "type": "object"
}

6.13.5 Property definition

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>desiredHumidity</td>
<td>integer</td>
<td></td>
<td>Read Write</td>
<td>Desired value for Humidity</td>
</tr>
<tr>
<td>range</td>
<td>array: see</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value</td>
</tr>
<tr>
<td>humidity</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>Current sensed value for Humidity</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>desiredHumidity</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>Desired value for Humidity</td>
</tr>
<tr>
<td>rt</td>
<td>array: see</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>if</td>
<td>array: see</td>
<td>No</td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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 an the operational state of an Ice Maker.

The 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).

Retrieves the current Ice Maker status.

6.14.2 Example URI

/IceMakerResURI

6.14.3 Resource type

The resource type (rt) is defined as: ['oic.r.icemaker'].

6.14.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"info": {
  "title": "Ice Maker",
  "version": "v1.1.0-20160519",
  "license": {
    "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
    "x-description": "Redistribution and use in source and binary forms, with or without
      modification, are permitted provided that the following conditions are met:
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         the following disclaimer.
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      OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
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      ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
      OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
      SUCH DAMAGE.\n"
  }
},
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/IceMakerResURI" : {
    "get": {
      "description": "This resource describes an the operational state of an Ice Maker. The
      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). Retrieves the current Ice Maker
      status.
      "parameters": [
        { "$ref": "#/parameters/interface" }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.icemaker"],
            "id": "unique_example_id",
            "status": "on"
          }
        }
      },
      "post": {
        "description": "Sets the desired Ice Maker status. Only valid settings for status in a Post
        shall be [on,off].",
        "parameters": [
          { "$ref": "#/parameters/interface" }
        ],
        "responses": {
          "200": {
            "description": "Indicates that the Ice Maker status was changed. The new status is
            provided in the response.
            "x-example":
          }
        }
      }
    }
  }
}
{
    "id": "unique_example_id",
    "status": "off"
}

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

"403": {
    "id": "unique_example_id",
    "status": "off"
}

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

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

"definitions": {
    "IceMaker": {
        "properties": {
            "rt": {
                "description": "Resource Type",
                "items": {
                    "maxLength": 64,
                    "type": "string"
                },
                "minItems": 1,
                "readOnly": true,
                "type": "array"
            },
            "status": {
                "description": "Status of the Ice Maker",
                "enum": [
                    "on",
                    "off",
                    "full"
                ],
                "type": "string"
            },
            "n": {
                "description": "Friendly name of the resource",
                "maxLength": 64,
                "readOnly": true,
                "type": "string"
            },
            "id": {
                "description": "Instance ID of this specific resource",
                "maxLength": 64,
                "readOnly": true,
                "type": "string"
            },
            "if": {
                "description": "The interface set supported by this resource",
                "maxLength": 64,
                "readOnly": true,
                "type": "string"
            }
        }
    }
}
6.14.5 Property definition

Table 31 defines the Properties that are part of the ['oic.r.icemaker'] 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>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>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>status</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>Status of the Ice Maker</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.15  Lock

6.15.1 Introduction

Resource describing a lock.

For the type of lockState, the value 'Locked' indicates that the door is Locked.
The value 'Unlocked' indicates that the door is Unlocked.

Retrieves the state of the lock.

6.15.2 Example URI

/LockStatusResURI

6.15.3 Resource type

The resource type (rt) is defined as: ['oic.r.lock.status'].

6.15.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Lock",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without
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HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.
"
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/LockStatusResURI" : {
            "get": {
                "description": "Resource describing a lock.
For the type of lockState, the value 'Locked' indicates that the door is Locked.
The value 'Unlocked' indicates that the door is Unlocked.
Retrieves the state of the lock.
",
                "parameters": [
                    {
                        "$ref": "#/parameters/interface"
                    }
                ],
                "responses": {
                    "200": {
                        "description": ",
                        "x-example": {
                            "rt": ["oic.r.lock.status"],
                            "id": "unique_example_id",
                            "lockState": "Locked"
                        }
                    }
                },
                "schema": {
                    "$ref": "#/definitions/Lock"
                }
            }
        }
    }
}
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"post": {
  "description": "Sets the current lock state.\n",
  "parameters": [
    {
      "$ref": "#/parameters/interface"},
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/Lock" },
      "x-example": {
        "lockState": "Unlocked"
      }
    }
  ],
  "responses": {
    "200": {
      "description" : "",
      "x-example": {
        "id": "unique_example_id",
        "lockState": "Unlocked"
      }
    },
    "403": {
      "description": "This response is generated by the OIC Server when the client sends:\nAn update with an invalid property value for lockState.\nThe server responds with the current resource representation.\n",
      "x-example": {
        "lockState": "Unlocked"
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Lock" : {
      "properties": {
        "rt" : {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "n" : {
          "description": "Friendly name of the resource",
          "maxLength": 64,
          "readOnly": true,
          "type": "string"
        }
      }
    }
  }
}
"lockState" : {
    "description": "State of the lock.",
    "enum": [
        "Locked",
        "Unlocked"
    ],
    "type": "string"
},
"id" :
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},
"if" :
    "description": "The interface set supported by this resource",
    "items": {
        "enum": [
            "oic.if.baseline",
            "oic.if.ll",
            "oic.if.b",
            "oic.if.lb",
            "oic.if.rw",
            "oic.if.r",
            "oic.if.a",
            "oic.if.a"
        ],
        "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
}
},
"type" : "object"
]

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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>lockState</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>State of the lock.</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></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.16 Lock Code

6.16.1 Introduction

Resource describing a lock code.

The lockCodeList is an array of possible codes that may be associated with a lock.

These are all presented as strings.

Retrieves the current lock code values.

6.16.2 Example URI

/LockCodeResURI

6.16.3 Resource type

The resource type (rt) is defined as: ['oic.r.lock.code'].

6.16.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Lock Code",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
      modification, are permitted provided that the following conditions are met:
      1. Redistributions of source code must retain the above copyright notice, this list of conditions and
         the following disclaimer.
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         copyright notice, this list of conditions and the following disclaimer in the documentation and/or
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      ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
      OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
      SUCH DAMAGE.
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/LockCodeResURI" : {
      "get": {
        "description": "Resource describing a lock code.\nThe lockCodeList is an array of possible
        codes that may be associated with a lock.\nThese are all presented as strings.\nRetrieves the
        current lock code values.\n",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          },
          "responses": {
            "200": {
              "description": "",
              "x-example": {
                "rt": ["oic.r.lock.code"],
                "id": "unique_example_id",
                "lockCodeList": ["012345","112233"]
              }
            }
          },
          "schema": { "$ref": "#/definitions/LockCode" }
        }
```
"post": {
  "description": "Updates the current lock code values.\n",
  "parameters": [
    {
      "$ref": "#/parameters/interface"},
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/LockCode" },
      "x-example": {
        "lockCodeList": ["543210","332211"]
      }
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "id": "unique_example_id",
        "lockCodeList": ["543210","332211"]
      }
    },
    { "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "LockCode": {
        "properties": {
          "rt": {
            "description": "Resource Type",
            "items": {
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "readOnly": true,
            "type": "array"
          },
          "precision": {
            "description": "Accuracy granularity of the exposed value",
            "readOnly": true,
            "type": "number"
          },
          "n": {
            "description": "Friendly name of the resource",
            "maxLength": 64,
            "readOnly": true,
            "type": "string"
          },
          "range": {
            "description": "The valid range for the value Property",
            "items": {
              "maxLength": 64,
              "readOnly": true,
              "type": "string"
            }
          }
        }
      }
    }
  }
}
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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>lockCodeList</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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>observe</td>
<td></td>
<td></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 supportedModes is an array of possible modes the device supports.

The modes are an array of the currently active mode(s).

Retrieves the current mode.

6.17.2 Example URI

/ModeResURI

6.17.3 Resource type

The resource type (rt) is defined as: ['oic.r.mode'].

6.17.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Mode",
      "version": "v1.1.0-20160519",
      "license": {
         "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
         "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
            1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
            2. Redistributions in binary form must reproduce the above
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"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 supportedModes is an array of possible modes the device supports. The modes are an array of the currently active mode(s). Retrieves the current mode."
    },
    "responses": {
      "200": {
        "description": ",
        "x-example": {
          "rt": ["oic.r.mode"],
          "id": "unique_example_id",
          "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": {
            "id": "unique_example_id",
            "modes": ["armedAway"]
          }
        },
        "403": {
          "description": "This response is generated by the OIC Server when the client sends:
An update with an value for mode that is not found in supportedModes. The server responds with the current resource representation.",
          "x-example": {
            "id": "unique_example_id",
            "modes": ["armedAway"]
          }
        }
      }
    }
  }
}
"id": "unique_example_id",
"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": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "modes": {
        "description": "Array of the currently active mode(s)",
        "items": {
          "type": "string"
        },
        "type": "array"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "supportedModes": {
        "description": "Array of possible modes the device supports.",
        "items": {
          "type": "string"
        },
        "readOnly": true,
        "type": "array"
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "if": {
        "type": "string"}
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>Resource Type</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>
Table 38 defines the CRUDN operations that are supported on the ['oic.r.mode'] Resource Type

Table 38 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.mode']

Create  Read  Update  Delete  Notify
get     post

6.17.6 CRUDN behaviour

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 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 range (from oic.r.baseresource) 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 step (from oic.r.baseresource) is present then it represents the increment between possible values; if not provided 1 is assumed. Retrieves the current openLevel.

6.18.2 Example URI

/OpenLevelResURI

6.18.3 Resource type

The resource type (rt) is defined as: ['oic.r.openlevel'].

6.18.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Open Level",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without"
        }
    }
}
```
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### /OpenLevelResURI

**get**: 
- **description**: "This resource describes how open or ajar an entity such as a window, door, blind or shutter is. The 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 range (from oic.r.baseresource) 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 step (from oic.r.baseresource) is present then it represents the increment between possible values; if not provided 1 is assumed. Retrieves the current openLevel."
- **parameters**: [ ]

```
{
    "parameters": [ ]
}
```

```
200": {
    "description": "",
    "x-example":
    {
        "rt": ["oic.r.openlevel"],
        "id": "unique_example_id",
        "openLevel": 50,
        "step": 2,
        "range": [0, 100]
    }
}
```

```
schema": { "$ref": "/#definitions/OpenLevel" }
```

**post**: 
- **description**: "Sets the desired openLevel."
- **parameters**: [ ]

```
{
    "name": "body",
    "in": "body",
    "required": true,
    "schema": { "$ref": "/#definitions/OpenLevel" },
    "x-example":
    {
        "id": "unique_example_id",
        "openLevel": 0
    }
}
```

```
200": {
    "description": "",
    "x-example":
    {
        "openLevel": 0
    }
}
```
"schema": { "$ref": "#/definitions/OpenLevel" }},
"403": {
  "description": "This response is generated by the OIC Server when the client sends:

An update with an out of range property value for openLevel. The server responds with the current
resource representation."
  
  "x-example": {
    "id": "unique_example_id",
    "openLevel": 50,
    "step": 2,
    "range": [0,100]
  }
},

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

"definitions": {
  "OpenLevel": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "openLevel": {
        "description": "How open or ajar the entity is",
        "type": "integer"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "range": {
        "description": "The valid range for the value Property",
        "items": {
          "anyOf": [
            { "type": "number" },
            { "type": "integer" }
          ]
        }
      }
    }
  }
}
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>step</td>
<td>multiple types:</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td></td>
<td>see schema</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.18.5 Property definition
6.18.6 CRUDN behaviour

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

Table 40 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.openlevel']

<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>

6.19 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 in adverse operational characteristics. The machineStates is an array of the possible operational states. The currentMachineState is the current state of operation of the device. The jobStates is an array of the possible job states. The currentJobState is the currently active jobState. The runningTime is the ISO8601 encoded elapsed time in the current operational state. The remainingTime is the ISO8601 encoded time till completion of the current operational state. The progressPercentage is the percentage completeness of the current jobState. Retrieves the current operational and job states.

6.19.2 Example URI

/OperationalStateResURI

6.19.3 Resource type

The resource type (rt) is defined as: ['oic.r.operational.state'].

6.19.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Operational State",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
        }
    }
}
```
"x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
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the following disclaimer.
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ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE."

"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 machineStates is an array of
      the possible operational states. The currentMachineState is the current state of operation of the
      device. The jobStates is an array of the possible job states. The currentJobState is the currently
      active jobState. The runningTime is the ISO8601 encoded elapsed time in the current operational
      state. The remainingTime is the ISO8601 encoded time till completion of the current operational
      state.
      The progressPercentage is the percentage completeness of the current jobState.
      Retrieves
      the current operational and job states."
    
    "parameters": [
      {
      "$ref": "#/parameters/interface"
    
    },
    
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.operational.state"],
          "id": "unique_example_id",
          "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" }
  
    }
  }

  
},
"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": {
      "id": "unique_example_id",
      "currentMachineState": "pause",
      "currentJobState": "wash"
    }
  
},
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "currentMachineState": "pause",
      "currentJobState": "wash"
    }
  },
  "schema": { "$ref": "/definitions/OperationUpdate" }
},
  "403": {
    "description": "This response is generated by the OIC Server when the client sends:
An update with an value for currentMachineState that is not found in machineStates.
An update with an value for currentJobState that is not found in jobStates.
The server responds with the current resource representation.",
    "x-example": {
      "id": "unique_example_id",
      "machineStates": ["pause", "stopped", "idle", "active"],
      "currentMachineState": "active",
      "jobStates": ["preWash", "wash", "rinse", "spin", "dry", "airDry",
      "wrinklePrevent"],
      "currentJobState": "rinse",
      "runningTime": "PT15M20S",
      "remainingTime": "PT10M40S",
      "progressPercentage": 75
    }
  },
  "schema": { "$ref": "/definitions/Operation" }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"],
    "readOnly": true,
    "type": "array"
  }
},
"definitions": {
  "Operation": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "currentMachineState": {
        "description": "Current state of operation of the device."
      },
      "currentJobState": {
        "description": "Currently active jobState",
        "type": "string"
      },
      "machineStates": {
        "description": "array of the possible operational states."
      }
    }
  }
}
"type": "string",
"readOnly": true,
"type": "array"
},
"precision" : {
"description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number"
},
"n" : {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"runningTime" : {
"description": "Elapsed time in the current operational state",
"readOnly": true,
"type": "string"
},
"range" : {
"description": "The valid range for the value Property",
"items": [ {
"anyOf": [ {
"type": "number"
}, {
"type": "integer"
}
]
},
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"remainingTime" : {
"description": "Time till completion of the current operational state",
"readOnly": true,
"type": "string"
},
"step" : {
"anyOf": [ {
"type": "integer"
}, {
"type": "number"
}
],
"description": "Step value across the defined range",
"readOnly": true
},
"progressPercentage" : {
"description": "Percentage completeness of the current jobState",
"maximum": 100,
"minimum": 0,
"readOnly": true,
"type": "integer"
},
"id" : {
"description": "Instance ID of this specific resource",}
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"jobStates": {
  "description": "array of the possible job states."
  },
"jobStates": {
  "items": {
    "type": "string"
  },
  "readOnly": true,
  "type": "array"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.1l",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}
},
"type": "object"
],
"required": ["machineStates", "currentMachineState"
}

"OperationUpdate": {
  "properties": {
    "currentMachineState": {
      "description": "Current state of operation of the device."
    },
    "currentJobState": {
      "description": "Currently active jobState",
      "type": "string"
    }
  }
}

6.19.5 Property definition

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

Table 41 – The Property definitions of the Resource with type 'rt' = ['oic.r.operational.state']

<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>currentJobState</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>Currently active jobState</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>rt</th>
<th>array: see schema</th>
<th>No</th>
<th>Read Only</th>
<th>Resource Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>progressPercentage</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>Percentage completeness of the current jobState</td>
</tr>
<tr>
<td>remainingTime</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Time till completion of the current operational state</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>jobStates</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>array of the possible job states.</td>
</tr>
<tr>
<td>currentMachineState</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>Current state of operation of the device.</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>runningTime</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Elapsed time in the current operational state</td>
</tr>
<tr>
<td>machineStates</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>array of the possible operational states.</td>
</tr>
<tr>
<td>currentJobState</td>
<td>string</td>
<td>Read Write</td>
<td>Currently active jobState</td>
<td></td>
</tr>
<tr>
<td>currentMachineState</td>
<td>string</td>
<td>Read Write</td>
<td>Current state of operation of the device.</td>
<td></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 42 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.operational.state']**

<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.
This specifies the actual speed of changing between 2 dimming values.
Time is specified in milliseconds [ms].
When range (from oic.r.baseresource) is omitted the maximum value is 100 ms. The RampTime of 0 ms indicates the minimal delay possible by the implementation. Retrieves the current RampTime.

6.20.2 Example URI

/RampTimeResURI

6.20.3 Resource type

The resource type (rt) is defined as: ['oic.r.light.ramptime'].

6.20.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Ramp Time",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/RampTimeResURI" : {
      "get": {
        "description": "This resource that describes the Ramp Time of a dimming function. This specifies the actual speed of changing between 2 dimming values. Time is specified in milliseconds [ms]. When range (from oic.r.baseresource) is omitted the maximum value is 100 ms. The RampTime of 0 ms indicates the minimal delay possible by the implementation. Retrieves the current RampTime."
      },
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        },
        {
          "name": "body",
          "in": "body",
          "schema": { "$ref": "#/definitions/RampTime" }
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": "oic.r.light.ramptime",
            "id": "unique_example_id",
            "rampTime": 0,
            "range": [0,100]
          }
        }
      }
    },
    "post": {
      "description": "Sets the current RampTime."
    },
    "parameters": [
      {
        "$ref": "#/parameters/interface",
        "in": "body",
        "name": "body"
      }
    ]
  }
}
```
"in": "body",
"required": true,
"schema": { "$ref": "/definitions/RampTime" },
"x-example": {
  "rampTime": 50
}
]
},
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "id": "unique_example_id",
      "rampTime": 50
    }
  },
  "403": {
    "description": "This response is generated by the OIC Server when the client sends:
An update with an out of range property value for rampTime.
The server responds with the current resource representation.
",
    "x-example": {
      "id": "unique_example_id",
      "rampTime": 40
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "RampTime": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "range": 
    },
6.20.5 Property definition

Table 43 defines the Properties that are part of the ['oic.r.light.ramptime'] Resource Type
Table 43 – The Property definitions of the Resource with type 'rt' = ['oic.r.light.ramptime']

<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>No</td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>rampTime</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>Actual speed of changing between 2 dimming values</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.21 Refrigeration

6.21.1 Introduction

This resource describes a refrigeration function.
The filter state is a read-only value providing the percentage life time remaining for the water filter.
RapidFreeze is a boolean that controls the rapid freeze capability if present.
RapidCool is a boolean that controls the rapid cool capability if present.
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.
Retrieves the current Refrigeration function status; all Properties supported by the Device are returned.

6.21.2 Example URI

/RefrigerationResURI

6.21.3 Resource type

The resource type (rt) is defined as: ['oic.r.refrigeration'].

6.21.4 OpenAPI 2.0 definition

```json
{"swagger": "2.0",

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"info": {
  "title": "Refrigeration",
  "version": "v1.1.0-20160519",
  "license": {
    "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
    "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions
and the following disclaimer.
2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n
IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n
HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.\n"
  }
},
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/RefrigerationResURI" : {
    "get": {
      "description": "This resource describes a refrigeration function.\nThe filter state is a
read-only value providing the percentage life time remaining for the water filter.\nRapidFreeze is a
boolean that controls the rapid freeze capability if present.\nRapidCool is a boolean that controls
the rapid cool capability if present.\ndefrost is a boolean that controls the defrost cycle if
present.\nAt least one of the listed Properties shall be present in a Resource Instance.\nRetrieves
the current Refrigeration function status; all Properties supported by the Device are returned.\nRetrieves
"parameters": [
  {"$ref": "/#parameters/interface"}
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.refrigeration"],
      "id": "unique_example_id",
      "filter": 75,
      "rapidFreeze": false,
      "rapidCool": false,
      "defrost": true
    }
  },
  "schema": { "$ref": "/#definitions/Refrigeration" }
}
},
"post": {
  "description": "Activates the desired Refrigeration functions.\nSupported values are
rapidFreeze, rapidCool and defrost.\nAt least one of the supported values shall be provided.\n"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.
",
"x-example": {
  "id": "unique_example_id",
  "rapidFreeze": true
},
"schema": { "$ref": "#/definitions/RefrigerationUpdate" }
"rapidCool": {
  "description": "Indicates whether the unit has a rapid cool capability active",
  "type": "boolean"
}

"step": {
  "anyOf": [
    {
      "type": "integer"
    },
    {
      "type": "number"
    }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
}

"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
}

"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}

"anyOf": [
  {
    "required": ["filter"
  },
  {
    "required": ["rapidFreeze"
  }
]
6.21.5 Property definition

Table 45 defines the Properties that are part of the ['oic.r.refrigeration'] 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>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>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>
</tbody>
</table>

Table 45 – The Property definitions of the Resource with type 'rt' = ['oic.r.refrigeration']
<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Available</th>
<th>Access Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value.</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range.</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource.</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>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>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>filter</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>Percentage lifetime remaining for the water filter.</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value.</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>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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource.</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 temperature describes the current value measured.

The 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 range (from oic.r.baseresource) is omitted the default is +/- MAXINT.

Retrieves the current temperature value.

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 (rt) is defined as: ['oic.r.temperature'].

6.22.4 OpenAPI 2.0 definition

{
  "swagger": "2.0",
  "info": {
    "title": "Temperature",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
      modification, are permitted provided that the following conditions are met:\n
      1. Redistributions of source code must retain the above copyright notice, this list of conditions and
      the following disclaimer.\\n
      2. Redistributions in binary form must reproduce the above
      copyright notice, this list of conditions and the following disclaimer in the documentation and/or
      other materials provided with the distribution.\\n
      THIS SOFTWARE IS PROVIDED BY THE Open
      Connectivity Foundation, INC. "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
      LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
      WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\\n
      IN NO EVENT SHALL THE Open Connectivity
      Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
      OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
      SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
      ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
      OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
      SUCH DAMAGE."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/TemperatureResURI" : {
      "get": {
        "description": "This resource describes a sensed or actuated Temperature value.\n
The temperature describes the current value measured.\nThe units is a single value that is one of C, F or K.\nThe units provides the unit of measurement for the temperature value.\nIt is a read-only value that is provided by the server.\nIf the units Property is missing the default is Celsius [C].\nWhen range (from oic.r.baseresource) is omitted the default is +/- MAXINT.\nRetrieves the current temperature value.\nA client can specify the units for the requested temperature by use of a query parameter.\nIf no query parameter is provided the server provides its default measure or set value.\nIt is recommended to return always the units Property in the result.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "in": "query",
            "description": "Units",
            "type": "string",
            "enum": ["C", "F", "K"],
            "name": "units"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "200": {
              "description": ""
            }
          }
        }
      }
    }
  }
}
"x-example":
{
    "rt": ["oic.r.temperature"],
    "id": "unique_example_id",
    "temperature": 20.0,
    "units": "C",
    "range": [0.0,100.0]
}
}

"schema": { "$ref": "/definitions/Temperature" }
}

"403": {
    "description": "This response is generated by the OIC Server when the client sends:

A retrieve with q 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":
{
    "id": "unique_example_id",
    "temperature": 20.0,
    "units": "C"
}

"schema": { "$ref": "/definitions/Temperature" }
}

"post": {
    "description": "Sets the desired temperature value. If a unit is included and the server
does 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 }
    ],
    "responses": {
    "200": {
        "description": "",
        "x-example":
        { "id": "unique_example_id",
          "temperature": 18.0 }
        },
        "403": {
        "description": "This response is generated by the OIC 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 server responds with the current resource representation including the range
property illustrating the supported range and the error.
",
        "x-example":
        { "id": "unique_example_id",
          "temperature": 20.0,
          "units": "C",
          "range": [0.0,100.0] }
        },
        "schema": { "$ref": "/definitions/Temperature" }
    }
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "Temperature": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "temperature": {
        "description": "Current temperature setting or measurement",
        "type": "number"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "units": {
        "description": "Units for the temperature value",
        "enum": ["C", "F", "K"],
        "readOnly": true,
        "type": "string"
      },
      "range": {
        "description": "The valid range for the value Property",
        "items": {
          "anyOf": [{
            "type": "number"
          },
          {
            "type": "integer"
          }]
        },
        "maxItems": 2,
        "minItems": 2,
        "readOnly": true,
        "type": "array"
      }
    }
  }
}
Table 47 defines the Properties that are part of the ['oic.r.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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Units for the temperature value</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>
<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>

6.23 Time Period

6.23.1 Introduction

This resource describes the time period over which any additionally provided information is derived or bounded. The startTime and stopTime are ISO8601 encoded strings. startTime must be present. The interval is the interval of the time period in minutes, if present this value must be no less than 1 minute. The startTime and interval are mutually exclusive; both Properties cannot be present in a Resource instance. 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 (rt) is defined as: ['oic.r.time.period'].

6.23.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Time Period",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:\n    1. Redistributions of source code must retain the above copyright notice, this list of conditions and
       the following disclaimer.\n    2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or
       other materials provided with the distribution.\n    THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
    LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
    WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
    ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
```
"paths": {
  "/TimePeriodResURI": {
    "get": {
      "description": "This resource describes the time period over which any additionally
provided information is derived or bounded. The startTime and stopTime are ISO8601 encoded
strings. startTime must be present. The interval is the interval of the time period in minutes, if
present this value must be no less than 1 minute. stopTime and interval are mutually exclusive;
both Properties cannot be present in a Resource instance. Defines a time period for information
retrieval, action or other behaviour.",
      "parameters": [
        {"$ref": "#/parameters/interface"},
        {"$ref": "#/parameters/interface"},
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.time.period"],
            "id": "unique_example_id",
            "startTime": "2015-01-09T14:30Z",
            "stopTime": "2015-01-09T14:45Z"
          }
        },
        "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": { "$ref": "#/definitions/TimePeriod" },
          "x-example": {
            "startTime": "2015-01-09T14:30Z",
            "stopTime": "2015-01-09T14:45Z"
          }
        },
        {"$ref": "#/parameters/interface"},
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "id": "unique_example_id",
            "startTime": "2015-01-09T14:30Z",
            "stopTime": "2015-01-09T14:45Z"
          }
        },
        "schema": { "$ref": "#/definitions/TimePeriod" }
      }
    }
  },
"enum" : ["oic.if.a", "oic.if.baseline"]
}
,"definitions": {
  "TimePeriod" : {
    "properties": {
      "rt" : 
      {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "interval" :
      {
        "description": "Time interval in minutes after the startTime, if present stopTime cannot be present",
        "type": "integer"
      },
      "precision" :
      {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n" :
      {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "range" :
      {
        "description": "The valid range for the value Property",
        "items": {
          "anyOf": [
            {
              "type": "number"
            },
            {
              "type": "integer"
            }
          ]
        },
        "maxItems": 2,
        "minItems": 2,
        "readOnly": true,
        "type": "array"
      },
      "stopTime" :
      {
        "description": "Stop time for the time period, if present interval cannot be present",
        "type": "string"
      },
      "startTime" :
      {
        "description": "Start time for the time period",
        "type": "string"
      },
      "step" :
      {
        "anyOf": [
          {
            "type": "integer"
          },
          {
            "type": "number"
          }
        ]
      }
    }
  }
}
6.23.5 Property definition

Table 49 defines the Properties that are part of the ['oic.r.time.period'] 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>Read Only</td>
<td>Resource Type</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
<td></td>
</tr>
<tr>
<td>stopTime</td>
<td>string</td>
<td>Read Write</td>
<td>Stop time for the time period, if present interval cannot be present</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>number</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
<td></td>
</tr>
<tr>
<td>startTime</td>
<td>string</td>
<td>Read Write</td>
<td>Start time for the time period</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
<td></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 50 – The CRUDN operations of the Resource with type 'rt' = ["oic.r.time.period"]

<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>

6.24 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 count property is an integer representing either the current count or goal value. Retrieves the current activity count.

6.24.2 Example URI

(ActivityCountResURI)

6.24.3 Resource type

The resource type (rt) is defined as: ["oic.r.sensor.activity.count"].

6.24.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Activity Count",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:  
  1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. 
  2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. 
  THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.""
    }
  }
}```
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/ActivityCountResURI": {
    "get": {
      "description": "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 count property is an integer representing either the current count or goal value.
Retrieves the current activity count.",
"parameters": [
  {
    "$ref": "#/parameters/interface"}
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.sensor.activity.count"],
      "id": "unique_example_id",
      "count": 2500
    }
  }
},
"post": {
  "description": "Sets the count target",
  "parameters": [
    {
      "$ref": "#/parameters/interface"},
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/Count" },
      "x-example": {
        "count": 5000
      }
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "id": "unique_example_id",
        "count": 5000
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "Count": {
    "properties": {
      "count": {
        "description": "Current or Target count."
      }
    }
  }
}
"type": "integer",
"rt": {
  "description": "Resource Type",
  "items": {
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
},
"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      { "type": "number" },
      { "type": "integer" }
    ],
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
  },
  "step": {
    "anyOf": [
      { "type": "integer" },
      { "type": "number" }
    ],
    "description": "Step value across the defined range",
    "readOnly": true
  },
  "id": {
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },
  "if": {
    "description": "The interface set supported by this resource",
    "items": {
      "enum": [
        "oic.if.baseline",
        "oic.if.ll",
        "oic.if.b"
      ]
    }
  }
}
6.24.5 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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>count</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>Current or Target count.</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>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>
6.25 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 value is 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 (rt) is defined as: ['oic.r.sensor.atmosphericpressure'].

6.25.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Atmospheric Pressure Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
        1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
        2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

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        HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AtmosphericPressureResURI": {
      "get": {
        "description": "This resource provides a measurement of Mean Sea Level Pressure experienced at the measuring point expressed in millibars. The value is float which describes the atmospheric pressure in hPa (hectoPascals). Note that hPa and the also commonly used unit of millibars (mbar) are numerically equivalent."
      },
      "parameters": [ {
        "$ref": "#/parameters/interface"
      } ],
      "responses": {
        "200": {
          "description": ",
          "x-example": {
            "rt": ["oic.r.sensor.atmosphericpressure"],
            "id": "unique_example_id",
            "atmosphericPressure": 1000.4
          }
        }
      },
      "schema": { "$ref": "#/definitions/atmosphericPressure" }
    }
  }
}
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "atmosphericPressure": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "atmosphericPressure": {
        "description": "Current atmospheric pressure in hPa.",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "range": {
        "description": "The valid range for the value Property",
        "items": {
          "anyOf": [
            {
              "type": "number"
            },
            {
              "type": "integer"
            }
          ]
        },
        "maxItems": 2,
        "minItems": 2,
        "readOnly": true,
        "type": "array"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "step": {
        "anyOf": [
          {
            "type": "integer"
          },
          {
            "type": "number"
          }
        ],
        "description": "Step value across the defined range",
        "readOnly": true
      }
    }
  }
}
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}

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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value</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>
</tbody>
</table>
atmosphericPressure | number | Yes | Read Only | Current atmospheric pressure in hPa.

### 6.25.6 CRUDN behaviour

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

| Table 54 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.sensor.atmosphericpressure'] |
|---------------------------------------------------|---------------------------------------------------|
| Create | Read | Update | Delete | Notify |
| get | observe |

### 6.26 Audio Controls

#### 6.26.1 Introduction

This resource defines basic audio control functions.

The 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 mute control 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 (rt) is defined as: ['oic.r.audio'].

#### 6.26.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Audio Controls",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AudioResURI": {
      "get": {
        "description": "This resource defines basic audio control functions.
The 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 mute control 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).
      }
    }},
  "description": "This resource defines basic audio control functions.\nThe volume is an integer containing a percentage [0,100].\nA volume of 0 (zero) means no sound produced.\nA volume of 100 means maximum sound production.\nThe mute control is implemented as a boolean.\nA mute value of true means that the device is muted (no audio).\nA mute value of false means that the device is not muted (audio)."
}
```
true means that the device is muted (no audio). A mute value of false means that the device is not muted (audio).

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

"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.audio"],
      "id": "unique_example_id",
      "volume": 50,
      "mute": false
    }
  }
},

"schema": { "$ref": "#/definitions/Audio" }
}
```

```
"post": {
  "description": "",
  "parameters": [  
    {
      "$ref": "#/parameters/interface"  
    },

    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/Audio" },
      "x-example": {
        "volume": 75,
        "mute": false
      }
    }
  ],

  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "id": "unique_example_id",
        "volume": 75,
        "mute": false
      }
    }
  }
}
```

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

```
"definitions": {
  "Audio": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
```
"type": "array",
"mute": {
  "description": "Mute setting of an audio rendering device",
  "type": "boolean"
},
"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"volume": {
  "description": "Volume setting of an audio rendering device",
  "maximum": 100,
  "minimum": 0,
  "type": "integer"
},
"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": {
      "type": "number"
    },
    "type": "integer"
  }
},
"step": {
  "anyOf": {
    "type": "integer"
  },
  "type": "number"
},
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll"
    ]
  }
}
6.26.5 Property definition

Table 55 defines the Properties that are part of the ['oic.r.audio'] Resource Type

Table 55 – The Property definitions of the Resource with type 'rt' = ['oic.r.audio']

<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>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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>mute</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>Mute setting of an audio rendering device</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>volume</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>Volume setting of an audio rendering device</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 56 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.audio']

<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>
6.27 Auto Focus

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

6.27.2 Example URI
/AutoFocusResURI

6.27.3 Resource type
The resource type (rt) is defined as: ['oic.r.autofocus'].

6.27.4 OpenAPI 2.0 definition
```json
{
    "swagger": "2.0",
    "info": {
        "title": "Auto Focus",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/AutoFocusResURI": {
            "get": {
                "description": "This resource describes an auto focus on/off feature. The value is a boolean. An AutoFocus value of 'true' means that the switch is on. An AutoFocus value of 'false' means that the switch is off. Note that when Pan Tilt Zoom (see 'Pan Tilt Zoom' Resource definition) is used the autofocus works only in the selected area.

    "parameters": [
        {
            "$ref": "/#parameters/interface"
        }
    ],
    "responses": {
        "200": {
            "description": "",
            "x-example": {
                "rt": ["oic.r.autofocus"],
                "id": "unique_example_id",
                "autoFocus": false
            }
        }
    },
    "schema": { "$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": {
        "id": "unique_example_id",
        "autoFocus": true
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "AutoFocus": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "autoFocus": {
        "description": "Status of the Auto Focus",
        "type": "boolean"
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      }
    }
  }
}
"if" : 
   
   "description": "The interface set supported by this resource",
   "items": 
     "enum": [ 
       "oic.if.baseline",
       "oic.if.ll",
       "oic.if.b",
       "oic.if.lb",
       "oic.if.rw",
       "oic.if.r",
       "oic.if.a",
       "oic.if.s"
     ],
     "type": "string"
   },
   "minItems": 1,
   "readOnly": true,
   "type": "array"
   
  
  
  
  
  
  
  
  
  
  
  "type": "array"
  },
  "type": "object"
 },


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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>autoFocus</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>Status of the Auto Focus</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>
</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></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 states are read only.

The adfStates is an array of the possible operational states.

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.
Retrieves the current automatic document feeder state.

6.28.2 Example URI
/AutomaticDocumentFeederResURI

6.28.3 Resource type
The resource type (rt) is defined as: ['oic.r.automaticdocumentfeeder'].

6.28.4 OpenAPI 2.0 definition
```json
{
  "swagger": "2.0",
  "info": {
    "title": "Automatic Document Feeder",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
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    }
  },
  "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 states are read only. The adf states is an array of the possible operational states. 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. Retrieves the current automatic document feeder state."
        "parameters": [
          {"$ref": "/#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {"rt": ["oic.r.automaticdocumentfeeder"],
                      "id": "unique_example_id",
                      "adfStates": ["adfProcessing", "adfEmpty", "adfJam", "adfLoaded",
                                    "adfMispick", "adfHatchOpen", "adfDuplexPageTooShort", "adfDuplexPageTooLong",
                                    "adfMultipickDetected", "adfInputTrayFailed", "adfInputTrayOverloaded"],
                      "currentAdfState": "adfProcessing"
                    }
        }
    }
  }
}```
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.s", "oic.if.baseline"]
}
"definitions": {
"AutomaticDocumentFeeder": {
"properties": {
"adfStates": {
  "description": "array of the possible adf states.",
  "items": {
    "type": "string"
  }
},
  "readOnly": true,
  "type": "array"
},
  "rt": {
   "description": "Resource Type",
   "items": {
    "maxLength": 64,
    "type": "string"
   }
},
  "minItems": 1,
  "readOnly": true,
  "type": "array"
},
  "n": {
   "description": "Friendly name of the resource",
   "maxLength": 64,
   "readOnly": true,
   "type": "string"
},
  "currentAdfState": {
   "description": "Current adf state.",
   "readOnly": true,
   "type": "string"
},
  "id": {
   "description": "Instance ID of this specific resource",
   "maxLength": 64,
   "readOnly": true,
   "type": "string"
},
  "if": {
   "description": "The interface set supported by this resource",
   "items": {
    "enum": ["oic.if.baseline", "oic.if.ll", "oic.if.lb", "oic.if.rw", "oic.if.r", "oic.if.a", "oic.if.s"]
   }
   },
   "minItems": 1,
   "readOnly": true,
   "type": "array"
   },
   "required": ["adfStates", "currentAdfState"]
}
6.28.5 Property definition

Table 59 defines the Properties that are part of the ['oic.r.automaticdocumentfeeder'] 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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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>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>adfStates</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>array of the possible adf states.</td>
</tr>
<tr>
<td>currentAdfState</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>Current adf state.</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 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 (rt) is defined as: ['oic.r.button'].

6.29.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Button Switch",
        "version": "v1.1.0-20160519",
        "license": {
```
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"type": "boolean"
},
"n" :
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"id" :
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"if" :
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}
},
"type": "array"
}

<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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>Status of the button</td>
</tr>
</tbody>
</table>

6.29.5 Property definition

Table 61 defines the Properties that are part of the ['oic.r.button'] Resource Type

Table 61 – The Property definitions of the Resource with type 'rt' = ['oic.r.button']

6.29.6 CRUDN behaviour

Table 62 defines the CRUDN operations that are supported on the ['oic.r.button'] Resource Type
Table 62 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.button']

<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>

6.30 Carbon Dioxide Sensor

6.30.1 Introduction

This resource describes whether carbon dioxide has been sensed or not. The 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 (rt) is defined as: ['oic.r.sensor.carbondioxide'].

6.30.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Carbon Dioxide Sensor",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/CarbonDioxideResURI": {
            "get": {
                "description": "This resource describes whether carbon dioxide has been sensed or not."
            }
        }
    }
}
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "CO2": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "value": {
        "description": "true = sensed, false = not sensed.",
        "readOnly": true,
        "type": "boolean"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "if": {
        "description": "The interface set supported by this resource",
        "items": {
          "enum": ["oic.if.baseline", "oic.if.ll", "oic.if.b", "oic.if.lb", "oic.if.rw", "oic.if.r", "oic.if.a", "oic.if.s"],
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      }
    },
    "type": "object",
    "required": ["value"]
  }
}
6.30.5 Property definition

Table 63 defines the Properties that are part of the ['oic.r.sensor.carbondioxide'] 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>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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>true = sensed, false = not sensed.</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>
<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 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 (rt) is defined as: ['oic.r.sensor.carbonmonoxide'].

6.31.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Carbon Monoxide Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  }
}``
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"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],

"paths": {
  "/CarbonMonoxideResURI": {
    "get": {
      "description": "This resource describes whether carbon monoxide has been sensed or not.\nThe value is a boolean.\nA value of 'true' means that carbon monoxide has been detected.\nA value of 'false' means that carbon monoxide has not been detected.\n",
      "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"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "value": {
        "description": "true = sensed, false = not sensed.",
        "readOnly": true,
        "type": "boolean"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
      }
    }
  }
}
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>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>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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 66 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.sensor.carbonmonoxide']

<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 value is a boolean.
An AutoWhiteBalance value of 'true' means that the switch is on.
An AutoWhiteBalance value of 'false' means that the switch is off.

6.32.2 Example URI
/AutoWhiteBalanceResURI

6.32.3 Resource type
The resource type (rt) is defined as: ['oic.r.colour.autowhitebalance'].

6.32.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Auto White Balance",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AutoWhiteBalanceResURI": {
      "get": {
        "description": "This resource describes an auto balance on/off feature. The value is a boolean. An AutoWhiteBalance value of 'true' means that the switch is on. An AutoWhiteBalance value of 'false' means that the switch is off."
      },
      "parameters": [{$ref: "/parameters/interface"}],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ['oic.r.colour.autowhitebalance'],
            "id": "unique_example_id",
            "autoWhiteBalance": false
          }
        }
      }
    }
  }
}
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"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": {  
        "id": "unique_example_id",  
        "autoWhiteBalance": true  
      }  
    }  
  }  
},  
"parameters": {  
  "interface": {  
    "in": "query",  
    "name": "if",  
    "type": "string",  
    "enum": ["oic.if.a", "oic.if.baseline"]  
  }  
},  
"definitions": {  
  "AutoWhiteBalance": {  
    "properties": {  
      "rt": {  
        "description": "Resource Type",  
        "items": {  
          "maxLength": 64,  
          "type": "string"  
        },  
        "minItems": 1,  
        "readOnly": true,  
        "type": "array"  
      },  
      "autoWhiteBalance" : {  
        "description": "Status of the Auto White balance",  
        "type": "boolean"  
      },  
      "n" : {  
        "description": "Friendly name of the resource",  
        "maxLength": 64,  
        "readOnly": true,  
        "type": "string"  
      },  
      "id" : {  
        "description": "Instance ID of this specific resource",  
        "maxLength": 64,  
        "readOnly": true,  
        "type": "string"  
      }  
    }  
  }  
}
6.32.5 Property definition

Table 67 defines the Properties that are part of the ['oic.r.colour.autowhitebalance'] 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>autoWhiteBalance</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>Status of the Auto White balance</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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>
<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>
6.33 Colour Saturation

6.33.1 Introduction

This resource describes a Colour saturation value. The value is an integer. A colour saturation has a range of [0,100]. A colour saturation value of 0 means producing black and white images. A colour saturation value of 50 means producing device specific normal colour images. A colour saturation value of 100 means producing device very full colour images.

6.33.2 Example URI

/ColourSaturationResURI

6.33.3 Resource type

The resource type (rt) is defined as: ['oic.r.colour.saturation'].

6.33.4 OpenAPI 2.0 definition

{
  "swagger": "2.0",
  "info": {
    "title": "Colour Saturation",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ColourSaturationResURI": {
      "get": {
        "description": "This resource describes a Colour saturation value. The value is an integer. A colour saturation has a range of [0,100]. A colour saturation value of 0 means producing black and white images. A colour saturation value of 50 means producing device specific normal colour images. A colour saturation value of 100 means producing device very full colour images."
      
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ['oic.r.colour.saturation'],
            "id": "unique_example_id",
            "colourSaturation": 50
          }
        }
      },
      "schema": { "$ref": "#/definitions/Saturation" }
    }
  }
}
"post": {
  "description": 
  "parameters": [
    {
      "$ref": "#/parameters/interface",
      "name": "body",
      "in": "body",
      "required": true,
      "schema": {
        "$ref": "#/definitions/Saturation"
      }
    },
    {
      "colourSaturation": 60
    }
  ],
  "responses": {
    "200": {
      "description": 
      "x-example": 
      {
        "id": "unique_example_id",
        "colourSaturation": 60
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "Saturation": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        }
      },
      "minItems": 1,
      "readOnly": true,
      "type": "array"
    },
    "precision": {
      "description": "Accuracy granularity of the exposed value",
      "readOnly": true,
      "type": "number"
    },
    "n": {
      "description": "Friendly name of the resource",
      "maxLength": 64,
      "readOnly": true,
      "type": "string"
    },
    "range": {
      "description": "The valid range for the value Property",
      "items": {
        "anyOf": [
          
```
Table 69 defines the Properties that are part of the ['oic.r.colour.saturation'] Resource Type
Table 69 – The Property definitions of the Resource with type 'rt' = ['oic.r.colour.saturation']

<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>id</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>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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></td>
<td></td>
<td>observe</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 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 (rt) is defined as: ['oic.r.sensor.contact'].

6.34.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Contact Sensor",
      "version": "v1.1.0-20160519",
      "license": {
         "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
      }
   }
}
```
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ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.

"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 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"],
"id": "unique_example_id",
"value": true
}
}
},
"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.s", "oic.if.baseline"]
}
},
"definitions": {
"Contact": {
"properties": {
"rt" :
{
"description": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"value":
{
"description": "true = sensed, false = not sensed.",
"readOnly": true,
"type": "boolean"
}
6.34.5 Property definition

Table 71 defines the Properties that are part of the ['oic.r.sensor.contact'] 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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>
</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 DRType is the ApplianceLoadReductionType defined in Zigbee/HA Smart Energy Profile 2.0.
Start is a string containing an ISO8601 encoded start time.
The duration value is in minutes.
Override indicates whether the consumer has overridden the request (true) or not (false).
Provides the current DRLC action that is being applied.

6.35.2 Example URI

/DRLCResURI

6.35.3 Resource type

The resource type (rt) 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": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
        }
    },
    "paths": {
        "/DRLCResURI": {
            "get": {
                "description": "This resource describes any to be applied or currently being applied DRLC signal.
The DRType is the ApplianceLoadReductionType defined in Zigbee/HA Smart Energy Profile 2.0.
Start is a string containing an ISO8601 encoded start time.
The duration value is in minutes.
Override indicates whether the consumer has overridden the request (true) or not (false).
Provides the current DRLC action that is being applied."
            },
            "parameters": [
                {"$ref": "/#parameters/interface"}
            ],
            "responses": {
                "200": {
                    "description": "",
                    "x-example": {
                        "rt": "["oic.r.energy.drlc"]",
                        "interface": {
                            "interface": "DRLCResURI",
                            "version": "v1.1.0-20160519"
                        }
                    }
                }
            }
        }
    }
}```
"id": "unique_example_id",
"DRTyp": 1,
"start": "2015-01-09T16:45Z",
"duration": 10,
"override": false
}
},
"schema": { "$ref": "#/definitions/DRLC" }
}
},
"put": {
"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": { "$ref": "#/definitions/DRLC" },
"x-example":
{
"rt": ["oic.r.energy.drlc"],
"id": "unique_example_id",
"DRTyp": 1,
"start": "2015-01-09T16:45Z",
"duration": 10
}
},
"responses": {
"200": {
"description": "Indicates that the target DRLC resource was changed. The new
resource attributes are provided in the response."
},
"x-example":
{
"DRTyp": 1,
"id": "unique_example_id",
"start": "2015-01-09T17:00Z",
"duration": 15,
"override": false
}
},
"schema": { "$ref": "#/definitions/DRLC" }
},
"201": {
"description": "Indicates successful creation of the DRLC resource with the
attributes provided. The response includes the URI of the created resource."
},
"x-example":
{
"ResURI": "/MyDevice/MyDRLCURI"
}
},
"schema": { "$ref": "#/definitions/CreateResponse" }

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.b", "oic.if.baseline"]
  }
},
"definitions": {
  "DRLC": {
    "properties": {
      "rt": 

{  
  "description": "Resource Type",
  "items": {  
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
},

"step": {  
  "anyOf": [
    {  
      "type": "integer"
    },
    {  
      "type": "number"
    }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},

"start": {
  "description": "The start time for the application of DR",
  "type": "string"
},

"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},

"value": {  
  "anyOf": [
    {  
      "type": "array"
    },
    {  
      "type": "string"
    },
    {  
      "type": "boolean"
    },
    {  
      "type": "integer"
    },
    {  
      "type": "number"
    },
    {  
      "type": "object"
    }
  ],
  "description": "The value sensed or actuated by this Resource"
},

"n": {  
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"duration": 

{ "description": "The duration of the to be applied DR type", "type": "integer" },

"range": {
"description": "The valid range for the value Property", "items": {
"anyOf": [
"type": "number"
],
"type": "integer"
}
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array" },

"override": {
"description": "Whether the consumer has overriden the application of DR", "type": "boolean" },

"DRType": {
"description": "The to be applied demand-response type", "type": "integer" },

"id": {
"description": "Instance ID of this specific resource", "maxLength": 64,
"readOnly": true,
"type": "string" },

"if": {
"description": "The interface set supported by this resource", "items": {
"enum": [
"oic.if.baseline",
"oic.if.nl",
"oic.if.bl",
"oic.if.lb",
"oic.if.rw",
"oic.if.ro",
"oic.if.a",
"oic.if.s"
],
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array" }
"type": "object",
"required": ["DRType"]
"CreateResponse": {
"properties": {
}
6.35.5 Property definition

Table 73 defines the Properties that are part of the ["oic.r.energy.drlc"] 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>ResURI</td>
<td>string</td>
<td></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>Resource Type</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>value</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The value sensed or actuated by this Resource</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>duration</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The duration of the to be applied DR type</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>DRType</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The to be applied demand-response type</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>post</td>
<td>get</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 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 (rt) 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": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE."
        }
    },
    "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 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": [
                {"$ref": "#/parameters/interface"}
            ],
            "responses": {
                "200": {
                    "description": "",
                    "x-example": {
                        "rt": ["oic.r.energy.overload"],
                        "id": "unique_example_id",
                        "value": true
                    }
                }
            }
        }
    }
}
```
"schema": { "$ref": "#/definitions/EnergyOverload" }

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

"definitions": {
  "EnergyOverload": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "value": {
        "description": "true = sensed, false = not sensed.",
        "readOnly": true,
        "type": "boolean"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "if": {
        "description": "The interface set supported by this resource",
        "items": {
          "enum": ["oic.if.baseline", "oic.if.ll", "oic.if.b", "oic.if.lb", "oic.if.rw", "oic.if.r", "oic.if.a", "oic.if.s"],
          "type": "string"
        },
        "minItems": 1,
        "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>Resource Type</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>true = sensed, false = not sensed.</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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></td>
<td></td>
<td></td>
<td>observe</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 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 (rt) is defined as: ['oic.r.sensor']

6.37.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Generic Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution. THIS SOFTWARE IS PROVIDED BY The Open Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT"
  }
}
```
"get": {
  "description": "This resource describes whether some value or property or entity has been
  sensed or not.\nThe value is a boolean.\nA value of 'true' means that the target has been sensed.\nA
  value of 'false' means that the target has not been sensed.\n",
  "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": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
          "description": "Friendly name of the resource",
          "maxLength": 64,
          "readOnly": true,
          "type": "string"
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>id</td>
<td>string</td>
<td>yes</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td></td>
<td>Read Only</td>
<td>true = sensed, false = not sensed.</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td></td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td></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></td>
<td>Read Only</td>
<td>Resource Type</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>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>
6.38 Glass Break Sensor

6.38.1 Introduction
This resource describes a glass break sensor. The value is a boolean. A value of ‘true’ means that glass break has been sensed. A value of ‘false’ means that glass break has not been sensed.

6.38.2 Example URI
/GlassBreakResURI

6.38.3 Resource type
The resource type (rt) is defined as: ['oic.r.sensor.glassbreak'].

6.38.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Glass Break Sensor",
      "version": "v1.1.0-20160519",
      "license": {
         "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
         "description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.
IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE."
      }
   },
   "schemes": ["http"],
   "consumes": ["application/json"],
   "produces": ["application/json"],
   "paths": {
      "/GlassBreakResURI": {
         "get": {
            "description": "This resource describes a glass break sensor. The value is a boolean. A value of 'true' means that glass break has been sensed. A value of 'false' means that glass break has not been sensed.",
            "parameters": [
               {
                  "$ref": "#/parameters/interface"
               }
            ],
            "responses": {
               "200": {
                  "description": "",
                  "x-example": {
                     "rt": ["oic.r.sensor.glassbreak"],
                     "id": "unique_example_id",
                     "value": true
                  }
               }
            }
         }
      }
   }
}
```

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

"definitions": {
  "GlassBreak": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "value": {
        "description": "true = sensed, false = not sensed.",
        "readOnly": true,
        "type": "boolean"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "if": {
        "description": "The interface set supported by this resource",
        "items": {
          "enum": ["oic.if.baseline", "oic.if.ll", "oic.if.b", "oic.if.lb", "oic.if.rw", "oic.if.r", "oic.if.a", "oic.if.s"],
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      }
    },
    "type": "object",
    "required": ["value"]
  }
}

6.38.5 Property definition

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

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Table 79 – The Property definitions of the Resource with type 'rt' = ["oic.r.sensor.glassbreak"]

<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 interface set supported by this resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>true = sensed, false = not sensed.</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>
<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>

6.39 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", "Zone5".

6.39.2 Example URI

/HeartRateZoneResURI

6.39.3 Resource type

The resource type (rt) 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": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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```
"get": {
  "description": "This resource describes a measured heart rate by the current Zone using the
  Zoladz method\nThe Zoladz method defines Zones based on maximum heart rate; Zone 1 is the lowest,
  Zone 5 is the highest.\nThe heartRateZone is an enumeration containing one of: \"Zone1\", \"Zone2\", \"Zone3\", \"Zone4\", \"Zone5\".
  "parameters": [
    {"$ref": "/parameters/interface"},

  ]
},
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.sensor.heart.zone"],
      "id": "unique_example_id",
      "heartRateZone": "Zone3"
    }
  }
},
"schema": { "$ref": "/definitions/heartRateZone" }
}

"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "heartRateZone": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "step": {
        "anyOf": [
          {
            "type": "integer"
          },
          {
            "type": "number"
          }
        ],
        "description": "Step value across the defined range",
        "readOnly": true
      }
    }
  }
}
"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},

"value": {
  "anyOf": [
    { "type": "array" },
    { "type": "string" }
  ],
  "description": "The value sensed or actuated by this Resource"
},

"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"range": {
  "description": "The valid range for the value Property",
  "items": [
    { "type": "number" }
  ],
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},

"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"heartRateZone": {
  "description": "Current heart rate zone based on the Zoladz system."
}
"Zone1",
"Zone2",
"Zone3",
"Zone4",
"Zone5"
]
readOnly: true,
type: "string"

if:

description: "The interface set supported by this resource",
items: {
enum: [  
"oic.if.baseline",
"oic.if.ill",
"oic.if.b",
"oic.if.lb",
"oic.if.rb",
"oic.if.rl",
"oic.if.a",
"oic.if.s"
],
type: "string"
}
minItems: 1,
readOnly: true,
type: "array"

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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>
<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 interface set supported by this resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>value</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The value sensed or</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>
<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>

6.40 Illuminance Sensor

6.40.1 Introduction

This resource describes an illuminance sensor. Illuminance is a float and represents the sensed luminous flux per unit area in lux.

6.40.2 Example URI

/IlumminanceSensorResURI

6.40.3 Resource type

The resource type (rt) is defined as: ['oic.r.sensor.illuminance'].

6.40.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Illuminance Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/IlluminanceSensorResURI": {
      "get": {
        "description": "This resource describes an illuminance sensor. Illuminance is a float and represents the sensed luminous flux per unit area in lux."
      }
    }
  }
}
```

<table>
<thead>
<tr>
<th>range</th>
<th>array: see schema</th>
<th>No</th>
<th>Read Only</th>
<th>actuated by this Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Accuracy granularity of the exposed value</td>
</tr>
</tbody>
</table>
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.sensor.illuminance"],
      "id": "unique_example_id",
      "illuminance": 450.0
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "Illuminance": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "illuminance": {
        "description": "Sensed luminous flux per unit area in lux.",
        "readOnly": true,
        "type": "number"
      },
      "range": {
        "description": "The valid range for the value Property",
        "items": {
          "anyOf": {
            "type": "number"
          }
        },
        "type": "integer"
      }
    },
    "maxItems": 2,
6.40.5 Property definition

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

Table 83 – The Property definitions of the Resource with type 'rt' = ['oic.r.sensor.illuminance']

<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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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 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

6.41.3 Resource type

The resource type (rt) is defined as: ['oic.r.sensor.magneticfielddirection'].

6.41.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Magnetic Field Direction Sensor",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved._",
            "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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```
"description": "This resource describes the direction of the Earth's magnetic field at the observer's current point in space. The 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).

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

"responses": {  
  "200": {  
    "description": "",  
    "x-example":  
},  
},  

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

"definitions": {  
  "magneticFieldDirection": {  
    "properties": {  
      "rt": {  
        "description": "Resource Type",  
        "items": {  
          "maxLength": 64,  
          "type": "string"  
        },  
        "minItems": 1,  
        "readOnly": true,  
        "type": "array"  
      },  
      "precision": {  
        "description": "Accuracy granularity of the exposed value",  
        "readOnly": true,  
        "type": "number"  
      },  
      "value": {  
        "description": "Array containing Hx, Hy, Hz.",  
        "items": {  
          "type": "number"  
        },  
        "maxItems": 3,  
        "minItems": 3,  
        "readOnly": true,  
        "type": "array"  
      },  
      "n": 
    }  
}  
}
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"range": {
"description": "The valid range for the value Property",
"items": {
  "anyOf": [
    {"type": "number"},
    {"type": "integer"}
  ]
},
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"step": {
  "anyOf": [
    {"type": "integer"},
    {"type": "number"}
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.f",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}
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>value</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>Array containing Hx, Hy, Hz.</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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.

Retrieves the current media resource.

6.42.2 Example URI

/MediaResURI

6.42.3 Resource type

The resource type (rt) is defined as: ['oic.r.media'].

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6.4.2.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Media",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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},
  "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:

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 sdarray is an SDP line.
Each line shall follow the SDP description syntax as defined in the SDP specification.

Retrieves the current media resource."
      },
      "parameters": [{"$ref": "#/parameters/interface"}],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.media"],
            "id": "unique_example_id",
            "media": [
              {
                "url": "some example url",
                "sdp": {
                  "m=video 1 RTP/AVP 96",
                  "a=rtpmap:96 H264/9000",
                  "a=fmtp:96 profile-level-id=42A028;packetization-mode=1"
                }
              },
              {
                "url": "some other example1 url",
                "sdp": {
                  "m=audio 2 RTP/AVP 97",
                  "a=rtpmap:97 MP4A-LATM/90000"
                }
              },
              {
                "url": "some other example2 url",
                "sdp": {
                  "m=video 3 RTP/AVP 98",
                  "a=rtpmap:98 jpeg/90000",
                  "a=fmtp:98 sampling=YCbCr-4:2:0;width=256;height=256"
                }
              }
            ]
          }
        }
      }
    }
  }
}
```
"schema": { "$ref": "#/definitions/Media" }
"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.s", "oic.if.baseline"]
}
"definitions": {
"Media": {
"properties": {
"rt": {
"description": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"media": {
"items": {
"properties": {
"sdp": {
"description": "Array of strings, one per SDP line",
"items": {
"description": "SDP media or attribute line",
"type": "string"
},
"type": "array"
},
"url": {
"description": "url for the media instance",
"type": "string"
}
},
"type": "object"
},
"n": {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"id": {
"description": "Instance ID of this specific resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": [
"oic.if.baseline",
"oic.if.s", "oic.if.baseline"]
},
"enum": ["oic.if.baseline", "oic.if.s"]
}
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>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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>media</td>
<td>array: 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>Resource Type</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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></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>

6.43 Media Source
6.43.1 Introduction
This resource defines a media source that exists on a device.
The source can be an input source or output source, this resource is agnostic of that.
The sourceName specifies a pre-defined media input or output (e.g. "HDMI", "DVI")
The sourceNumber is a numeric identifier to specify the instance (e.g. "PC", "1")
The sourceType is an enumeration defining whether the source is audio, video or both.
The 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 (rt) is defined as: ['oic.r.mediasource'].

6.43.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Media Source",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
        }
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/mediaSourceResURI": {
            "get": {
                "description": "This resource defines a media source that exists on a device. The source can be an input source or output source, this resource is agnostic of that. The sourceName specifies a pre-defined media input or output (e.g. "HDMI", "DVI") and the sourceNumber is a numeric identifier to specify the instance (e.g. "1", "PC"). The sourceType is an enumeration defining whether the source is audio, video or both. The status is a boolean that determines if the specific source instance is selected or not. A status of false means that the source instance is selected. A status of false means that the source instance is not selected."
            },
            "parameters": [
                {
                    "$ref": "#/parameters/interface"
                }
            ],
            "responses": {
                "200": {
                    "description": "",
                    "x-example": {
                        "rt": ["oic.r.mediasource"],
                        "id": "unique_example_id",
                        "sourceName": "HDMI-CEC",
                        "sourceNumber": "1",
                        "sourceType": "audioPlusVideo",
                        "status": true
                    }
                }
            }
        },
        "post": {
            "description": "Changes the status of the source. Allows changes of the sourceName and the status."
        },
        "parameters": [
            {
                "$ref": "#/parameters/interface"
            }
        ]
    }
}
```

The `OICConnectivityOpenSource` provides specifications and APIs for enabling connectivity within the Internet of Things (IoT) ecosystem. This excerpt illustrates the definition of a media source resource, which is represented using the OpenAPI 2.0 standard. The resource is defined with a URI path `/mediaSourceResURI`, and it includes a GET method that provides a description of a media source, along with parameters for sourceName, sourceNumber, sourceType, and status. The response includes an example of how to represent a media source using JSON. This example is part of a larger specification that guides developers on how to implement and interact with media sources in IoT devices.
"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "#/definitions/mediaSource" },
"x-example":
{
   "sourceName": "my new name",
   "sourceNumber": "1",
   "status": true
}

"responses": {
   "200": {
      "description": "",
      "x-example":
      {
         "id": "unique_example_id",
         "sourceName": "my new name",
         "sourceNumber": "1",
         "status": true
      }
   }
}

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

"definitions": {
   "mediaSource": {
      "properties": {
         "rt": {
            "description": "Resource Type",
            "items": {
               "maxLength": 64,
               "type": "string"
            },
            "minItems": 1,
            "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":
   }
}
"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"range": {
  "description": "The valid range for the value Property",
  "items": [
    "anyOf": [
      "type": "number"
    ],
    "type": "integer"
  ],
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},
"step": {
  "anyOf": [
    "type": "integer"
  ],
  "type": "number"
},
"sourceNumber": {
  "description": "Numeric identifier to specify the instance",
  "readOnly": true,
  "type": [integer, string]
},
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": [
    "enum": ["oic.if.baseline", "oic.if.l1", "oic.if.b", "oic.if.l1b", "oic.if.rw", "oic.if.r", "oic.if.a"]
  ]
}
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>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>sourceNumber</td>
<td>['integer', 'string']</td>
<td>No</td>
<td>Read Only</td>
<td>Numeric identifier to specify the instance</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>sourceType</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Specifies the type of the source</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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>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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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>observe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.44 Media Source List

6.44.1 Introduction

This resource provides the list of media sources available on the device. The sources are an array of mediaSource(s) as separately defined. The basic resource type oic.r.mediaSourceList does not provide any indications whether the source is input or output. Hence, two specializations of this resource exist. When a device exposes input sources then an instance of this resource with a resource type of oic.r.media.input is exposed. When a device exposes output sources then an instance of this resource with a resource type of oic.r.media.output is exposed. A device that exposes both input and output media sources then exposes two instances of this resource, one with a resource type or oic.r.media.input and one with a resource type of oic.r.media.output.

6.44.2 Example URI

/mediaSourceListResURI

6.44.3 Resource type

The resource type (rt) is defined as: ['oic.r.mediasourceList'].

6.44.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Media Source List",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

        1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
        2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

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    }
  },

  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/mediaSourceListResURI": {
      "get": {
        "description": "This resource provides the list of media sources available on the device. The sources are an array of mediaSource(s) as separately defined. The basic resource type oic.r.mediaSourceList does not provide any indications whether the source is input or output. Hence, two specializations of this resource exist. When a device exposes input sources then an instance of this resource with a resource type of oic.r.media.input is exposed. When a device exposes output sources then an instance of this resource with a resource type of oic.r.media.output is exposed. A device that exposes both input and output media sources then exposes two instances of this resource, one with a resource type or oic.r.media.input and one with a resource type of oic.r.media.output.
      }
    }
  }
}
```
exposes two instances of this resource, none with a resource type or oic.r.media.input and one with a resource type of oic.r.media.output:

```
"parameters": [
  {"$ref": "/parameters/interface"},
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.mediasourcelist"],
      "id": "unique_example_id",
      "sources": [
        {
          "sourceName": "HDMI-CEC",
          "sourceNumber": "1",
          "sourceType": "audioPlusVideo",
          "status": true
        },
        {
          "sourceName": "dualRCA",
          "sourceNumber": "1",
          "sourceType": "audioOnly",
          "status": false
        }
      ]
    },
    "schema": { "$ref": "#/definitions/mediaSourceList" }
  }
},
"post": {
  "description": "Changes the status of the source(s). Allows changes of the sourceName and the status.",
  "parameters": [
    {"$ref": "/parameters/interface"},
    {
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "#/definitions/mediaSourceList" },
      "x-example": {
        "sources": [
          {
            "sourceName": "my new name",
            "sourceNumber": "1",
            "status": true
          }
        ]
      },
      "schema": { "$ref": "#/definitions/mediaSourceList" }
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "id": "unique_example_id",
        "sources": {
          "sourceName": "my new name",
          "sourceNumber": "1",
          "status": true
        }
      },
      "schema": { "$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": {
                    "maxLength": 64,
                    "type": "string"
                },
                "minItems": 1,
                "readOnly": true,
                "type": "array"
            },
            "precision": {
                "description": "Accuracy granularity of the exposed value",
                "readOnly": true,
                "type": "number"
            },
            "n": {
                "description": "Friendly name of the resource",
                "maxLength": 64,
                "readOnly": true,
                "type": "string"
            },
            "sources": {
                "items": {
                    "properties": {
                        "sourceNumber": {
                            "description": "Numeric identifier to specify the instance",
                            "readOnly": true,
                            "type": ["integer", "string"
                        ]
                    }
                }
            }
        }
    },
    "sourceName": {
        "description": "Specifies a pre-defined media input or output",
        "type": "string"
    },
    "sourceNumber": {
        "description": "Numeric identifier to specify the instance",
        "readOnly": true,
        "type": ["integer", "string"
    ]
},
    "sourceType": {
        "description": "Specifies the type of the source",
        "enum": ["audioOnly", "videoOnly", "audioPlusVideo"
    ]
},
    "status": {
        "description": "Specifies if the specific source instance is selected or not",
        "type": "boolean"
    }
}
"type": "array",
"range": {
    "description": "The valid range for the value Property",
    "items": [
        "anyOf": [
            { "type": "number" },
            { "type": "integer" }
        ]
    },
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
},
"step": {
    "anyOf": [
        { "type": "integer" },
        { "type": "number" }
    ],
    "description": "Step value across the defined range",
    "readOnly": true
},
"id": {
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},
"if": {
    "description": "The interface set supported by this resource",
    "items": [
        { "enum": ["oic.if.baseline", "oic.if.ll", "oic.if.l", "oic.if.lb", "oic.if.rw", "oic.if.r", "oic.if.a", "oic.if.s"],
        "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
},
"type": "object",
"required": ["sources"]
}
}

6.44.5 Property definition

Table 91 defines the Properties that are part of the ['oic.r.mediasourcelist'] Resource Type.
Table 91 – The Property definitions of the Resource with type 'rt' = ['oic.r.mediasourcelist']

<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 interface set supported by this resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>sources</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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></td>
<td></td>
<td>observe</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 mediaSource(s) as separately defined.

6.45.2 Example URI
/mediaSourceInputResURI

6.45.3 Resource type
The resource type (rt) is defined as: ['oic.r.media.input'].

6.45.4 OpenAPI 2.0 definition

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ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE."

{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 mediaSource(s) as separately defined."
,"parameters": [
{"$ref": "/#parameters/interface"}
]},
"responses": {
"200": {
"description": ",
"x-example": {
"rt": ["oic.r.media.input"],
"id": "unique_example_id",
"sources": {
"sourceName": "HDMI-CEC",
"sourceNumber": "1",
"sourceType": "audioPlusVideo",
"status": true
},
"sourceName": "dualRCA",
"sourceNumber": "1",
"sourceType": "audioOnly",
"status": false
}
}
},
"post": {
"description": "Changes the status of the source(s). Allows changes of the sourceName and
the status."
,"parameters": [
{"$ref": "/#parameters/interface"},
"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "/#definitions/mediaSourceList" },
"x-example": {
"sources": [ {
"sourceName": "my new name",
"sourceNumber": "1",
"status": true
}
]
},
"responses": {
"200": {
"description": "OK",
"body": {
"message": "Changes the status of the source(s)."
"sourceId": "unique_example_id"
}
},
"400": {
"description": "Bad Request",
"body": {
"message": "The request is not well-formed.
"sourceId": "unique_example_id"
}
},
"404": {
"description": "Not Found",
"body": {
"message": "The source is not found.
"sourceId": "unique_example_id"
}
},
"500": {
"description": "Internal Server Error",
"body": {
"message": "An error occurred on the server.
"sourceId": "unique_example_id"
}
}
}
"200": {
  "description": "",
  "x-example": {
    "id": "unique_example_id",
    "sources": [
      {
        "sourceName": "my new name",
        "sourceNumber": "1",
        "status": true
      }
    ]
  }
}

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

"definitions": {
  "mediaSourceList": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "sources": {
        "items": {
          "properties": {
            "sourceName": {
              "description": "Specifies a pre-defined media input or output",
              "type": "string"
            },
            "sourceNumber": {
              "description": "Numeric identifier to specify the instance",
              "readOnly": true,
              "type": {
                "integer",
                "string"
              }
            },
            "sourceType": {
              "description": "Specifies the type of the source",
              "enum": ["audioOnly", "videoOnly",
                "audioVideo"]
            }
          }
        }
      }
    }
  }
}

"audioPlusVideo",
"readOnly": true,
"type": "string"
},
"status": {
 "description": "Specifies if the specific source instance is selected or not",
"type": "boolean"
}
}
],
"type": "array"
},
"range": {
 "description": "The valid range for the value Property",
"items": {
 "anyOf": [
 {"type": "number"}
 },
 {"type": "integer"}
]
 },
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"step": {
 "anyOf": [
 {"type": "integer"}
 ],
{"type": "number"}
],
"description": "Step value across the defined range",
"readOnly": true
},
"id": {
 "description": "Instance ID of this specific resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"if": {
 "description": "The interface set supported by this resource",
"items": {
 "enum": [
 "oic.if.baseline",
 "oic.if.ll",
 "oic.if.b",
 "oic.if.lb",
 "oic.if.ta",
 "oic.if.tw",
 "oic.if.ta",
 "oic.if.ta",
 "oic.if.ta"
 ],
"type": "string"
],
"minItems": 1,
"readOnly": true,
"type": "array"
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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>sources</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></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>post</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 mediaSource(s) as separately defined.

6.46.2 Example URI

/mediaSourceOutputResURI

6.46.3 Resource type

The resource type (rt) is defined as: ['oic.r.media.output'].

6.46.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Media Source Output",
        "version": "v1.1.0-20160519"
    }
}
```
"license": {
  "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
  "x-description": "Redistribution and use in source and binary forms, with or without
  modification, are permitted provided that the following conditions are met:\n
  1. Redistributions of source code must retain the above copyright notice, this list of conditions and
  the following disclaimer.\n  2. Redistributions in binary form must reproduce the above
  copyright notice, this list of conditions and the following disclaimer in the documentation and/or
  other materials provided with the distribution.\n
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  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
  WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n  IN NO EVENT SHALL THE Open Connectivity

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  OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
  SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n  HOWEVER CAUSED AND ON
  ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
  OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
  SUCH DAMAGE.\n"
},
"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.\n      The sources are an array of mediaSource(s) as separately defined.\n"
    },
    "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.\n          The sources are an array of mediaSource(s) as separately defined.\n"
        },
        "post": {
          "description": "Changes the status of the source(s).\n          Allows changes of the sourceName and
          the status.\n"
        }
      }
    }
  }
}
"schema": { "$ref": "/#definitions/mediaSourceList" }
}
"sourceNumber": "1",
"status": true
}
]

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

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

"definitions": {
  "mediaSourceList": {
    "properties": {
      "rt": {
        "items": {  
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "sources": {
        "items": {
          "oneOf": [
            {
              "properties": {
                "sourceName": {
                  "description": "Specifies a pre-defined media input or output",
                  "type": "string"
                }
              }
            }
          ]
        }
      }
    }
  }
}


  "sourceNumber": {
      "description": "Numeric identifier to specify the instance",
      "readOnly": true,
      "type": ["integer", "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": "array"
},

"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      { "type": "number"
      },
      { "type": "integer"
      }
    ],
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
  },

  "step": {
    "anyOf": [
      { "type": "integer"
      },
      { "type": "number"
      }
    ],
    "description": "Step value across the defined range",
    "readOnly": true
  }

  },

  "id": {
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },

  "if": {
    "description": " The interface set supported by this resource",
    "items": [
      { "enum": ["string"
      ]},
    "type": ["integer", "string"]
  }

  },

  "range": {
    "description": "The valid range for the value Property",
    "items": {
      "anyOf": [
        { "type": "number"
        },
        { "type": "integer"
        }
      ],
      "maxItems": 2,
      "minItems": 2,
      "readOnly": true,
      "type": "array"
    },

    "step": {
      "anyOf": [
        { "type": "integer"
        },
        { "type": "number"
        }
      ],
      "description": "Step value across the defined range",
      "readOnly": true
    }

  }}
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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>sources</td>
<td>array: 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 interface set supported by this resource</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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 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 (rt) is defined as: ['oic.r.sensor.motion'].

6.47.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Motion Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MotionResURI" : {
      "get": {
        "description": "This resource describes whether motion has been sensed or not.
The 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": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.sensor.motion"],
              "id": "unique_example_id",
              "value": true
            }
          }
        },
        "schema": { "$ref": "#/definitions/Motion" }
      }
    }
  }
}
```

6.47.5 Property definition

Table 97 defines the Properties that are part of the ['oic.r.sensor.motion'] Resource Type
Table 97 – The Property definitions of the Resource with type 'rt' = ['oic.r.sensor.motion']

<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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>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>

6.47.6 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 (rt) is defined as: ['oic.r.nightmode'].

6.48.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Night Mode",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

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    }
  }
```
"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"],
            "id": "unique_example_id",
            "nightMode": false
          }
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "NightMode": {
    "properties": {
      "rt": {
        "description": "Resource Type",
      }
    }
  }
6.4.8.5 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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>nightMode</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>Status of the Night Mode</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
</tbody>
</table>
### 6.48.6 CRUDN behaviour

<table>
<thead>
<tr>
<th>if</th>
<th>array: see schema</th>
<th>No</th>
<th>Read Only</th>
<th>The interface set supported by this resource</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>
</tbody>
</table>

#### Table 100 - The CRUDN operations of the Resource with type 'rt' = ['oic.r.nightmode']

<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 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

```
/PredenceResURI
```

#### 6.49.3 Resource type

The resource type (rt) is defined as: ['oic.r.sensor.presence'].

#### 6.49.4 OpenAPI 2.0 definition

```
{
    "swagger": "2.0",
    "info": {
        "title": "Presence Sensor",
        "version": "v1.1.0-20160519",
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/PresenceResURI": {
        "get": {
            "description": "This resource describes whether presence has been sensed or not.
The 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": ["$ref": "/parameters/interface"]
        }
    }
}
```
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.sensor.presence"],
      "id": "unique_example_id",
      "value": true
    }
  },
  "schema": { "$ref": "/definitions/Presence" }
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "Presence": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "value": {
        "description": "true = sensed, false = not sensed."
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "if": {
        "description": "The interface set supported by this resource",
        "items": ["oic.if.baseline", "oic.if.11", "oic.if.b", "oic.if.ll", "oic.if.rb", "oic.if.r", "oic.if.a", "oic.if.s"]
      }
    }
  }
}
6.49.5 Property definition

Table 101 defines the Properties that are part of the ['oic.r.sensor.presence'] 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>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>true = sensed, false = not sensed.</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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>
<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 rt 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 rt is 'oic.r.movement.ptz'. For digital/virtual image enhancements the rt is 'oic.r.image.ptz'. The Pan and Tilt are specified in degrees. The Zoom Factor 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 the vendor defined setting. Note that this resource also can be used to create an offset for physical movement. When that is the case, the rt 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 rt value is: oic.r.image.offset.ptz
When the 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 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]

Retrieves the current pan, tilt and zoom setting.

6.50.2 Example URI

/PanTiltZoomResURI

6.50.3 Resource type

The resource type (rt) is defined as: ['oic.r.ptz'].

6.50.4 OpenAPI 2.0 definition

```json
{
"swagger": "2.0",
"info": {
  "title": "Pan Tilt Zoom Movement",
  "version": "v1.1.0-20160519",
  "license": {
    "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
  }
},
"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 rt 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 rt is 'oic.r.movement.ptz'. For digital/virtual image enhancements the rt is 'oic.r.image.ptz'. The Pan and Tilt are specified in degrees. The Zoom Factor 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 the vendor defined setting. Note that this resource also can be used to create an offset for physical movement. When that is the case, the rt 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 rt value is: oic.r.image.offset.ptz. When the 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 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]. Retrieves the current pan, tilt and zoom setting.

    "parameters": [
      {
        "$ref": "#/parameters/interface"
      }
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ['oic.r.ptz'],
          "id": "unique_example_id",
          "pan": 0.0
        }
      }
    }
  }
}
```
"tilt": 0.0,
"zoomFactor": "2x"
}

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

"post": {
"description": "Sets the current pan, tilt and zoom value\n",
"parameters": [
{
"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": {
      "id": "unique_example_id",
      "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": "Resource Type",
      "items": {
        "maxLength": 64,
        "type": "string"
      },
      "minItems": 1,
      "readOnly": true,
      "type": "array"
    },
    "tilt_range": {
      "description": "Min and Max values for the tilt setting",
      "items": {
        "type": "number"
      },
      "maxItems": 2,
      "minItems": 2,
"readOnly": true,
"type": "array"
],
"zoomFactor": {
  "description": "The Zoomfactor value",
  "type": "string"
},
"tilt": {
  "description": "vertical tilt in degrees",
  "type": "number"
},
"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      "type": "number"
    ],
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
  },
  "pan_range": {
    "description": "Min and Max values for the pan setting",
    "items": {
      "type": "number"
    },
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
  },
  "step": {
    "anyOf": [
      "type": "integer"
    ],
    "type": "number"
  }
},
"zoomFactorRange": {
  "description": "allowed Zoom Factor values. Linear equates to a 1-100 min/max."
}


```json
"linear",
"1x",
"2x",
"4x",
"8x",
"16x",
"32x"
],
"readOnly": true,
"type": "string"
}

{id} :

{
"description": "Instance ID of this specific resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
}

"pan" :

{
"description": "horizontal pan in degrees",
"type": "number"
}

"if" :

{
"description": "The interface set supported by this resource",
"items": {
"enum": [
"oic.if.baseline",
"oic.if.ll",
"oic.if.b",
"oic.if.rb",
"oic.if.rw",
"oic.if.r",
"oic.if.a",
"oic.if.e"
],
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
}
```

### 6.50.5 Property definition

Table 103 defines the Properties that are part of the ['oic.r.ptz'] Resource Type

**Table 103 – The Property definitions of the Resource with type 'rt' = ['oic.r.ptz']**

<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>pan_range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Min and Max values for the pan setting</td>
</tr>
<tr>
<td>tilt</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>vertical tilt in degrees</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>
id | string | No | Read Only | Instance ID of this specific resource
---|---|---|---|---
tilt_range | array: see schema | No | Read Only | Min and Max values for the tilt setting
zoomFactorRange | string | No | Read Only | allowed Zoom Factor values. Linear equates to a 1-100 min/max.
step | multiple types: see schema | No | Read Only | Step value across the defined range
pan | number | Yes | Read Write | horizontal pan in degrees
zoomFactor | string | Yes | Read Write | The ZoomFactor value
rt | array: see schema | No | Read Only | Resource Type
range | array: see schema | No | Read Only | The valid range for the value Property
if | array: see schema | No | Read Only | The interface set supported by this resource

### 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']**

<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>

### 6.51 Signal Strength

#### 6.51.1 Introduction

This resource describes the strength of a signal by means of lqi and rssi. The lqi is a floating point number that represents Link Quality Indicator. The 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 (rt) is defined as: ['oic.r.signalstrength'].

#### 6.51.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Signal Strength",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
        }
    }
}
```

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Redistributions in binary form must reproduce the above

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
    "/SignalStrengthResURI" : {

    "get": {

        "description": "This resource describes the strength of a signal by means of lqi and rssi.\nThe lqi is a floating point number that represents Link Quality Indicator.\nThe rssi is a floating point number that represents the received signal strength indicator.\n",

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

        "responses": {
            "200": {
                "description" : "",
                "x-example": {
                    "rt": ["oic.r.signalstrength"],
                    "id": "unique_example_id",
                    "lqi": 10.0,
                    "rssi": 55.0
                }
            },

            "schema": { "$ref": "#/definitions/SignalStrength" }
        }
    }
}
"parameters": {
    "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
    }
},

"definitions": {
    "SignalStrength" : {
        "properties": {
            "rt" : {
                "description": "Resource Type",
                "items": { 
                    "maxLength": 64,
                    "type": "string"
                },
                "minItems": 1,
                "readOnly": true,
                "type": "array"
            },

            "precision" : {
                "description": "Accuracy granularity of the exposed value",
                "readOnly": true,
                "type": "number"
            },

            "n" : {
                "description": "",
                "type": "array"
            }
        }
    }
}
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"range": {
"description": "The valid range for the value Property",
"items": [
"anyOf": [
  "type": "number"
],
"type": "integer"
]
}
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"lqi": {
"description": "current value of Link Quality Indicator",
"readOnly": true,
"type": "number"
},
"step": {
"anyOf": [
  "type": "integer"
],
"type": "number"
}
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"rssi": {
"description": "current value of Received Signal Strength Indicator",
"readOnly": true,
"type": "number"
},
"id": {
"description": "Instance ID of this specific resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": [
"enum": [
  "oic.if.baseline",
  "oic.if.ll",
  "oic.if.h",
  "oic.if.lb",
  "oic.if.rw",
  "oic.if.e",
  "oic.if.a",
  "oic.if.s"
],
"type": "string"
],
"minItems": 1,
"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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>rssi</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>current value of Received Signal Strength Indicator</td>
</tr>
<tr>
<td>lqi</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>current value of Link Quality Indicator</td>
</tr>
<tr>
<td>step</td>
<td>multiple types:</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td></td>
<td>see schema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td></td>
<td>schema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>array: see</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td></td>
<td>schema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see</td>
<td>No</td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td></td>
<td>schema</td>
<td></td>
<td></td>
<td></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 OIC Server that is capable of rendering speech by an OIC 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 RFC 5646 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
is given below:
"<?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 (rt) is defined as: ['oic.r.speech.tts']

6.52.4 OpenAPI 2.0 definition

{  
"swagger": "2.0",
"info": {
"title": "Speech Synthesis-TTS",
"version": "v1.1.0-20160519",
"license": {
"name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."},
"x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.
2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.
THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL THE Open Connectivity
This resource may be created on the OIC Server that is capable of rendering speech by an OIC 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 RFC 5646 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 is given below:

```xml
<?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"
x:lang="en-US">

The title of the movie is: Monty Pythons The Meaning of Life which is directed by Terry Jones.
</speak>
```

Changes the utterance being rendered. Example shows a change in language selected.

```json
"parameters": [
  {"$ref": "#/parameters/interface"},
  {"name": "body","in": "body","required": true,
  "schema": { "$ref": "#/definitions/Speech" },
  "x-example": {
    "rt": ["oic.r.speech.tts"],
    "id": "unique_example_id",
    "utterance": "SSML Document",
    "supportedLanguages": ["en-US", "en-GB", "fr-CA"],
    "supportedVoices": <voice gender="female" variant="2">Mike</voice>
  }
},

"responses": {
  "200": {
    "description" : "",
    "x-example": {
      "utterance": "SSML Document"
    }
  }
}
```
"schema": { "$ref": "#/definitions/Speech" }

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

"definitions": {
  "Speech": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "supportedLanguages": {
        "description": "array of supported language tags",
        "items": {
          "type": "string"
        },
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "supportedVoices": {
        "description": "SSML document fragment indicating supported voices",
        "readOnly": true,
        "type": "string"
      },
      "utterance": {
        "description": "SSML document including the speech body",
        "type": "string"
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "if": {
        "description": "The interface set supported by this resource",
        "items": {
          "enum": ["oic.if.baseline",
                   "oic.if.ll",
                   "oic.if.b"],
          "type": "string"
        }
      }
    }
  }
}
6.52.5 Property definition

Table 107 defines the Properties that are part of the ['oic.r.speech.tts'] 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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>supportedVoices</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>SSML document fragment indicating supported voices</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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>utterance</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>SSML document including the speech body</td>
</tr>
<tr>
<td>supportedLanguages</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>array of supported language tags</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>
<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 touch has been sensed or not. The 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 (rt) is defined as: ['oic.r.sensor.touch'].

6.53.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Touch Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
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HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE."}
}
```

6.53.5 Property definition

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

Table 109 – The Property definitions of the Resource with type 'rt' = ['oic.r.sensor.touch']

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
</table>

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<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>true = sensed, false = not sensed.</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>if</td>
<td>array:</td>
<td>see</td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>rt</td>
<td>array:</td>
<td>see</td>
<td>Read Only</td>
<td>Resource Type</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 110 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.sensor.touch']**

<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 measurement is the current measured UV Index. Retrieves the current UV Radiation value.

#### 6.54.2 Example URI

/UVRadiationResURI

#### 6.54.3 Resource type

The resource type (rt) is defined as: ['oic.r.sensor.radiation.uv'].

#### 6.54.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "UV Radiation",
      "version": "v1.1.0-20160519",
      "license": {
         "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
         "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
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      }
   },
   "schemes": ["http"],
   "consumes": ["application/json"]
}
```
"produces": ["application/json"],
"paths": {
  "/UVRadiationResURI" : {
    "get": {
      "description": "This resource specifies UV radiation measurement. The measurement is the current measured UV Index. Retrieves the current UV Radiation value."
    
    "parameters": [
      {"$ref": "/parameters/interface"}
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.sensor.radiation.uv"],
          "id": "unique_example_id",
          "measurement": 3.5
        }
      },
      "schema": { "$ref": "/definitions/UVRadiation" }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "UVRadiation" : {
      "properties": {
        "rt" : {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "precision" : {
          "description": "Accuracy granularity of the exposed value",
          "readOnly": true,
          "type": "number"
        },
        "n" : {
          "description": "Friendly name of the resource",
          "maxLength": 64,
          "readOnly": true,
          "type": "string"
        },
        "range" : {
          "description": "The valid range for the value Property",
          "items": {
            "anyOf": [ {"type": "number"}, {"type": "integer"} ]
          }
        }
      }
    }
  }
}
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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</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']

<table>
<thead>
<tr>
<th>Resource Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The interface set supported by this resource</td>
<td></td>
</tr>
<tr>
<td>The measured UV Index</td>
<td></td>
</tr>
<tr>
<td>Instance ID of this specific resource</td>
<td></td>
</tr>
<tr>
<td>Friendly name of the resource</td>
<td></td>
</tr>
<tr>
<td>Step value across the defined range</td>
<td></td>
</tr>
<tr>
<td>The valid range for the value Property</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Read Only</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CRUDN behaviour</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>

6.55 Water Sensor

6.55.1 Introduction

This resource describes whether water has been sensed or not.
The 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 (rt) is defined as: ['oic.r.sensor.water'].

6.55.4 OpenAPI 2.0 definition

```json
{ "swagger": "2.0",
  "info": {
    "title": "Water Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  }
}
```
"paths": {
  "/WaterResURI": {
    "get": {
      "description": "This resource describes whether water has been sensed or not. The value is a boolean. A value of 'true' means that water has been sensed. A value of 'false' means that water has 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
        }
      }
      
      Schemas:
      
      "Water": {
        "properties": {
          "rt": {
            "description": "Resource Type",
            "items": ["oic.r.sensor.water"],
            "minItems": 1,
            "readOnly": true,
            "type": "array"
          },
          "value": {
            "description": "true = sensed, false = not sensed."
          },
          "n": {
            "description": "Friendly name of the resource",
            "maxLength": 64,
            "readOnly": true,
            "type": "string"
          },
          "id": {
            "description": "",
            "maxLength": 64,
            "readOnly": true,
            "type": "string"
          }
        }
      }
    }
  }
}

"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/WaterResURI": {
    "get": {
      "description": "This resource describes whether water has been sensed or not. The value is a boolean. A value of 'true' means that water has been sensed. A value of 'false' means that water has 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
        }
      }
      
      Schemas:
      
      "Water": {
        "properties": {
          "rt": {
            "description": "Resource Type",
            "items": ["oic.r.sensor.water"],
            "minItems": 1,
            "readOnly": true,
            "type": "array"
          },
          "value": {
            "description": "true = sensed, false = not sensed."
          },
          "n": {
            "description": "Friendly name of the resource",
            "maxLength": 64,
            "readOnly": true,
            "type": "string"
          },
          "id": {
            "description": "",
            "maxLength": 64,
            "readOnly": true,
            "type": "string"
          }
        }
      }
    }
  }
}

"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/WaterResURI": {
    "get": {
      "description": "This resource describes whether water has been sensed or not. The value is a boolean. A value of 'true' means that water has been sensed. A value of 'false' means that water has 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
        }
      }
      
      Schemas:
      
      "Water": {
        "properties": {
          "rt": {
            "description": "Resource Type",
            "items": ["oic.r.sensor.water"],
            "minItems": 1,
            "readOnly": true,
            "type": "array"
          },
          "value": {
            "description": "true = sensed, false = not sensed."
          },
          "n": {
            "description": "Friendly name of the resource",
            "maxLength": 64,
            "readOnly": true,
            "type": "string"
          },
          "id": {
            "description": "",
            "maxLength": 64,
            "readOnly": true,
            "type": "string"
          }
        }
      }
    }
  }
}
6.5.5 Property definition

Table 113 defines the Properties that are part of the ['oic.r.sensor.water'] 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>value</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>true = sensed, false = not sensed.</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource.</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type.</td>
</tr>
</tbody>
</table>

6.5.6 CRUDN behaviour

Table 114 defines the CRUDN operations that are supported on the ['oic.r.sensor.water'] 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>
6.56 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 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 (rt) is defined as: ['oic.r.sensor.acceleration'].

6.56.4 OpenAPI 2.0 definition
{
  "swagger": "2.0",
  "info": {
    "title": "Acceleration Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
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ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE."
    }
  }
}
}
"interface" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.s", "oic.if.baseline"]
}
},
"definitions": {
    "acceleration" : {
        "properties": {
            "acceleration" : {
                "description": "sensed acceleration experienced in 'g'.",
                "readOnly": true,
                "type": "number"
            },
            "rt" : {
                "description": "Resource Type",
                "items": {
                    "maxLength": 64,
                    "type": "string"
                },
                "minItems": 1,
                "readOnly": true,
                "type": "array"
            },
            "precision" : {
                "description": "Accuracy granularity of the exposed value",
                "readOnly": true,
                "type": "number"
            },
            "n" : {
                "description": "Friendly name of the resource",
                "maxLength": 64,
                "readOnly": true,
                "type": "string"
            },
            "range" : {
                "description": "The valid range for the value Property",
                "items": {
                    "anyOf": [
                        {
                            "type": "number"
                        },
                        {
                            "type": "integer"
                        }
                    ]
                },
                "maxItems": 2,
                "minItems": 2,
                "readOnly": true,
                "type": "array"
            },
            "step" : {
                "anyOf": [
                    {
                        "type": "integer"
                    },
                    {
                        "type": "number"
                    }
                ],
                "description": "Step value across the defined range",
                "readOnly": true
            },
            "id" :
Table 115 defines the Properties that are part of the ['oic.r.sensor.acceleration'] 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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>acceleration</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Sensed acceleration experienced in 'g'.</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
</tbody>
</table>
6.56.6 CRUDN behaviour

Table 116 defines the CRUDN operations that are supported on the ['oic.r.sensor.acceleration'] 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>

6.57 Movement

6.57.1 Introduction

This resource specifies linear movement.

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

The movement is the currently selected movement value.

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

6.57.2 Example URI

/MovementResURI

6.57.3 Resource type

The resource type (rt) is defined as: ['oic.r.movement.linear'].

6.57.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Movement",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MovementResURI": {
      "get": {
        "description": "This resource specifies linear movement. The movementSettings is an array of strings containing possible movement values (e.g. spin, stop, left, right). The movement is the currently selected movement value. The movementModifier is a modifier to the movement value (e.g. spin", "90")",
        "parameters": [],
        "responses": {}
      }
    }
  }
}
```
"x-example":
{
"rt": ["oic.r.movement.linear"],
"id": "unique_example_id",
"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":
{
"id": "unique_example_id",
"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": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"movementSettings": {
"description": "array of possible movement values",
"items": {
"type": "string"}}}}
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>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>
id | string | No | Read Only | Instance ID of this specific resource
---|---|---|---|---
n | string | No | Read Only | Friendly name of the resource
rt | array: see schema | No | Read Only | Resource Type
movementSettings | array: see schema | Yes | Read Only | array of possible movement values
movementModifier | string | No | Read Write | Modifier to the movement value (e.g. spin-90, left-20), units are device dependent
movement | string | Yes | Read Write | Current movement value

### 6.57.6 CRUDN behaviour

Table 118 defines the CRUDN operations that are supported on the ['oic.r.movement.linear'] 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></td>
<td></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 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 (rt) is defined as: ['oic.r.sensor.sleep'].

#### 6.58.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Sleep Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:\n
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```

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"get": {
    "description": "This resource describes whether human sleep has been sensed or not. 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": {
            "schema": { "ref": "#/definitions/sleep" }
        }
    },
    "parameters": {
        "interface": {
            "in": "query",
            "name": "if",
            "type": "string",
            "enum": ["oic.if.s", "oic.if.baseline"
        }
    },
    "definitions": {
        "sleep": {
            "properties": {
                "rt": {
                    "description": "Resource Type",
                    "items": { "maxLength": 64,
                        "type": "string" },
                    "minItems": 1,
                    "readOnly": true,
                    "type": "array" },
                "value": {
                    "description": "true = sensed, false = not sensed.",
                    "readOnly": true,
                    "type": "boolean"
                },
                "n": {
                    "description": "Friendly name of the resource",
                    "maxLength": 64,
                    "readOnly": true,
                    "type": "string",
                    "optional": true
                },
                "id": {
                    "description": "Instance ID of this specific resource",
                    "maxLength": 64,
                    "readOnly": true,
                    "type": "string",
                    "optional": true
                }
            },
            "required": ["rt", "value", "n", "id"
        }
    }
}
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>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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>
<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>
6.59 Smoke Sensor

6.59.1 Introduction
This resource describes whether smoke has been sensed or not. The 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
/SenseSensorResURI

6.59.3 Resource type
The resource type (rt) is defined as: ['oic.r.sensor.smoke'].

6.59.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Smoke Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SmokeSensorResURI": {
      "get": {
        "description": "This resource describes whether smoke has been sensed or not. The 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"}],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.sensor.smoke"],
            "id": "unique_example_id",
            "value": true
          }
        }
      }
    }
  }
}
```

---

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6.59.5 Property definition

Table 121 defines the Properties that are part of the ['oic.r.sensor.smoke'] Resource Type
### Table 121 – The Property definitions of the Resource with type 'rt' = ['oic.r.sensor.smoke']

<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><code>if</code></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><code>n</code></td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td><code>value</code></td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>true = sensed, false = not sensed.</td>
</tr>
<tr>
<td><code>id</code></td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td><code>rt</code></td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</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 122 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.sensor.smoke']

<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>

### 6.60 Three Axis Sensor

#### 6.60.1 Introduction

This resource provides a representation of the measurement from a three-axis sensor. The orientation is an array of numbers representing x-plane, y-plane and z-plane values. The unit of measurement for each pane is 'g'.

#### 6.60.2 Example URI

/ThreeAxisResURI

#### 6.60.3 Resource type

The resource type (rt) is defined as: ['oic.r.sensor.threeaxis'].

#### 6.60.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Three Axis Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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    }
  }
}
```
"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 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": [
{"$ref": "/parameters/interface"}
],
"responses": {
"200": {
"description": "",
"x-example": {
"rt": ["oic.r.sensor.threeaxis"],
"id": "unique_example_id",
"orientation": [0.7, 1.1, -0.2]
}
},
"schema": { "$ref": "/definitions/threeAxis" }
}
}
},
"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.s", "oic.if.baseline"]
}
},
"definitions": {
"threeAxis": {
"properties": {
"rt": {
"description": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"orientation": {
"description": "Array containing x-plane, y-plane and z-plane orientation in 'g'.",
"items": {
"type": "number"
},
"maxItems": 3,
"minItems": 3,
"readOnly": true,
"type": "array"
},
"precision": {
"description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number"
},
"n": {
"description": "Friendly name of the resource",
"type": "string"
}
6.60.5 Property definition

Table 123 defines the Properties that are part of the ['oic.r.sensor.threeaxis'] Resource Type
Table 123 – The Property definitions of the Resource with type 'rt' = ['oic.r.sensor.threeaxis']

<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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>range</td>
<td>array; see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>orientation</td>
<td>array; see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>Array containing x-plane, y-plane and z-plane orientation in 'g'.</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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 124 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.sensor.threeaxis']

<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>get</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.61 Altimeter

6.61.1 Introduction

This resource describes the properties associated with altimeter.

alt is the distance (metres) above or below 'local' sea-level.

Retrieves the current the distance (metres) above or below 'local' sea-level.

6.61.2 Example URI

/AltimeterResURI

6.61.3 Resource type

The resource type (rt) is defined as: ['oic.r.altimeter'].

6.61.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Altimeter",
        "version": "v1.1.1-20181004",
        "license": {
            "name": "copyright 2016-2018 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without"
        }
    }
}
```
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"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/AltimeterResURI": {
    "get": {
      "description": "This resource describes the properties associated with altimeter. alt is the distance (metres) above or below 'local' sea-level. Retrieves the current the distance (metres) above or below 'local' sea-level."
    },
    "parameters": [
      {
        "$ref": "#/parameters/interface"
      }
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.altimeter"],
          "id": "unique_example_id",
          "alt": 1500.0
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Altimeter": {
        "properties": {
          "rt": {
            "description": "Resource Type",
            "items": {
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "readOnly": true,
            "type": "array"
          },
          "precision": {
            "description": "Accuracy granularity of the exposed value",
            "readOnly": true,
            "type": "number"
          }
        }
      }
    }
  }
}
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      { "type": "number" },
      { "type": "integer" }
    ]
  },
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},
"step": {
  "anyOf": [
    { "type": "integer" },
    { "type": "number" }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},
"alt": {
  "description": "The current distance (metres) above or below 'local' sea-level."
},
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": ["oic.if.baseline", "oic.if.ll", "oic.if.b", "oic.if.lb", "oic.if.rw", "oic.if.r", "oic.if.a", "oic.if.s"],
  "type": "string"
},
"minItems": 1,
6.61.5 Property definition

Table 125 defines the Properties that are part of the ['oic.r.altimeter'] 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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
</tbody>
</table>

6.61.6 CRUDN behaviour

Table 126 defines the CRUDN operations that are supported on the ['oic.r.altimeter'] 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>

6.62 Clock

6.62.1 Introduction

This resource describes the properties associated with clock and time.
Clock is a time information.
Datet ime is using ISO 8601 dat eti me format (e.g: "2007-04-05T14:30Z") (Time+Date+Timezone)
Countdown is the desired total seconds for countdown.
Retrieves the current dat etime data.

6.62.2 Example URI

/ClockResURI
6.62.3 Resource type

The resource type (rt) is defined as: ['oic.r.clock'].

6.62.4 OpenAPI 2.0 definition

```json
{ "swagger": "2.0",
 "info": {
 "title": "Clock",
 "version": "v1.1.0-20160519",
 "license": {
 "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
 "description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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 },
 "schemes": ["http"],
 "consumes": ["application/json"],
 "produces": ["application/json"],
 "paths": {
 "/ClockResURI": {
 "get": {
 "description": "This resource describes the properties associated with clock and time.\nClock is a time information.\nDatetime is using ISO 8601 datetime format (e.g: "2007-04-05T14:30Z") (Time+Date+Timezone)\nCountdown is the desired total seconds for countdown.\nRetrieves the current datetime data.\n",
 "parameters": [{$ref": "/parameters/interface"}]
 },
 "responses": {
 "200": {
 "description": "",
 "x-example": {
 "rt": ["oic.r.clock"],
 "id": "unique_example_id",
 "datetime": "2015-11-05T14:30Z",
 "countdown": 0.0
 }
 },
 "post": {
 "description": "Sets the desired datetime.\n",
 "parameters": [{$ref": "/parameters/interface"}]
 },
 "name": "body",
 "in": "body",
 "required": true,
 "schema": { "$ref": "/definitions/Clock" }
 }"x-example": {
 "datetime": "2015-11-05T14:30Z",
 "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": {
    "id": "unique_example_id",
    "datetime": "2015-11-05T14:30Z",
    "countdown": 0.0
  }
  
  "schema": { "$ref": "#/definitions/Clock" }
  
},

  "403": {
    "description": "Indicates that OIC client sent an invalid property value to the
server. The server responds with the required input representation."
  
  "x-example": {
    "id": "unique_example_id",
    "datetime": "2015-11-05T14:30Z",
    "countdown": 0.0
  }
  
  "schema": { "$ref": "#/definitions/Clock" }
  
},

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

"definitions": {
  "Clock": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "countdown": {
        "description": "Desired total seconds for countdown",
        "minimum": 0,
        "type": "number"
      }
    },
    "range": 
  }
}
"description": "The valid range for the value Property",
"items": {
  "anyOf": [
    {
      "type": "number"
    },
    {
      "type": "integer"
    }
  ],
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},
"step": {
  "anyOf": [
    {
      "type": "integer"
    },
    {
      "type": "number"
    }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},
"datetime": {
  "description": "Using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00)",
  "type": "string"
},
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.rb",
      "oic.if.rb",
      "oic.if.r",
      "oic.if.a",
      "oic.if.a"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
},
"type": "object",
"required": ["datetime"]}
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>Resource Type</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>countdown</td>
<td>number</td>
<td>No</td>
<td>Read Write</td>
<td>Desired total seconds for countdown</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>datetime</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>Using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00)</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>

6.62.6 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.

Latitude is a device’s current Latitude coordinate (degrees).

Longitude is a device’s current Longitude coordinate (degrees).

Alt is a device’s current distance (metres) above or below 'local' sea-level.

Accuracy is the accuracy level of the latitude and longitude coordinates (metres).

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

heading is a direction of travel of device (degree).

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

Retrieves the current geolocation coordinates.
6.63.2 Example URI

/GeolocationResURI

6.63.3 Resource type

The resource type (rt) is defined as: ['oic.r.sensor.geolocation'].

6.63.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Geolocation",
    "version": "v1.1.1-20181004",
    "license": {
      "name": "copyright 2016-2018 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "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. Latitude is a device's current Latitude coordinate (degrees). Longitude is a device's current Longitude coordinate (degrees). Alt is a device's current distance (metres) above or below 'local' sea-level. Accuracy is the accuracy level of the latitude and longitude coordinates (metres). AltitudeAccuracy is the accuracy level of the altitude coordinates (metres). Heading is a direction of travel of device (degree). Speed is a device's current velocity (metres per second). Retrieves the current geolocation coordinates.",
        "parameters": [
          {"$ref": "/#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.sensor.geolocation"],
              "id": "unique_example_id",
              "latitude": 55.070859,
              "longitude": -3.60512,
              "alt": 12.07,
              "accuracy": 65.0,
              "altitudeAccuracy": 0.0,
              "heading": 90.0,
              "speed": 0.0
            }
          }
        }
      }
    }
  }
}
```
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "Geolocation": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "step": {
        "anyOf": [
          { "type": "integer" },
          { "type": "number" }
        ],
        "description": "Step value across the defined range",
        "readOnly": true
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "longitude": {
        "description": "Device's Current Longitude coordinate (degrees)",
        "readOnly": true,
        "type": "number"
      },
      "heading": {
        "description": "Direction of travel of device (degree)",
        "maximum": 360,
        "minimum": 0,
        "readOnly": true,
        "type": "number"
      },
      "range": {
        "description": "The valid range for the value Property",
        "items": {
          "anyOf": [
            { "type": "number" },
            { "type": "integer" }
          ]
        },
        "maxItems": 2,
        "minItems": 2,
        "readOnly": true,
        "type": "array"
      }
    }
  }
}
"n": {
    "description": "Friendly name of the resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},

"latitude": {
    "description": "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": "Device's current velocity (metres per second)",
    "minimum": 0,
    "readOnly": true,
    "type": "number"
},

"id": {
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},

"if": {
    "description": "The interface set supported by this resource",
    "items": {
        "enum": [
            "oic.if.baseline",
            "oic.if.ll",
            "oic.if.b",
            "oic.if.lb",
            "oic.if.rw",
            "oic.if.r",
            "oic.if.a",
            "oic.if.s"
        ],
        "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
}
### 6.63.5 Property definition

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>latitude</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Device's Current Latitude coordinate (degrees)</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>heading</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Direction of travel of device (degree)</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>longitude</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Device's Current Longitude coordinate (degrees)</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>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 interface set supported by this resource</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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>speed</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Device's current velocity (metres per second)</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

<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>

6.64 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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.

Retrieves height of an object.

6.64.2 Example URI

/HeightResURI

6.64.3 Resource type

The resource type (rt) is defined as: ['oic.r.height'].

6.64.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Height",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

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ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.
"
    },
    "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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.
    Retrieves height of an object.
  }
```
"parameters": [  {
    "$ref": "#/parameters/interface"
},

"responses": {
    "200": {
        "description": "",
        "x-example": {
            "rt": ["oic.r.height"],
            "id": "unique_example_id",
            "height": 1.8,
            "units": "m"
        }
    },

    "schema": {
        "$ref": "#/definitions/Height"
    }
},

"post": {
    "description": "Sets the Height.\n",
    "parameters": [  {
        "$ref": "#/parameters/interface"},

            {
                "name": "body",
                "in": "body",
                "required": true,
                "schema": {
                    "$ref": "#/definitions/Height"
                },

        "x-example": {
            "height": 1.8,
            "units": "m"
        }
    },

    "responses": {
        "200": {
            "description": "Indicates that the height was successfully changed.\nThe new height is provided in the response.\n",
            "x-example": {
                "id": "unique_example_id",
                "height": 1.8,
                "units": "m"
            }
        },

        "403": {
            "description": "Indicates that OCF client sent an invalid property value to the server.\nThe server responds with the current resource representation.\n",
            "x-example": {
                "id": "unique_example_id",
                "height": 1.8,
                "units": "m"
            }
        }
    }
},

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

"definitions": {
"Height" : {
  "properties": {
    "rt": {
      "description": "Resource Type",
      "items": {
        "maxLength": 64,
        "type": "string"
      },
      "minItems": 1,
      "readOnly": true,
      "type": "array"
    },
    "precision": {
      "description": "Accuracy granularity of the exposed value",
      "readOnly": true,
      "type": "number"
    },
    "n": {
      "description": "Friendly name of the resource",
      "maxItems": 64,
      "readOnly": true,
      "type": "string"
    },
    "units": {
      "description": "Height unit",
      "enum": ["m", "cm", "ft", "in"],
      "readOnly": true,
      "type": "string"
    },
    "range": {
      "description": "The valid range for the value Property",
      "items": [{}]
    },
    "step": {
      "anyOf": [
        { "type": "number" },
        { "type": "integer" }
      ],
      "maxItems": 2,
      "minItems": 2,
      "readOnly": true,
      "type": "array"
    },
    "height": {
      "description": "Height of an object",
      "anyOf": [
        { "type": "integer" },
        { "type": "number" }
      ],
      "description": "Step value across the defined range",
      "readOnly": true,
      "type": "array"
    },
    "height": {
      "description": "Height of an object",
      "anyOf": [
        { "type": "integer" },
        { "type": "number" }
      ],
      "description": "Step value across the defined range",
      "readOnly": true,
      "type": "array"
    }
  }
}
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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Height unit</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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
</tbody>
</table>
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']

Create | Read | Update | Delete | Notify
--- | --- | --- | --- | ---
get | post | | | observe

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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.

Retrieves weight of an object.

6.65.2 Example URI

/WeightResURI

6.65.3 Resource type

The resource type (rt) is defined as: ['oic.r.weight'].

6.65.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Weight",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.
2. Redistributions in binary form must reproduce the above
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ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.
"
    },
    "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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.

Retrieves weight of an object.
",
                "parameters": [
                    {"$ref": "/#parameters/interface"}
                ],
            }
        }
    }
}
```
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.weight"],
      "id": "unique_example_id",
      "weight": 80.0,
      "units": "kg"
    }
  },
  "schema": { "$ref": "#/definitions/Weight" }
}

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

"definitions": {
  "Weight": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "weight": {
        "description": "Weight of an object",
        "minimum": 0,
        "readOnly": true,
        "type": "number"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "units": {
        "description": "Weight unit",
        "enum": ["kg", "g", "lb", "oz"],
        "readOnly": true,
        "type": "string"
      }
    }
  }
}
6.65.5 Property definition

Table 133 defines the Properties that are part of the ['oic.r.weight'] Resource Type

Table 133 – The Property definitions of the Resource with type 'rt' = ['oic.r.weight']

<table>
<thead>
<tr>
<th>Property name</th>
<th>Value type</th>
<th>Mandatory</th>
<th>Access mode</th>
<th>Description</th>
</tr>
</thead>
</table>

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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>Property</th>
<th>Type</th>
<th>Optional</th>
<th>Access</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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>units</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>Weight unit</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>weight</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Weight of an object</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. Measured is the actual sensed value with units per contaminant type as described below. 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 valueType indicates a qualitative or measured reading within the contaminantValue Property. contaminantValue contains the actual measured or qualitative level. The range contains the allowed range for the value that is being reported (from oic.r.baseresource). If valueType is 'Measured' then the units for the contaminant types are as follows:

- Methanal (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)

Retrieves the current air quality.

6.66.2 Example URI

/AirQualityResURI

6.66.3 Resource type

The resource type (rt) is defined as: [‘oic.r.airquality’].
6.6.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Air Quality",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
        }
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/AirQualityResURI": {
            "get": {
                "description": "This resource describes a qualitative or measured contaminant that can be used to infer Air Quality. Unmeasured is the actual sensed value with units per contaminant type as described below. 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 valueType indicates a qualitative or measured reading within the contaminant value range. The contaminant value contains the actual measured or qualitative level. The range contains the allowed range for the value that is being reported (from oic.r.baseresource). If valueType is 'Measured' then the units for the contaminant types are as follows: Methanal (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)\n
Retrieves the current air quality.\n",
                "parameters": [
                    {"$ref": "#/parameters/interface"}
                ],
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": {
                            "rt": ["oic.r.airquality"],
                            "id": "unique_example_id",
                            "contaminanttype": "CO",
                            "valuetype": "Measured",
                            "contaminantvalue": 10,
                            "range": [0,500]
                        }
                    }
                },
                "schema": { "$ref": "#/definitions/AirQuality" }
            }
        }
    }
}
```

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"definitions": {
  "AirQuality": {
    "properties": {
      "contaminantType": {
        "description": "The contaminant being measured."
      },
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "valuetype": {
        "description": "Indicates whether the provided value is qualitative or measured."
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "range": {
        "description": "The valid range for the value Property",
        "items": {
          "type": "number"
        },
        "maxItems": 2,
        "minItems": 2
      }
    }
  }
}

6.66.5 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>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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
</tbody>
</table>
range | array: see schema | Yes | Read Only | The valid range for the value Property
---|---|---|---|---
contaminantvalue | integer | Yes | Read Only | The measured or qualitative value for the contaminant.
precision | number | No | Read Only | Accuracy granularity of the exposed value
step | multiple types: see schema | No | Read Only | Step value across the defined range
valuetype | string | Yes | Read Only | Indicates whether the provided value is qualitative or measured.
contaminanttype | string | Yes | Read Only | The contaminant being measured.
| string | No | Read Only | Friendly name of the resource
rt | array: see schema | No | Read Only | Resource Type

6.66.6 CRUDN behaviour
Table 136 defines the CRUDN operations that are supported on the ['oic.r.airquality'] 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>

6.67 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
/AirQualityResURI

6.67.3 Resource type
The resource type (rt) 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": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without"
    }
  }
}```
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"schema": { "$ref": "#/definitions/AirQuality" }

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

"definitions": {
  "AirQuality-ll": {
    "title": "Air Quality Collection Link List Schema (auto merged)"
  },
  "AirQuality": {
    "properties": {
      "rt": {
        "items": {
          "$ref": "#/definitions/oic.oic-link"
        }
      },
      "links": {
        "description": "A set of simple or individual OIC Links."
      }
    }
  }
}
"type": "object",
},
"ins": {
"description": "The instance identifier for this web link in an array of web links - used in collections",
"type": "integer"
},
"p": {
"description": "Specifies the framework policies on the Resource referenced by the target URI",
"properties": {
"bm": {
"description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
"type": "integer"
}
}
}
"required": ["bm"]
},
"type": "object"
},
"rel": {
"description": "The relation of the target URI referenced by the link to the context URI",
"oneOf": ["default": [
[31x328]15360
[31x329]15361
[31x330]15362
[31x331]15363
[31x332]15364
[31x333]15365
[31x334]15366
[31x335]15367
[31x336]15368
[31x337]15369
[31x338]15370
[31x339]15371
[31x340]15372
[31x341]15373
[31x342]15374
[31x343]15375
[31x344]15376
[31x345]15377
[31x346]15378
[31x347]15379
[31x348]15380
[31x349]15381
[31x350]15382
[31x351]15383
[31x352]15384
[31x353]15385
[31x354]15386
[31x355]15387
[31x356]15388
[31x357]15389
[31x358]15390
[31x359]15391
[31x360]15392
[31x361]15393
[31x362]15394
[31x363]15395
[31x364]15396
[31x365]15397
[31x366]15398
[31x367]15399
[31x368]15400
[31x369]15401
[31x370]15402
[31x371]15403
[31x372]15404
[31x373]15405
[31x374]15406
[31x375]15407
[31x376]15408
[31x377]15409
[31x378]15410
}]
"hosts",
  "items": {
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "type": "array"
},
"default": "hosts",
"maxLength": 64,
"type": "string"
}
"rt": {
  "description": "Resource Type of the Resource",
  "items": {
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "type": "array"
},
"title": {
  "description": "A title for the link relation. Can be used by the UI to provide a context.",
  "maxLength": 64,
  "type": "string"
},
"type": {
  "default": "application/cbor",
  "description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.",
  "items": {
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "type": "array"
}
"required": [
  "href",
  "rt",
  "if"
],
"type": "object"
},
"type": "array"
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"rts": {
  "items": {
    "anyOf": [
      "enum": [
        "oic.r.airquality",
        "oic.r.value.conditional"
      ],
      "type": "string"
    ],
    "type": "array"}
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.bb",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
},
"airqualitycollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
},
"oic.collection.links.arrayoflinks": {
  "properties": {
    "links": {
      "description": "A set of simple or individual OIC Links.",
      "items": {
        "properties": {
          "anchor": {
            "description": "This is used to override the context URI e.g. override the URI of the containing collection.",
            "format": "uri",
            "maxLength": 256,
            "type": "string"
          }
        }
      }
    }
  }
},
"pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$"
"type": "string"
},
"eps": {
  "description": "the Endpoint information of the target Resource",
  "items": {
    "properties": {
      "ep": {
        "description": "Transport Protocol Suite + Endpoint Locator",
        "format": "uri",
        "type": "string"
      },
      "pri": {
        "description": "The priority among multiple Endpoints",
        "minimum": 1,
        "type": "integer"
      }
    }},
    "type": "object"
  },
  "type": "array"
},
"href": {
  "description": "This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.",
  "format": "uri",
  "maxLength": 256,
  "type": "string"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "type": "array"
},
"ins": {
  "description": "The instance identifier for this web link in an array of web links used in collections",
  "type": "integer"
},
"p": {
  "description": "Specifies the framework policies on the Resource referenced by the target URI",
  "properties": {
    "bm": {
      "description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
      "type": "integer"
    }
  },
  "required": [
    "bm"
  ],
  "type": "object"
},
"rel": {
  "description": "The relation of the target URI referenced by the link to the context URI",
  "oneOf": [
    "default": [
      "hosts"
"items": {
  "maxLength": 64,
  "type": "string"
},
"minItems": 1,
"type": "array"
},
"default": "hosts",
"maxLength": 64,
"type": "string"
},
"default": "application/cbor",
"description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.",
"items": {
  "maxLength": 64,
  "type": "string"
},
"type": {
  "default": "application/cbor",
  "description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.",
  "items": {
    "maxLength": 64,
    "type": "string"
  },
  "type": "object"
},
"type": "array"},
"type": "object"},
"description": "A collection is a set of links along with additional properties to describe the collection itself",
"properties": {
  "rts": {
    "$ref": "#/definitions/oic.core/properties/rt",
    "description": "The list of allowable resource types (for Target and anchors) in links included in the collection"
  },
  "type": "object"},
"type": "array"},
"id": {
"properties": {
"description": "Instance ID of this specific resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": {
"enum": [
"oic.if.baseline",
"oic.if.l1",
"oic.if.b",
"oic.if.lb",
"oic.if.rw",
"oic.if.r",
"oic.if.a",
"oic.if.e"
],
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"n": {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"rt": {
"description": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"maxItems": 2,
"minItems": 2,
"type": "array",
"uniqueItems": true
},
"rts": {
"items": {
"anyOf": [
{
"enum": [
"oic.r.airquality",
"oic.r.value.conditional"
]
},
{
"enum": [
"oic.r.airqualitycollection",
"oic.wk.col"
]
}
]
},
"type": "object"}
,oic.r.airqualitycollection": {
"properties": {
"rt": {
"items": {
"enum": [
"oic.r.airqualitycollection",
"oic.wk.col"
]
},
"type": "string"
},
"maxItems": 2,
"minItems": 2,
"type": "array",
"uniqueItems": true
},
"rts": {
"items": {
"anyOf": [
{
"enum": [
"oic.r.airquality",
"oic.r.value.conditional"
]
},
{
"enum": [
"oic.r.airqualitycollection",
"oic.wk.col"
]
}
]
},
"type": "string"}
"oic.r.airquality"

"type": "string"

"maxItems": 2,
"minItems": 1,
"type": "array",
"uniqueItems": true

"type": "object"

"oic.oic-link" :

"properties": {
    "anchor": {
        "description": "This is used to override the context URI e.g. override the URI of the
containing collection.",
        "format": "uri",
        "maxLength": 256,
        "type": "string"
    },
    "di": {
        "description": "The Device ID formatted according to IETF RFC 4122.",
        "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
        "type": "string"
    },
    "eps": {
        "description": "The Endpoint information of the target Resource",
        "items": {
            "properties": {
                "ep": {
                    "description": "Transport Protocol Suite + Endpoint Locator",
                    "format": "uri",
                    "type": "string"
                },
                "pri": {
                    "description": "The priority among multiple Endpoints",
                    "minimum": 1,
                    "type": "integer"
                }
            },
            "type": "array"
        },
        "href": {
            "description": "This is the target URI, it can be specified as a Relative Reference or
fully-qualified URI.",
            "format": "uri",
            "maxLength": 256,
            "type": "string"
        },
        "if": {
            "description": "The interface set supported by this resource",
            "items": {
                "enum": [
                    "oic.if.baseline",
                    "oic.if.11",
                    "oic.if.b",
                    "oic.if.rw",
                    "oic.if.r",
                    "oic.if.a",
                    "oic.if.s"
                ],
                "type": "string"
            },
            "minItems": 1,
"type": "array",
},
"ins": {
"description": "The instance identifier for this web link in an array of web links - used in collections",
"type": "integer",
},
"p": {
"description": "Specifies the framework policies on the Resource referenced by the target URI",
"properties": {
  "bm": {
    "description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
    "type": "integer"
  }
},
"required": [
  "bm"
],
"type": "object",
},
"rel": {
"description": "The relation of the target URI referenced by the link to the context URI",
"oneOf": [
  {
    "default": [
      "hosts"
    ],
    "items": {
      "maxLength": 64,
      "type": "string"
    },
    "minItems": 1,
    "type": "array"
  },
  {
    "default": "hosts",
    "maxLength": 64,
    "type": "string"
  }
],
"rt": {
"description": "Resource Type of the Resource",
"items": {
  "maxLength": 64,
  "type": "string"
},
"minItems": 1,
"type": "array"
},
"title": {
"description": "A title for the link relation. Can be used by the UI to provide a context.",
"maxLength": 64,
"type": "string"
},
"type": {
"default": "application/cbor",
"description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting."
,"items": {
  "maxLength": 64,
  "type": "string"
},
"minItems": 1,
"type": "array"
},
"required": [
  "href"}
### 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>rts</td>
<td>multiple types: see schema</td>
<td></td>
<td>Read Write</td>
<td>The list of allowable resource types (for Target and anchors) in links included in the collection</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td></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></td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td></td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td></td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Resource Type of the Resource</td>
</tr>
<tr>
<td>eps</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The Endpoint information of the target Resource</td>
</tr>
<tr>
<td>title</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>A title for the link relation. Can be used by the UI to provide a context.</td>
</tr>
<tr>
<td>ins</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The instance identifier for this web link in an array of web links - used in collections</td>
</tr>
<tr>
<td>href</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>This is the target URI, it can be specified as a Relative</td>
</tr>
<tr>
<td><strong>anchor</strong></td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>This is used to override the context URI e.g. override the URI of the containing collection.</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------</td>
<td>----------</td>
<td>------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>di</strong></td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>The Device ID formatted according to IETF RFC 4122.</td>
</tr>
<tr>
<td><strong>p</strong></td>
<td>object: see</td>
<td>No</td>
<td>Read Write</td>
<td>Specifies the framework policies on the Resource referenced by the target URI.</td>
</tr>
<tr>
<td><strong>type</strong></td>
<td>array: see</td>
<td>No</td>
<td>Read Write</td>
<td>A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.</td>
</tr>
<tr>
<td><strong>rel</strong></td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The relation of the target URI referenced by the link to the context URI.</td>
</tr>
<tr>
<td><strong>rt</strong></td>
<td>array: see</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td><strong>if</strong></td>
<td>array: see</td>
<td>Yes</td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td><strong>links</strong></td>
<td>array: see</td>
<td>No</td>
<td>Read Write</td>
<td>A set of simple or individual OIC Links.</td>
</tr>
<tr>
<td><strong>n</strong></td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td><strong>rts</strong></td>
<td>array: see</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td><strong>id</strong></td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td><strong>rt</strong></td>
<td>array: see</td>
<td></td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td><strong>rts</strong></td>
<td>array: see</td>
<td></td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td><strong>links</strong></td>
<td>array: see</td>
<td>No</td>
<td>Read Write</td>
<td>A set of simple or individual OIC Links.</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>
<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>

6.68 Consumable

6.68.1 Introduction

This resource specifies a thing that can be consumed such as filter material, printer toner etc.

The type is an enumeration defining the thing being consumed as defined by the Smart Home Device Specification.

The remaining is an integer capturing the percentage remaining life.

The order percentage is an integer capturing the percentage life at which replacement or replenishment is recommended by the manufacturer.

The 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 (rt) is defined as: ['oic.r.consumable'].

6.68.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Consumable",
        "version": "OCF-v1.0.0-20160620",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

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"}
},
"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 type is an enumeration defining the thing being consumed as defined by the Smart Home Device Specification. The remaining is an integer capturing the percentage remaining life. The order percentage is an integer capturing the percentage life at which replacement or replenishment is recommended by the manufacturer. The url is a string containing a URL at which further information may be obtained with respect to the consumable.",
```
"parameters": [
  {"$ref": "#/parameters/interface"},
],
"responses": {
"200": {
  "description": "",
  "x-example": {
    "rt": ["oic.r.consumable"],
    "id": "unique_example_id",
    "typeofconsumable": "tonerBlack",
    "remaining": 20,
    "orderpercentage": 10,
    "url": "http://myreorderURL"
  }
},
  "schema": { "$ref": "#/definitions/consumable" }
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "consumable": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "remaining": {
        "description": "Percentage remaining lifespan.",
        "maximum": 100,
        "minimum": 0,
        "readOnly": true,
        "type": "integer"
      },
      "typeofconsumable": {
        "description": "Thing that is being consumed.",
        "readOnly": true,
        "type": "string"
      },
      "url": {
        "description": "URL at which additional ordering information may be found.",
        "format": "uri",
        "readOnly": true,
        "type": "string"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": 
    },
{ "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"range": {
  "description": "The valid range for the value Property",
  "items": { 
    "anyOf": [
      { "type": "number"
      },
      { "type": "integer"
      }
    ],
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
  },
  "orderpercentage": {
    "description": "Percentage at which re-ordering is recommended by the manufacturer",
    "maximum": 100,
    "minimum": 0,
    "readOnly": true,
    "type": "integer"
  },
  "step": {
    "anyOf": [
      { "type": "integer"
      },
      { "type": "number"
      }
    ],
    "description": "Step value across the defined range",
    "readOnly": true
  },
  "id": {
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },
  "if": {
    "description": "The interface set supported by this resource",
    "items": { 
      "enum": [ 
        "oic.if.baseline",
        "oic.if.11",
        "oic.if.b",
        "oic.if.lb",
        "oic.if.1",
        "oic.if.rw",
        "oic.if.r",
        "oic.if.a",
        "oic.if.s"
      ],
      "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
  } }
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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>remaining</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>Percentage remaining lifespan.</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>typeofconsumable</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>Thing that is being consumed.</td>
</tr>
<tr>
<td>orderpercentage</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>Percentage at which re-ordering is recommended by the manufacturer</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>url</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>URL at which additional ordering information may be found.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</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></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 (rt) is defined as: ['oic.r.consumablecollection', 'oic.wk.col'].

6.69.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Consumables",
    "version": "OCF-v1.0.0-20160620",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
    1. Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.
    2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.
    3. THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. "AS IS"
    AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.
    4. IN NO EVENT SHALL The Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
    HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.
  }
},
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ConsumablesResURI?if=oic.if.ll" : {
      "get": {
        "$ref": "/parameters/interface-ll"
      },
      "responses": {
        "200": {
          "description": "This resource specifies things that can be consumed such as filter material, printer
toner etc. The resource is a collection of instances of oic.r.consumable detailing the
individual consumed items. supportedconsumables is the set of consumable types that this instance of
the Resource supports",
          "parameters": [
            {
              "$ref": "/parameters/interface-ll"
            }
          ],
          "description": "",
          "x-example": {
            "href": "/myTonerBlackResURI", "rt": ["oic.r.consumable"], 
            "if": ["oic.if.s", "oic.if.baseline"],
            "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
          },
            {
              "$ref": "/myTonerCyanResURI", "rt": ["oic.r.consumable"], 
            "if": ["oic.if.s", "oic.if.baseline"],
            "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
          },
            {
              "$ref": "/myTonerMagentaResURI", "rt": ["oic.r.consumable"], 
            "if": ["oic.if.s", "oic.if.baseline"],
            "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
          },
            {
              "$ref": "/myTonerYellowResURI", "rt": ["oic.r.consumable"], 
            "if": ["oic.if.s", "oic.if.baseline"],
            "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
          }
        }
      }
    }
  }
}
```
"ConsumablesCollectionLinkListSchema (auto merged)"

"items": ["oic.r.consumablecollection","oic.wk.col"]
"id": "unique_example_id",
"schema": { "$ref": "#/definitions/oic.r.consumablecollection","oic.wk.col"}

"ConsumablesResourceURI?if=oic.if.baseline": {
  "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\n",
    "parameters": [
      {"$ref": "#/parameters/interface-baseline"}
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.consumablecollection","oic.wk.col"],
          "id": "unique_example_id",
          "schema": { "$ref": "#/definitions/consumables" }
        }
      }
    }
  }

"SupportedConsumables": { "tonerBlack","tonerCyan","tonerMagenta","tonerYellow"},
"links": [
  {"href": "/myTonerBlackResURI", "rt": ["oic.r.consumable"], "if": "oic.if.s","oic.if.baseline"},
  {"href": "/myTonerCyanResURI", "rt": ["oic.r.consumable"], "if": "oic.if.s","oic.if.baseline"},
  {"href": "/myTonerMagentaResURI", "rt": ["oic.r.consumable"], "if": "oic.if.s","oic.if.baseline"},
  {"href": "/myTonerYellowResURI", "rt": ["oic.r.consumable"], "if": "oic.if.s","oic.if.baseline"}
]

"Consumables": {
  "title": "Consumables Collection Link List Schema (auto merged)"
}

"items": ["oic.oic-link"]
"supportedconsumables": {
    "description": "Array of possible consumables the device measures.",
    "items": {
        "type": "string",
    },
    "readOnly": true,
    "type": "array"
},

"links": {
    "description": "A set of simple or individual OIC Links.",
    "items": {
        "properties": {
            "anchor": {
                "description": "This is used to override the context URI e.g. override the URI of the containing collection.",
                "format": "uri",
                "maxLength": 256,
                "type": "string",
            },
            "di": {
                "description": "The Device ID formatted according to IETF RFC 4122.",
                "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
                "type": "string",
            },
            "eps": {
                "description": "the Endpoint information of the target Resource",
                "items": {
                    "properties": {
                        "ep": {
                            "description": "Transport Protocol Suite + Endpoint Locator",
                            "format": "uri",
                            "type": "string"
                        },
                        "pri": {
                            "description": "The priority among multiple Endpoints",
                            "minimum": 1,
                            "type": "integer"
                        }
                    },
                    "type": "object"
                },
                "type": "array"
            },
            "href": {
                "description": "This is the target URI, it can be specified as a Relative Reference or fully-qualified URI."
            }
        }
    }
}
"format": "uri",
"maxLength": 256,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": [
   "enum": [
   "oic.if.baseline",
   "oic.if.l",
   "oic.if.b",
   "oic.if.rw",
   "oic.if.r",
   "oic.if.a",
   "oic.if.s"
   ],
   "type": "string"
],
}"minItems": 1,
"type": "array"
},
"ins": {
"description": "The instance identifier for this web link in an array of web links - used in collections",
"type": "integer"
},
"p": {
"description": "Specifies the framework policies on the Resource referenced by the target URI",
"properties": {
   "bm": {
   "description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
   "type": "integer"
   },
   "required": {
   "bm"
   },
   "type": "object"
   },
"rel": {
"description": "The relation of the target URI referenced by the link to the context URI",
"oneOf": {
   "default": [
   "hosts"
   ],
"items": {
   "maxLength": 64,
   "type": "string"
   },
   "minItems": 1,
   "type": "array"
   },
   "default": "hosts",
   "maxLength": 64,
   "type": "string"
   },
"rt": {
"description": "Resource Type of the Resource",
"items": {
   "maxLength": 64,
   "type": "string"
   },
   "minItems": 1,
   "type": "array"
   }
}
"title": {
    "description": "A title for the link relation. Can be used by the UI to provide a context.",
    "maxLength": 64,
    "type": "string"
},
"type": {
    "default": "application/cbor",
    "description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.",
    "items": {
        "maxLength": 64,
        "type": "string"
    },
    "minItems": 1,
    "type": "array"
},
"required": [
    "href",
    "rt",
    "if"
],
"type": "object"},
"type": "array"},
"n": {
    "description": "Friendly name of the resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},
"rts": {
    "items": {
        "anyOf": [
            {
                "enum": [
                    "oic.r.consumable",
                    "oic.r.value.conditional"
                ],
                "type": "string"
            },
            {
                "enum": [
                    "oic.r.consumable"
                ],
                "type": "string"
            }
        ]
    },
    "maxItems": 2,
    "minItems": 1,
    "type": "array",
    "uniqueItems": true
},
"if": {
    "description": "The interface set supported by this resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},
"id": {
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},
"rt": {
    "description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.",
    "items": {
        "maxLength": 64,
        "type": "string"
    },
    "minItems": 1,
    "type": "array"}
"items": [
  "enum": [
    "oic.if.baseline",
    "oic.if.ll",
    "oic.if.b",
    "oic.if.lb",
    "oic.if.rw",
    "oic.if.r",
    "oic.if.a",
    "oic.if.s"
  ],
  "type": "string"
],
"minItems": 1,
"readOnly": true,
"type": "array"
}

"type": "object"
,oic.collection.links.arrayoflinks" :
{
  "properties": {
    "links": {
      "description": "A set of simple or individual OIC Links.",
      "items": {
        "properties": {
          "anchor": {
            "description": "This is used to override the context URI e.g. override the URI of the containing collection.",
            "format": "uri",
            "maxLength": 256,
            "type": "string"
          },
          "di": {
            "description": "The Device ID formatted according to IETF RFC 4122.",
            "pattern": "^([a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12})$",
            "type": "string"
          },
          "eps": {
            "description": "the Endpoint information of the target Resource",
            "items": {
              "properties": {
                "ep": {
                  "description": "Transport Protocol Suite + Endpoint Locator",
                  "format": "uri",
                  "type": "string"
                },
                "pri": {
                  "description": "The priority among multiple Endpoints",
                  "minimum": 1,
                  "type": "integer"
                }
              },
              "type": "object"
            },
            "type": "array"
          },
          "href": {
            "description": "This is the target URL, it can be specified as a Relative Reference or fully-qualified URL.",
            "format": "uri",
            "maxLength": 256,
            "type": "string"
          },
          "if": {
            "description": "The interface set supported by this resource",
            "items": {
              "enum": [
                "oic.if.baseline",
                "oic.if.ll",
                "oic.if.b",
                "oic.if.lb",
                "oic.if.rw",
                "oic.if.r",
                "oic.if.a",
                "oic.if.s"
              ],
              "type": "string"
            },
            "minItems": 1,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object"
      },
      "readOnly": false,
      "type": "object"
    }
  },
  "minProperties": 1,
  "type": "object"
}
"oic.if.ll",
"oic.if.b",
"oic.if.rw",
"oic.if.r",
"oic.if.a",
"oic.if.s"
},
"type": "string"
},
"minItems": 1,
"type": "array"
},
"ins": {
"description": "The instance identifier for this web link in an array of web links - used in collections",
"type": "integer"
},
"p": {
"description": "Specifies the framework policies on the Resource referenced by the target URI",
"properties": {
"bm": {
"description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
"type": "integer"
}
},
"required": [
"bm"
]
},
"rel": {
"description": "The relation of the target URI referenced by the link to the context URI",
"oneOf": [
{
"default": ["hosts"],
"items": {
"maxLength": 64,
"type": "string"
}
},
"minItems": 1,
"type": "array"
}
],
"rt": {
"description": "Resource Type of the Resource",
"items": {
"maxLength": 64,
"type": "string"
}
},
"minItems": 1,
"type": "array"
},
"title": {
"description": "A title for the link relation. Can be used by the UI to provide a context.",
"maxLength": 64,
"type": "string"
}
},
"type": {
"default": "application/cbor",
"description": "A hint at the representation of the resource referenced by the..."
target URI. This represents the media types that are used for both accepting and emitting.

```

"items": {
  "maxLength": 64,
  "type": "string"}
},
"minItems": 1,
"type": "array"
},
"required": ["href",
  "rt",
  "if"],
"type": "object"
},
"type": "array"
}
"oic.collection.properties": {
  "description": "A collection is a set of links along with additional properties to describe
  the collection itself",
  "properties": {
    "rts":{
      "$ref": "/definitions/oic.core/properties/rt",
      "description": "The list of allowable resource types (for Target and anchors) in links
  included in the collection"
    },
    "type": "object"
  }
},
"oic.core": {
  "properties": {
    "id": {
      "description": "Instance ID of this specific resource",
      "maxLength": 64,
      "readOnly": true,
      "type": "string"}
    },
    "if": {
      "description": "The interface set supported by this resource",
      "items": {
        "enum": [
          "oic.if.baseline",
          "oic.if.ll",
          "oic.if.lb",
          "oic.if.b",
          "oic.if.rb",
          "oic.if.rb",
          "oic.if.a",
          "oic.if.a"
        ],
        "type": "string"
      },
      "minItems": 1,
      "readOnly": true,
      "type": "array"
    },
    "n": {
      "description": "Friendly name of the resource",
      "maxLength": 64,
      "readOnly": true,
      "type": "string"
    },
    "rt": {
      "description": "Resource Type",
      "items": {

"maxLength": 64,
  "type": "string",
},
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}
},
  "type": "object"
}
},
  "type": "array"
}
"consumablecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"oic.r.consumablecollection": {
  "properties": {
    "rt": {
      "items": {
        "enum": [
          "oic.r.consumablecollection",
          "oic.wk.col"
        ],
        "type": "string"
      },
      "maxItems": 2,
      "minItems": 2,
      "type": "array",
      "uniqueItems": true
    },
    "rts": {
      "items": {
        "anyOf": [
          {
            "enum": [
              "oic.r.consumable",
              "oic.r.value.conditional"
            ],
            "type": "string"
          },
          {
            "enum": [
              "oic.r.consumable"
            ],
            "type": "string"
          }
        ]
      },
      "maxItems": 2,
      "minItems": 1,
      "type": "array",
      "uniqueItems": true
    },
    "supportedconsumables": {
      "description": "Array of possible consumables the device measures.",
      "items": {
        "type": "string"
      },
      "readOnly": true,
      "type": "array"
    },
    "type": "object"
  }
}
"oic.oic-link": {

"properties": {
  "anchor": {
    "description": "This is used to override the context URI e.g. override the URI of the
    containing collection.",
    "format": "uri",
    "maxLength": 256,
    "type": "string"
  },
  "di": {
    "description": "The Device ID formatted according to IETF RFC 4122.",
    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
    "type": "string"
  },
  "eps": {
    "description": "the Endpoint information of the target Resource",
    "items": {
      "properties": {
        "ep": {
          "description": "Transport Protocol Suite + Endpoint Locator",
          "format": "uri",
          "type": "string"
        },
        "pri": {
          "description": "The priority among multiple Endpoints",
          "minimum": 1,
          "type": "integer"
        }
      },
      "type": "object"
    },
    "type": "array"
  },
  "href": {
    "description": "This is the target URI, it can be specified as a Relative Reference or
    fully-qualified URI.",
    "format": "uri",
    "maxLength": 256,
    "type": "string"
  },
  "if": {
    "description": "The interface set supported by this resource",
    "items": {
      "enum": [
        "oic.if.baseline",
        "oic.if.11l",
        "oic.if.b",
        "oic.if.rw",
        "oic.if.z",
        "oic.if.a",
        "oic.if.s"
      ],
      "type": "string"
    },
    "minItems": 1,
    "type": "array"
  },
  "ins": {
    "description": "The instance identifier for this web link in an array of web links - used
    in collections",
    "type": "integer"
  },
  "p": {
    "description": "Specifies the framework policies on the Resource referenced by the target
    URI",
    "properties": {
      "bm": {
        "description": "Specifies the framework policies on the Resource referenced by the
        target URI for e.g. observable and discoverable",
        "type": "integer"
      }
    }
  }
}
6.69.5 Property definition

Table 141 defines the Properties that are part of the ['oic.r.consumablecollection', 'oic.wk.col'] 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>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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>supportedconsumables</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Array of possible consumables the device measures.</td>
</tr>
<tr>
<td>rts</td>
<td>array: 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 Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>links</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>A set of simple or individual OIC Links.</td>
</tr>
<tr>
<td>links</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>A set of simple or individual OIC Links.</td>
</tr>
<tr>
<td>href</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.</td>
</tr>
<tr>
<td>type</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.</td>
</tr>
<tr>
<td>p</td>
<td>object: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Specifies the framework policies on the Resource referenced by the target URI.</td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The relation of the target URI referenced by the link to the context URI.</td>
</tr>
<tr>
<td>di</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>The Device ID formatted</td>
</tr>
<tr>
<td>title</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>A title for the link relation. Can be used by the UI to provide a context.</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 Write</td>
<td>Resource Type of the Resource</td>
</tr>
<tr>
<td>anchor</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>This is used to override the context URI e.g. override the URI of the containing collection.</td>
</tr>
<tr>
<td>eps</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>the Endpoint information of the target Resource</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>ins</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The instance identifier for this web link in an array of web links - used in collections</td>
</tr>
<tr>
<td>rts</td>
<td>multiple types: see schema</td>
<td></td>
<td>Read Write</td>
<td>The list of allowable resource types (for Target and anchors) in links included in the collection</td>
</tr>
<tr>
<td>supportedconsumables</td>
<td>array: see schema</td>
<td></td>
<td>Read Only</td>
<td>Array of possible consumables the device measures.</td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td></td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td></td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td></td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td></td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td></td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td></td>
<td>Read Only</td>
<td>The interface set supported by this resource</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>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>

6.70 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 (G)

https://www.energystar.gov/sites/default/files/specs/private/ENERGY%20STAR%20Final%20Version%205.0%20Residential%20Refrigerators%20and%20Freezers%20Program%20Requirements.pdf

The status is a boolean indicating whether the function is on, if off then defrost is scheduled as part of normal device operation.

startTime, from oic.r.time.period (mandatory) is an ISO8601 encoded start time for the interval in which defrost shall not occur.

stopTime, from oic.r.time.period is an ISO8601 encoded stop time for the interval in which defrost shall not occur.

interval, from oic.r.time.period with additional range restrictions is the time in minutes of the period that starts at startime (if not present the default is 240).

stopTime and interval are mutually exclusive; they cannot both be present in a Resource instance

Retrieves the current Delay Defrost function status

6.70.2 Example URI

/DelayDefrostResURI

6.70.3 Resource type

The resource type (rt) is defined as: ['oic.r.delaydefrost'].

6.70.4 OpenAPI 2.0 definition

```
{
   "swagger": "2.0",
   "info": {
      "title": "Delay Defrost",
      "version": "OCF_v1.0.0-2016__",
      "license": {
         "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:\n1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.\n2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.\n3. THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n4. IN NO EVENT SHALL The Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE."
   }
   "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)G
(https://www.energystar.gov/sites/default/files/specs/private/ENERGY%20STAR%20Final%20Version%205.0%20Residential%20Refrigerators%20and%20Freezers%20Program%20Requirements.pdf). The status is a boolean indicating whether the function is on, if off then defrost is scheduled as part of normal device operation. startTime, from oic.r.time.period (mandatory) is an ISO8601 encoded start time for the interval in which defrost shall not occur. stopTime, from oic.r.time.period is an ISO8601 encoded stop time for the interval in which defrost shall not occur. interval, from oic.r.time.period with additional range restrictions is the time in minutes of the period that starts at startTime (if not present the default is 240). stopTime and interval are mutually exclusive; they cannot both be present in a Resource instance.\nRetrieves the current Delay Defrost function status."

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

    "responses": {
      "200": {
        "description": 
        
        "x-example":
        
        {
          "rt": ["oic.r.delaydefrost"],
          "id": "unique_example_id",
          "startTime": "06:00Z",
          "status": false
        }
      }
    }
  },

  "post": {
    "description": "Activates the desired Delay Defrost functions.\n
    "parameters": [
      {
        "name": "body",
        "in": "body",
        "required": true,
        "schema": {
          "$ref": "#/definitions/DelayDefrost"
        }
      }
    ],

    "responses": {
      "200": {
        "description": "Indicates that the DelayDefrost function was changed. The new representation may be provided in the response.\n
        "x-example":
        
        {
          "id": "unique_example_id",
          "status": true,
          "startTime": "06:00Z",
          "interval": 180
        }
      },

      "403": {
        "description": "Indicates the update to the time properties was rejected. Reasons for rejection:\ninvalid time entry\nThe current unchanged representation may be provided in the response.\n
        "x-example":
        
        {
          "id": "unique_example_id"
        }
      }
    }
  }
}
"status": true,
"startTime": "06:00Z",
"interval": 180
}

"schema": { "$ref": "/definitions/DelayDefrost" }
}

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

"definitions": {
  "DelayDefrost": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "status": {
        "description": "Indicates whether any supported delay defrost function is active",
        "type": "boolean"
      },
      "interval": {
        "default": 240,
        "description": "Defrost interval as defined by Energy Star",
        "maximum": 1440,
        "minimum": 1,
        "type": "integer"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "range": {
        "description": "The valid range for the value Property",
        "items": {
          "anyOf": [
            { "type": "number" }
          ],
          "type": "integer"
        }
      }
    }
  }
}
Table 143 defines the Properties that are part of the ['oic.r.delaydefrost'] 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>
</table>

6.70.5 Property definition
<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Readability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>precision</td>
<td>number</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>interval</td>
<td>integer</td>
<td>Read Write</td>
<td>Defrost interval as defined by Energy Star</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>startTime</td>
<td>string</td>
<td>Read Write</td>
<td>Start time for the time period</td>
</tr>
<tr>
<td>stopTime</td>
<td>string</td>
<td>Read Write</td>
<td>Stop time for the time period, if present interval cannot be present</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>status</td>
<td>boolean</td>
<td>Read Write</td>
<td>Indicates whether any supported delay defrost function is active</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>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>

6.71 Eco Mode

6.71.1 Introduction

This resource specifies the supported and currently active Eco Mode of a Device. The Resource uses the existing schema for Mode (oic.r.mode) with a restriction that the population of supportedModes and modes Properties is restricted to the set of values given below:

"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 (rt) is defined as: ['oic.r.ecomode'].

6.71.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Eco Mode",
        "version": "OCF-v1.0.0-20160620",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
        }
    },
    "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 uses the existing schema for Mode (oic.r.mode) with a restriction that the population of supportedModes and modes Properties is restricted to the set of values given below:\n\nThe adminforced Property indicates that the value has been set by another party (e.g. via some offboard Smart Energy interaction)\n",
                "parameters": [
                    {
                        "$ref": "#/parameters/interface"
                    }
                ],
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": {
                            "rt": ["oic.r.ecomode"],
                            "id": "unique_example_id",
                            "supportedModes": ["disabled","enabled"],
                            "modes": ["disabled"],
                            "adminforced": false
                        }
                    }
                }
            },
            "post": {
                "description": "",
                "parameters": [
                    {
                        "$ref": "#/parameters/interface"
                    }
                ],
                "required": true,
                "schema": { "$ref": "#/definitions/ecomode-update" },
                "x-example": {
                    "modes": ["enabled"]
                }
            }
        }
    }
}
```
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "id": "unique_example_id",
      "modes": ["enabled"]
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "ecomode": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "modes": {
        "description": "Array of the currently active mode(s)",
        "items": {
          "type": "string"
        },
        "type": "array"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "supportedModes": {
        "description": "Array of possible modes the device supports.",
        "items": {
          "type": "string"
        },
        "readOnly": true,
        "type": "array"
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "adminforced": {
        "description": ""
6.71.5 Property definition

Table 145 defines the Properties that are part of the [oic.r.ecomode] 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>modes</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Desired mode</td>
</tr>
<tr>
<td>adminforced</td>
<td>boolean</td>
<td>No</td>
<td>Read Only</td>
<td>Indicator that the current mode of operation has been forced by admin action.</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>modes</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Array of the currently active mode(s)</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>
<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 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).

maxheatinglevel defines the max level for the heating zone
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,
Retrieves the current heating zone information.

6.72.2 Example URI

/HeatingZoneResURI

6.72.3 Resource type

The resource type (rt) is defined as: ['oic.r.heatingzone'].

6.72.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Heating Zone",
        "version": "OCF1.0-20160722",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.
2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.
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IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE."
}"
```
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/HeatingZoneResURI": {
    "get": {
      "description": "This Resource provides information about the status of a 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). maxheatinglevel defines the max level for the heating
zone\nheatinglevel is the current heating level of the zone\nFor each element the value range is
from 0 (indication that the zone is not heating) to maxheatinglevel,\nRetrieves the current heating
zone information."
    },
    "parameters": [ 
      {"$ref": "#/parameters/interface"}
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.heatingzone"],
          "id": "unique_example_id",
          "maxheatinglevel": 6,
          "heatinglevel": 0
        }
      }
    },
    "schema": { "$ref": "#/definitions/HeatingZone" }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "HeatingZone": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": { "maxLength": 64,
                    "type": "string" 
                  },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "step": {
        "anyOf": [
          { "type": "integer" },
          { "type": "number" }
        ],
        "description": "Step value across the defined range",
        "readOnly": true
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "type": "string"
      }
    }
  }
}
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"range": {
  "description": "The valid range for the value Property",
  "items": [
    "anyOf": [
      "type": "number"
    ],
    "type": "integer"
  ]
},
"heatinglevel": {
  "description": "Current heating level for the zone indicated."
},
"maxheatinglevel": {
  "description": "Maximum heating level for the zone indicated.",
  "readOnly": true,
  "type": "integer"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": [
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.bl",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.a"
    ],
    "type": "string"
  ],
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}

"type": "object"
"required": ["maxheatinglevel", "heatinglevel"]
6.72.5 Property definition

Table 147 defines the Properties that are part of the ['oic.r.heatingzone'] Resource Type

Table 147 – The Property definitions of the Resource with type ‘rt’ = ['oic.r.heatingzone']

<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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>heatinglevel</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>Current heating level for the zone indicated.</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>maxheatinglevel</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>Maximum heating level for the zone indicated.</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>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
</tbody>
</table>

6.72.6 CRUDN behaviour

Table 148 defines the CRUDN operations that are supported on the ['oic.r.heatingzone'] Resource Type

Table 148 – The CRUDN operations of the Resource with type ‘rt’ = ['oic.r.heatingzone']

<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.

6.73.2 Example URI

/HeatingZoneResURI
The resource type (rt) 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": "OCF1.0-20160722",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
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    }
  },
  "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": [
          {
            "$ref": "#/parameters/interface-ll"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myZone1ResURI",
                "rt": ["oic.r.heatingzone"],
                "if": ["oic.if.s"],
                "eps": [{
                  "ep": "coaps://[fe80::b1d6]:1122"
                }]
              },
              {
                "href": "/myZone2ResURI",
                "rt": ["oic.r.heatingzone"],
                "if": ["oic.if.s"],
                "eps": [{
                  "ep": "coaps://[fe80::b1d6]:1122"
                }]
              },
              {
                "href": "/myZone3ResURI",
                "rt": ["oic.r.heatingzone"],
                "if": ["oic.if.s"],
                "eps": [{
                  "ep": "coaps://[fe80::b1d6]:1122"
                }]
              },
              {
                "href": "/myZone4ResURI",
                "rt": ["oic.r.heatingzone"],
                "if": ["oic.if.s"],
                "eps": [{
                  "ep": "coaps://[fe80::b1d6]:1122"
                }]
              }
            ]
          },
          "schema": { "$ref": "#/definitions/HeatingZone-ll" }
        }
      }
    },
    "/HeatingZoneResURI?if=oic.if.baseline" : {
      "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\nRetrieves the current heating zone information",
        "parameters": [
          {
            "$ref": "#/parameters/interface-baseline"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myZone1ResURI",
                "rt": ["oic.r.heatingzone"],
                "if": ["oic.if.s"],
                "eps": [{
                  "ep": "coaps://[fe80::b1d6]:1122"
                }]
              },
              {
                "href": "/myZone2ResURI",
                "rt": ["oic.r.heatingzone"],
                "if": ["oic.if.s"],
                "eps": [{
                  "ep": "coaps://[fe80::b1d6]:1122"
                }]
              },
              {
                "href": "/myZone3ResURI",
                "rt": ["oic.r.heatingzone"],
                "if": ["oic.if.s"],
                "eps": [{
                  "ep": "coaps://[fe80::b1d6]:1122"
                }]
              },
              {
                "href": "/myZone4ResURI",
                "rt": ["oic.r.heatingzone"],
                "if": ["oic.if.s"],
                "eps": [{
                  "ep": "coaps://[fe80::b1d6]:1122"
                }]
              }
            ]
          },
          "schema": { "$ref": "#/definitions/HeatingZone-baseline" }
        }
      }
    }
  }
}
```
"200": {"description": "", "x-example": {
"rt": ["oic.r.heatingzonecollection","oic.wk.col"],
"id": "unique_example_id",
"links": [
{"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"}]
]
],
"schema": { "$ref": "/definitions/HeatingZone" }
},
"parameters": {
"interface-ll" : {
"in" : "query",
"name" : "if",
"type" : "string",
"enum" : ["oic.if.ll"]
},
"interface-baseline" : {
"in" : "query",
"name" : "if",
"type" : "string",
"enum" : ["oic.if.baseline"]
},
"interface-all" : {
"in" : "query",
"name" : "if",
"type" : "string",
"enum" : ["oic.if.ll", "oic.if.baseline"]
}
},
"definitions": {
"HeatingZone-ll" : {
"title" : "Heating Zone Collection Link List Schema (auto merged)"
,"items" : {
"$ref": "/definitions/oic.oic-link"
}
,"type" : "array"
},
"HeatingZone" : {
"properties": {
"rt" : {
"items": {
"enum": ["oic.r.heatingzonecollection", "oic.wk.col"]
},
"type" : "string"
},
"maxItems": 2,
"minItems": 2,
"type": "array",
"uniqueItems": true
],
"links": {
"description": "A set of simple or individual OIC Links.",
"items": {
"properties": {
"anchor": {
"description": "This is used to override the context URI e.g. override the URI of the containing collection."
,
"format": "uri",
"maxLength": 256,
"type": "string"
},
"di": {
"description": "The Device ID formatted according to IETF RFC 4122.",
"pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
"type": "string"
},
"eps": {
"description": "the Endpoint information of the target Resource",
"items": {
"properties": {
"ep": {
"description": "Transport Protocol Suite + Endpoint Locator",
"format": "uri",
"type": "string"
},
"pri": {
"description": "The priority among multiple Endpoints",
"minimum": 1,
"type": "integer"
}
}],
"type": "object"
},
"type": "object"
},
"href": {
"description": "This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.",
"format": "uri",
"maxLength": 256,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": {
"enum": ["oic.if.baseline",
"oic.if.l1",
"oic.if.b",
"oic.if.rw",
"oic.if.r",
"oic.if.a",
"oic.if.s"
],
"type": "string"
},
"minItems": 1,
"type": "array"
}
},
"p": {
"description": "Specifies the framework policies on the Resource referenced by
target URI",
  "properties": {
    "bm": {
      "description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
      "type": "integer"
    },
    "required": ["bm"],
    "type": "object"
  },
  "rel": {
    "description": "The relation of the target URI referenced by the link to the context URI",
    "oneOf": [
      {
        "default": ["hosts"],
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "type": "array"
      },
      {
        "default": "hosts",
        "maxLength": 64,
        "type": "string"
      }
    ],
    "rt": {
      "description": "Resource Type of the Resource",
      "items": {
        "maxLength": 64,
        "type": "string"
      },
      "minItems": 1,
      "type": "array"
    },
    "title": {
      "description": "A title for the link relation. Can be used by the UI to provide a context.",
      "maxLength": 64,
      "type": "string"
    },
    "type": {
      "default": "application/cbor",
      "description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.",
      "items": {
        "maxLength": 64,
        "type": "string"
      },
      "minItems": 1,
      "type": "array"
    },
    "required": [
      "href",
      "rt",
      "if"
    ],
    "type": "object"
  },
  "type": "array"}
"n": {
    "description": "Friendly name of the resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},
"rts": {
    "items": {
        "anyOf": [
            {
                "enum": [
                    "oic.r.heatingzone",
                    "oic.r.value.conditional"
                ],
                "type": "string"
            },
            {
                "enum": [
                    "oic.r.heatingzone"
                ],
                "type": "string"
            }
        ]
    },
    "maxItems": 2,
    "minItems": 1,
    "type": "array",
    "uniqueItems": true
},
"id": {
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},
"if": {
    "description": "The interface set supported by this resource",
    "items": {
        "enum": [
            "oic.if.baseline",
            "oic.if.ll",
            "oic.if.b",
            "oic.if.lb",
            "oic.if.rw",
            "oic.if.r",
            "oic.if.a",
            "oic.if.a"
        ],
        "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
},
"oic.collection.links.arrayoflinks": {
    "description": "A set of simple or individual OIC Links."
}
"anchor": {
  "description": "This is used to override the context URI e.g. override the URI of
  the containing collection."
},

"di": {
  "description": "The Device ID formatted according to IETF RFC 4122.",
  "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
  "type": "string"
},

"eps": {
  "description": "the Endpoint information of the target Resource",
  "items": {
    "properties": {
      "ep": {
        "description": "Transport Protocol Suite + Endpoint Locator",
        "format": "uri",
        "type": "string"
      },
      "pri": {
        "description": "The priority among multiple Endpoints",
        "minimum": 1,
        "type": "integer"
      }
    },
    "type": "object"
  },
  "type": "array"
},

"href": {
  "description": "This is the target URI, it can be specified as a Relative Reference
  or fully-qualified URI.",
  "format": "uri",
  "maxLength": 256,
  "type": "string"
},

"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "type": "array"
},

"ins": {
  "description": "The instance identifier for this web link in an array of web links -
  used in collections",
  "type": "integer"
},

"p": {
  "description": "Specifies the framework policies on the Resource referenced by the
  target URI",
  "properties": {
    "bm": {
      "description": "Specifies the framework policies on the Resource referenced by
      the target URI for e.g. observable and discoverable",
      "type": "integer"
    }
  },
  "required": [
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
}
"heatingzonecollection-ll": {
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  },
  "type": "array"
"oic.core": {
  "properties": {
    "id": {
      "description": "Instance ID of this specific resource",
      "maxLength": 64,
      "readOnly": true,
      "type": "string"
    },
    "if": {
      "description": "The interface set supported by this resource",
      "items": {
        "enum": [
          "oic.if.baseline",
          "oic.if.l1",
          "oic.if.b",
          "oic.if.lb",
          "oic.if.rw",
          "oic.if.r",
          "oic.if.a",
          "oic.if.s"
        ],
        "type": "string"
      },
      "minItems": 1,
      "readOnly": true,
      "type": "array"
    },
    "n": {
      "description": "Friendly name of the resource",
      "maxLength": 64,
      "readOnly": true,
      "type": "string"
    },
    "rt": {
      "description": "Resource Type",
      "items": {
        "maxLength": 64,
        "type": "string"
      },
      "minItems": 1,
      "readOnly": true,
      "type": "array"
    }
  },
  "type": "object"
},
"oic.r.heatingzonecollection": {
  "properties": {
    "rt": {
      "items": {
        "enum": [
          "oic.r.heatingzonecollection",
          "oic.wk.col"
        ],
        "type": "string"
      },
      "maxItems": 2,
      "minItems": 2,
      "type": "array",
      "uniqueItems": true
    },
    "rts": {
      "items": {
        "anyOf": [
          {"enum": ["oic.r.heatingzone", "oic.r.value.conditional"]}
        ],
        "type": "object"
      }
    }
  },
  "type": "object"
"type": "string"
],
"enum": [
"oic.r.heatingzone"
],
"type": "string"
}
}
]
"maxItems": 2,
"minItems": 1,
"type": "array",
"uniqueItems": true
}
,"type": "object"
}
,"oic.collection.properties" : 
"description": "A collection is a set of links along with additional properties to describe
the collection itself",
"properties": {
"rts": {
"$ref": "#/definitions/oic.core/properties/rt",
"description": "The list of allowable resource types (for Target and anchors) in links
included in the collection"
}
,"type": "object"
}
,"oic.oic-link" : 
{"properties": {
"anchor": {
"description": "This is used to override the context URI e.g. override the URI of the
containing collection.",
"format": "uri",
"maxLength": 256,
"type": "string"
},
"di": {
"description": "The Device ID formatted according to IETF RFC 4122.",
"pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
"type": "string"
},
"eps": {
"description": "the Endpoint information of the target Resource",
"items": {
"properties": {
"ep": {
"description": "Transport Protocol Suite + Endpoint Locator",
"format": "uri",
"type": "string"
},
"pri": {
"description": "The priority among multiple Endpoints",
"minimum": 1,
"type": "integer"
}]
,"type": "object"
}],
"href": {
"description": "This is the target URI, it can be specified as a Relative Reference or
fully-qualified URI.",
}
"format": "uri",
"maxLength": 256,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": {
"enum": [
"oic.if.baseline",
"oic.if.ll",
"oic.if.b",
"oic.if.rw",
"oic.if.r",
"oic.if.a",
"oic.if.s"
],
"type": "string"
},
"minItems": 1,
"type": "array"
},
"ins": {
"description": "The instance identifier for this web link in an array of web links - used in collections",
"type": "integer"
},
"p": {
"description": "Specifies the framework policies on the Resource referenced by the target URI",
"properties": {
"bm": {
"description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
"type": "integer"
}
},
"required": [
"bm"
],
"type": "object"
},
"rel": {
"description": "The relation of the target URI referenced by the link to the context URI",
"oneOf": [
{
"default": [
"hosts"
],
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
},
{"default": "hosts",
"maxLength": 64,
"type": "string"}
]}
},
"rt": {
"description": "Resource Type of the Resource",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
},
"title": ["Description"],
"type": "array"}
"description": "A title for the link relation. Can be used by the UI to provide a context.",
"maxLength": 64,
"type": "string"
},
"type": {
"default": "application/cbor",
"description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting."
,
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
}
}

"required": [
"href",
"rt",
"if"
],
"type": "object"
}

6.73.5 Property definition

Table 149 defines the Properties that are part of the ['oic.r.heatingzonecollection', 'oic.wk.col'] Resource Type

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>links</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>A set of simple or individual OIC Links.</td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td></td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td></td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td></td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td></td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td></td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td></td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>rts</td>
<td>multiple types:</td>
<td></td>
<td>Read Write</td>
<td>The list of allowable resource types (for Target and anchors) in links</td>
</tr>
<tr>
<td></td>
<td>see schema</td>
<td></td>
<td></td>
<td>included in the collection</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
<td>----------</td>
<td>-----------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>rts</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>links</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>A set of simple or individual OIC Links.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td>di</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>The Device ID formatted according to IETF RFC 4122.</td>
</tr>
<tr>
<td>href</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.</td>
</tr>
<tr>
<td>eps</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>the Endpoint information of the target Resource</td>
</tr>
<tr>
<td>anchor</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>This is used to override the context URI e.g. override the URI of the containing collection.</td>
</tr>
<tr>
<td>title</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>A title for the link relation. Can be used by the UI to provide a context.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>type</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.</td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The relation of the target URI</td>
</tr>
</tbody>
</table>
### 6.73 CRUDN behaviour

Table 150 defines the CRUDN operations that are supported on the ['oic.r.heatingzonecollection', 'oic.wk.col'] 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>

### 6.74 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.

availablelevels is an array of the levels that can be selected, these can be a number or an integer.

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.

Retrieves the current selectable levels.

#### 6.74.2 Example URI

/SelectableLevelsResURI

#### 6.74.3 Resource type

The resource type (rt) is defined as: ['oic.r.selectablelevels'].

#### 6.74.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Selectable Levels",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
        }
    },
    "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:"
}
```
machine-readable format (

other materials provided with the distribution.

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"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. availablelevels is an array of the levels that can be selected, these can be a number or an integer. 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. Retrieves the current selectable levels.
",
"parameters": [
{
"$ref": "#/parameters/interface"
}
],
"responses": {
"200": {
"description": "",
"x-example": {
"rt": ["oic.r.selectablelevels"],
"id": "unique_example_id",
"availablelevels": [0, 2, 4, 6, 8],
"targetlevel": 2
}
}
",
"schema": { "$ref": "#/definitions/SelectableLevels" }
}
}
",
"post": {
"description": "Sets the current level from the set that is selectable",
"parameters": [
{
"$ref": "#/parameters/interface"
}
],
"responses": {
"200": {
"description": "",
"x-example": {
"targetlevel": 4
}
}
",
"403": {
"description": "Generated by a Server when an attempt is made to update to a targetlevel that is not in the set of availablelevels",
"x-example": {

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"id": "unique_example_id",
"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": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"n": {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"targetlevel": {
"anyOf": [
{"type": "integer"},
{"type": "number"}
]
},
"description": "The target level from the available selectable set",
"availablelevels": {
"description": "Set of levels from which one can be selected",
"items": {
"anyOf": [
{"type": "integer"},
{"type": "number"}
]
},
"readOnly": true,
"type": "array"
},
"id": {
"description": "Instance ID of this specific resource",
"maxLength": 64,
"items": {
"maxLength": 64,
"type": "string"
}
"readOnly": true,
"type": "string"
}],
"if" : {
"description": "The interface set supported by this resource",
"items": {
"enum": [
"oic.if.baseline",
"oic.if.ll",
"oic.if.ib",
"oic.if.rb",
"oic.if.rw",
"oic.if.r",
"oic.if.s",
"oic.if.a"
],
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
}
]
,"type": "object"
,"required": ["availablelevels", "targetlevel"]
}
,"required": ["targetlevel"]
}
"UpdateSchema" : {
"properties": {
"targetlevel" :
{"description": "The target level from the available selectable set",
"type": ["integer", "number"]
}
,"type": "object"
,"required": ["targetlevel"]
}
}

6.74.5 Property definition

Table 151 defines the Properties that are part of the ['oic.r.selectablelevels'] Resource Type

Table 151 – The Property definitions of the Resource with type 'rt' = ['oic.r.selectablelevels']

<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>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>availablelevels</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Only</td>
<td>Set of levels from which one can be selected</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
</tbody>
</table>
| targetlevel   | multiple types: see schema | Yes | Read Write | The target level from the
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></td>
<td></td>
<td>observe</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 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.

A 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"]. Please see Section 5.7.1 of the published OCF Resource Type Specification for more details.

The threshold is the amount by which the thing being observed must change before a notification is sent.

The 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 maxnotifyperiod timer 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.

6.75.2 Example URI

/ValueConditionalResURI

6.75.3 Resource type

The resource type (rt) is defined as: ['oic.r.value.conditional'].

6.75.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Value Conditional",
    "version": "v1.1.0-20161031",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  }
}
```
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LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL THE Open Connectivity
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SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.\n"

"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. These conditions are applied by the 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. A server exposes
this Resource in association with the Resource conveying the observed value. This is done by means
of a new Resource instance with RT of ["oic.r.<thing being observed>", "oic.r.value.conditional"], e.g ["oic.r.temperature", "oic.r.value.conditional"]. Please see
Section 5.7.1 of the published OCF Resource Type Specification for more details. The threshold is
the amount by which the thing being observed must change before a notification is sent. The
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 maxnotifyperiod timer 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."

"parameters": [
{"$ref": "#/parameters/interface"}
],
"responses": {
"200": {
"description": "",
"x-example": {
"rt": ["oic.r.value.conditional"],
"id": "unique_example_id",
"threshold": 2,
"minnotifyperiod": 2000,
"maxnotifyperiod": 5000
}
},
"schema": { "$ref": "#/definitions/valueconditional" }
}
"post": {
"description": "body:\n application/json:\n schema: valueconditional\n example: |

{"threshold": 2, "minnotifyperiod": 1500} |

"parameters": [
{"$ref": "#/parameters/interface"}
],
"responses": {
"200": {
"description": "",
"x-example": {
"threshold": 2,
"minnotifyperiod": 1500
}
},
"schema": { "$ref": "#/definitions/valueconditional" }
}
"parameters": {
"interface": {
  "in": "query",
  "name": "if",
  "type": "string",
  "enum": ["oic.if.rw", "oic.if.baseline"]
}
"definitions": {
  "valueconditional": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "maxnotifyperiod": {
        "description": "Maximum elapsed time in ms before a notification must be sent.",
        "minimum": 0,
        "type": "integer"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "minnotifyperiod": {
        "description": "Minimum elapsed time in ms before a notification is sent.",
        "minimum": 0,
        "type": "integer"
      },
      "threshold": {
        "description": "Amount by which the measured value must change before a notification is sent.",
        "minimum": 0,
        "type": "number"
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "if": {
        "description": "The interface set supported by this resource",
        "items": {
          "enum": ["oic.if.baseline", "oic.if.ll", "oic.if.b", "oic.if.lb", "oic.if.rw", "oic.if.r", "oic.if.a", "oic.if.s"],
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
6.75.5 Property definition

Table 153 defines the Properties that are part of the ['oic.r.value.conditional'] 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>maxnotifyperiod</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>Maximum elapsed time in ms before a notification must be sent.</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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>threshold</td>
<td>number</td>
<td>No</td>
<td>Read Write</td>
<td>Amount by which the measured value must change before a notification is sent.</td>
</tr>
<tr>
<td>minnotifyperiod</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>Minimum elapsed time in ms before a notification is sent.</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>
6.75.6 CRUDN behaviour

Table 154 defines the CRUDN operations that are supported on the ['oic.r.value.conditional'] 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>

6.76 Colour Space Coordinates

6.76.1 Introduction

This resource describes the colour using colour space co-ordinates.

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 precision (from oic.r.baseresource) is provided it applies to both the X and Y coordinates.

Provides the colour using colour space coordinates.

6.76.2 Example URI

/example/ColourSpaceCoordinatesResURI

6.76.3 Resource type

The resource type (rt) is defined as: ['oic.r.colour.csc'].

6.76.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Space Coordinates",
    "version": "OCFv1.1.0-2017",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/example/ColourSpaceCoordinatesResURI": {
      "get": {
        "description": "This resource describes the colour using colour space co-ordinates.

        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 precision (from oic.r.baseresource) is provided it applies to both the X and Y coordinates.

        Provides the colour using colour space coordinates.
        
        The resource type (rt) is defined as: ['oic.r.colour.csc'].
        
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  }
}
```
"responses": {  
  "200": {  
    "description": "",  
    "x-example": {  
      "rt": ["oic.r.colour.csc"],  
      "id": "unique_example_id",  
      "csc": [0.41, 0.51]  
    }  
  },  
  "schema": { "$ref": "#/definitions/ColourCSC" }  
},  
"post": {  
  "description": "Sets current colour space coordinates\n",  
  "parameters": [  
    {"$ref": "#/parameters/interface-a"},  
    {  
      "name": "body",  
      "in": "body",  
      "required": true,  
      "schema": { "$ref": "#/definitions/ColourCSC" },  
      "x-example": {  
        "csc": [0.40, 0.70]  
      }  
    },  
    {  
      "schema": { "$ref": "#/definitions/ColourCSC" }  
    }  
  ],  
  "responses": {  
    "200": {  
      "description": "",  
      "x-example": {  
        "id": "unique_example_id",  
        "csc": [0.40, 0.70]  
      }  
    },  
    "schema": { "$ref": "#/definitions/ColourCSC" }  
  }  
},  
"parameters": {  
  "interface-a": {  
    "in": "query",  
    "name": "if",  
    "type": "string",  
    "enum": ["oic.if.a"]  
  },  
  "interface-all": {  
    "in": "query",  
    "name": "if",  
    "type": "string",  
    "enum": ["oic.if.a", "oic.if.baseline"]  
  }  
},  
"definitions": {  
  "ColourCSC": {  
    "properties": {  
      "rt": {  
        "description": "Resource Type",  
        "items": {  
          "maxLength": 64,  
          "type": "string"  
        },  
        "minItems": 1,  
        "readOnly": true,  
        "type": "array"  
      }  
    }  
  }  
}
"precision": {  
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},
"csc": {
  "description": "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": {  
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"range": {  
  "description": "The valid range for the value Property",
  "items": {  
    "anyOf": [  
      {  
        "type": "number"
      },
      {  
        "type": "integer"
      }
    ],
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
  },
  "step": {  
    "anyOf": [  
      {  
        "type": "integer"
      },
      {  
        "type": "number"
      }
    ],
    "description": "Step value across the defined range",
    "readOnly": true
  },
  "id": {  
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },
  "if": {  
    "description": "The interface set supported by this resource",
    "items": [  
      "enum": [  
        "oic.if.baseline",
        "oic.if.1l",
        "oic.if.b",
        "oic.if.lb"
      ]
    ]
  }
}
Table 155 defines the Properties that are part of the ['oic.r.colour.csc'] Resource Type

**Table 155 – The Property definitions of the Resource with type 'rt' = ['oic.r.colour.csc']**

<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>No</td>
<td>Read Only</td>
<td>The interface set supported by this resource</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>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>csc</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>X and Y coordinates of the colour in CIE colour space</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
</tbody>
</table>

**Table 156 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.colour.csc']**

<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></td>
</tr>
</tbody>
</table>
6.77 Colour Temperature

6.77.1 Introduction

This resource describes the colour using colour temperature conventions. ct is the Mired colour temperature. The equivalent value in Kelvin is obtained by Colour Temp(K) = 1,000,000/Colour Temp(Mired)

Provides the colour using colour temperature conventions.

6.77.2 Example URI

(example/ColourTemperatureResURI

6.77.3 Resource type

The resource type (rt) is defined as: [oic.r.colour.colourtemperature].

6.77.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Colour Temperature",
        "version": "OCFv1.0-2017",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

            1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
            2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

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        }
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/example/ColourTemperatureResURI": {
            "get": {
                "description": "This resource describes the colour using colour temperature conventions.

                ct is the Mired colour temperature.

                The equivalent value in Kelvin is obtained by Colour Temp(K) = 1,000,000/Colour Temp(Mired)

                Provides the colour using colour temperature conventions.
            },
            "parameters": [
                "$ref": "#/parameters/interface-all"
            ],
            "responses": {
                "200": {
                    "description": "",
                    "x-example": {
                        "rt": "[oic.r.colour.colourtemperature]",
                        "id": "unique_example_id",
                        "ct": 457
                    }
                }
            }
        }
    }
}
```
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{"$ref": "#/parameters/interface-a"},
{
"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "#/definitions/ColourTemp" },
"x-example":
{
"ct":
457
}
}
],
"responses": {
"200": {
"description" : "",
"x-example":
{
"id":
"unique_example_id",
"ct":
467
}
,
"schema": { "$ref": "#/definitions/ColourTemp" }
}
}
}
}
},
"parameters": {
"interface-a" : {
"in" : "query",
"name" : "if",
"type" : "string",
"enum" : ["oic.if.a"]
},
"interface-all" : {
"in" : "query",
"name" : "if",
"type" : "string",
"enum" : ["oic.if.a", "oic.if.baseline"]
}
},
"definitions": {
"ColourTemp" : {
"properties": {
"rt" :
{
"description": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"precision" :
{
"description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number"
},
"n" :
{
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"range" :
{
"description": "The valid range for the value Property",
"items": {

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6.77.5 Property definition

Table 157 defines the Properties that are part of the ['oic.r.colour.colourtemperature'] Resource Type
Table 157 – The Property definitions of the Resource with type 'rt' = ['oic.r.colour.colourtemperature']

<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>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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>ct</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>Mired colour temperature</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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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 158 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.colour.colourtemperature']

<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>

6.78 Colour Hue and Saturation

6.78.1 Introduction

This resource describes the colour using hue-saturation conventions.

- 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 precision (from oic.r.baseresource) is provided it applies to the hue angle.
- Saturation is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).
- Saturation can be converted to a percentage by saturation/maximumsaturation X 100; where maximumsaturation is 32767 if the Property itself is not present.
- Maximumsaturation is the upper bound on the saturation supported by the Device.
- If not present the maximum value for saturation is 32767.
- Provides the colour using hue and saturation conventions.

6.78.2 Example URI

/example/ColourHueSaturationResURI

6.78.3 Resource type

The resource type (rt) is defined as: ['oic.r.colour.hs'].

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6.78.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Hue and Saturation",
    "version": "v1.0-2017",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:\n
1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.\n2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.\n3. THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL The Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/example/ColourHueSaturationResURI": {
      "get": {
        "description": "This resource describes the colour using hue-saturation conventions.\nhue 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.\nIf precision (from oic.r.baseresource) is provided it applies to the hue angle.\nsaturation is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).\nSaturation can be converted to a percentage by saturation/maximumsaturation X 100; where maximumsaturation is 32767 if the Property itself is not present.\nIf not present the maximum value for saturation is 32767.\nProvides the colour using hue and saturation conventions.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.colour.hs"],
              "id": "unique_example_id",
              "hue": 300.0,
              "saturation": 212,
              "maximumsaturation": 1000
            }
          }
        },
        "schema": { "$ref": "#/definitions/ColourHS" }
      }
    }
  }
}
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved 319
"hue": 300.0,
"saturation": 212
}
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "id": "unique_example_id",
      "hue": 300.0,
      "saturation": 212
    }
  }
},
"schema": { "$ref": "#/definitions/ColourHS" }
}
"parameters": {
  "interface-a": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a"]
  },
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "ColourHS": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "hue": {
        "description": "Hue angle as defined by the CIECAM02 model definition",
        "maximum": 360.0,
        "minimum": 0.0,
        "type": "number"
      },
      "saturation": {
        "description": "Saturation as defined by the CIECAM02 model definition",
        "maximum": 32767,
        "minimum": 0,
        "type": "integer"
      },
      "maximumsaturation": {
        "description": "Maximum supported value of Saturation for this Device",
        "maximum": 32767,
        "minimum": 0,
        "readOnly": true,
        "type": "integer"
      },
      "precision": 320
"description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number"
},
"n": {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"range": {
"description": "The valid range for the value Property",
"items": {
"anyOf": [
"type": "number"
],
"type": "integer"
}
},
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"step": {
"anyOf": [
"type": "integer"
],
"type": "number"
}
},
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"step": {
"anyOf": [
"type": "integer"
],
"type": "number"
}
},
"description": "Step value across the defined range",
"readOnly": true
},
"id": {
"description": "Instance ID of this specific resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": {
"enum": ["oic.if.baseline", "oic.if.ll", "oic.if.b", "oic.if.lb", "oic.if.rw", "oic.if.r", "oic.if.a", "oic.if.e"
],
"type": "string"
}
},
"minItems": 1,
"readOnly": true,
"type": "array"
}
6.78.5 Property definition

Table 159 defines the Properties that are part of the ['oic.r.colour.hs'] 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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property.</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource.</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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>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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range.</td>
</tr>
<tr>
<td>maximumsaturation</td>
<td>integer</td>
<td>No</td>
<td>Read Only</td>
<td>Maximum supported value of Saturation for this Device.</td>
</tr>
<tr>
<td>saturation</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>Saturation as defined by the CIECAM02 model definition.</td>
</tr>
<tr>
<td>hue</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>Hue angle as defined by the CIECAM02 model definition.</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>
<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>

6.79 Battery Material

6.79.1 Introduction

This resource describes the battery material represented as an enumerated set of strings.

Retrieves the battery material.
6.79.2 Example URI
/BatteryMaterialResURI

6.79.3 Resource type
The resource type (rt) is defined as: ['oic.r.batterymaterial'].

6.79.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Battery Material",
      "version": "v1.1.0-20170815",
      "license": {
         "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
         "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.
2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.
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CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.
"}
   },
   "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": [
            {"$ref": "#/parameters/interface"}
         ],
         "responses": {
            "200": {
               "description": "",
               "x-example": {
                  "rt": ['oic.r.batterymaterial'],
                  "id": "unique_example_id",
                  "material": "Alkaline"
               }
            }
         }
      }
   },
   "parameters": {
      "interface": {
         "in": "query",
         "name": "if",
         "type": "string",
         "enum": ["oic.if.s", "oic.if.baseline"]
      }
   },
   "definitions": {
      "BatteryMaterial": {
         "properties": {
            "rt": 
         }
      }
   }
}
```


```json
{
  "description": "Resource Type",
  "items": {
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
},

"material": {
  "description": "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 Oxide",
    "Nickel Zinc",
    "Organic Radical",
    "Paper",
    "Polymer Based",
    "Polysulfide Bromide",
    "Potassium Ion",
    "Pulvermachers Chain"
  ]
}
```
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>material</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>Battery construction material (type).</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>
</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. Operation 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.

Retrieves the state of brewing.

6.80.2 Example URI

/BrewingResURI

6.80.3 Resource type

The resource type (rt) is defined as: ['oic.r.brewing'].

6.80.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Brewing",
    "version": "v1.1.0-20170815",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
        1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
        2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
        THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. "$AS IS$" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.
        IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR...
```
"schemes": ["http"],
"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. Operation 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.\nRetrieves the state of brewing.\n",
      "parameters": [
        {$ref: "/#parameters/interface"}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.brewing"],
            "id": "unique_example_id",
            "amountrequested": 120,
            "strength": 8,
            "strengthrange": [1,10]
          }
        },
        "schema": { $ref: "/#definitions/Brewing" }
      }
    },
    "post": {
      "description": "Sets the brewing values\n",
      "parameters": [
        {$ref: "/#parameters/interface"},
        
      ],
      "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": {
    "parameters": {
      "$ref": "/#parameters/interface"},
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { $ref: "/#definitions/Brewing" },
      "x-example": {
        "amountrequested": 120,
        "strength": 8
      }
    },
    "schema": { $ref: "/#definitions/Brewing" }
"Brewing": {
  "properties": {
    "rt": {
      "description": "Resource Type",
      "items": {
        "maxLength": 64,
        "type": "string"
      },
      "minItems": 1,
      "readOnly": true,
      "type": "array"
    },
    "strength": {
      "description": "The strength of a brewed drink.",
      "type": "integer"
    },
    "amountrequested": {
      "description": "The amount requested in ml.",
      "type": "integer"
    },
    "n": {
      "description": "Friendly name of the resource",
      "maxLength": 64,
      "readOnly": true,
      "type": "string"
    },
    "range": {
      "description": "The valid range for the value Property",
      "items": {
        "anyOf": [
          { "type": "number" },
          { "type": "integer" }
        ],
        "maxItems": 2,
        "minItems": 2,
        "readOnly": true,
        "type": "array"
      },
      "strengthrange": {
        "items": {
          "type": "integer"
        },
        "maxItems": 2,
        "minItems": 2,
        "readOnly": true,
        "type": "array"
      },
      "step": {
        "anyOf": [
          { "type": "integer" },
          { "type": "number" }
        ],
        "description": "Step value across the defined range",
        "readOnly": true
      }
    }
  }
}
```json
{
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
}

{
    "description": "The interface set supported by this resource",
    "items": {
        "enum": [
            "oic.if.baseline",
            "oic.if.ll",
            "oic.if.b",
            "oic.if.lb",
            "oic.if.rw",
            "oic.if.r",
            "oic.if.a",
            "oic.if.s"
        ],
        "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
}
```

6.80.5 Property definition

Table 163 defines the Properties that are part of the ['oic.r.brewing'] Resource Type

Table 163 – The Property definitions of the Resource with type 'rt' = ['oic.r.brewing']

<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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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 valid range for the value Property</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The strength of a brewed drink.</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>
</tbody>
</table>

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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 can be used for either rated (read-only), desired (read-write) or measured (read-only) energy. The voltage is in Volts (V), current in Amps (A), and frequency in Hertz (Hz).

Retrieves the current energy.

6.81.2 Example URI

/energyresURI

6.81.3 Resource type

The resource type (rt) is defined as: ['oic.r.energy.electrical'].

6.81.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy",
    "version": "v1.1.0-20170815",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
        1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
        2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
        3. THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF NONINFRINGEMENT, ARE DISCLAIMED.
        4. IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
    "
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/energyresURI": {
      "get": {
        "description": "This resource describes the attributes associated with electrical energy.
        This can be used for either rated (read-only), desired (read-write) or measured (read-only) energy.
        The voltage is in Volts (V), current in Amps (A), and frequency in Hertz (Hz).
        Retrieves the current energy.
        "
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.r.energy.electrical"]
            }
          }
        }
      }
    }
  }
}
```
"id": "unique_example_id",
"voltage": 120.0,
"current": 5.0,
"frequency": 60.0
}

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

"post": {
  "description": "Sets the desired energy values\n",
  "parameters": [
    {
      "$ref": "/#parameters/interface-update",
      "name": "body",
      "in": "body",
      "required": true,
      "schema": { "$ref": "/#definitions/EnergyUpdate" },
      "x-example":
      {
        "desiredvoltage": 130.0,
        "desiredcurrent": 6.0
      }
    },
    "responses": {
      "200": {
        "description": "",
        "x-example":
        {
          "id": "unique_example_id",
          "desiredvoltage": 130.0,
          "desiredcurrent": 6.0
        }
      }
    },
    "parameters": {
      "interface-update": {
        "in": "query",
        "type": "string",
        "enum": ["oic.if.rw", "oic.if.baseline"]
      },
      "interface-all": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.r", "oic.if.rw", "oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Energy": {
        "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "precision": {
          "description": "Accuracy granularity of the exposed value",
          "readOnly": true,
          "type": "array"
        }
      }
    }
"type": "number"
},
"desiredcurrent": {
  "description": "The desired electric current in Amps (A).",
  "type": "number"
},
"current": {
  "description": "The electric current in Amps (A).",
  "readOnly": true,
  "type": "number"
},
"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      { "type": "number"
      },
      { "type": "integer"
      }
    ]
  },
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},
"frequency": {
  "description": "The electric frequency in Hertz (Hz).",
  "readOnly": true,
  "type": "number"
},
"voltage": {
  "description": "The electric voltage in Volts (V).",
  "readOnly": true,
  "type": "number"
},
"step": {
  "anyOf": [
    { "type": "integer"
    },
    { "type": "number"
    }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"desiredfrequency": {
  "description": "The desired electric frequency in Hertz (Hz).",
  "type": "number"
},
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
"readOnly": true,
"type": "string"
},
"desiredvoltage" :
{
  "description": "The desired electric voltage in Volts (V).",
  "type": "number"
},
"if" :
{
  "description": "The interface set supported by this resource",
  "items": {
    "enum": ["oic.if.baseline", "oic.if.ll", "oic.if.b", "oic.if.lb", "oic.if.rw", "oic.if.r", "oic.if.a", "oic.if.s"],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}

"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"
    }
  },
  "if" :
  {
    "description": "The interface set supported by this resource",
    "items": {
      "enum": ["oic.if.baseline", "oic.if.ll", "oic.if.b", "oic.if.lb", "oic.if.rw", "oic.if.r", "oic.if.a", "oic.if.s"],
      "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
  }
},
"anyOf" :
6.81.5 Property definition

Table 165 defines the Properties that are part of the ['oic.r.energy.electrical'] 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>desiredfrequency</td>
<td>number</td>
<td>Yes</td>
<td>Read Write</td>
<td>The desired electric frequency in Hertz (Hz).</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>desiredvoltage</td>
<td>number</td>
<td>No</td>
<td>Read Write</td>
<td>The desired electric voltage in Volts (V).</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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>Property</td>
<td>Type</td>
<td>Access</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>------------</td>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>frequency</td>
<td>number</td>
<td>Yes</td>
<td>The electric frequency in Hertz (Hz).</td>
<td></td>
</tr>
<tr>
<td>current</td>
<td>number</td>
<td>Yes</td>
<td>The electric current in Amps (A).</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>array: see</td>
<td>No</td>
<td>The valid range for the value Property</td>
<td></td>
</tr>
<tr>
<td>voltage</td>
<td>number</td>
<td>Yes</td>
<td>The electric voltage in Volts (V).</td>
<td></td>
</tr>
<tr>
<td>desiredfrequency</td>
<td>number</td>
<td>No</td>
<td>The desired electric frequency in Hertz (Hz).</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Friendly name of the resource</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see</td>
<td>No</td>
<td>Resource Type</td>
<td></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. energygenerated is a number that provides the energy generated in Watt-hour(Wh).

Retrieves the current energy generation.

6.82.2 Example URI

/EnergyGenerationResURI

6.82.3 Resource type

The resource type (rt) is defined as: ['oic.r.energy.generation'].

6.82.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Energy Generation",
        "version": "v1.1.0-20170815",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
        }
    }
}
```
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/EnergyGenerationResURI": {
    "get": {
      "description": "This resource describes the attributes associated with energy generation. energygenerated is a number that provides the energy generated in Watt-hour(Wh). Retrieves the current energy generation."
    }
  }
},
"parameters": {
  "$ref": "#/parameters/interface"
},
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.energy.generation"],
      "id": "unique_example_id",
      "energygenerated": 3000.00
    }
  }
},
"definitions": {
  "EnergyGeneration": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "energygenerated": {
        "description": "The energy generated in Watt-hour(Wh).",
        "readOnly": true,
        "type": "number"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "type": "string"
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
}
6.82.5 Property definition

Table 167 defines the Properties that are part of the ['oic.r.energy.generation'] Resource Type
Table 167 – The Property definitions of the Resource with type 'rt' = ['oic.r.energy.generation']

<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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>
</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 foam strength 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 a range Property defined in the baseressource. Retrieves the state of foaming.

6.83.2 Example URI

/FoamingResURI

6.83.3 Resource type

The resource type (rt) is defined as: ['oic.r.foaming'].

6.83.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Foaming",
        "version": "v1.1.0-20170815",
        "license": {
            "name": "Apache 2.0",
            "url": "http://www.apache.org/licenses/LICENSE-2.0"
        }
    },
    "paths": {
        "/FoamingResURI": {
            "get": {
                "description": "Retrieves the state of foaming.
```
"name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
"x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n1. Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\nTHIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\nIN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.\n"
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"]
  }
},
"definitions": {
  "Foaming": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "foamstrength": {
        "description": "The desired foaminess of the liquid.",
        "type": "integer"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "range": {
        "description": "The valid range for the value Property",
        "items": {
          "anyOf": [
            { "type": "number" },
            { "type": "integer" }
          ]
        },
        "maxItems": 2,
        "minItems": 2,
        "readOnly": true,
        "type": "array"
      },
      "step": {
        "anyOf": [
          { "type": "integer" },
          { "type": "number" }
        ]
      }
    }
  }
}
"description": "Step value across the defined range",
"readOnly": true
},
"id": {
"description": "Instance ID of this specific resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": {
"enum": [
"oic.if.baseline",
"oic.if.ill",
"oic.if.b",
"oic.if.lb",
"oic.if.rw",
"oic.if.r",
"oic.if.a",
"oic.if.s"
],
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
}
},
"type": "object"
],
"required": ["foamstrength"]
}
}
}
}
}

6.83.5 Property definition

Table 169 defines the Properties that are part of the ['oic.r.foaming'] 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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>foamstrength</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>The desired foaminess of the liquid.</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>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>
Table 170 defines the CRUDN operations that are supported on the ['oic.r.foaming'] 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>

6.84 Grinder

6.84.1 Introduction
This resource describes the attributes associated with a grinder. The coarseness of the grounds is an integer. The higher the value, the less coarse. remaining is a percentage that represents the unground material left.

Retrieves the state of a grinder.

6.84.2 Example URI
/GrinderResURI

6.84.3 Resource type
The resource type (rt) is defined as: ['oic.r.grinder'].

6.84.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Grinder",
    "version": "v1.1.0-20170815",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
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    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GrinderResURI": {
      "get": {
        "description": "This resource describes the attributes associated with a grinder. The coarseness of the grounds is an integer. The higher the value, the less coarse. remaining is a percentage that represents the unground material left.\nRetrieves the state of a grinder.\n",
        "parameters": [
          {"$ref": "/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": ""
          }
        }
      }
    }
  }
}
```

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"x-example":
{
  "rt":  ["oic.r.grinder"],
  "id":  "unique_example_id",
  "coarseness": 10,
  "remaining": 50
}

"schema": { "$ref": "/definitions/Grinder" }

"post": {
"description": "Sets grinding values\n",
"parameters": [
{ "$ref": "/parameters/interface"},

  "name": "body",
  "in": "body",
  "required": true,
  "schema": { "$ref": "/definitions/GrinderUpdate" },
  "x-example":
  {
    "coarseness": 10
  }
]

"responses": {
  "200": {
    "description": "",
    "x-example":
    {
      "id":  "unique_example_id",
      "coarseness": 10
    }
  }
}

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

"definitions": {
  "Grinder": {
    "properties": {
      "coarseness": {
        "description": "The desired coarseness when grinding.",
        "type": "integer"
      },
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "remaining": {
        "description": "The percentage of unground material left.",
        "type": "integer"
      }
    }
  }
}
"maximum": 100,
"minimum": 0,
"readOnly": true,
"type": "integer"
},
"precision": {
"description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number"
},
"n": {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"range": {
"description": "The valid range for the value Property",
"items": [
  "anyOf": [
    { "type": "number" },
    { "type": "integer" }
  ]
],
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"step": {
"anyOf": [
  { "type": "integer" },
  { "type": "number" }
],
"description": "Step value across the defined range",
"readOnly": true
},
"id": {
"description": "Instance ID of this specific resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": [
  "enum": [
    "oic.if.baseline",
    "oic.if.ll",
    "oic.if.b",
    "oic.if.lb",
    "oic.if.rw",
    "oic.if.r",
    "oic.if.a",
    "oic.if.e"
  ],
  "type": "string"
],
Table 171 defines the Properties that are part of the ['oic.r.grinder'] 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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>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>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
### 6.85 Liquid Level

#### 6.85.1 Introduction

This resource describes the attributes associated with liquid level. The current level and desired level are defined in terms of a percentage. The behaviour of when the current level and desired level are not equal is determined by the device manufacturer.

Retrieves the state of liquid level.

#### 6.85.2 Example URI

/LiquidLevelResURI

#### 6.85.3 Resource type

The resource type (rt) is defined as: ['oic.r.liquid.level'].

#### 6.85.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Liquid Level",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
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    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/LiquidLevelResURI": {
      "get": {
        "description": "This resource describes the attributes associated with liquid level. The current level and desired level are defined in terms of a percentage. The behaviour of when the current level and desired level are not equal is determined by the device manufacturer.\nRetrieves the state of liquid level.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ['oic.r.liquid.level'],
              "id": "unique_example_id",
              "currentlevel": 60,
              "desiredlevel": 80
            }
          }
        }
      }
    }
  }
}
```

<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>
"schema": { "$ref": "#/definitions/LiquidLevel" }

"post": {
  "description": "Sets liquid level values",
  "parameters": [
  { "$ref": "#/parameters/interface"},
  {
    "name": "body",
    "in": "body",
    "required": true,
    "schema": { "$ref": "#/definitions/LiquidLevelUpdate" },
    "x-example":
    {
      "desiredlevel": 80
    }
  }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example":
      {
        "id": "unique_example_id",
        "desiredlevel": 80
      }
    },
    "schema": { "$ref": "#/definitions/LiquidLevelUpdate" }
  }
},

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

"definitions": {
  "LiquidLevel": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "currentlevel": {
        "description": "The current level of the liquid in percentage.",
        "maximum": 100,
        "minimum": 0,
        "readOnly": true,
        "type": "integer"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n":
    }
  }
}

{
    "description": "Friendly name of the resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},
"range": {
    "description": "The valid range for the value Property",
    "items": {
        "anyOf": [
            {
                "type": "number"
            },
            {
                "type": "integer"
            }
        ]
    },
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
},
"step": {
    "anyOf": [
        {
            "type": "integer"
        },
        {
            "type": "number"
        }
    ],
    "description": "Step value across the defined range",
    "readOnly": true
},
"desiredlevel": {
    "description": "The desired level of the liquid in percentage.",
    "maximum": 100,
    "minimum": 0,
    "type": "integer"
},
"id": {
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},
"if": {
    "description": "The interface set supported by this resource",
    "items": {
        "enum": [
            "oic.if.baseline",
            "oic.if.ll",
            "oic.if.b",
            "oic.if.lb",
            "oic.if.rw",
            "oic.if.r",
            "oic.if.a",
            "oic.if.e"
        ],
        "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
}
}
6.85.5 Property definition

Table 173 defines the Properties that are part of the ['oic.r.liquid.level'] 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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>
</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></td>
<td></td>
<td>observe</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 connected state is a boolean indicating the status of the connector (False = disconnected, True = connected). The rated charging capacity and rated discharging capacity are in Amps (A).

Retrieves the state of the vehicle connector.

6.86.2 Example URI

/VehicleConnectorResURI

6.86.3 Resource type

The resource type (rt) is defined as: ['oic.r.vehicle.connector'].

6.86.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Vehicle Connector",
    "version": "v1.1.0-20170815",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
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    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/VehicleConnectorResURI": {
      "get": {
        "description": "This resource describes the attributes associated with an electric vehicle charging connector. The connected state is a boolean indicating the status of the connector (False = disconnected, True = connected). The rated charging capacity and rated discharging capacity are in Amps (A). Retrives the state of the vehicle connector.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ['oic.r.vehicle.connector'],
              "id": "unique_example_id",
              "connected": true,
              "ratedchargingcapacity": 20.0,
              "rateddischargingcapacity": 5.0
            }
          }
        }
      }
    }
  }
}
```
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "VehicleConnector": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "range": {
        "description": "The valid range for the value Property",
        "items": {
          "anyOf": [
            {"type": "number"},
            {"type": "integer"}
          ]
        },
        "maxItems": 2,
        "minItems": 2,
        "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"
      }
    }
  }
}
"id" : 
{ 
"description": "Instance ID of this specific resource", 
"maxLength": 64, 
"readOnly": true, 
"type": "string" 
}, 
"if" : 
{ 
"description": "The interface set supported by this resource", 
"items": { 
"enum": [ 
"oic.if.baseline", 
"oic.if.ll", 
"oic.if.b", 
"oic.if.lb", 
"oic.if.rw", 
"oic.if.r", 
"oic.if.a", 
"oic.if.s" 
], 
"type": "string" 
}, 
"minItems": 1, 
"readOnly": true, 
"type": "array" 
} 
}, 
"required": ["connected"] 
} 
}

### 6.86.5 Property definition

Table 175 defines the Properties that are part of the 'oic.r.vehicle.connector' 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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
</tbody>
</table>
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>

6.86.6 CRUDN behaviour

Table 176 defines the CRUDN operations that are supported on the ['oic.r.vehicle.connector'] Resource Type

6.87 Time Stamp

6.87.1 Introduction

This resource describes the properties associated with a timestamp.

TimeStamp is a string that captures the timestamp using the RFC3339 datetime format (e.g: 2007-04-05T14:30Z) (Time+Date+Timezone)

Retrieves the current timestamp data.

6.87.2 Example URI

/TimeStampResURI

6.87.3 Resource type

The resource type (rt) is defined as: ['oic.r.time.stamp'].

6.87.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Time Stamp",
        "version": "v1.1.0-20170830",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without"
        }
    }
}
```
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"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
"/TimeStampResURI": {
  "get": {
    "description": "This resource describes the properties associated with a timestamp. The timestamp is a string that captures the timestamp using the RFC3339 datetime format (e.g. 2007-04-05T14:30Z) (Time+Date+Timezone) Retrives the current timestamp data."
  }"parameters": [ {
    "$ref": "#/parameters/interface"
  },
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "id": "unique_example_id",
        "rt": ["oic.r.time.stamp"],
        "timestamp": "2015-11-05T14:30Z"
      }
    },
    "schema": { "$ref": "#/definitions/TimeStamp" }"parameters": [ {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.s", "oic.if.r", "oic.if.baseline"]
      }
    },
    "definitions": {
      "TimeStamp": {
        "properties": {
          "rt": {
            "description": "Resource Type",
            "items": {
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "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,
          "type": "array"}}}
"type": "string",
"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"range": {
  "description": "The valid range for the value Property",
  "items": [
    { "anyOf": []
    },
    { "type": "number"
    },
    { "type": "integer"
    }
  ],
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},
"step": {
  "anyOf": []
},
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": []
}
6.87.5 Property definition

Table 177 defines the Properties that are part of the ['oic.r.time.stamp'] Resource Type

Table 177 – The Property definitions of the Resource with type 'rt' = ['oic.r.time.stamp']

<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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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></td>
<td></td>
<td></td>
<td>observe</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.

The print
Retrieves the current 3D Printer attributes.

### 6.88.2 Example URI

```
/3DPrinterResURI
```

### 6.88.3 Resource type

The resource type (rt) is defined as: ['oic.r.printer.3d'].

### 6.88.4 OpenAPI 2.0 definition

```
{
    "swagger": "2.0",
    "info": {
        "title": "3D Printer",
        "version": "v1.1.0-20180115",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
}
```

```
"x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

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   following disclaimer.

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SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.

"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."

Retrieves the current 3D Printer attributes.

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

"responses": {
    "200": {
        "description": ",",
        "x-example":
        {
            "rt" : ["oic.r.printer.3d"],
            "id" : "unique_example_id",
            "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": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "printsizey": {
        "description": "This represents the maximum size of printing object in the direction of Y-axis. The unit is mm.",
        "readOnly": true,
        "type": "number"
      },
      "memorysize": {
        "description": "This value represents the total memory size of the printer. The unit is MB (Mega bytes)",
        "readOnly": true,
        "type": "number"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "3dprinttype": {
        "description": "The type of 3D printing technology.",
      },
      "range": {
      }"}}
"description": "The valid range for the value Property", "items": [ "anyOf": [ { "type": "number" }, { "type": "integer" } ], "maxItems": 2, "minItems": 2, "readOnly": true, "type": "array" ], "step": { "anyOf": [ { "type": "integer" }, { "type": "number" } ], "description": "Step value across the defined range", "readOnly": true }, "wanconnected": { "description": "This value 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" }, "printsizex": { "description": "This represents the maximum size of printing object in the direction of X-axis. The unit is mm." }, "id": { "description": "Instance ID of this specific resource", "maxLength": 64, "readOnly": true, "type": "string" }, "printsizez": { "description": "This represents the maximum size of printing object in the direction of Z-axis. The unit is mm." }, "if": { "description": "The interface set supported by this resource", "items": [ { "enum": [ "oic.if.baseline", "oic.if.ll", "oic.if.b", "oic.if.lb", "oic.if.rw", "oic.if.r", "oic.if.a", "oic.if.s" ] } ],
6.88.5 Property definition

Table 179 defines the Properties that are part of the ['oic.r.printer.3d'] Resource Type

Table 179 – The Property definitions of the Resource with type 'rt' = ['oic.r.printer.3d']

<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>printsizey</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>This represents the maximum size of printing object in the direction of Y-axis. The unit is mm.</td>
</tr>
<tr>
<td>printsizex</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>This represents the maximum size of printing object in the direction of X-axis. The unit is mm.</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>wanconnected</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>This value 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</td>
</tr>
<tr>
<td>Property</td>
<td>Type</td>
<td>Access</td>
<td>Read Only</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-----------</td>
<td>--------</td>
<td>-----------</td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>memorysize</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>This value represents the total memory size of the printer. The unit is MB (Mega Bytes).</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>printsizez</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>This represents the maximum size of printing object in the direction of Z-axis. The unit is mm.</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>

### 6.88.6 CRUDN behaviour

Table 180 defines the CRUDN operations that are supported on the ['oic.r.printer.3d'] Resource Type.

<table>
<thead>
<tr>
<th>CRUDN 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></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retrieve</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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.

- Retrieves blood pressure of an object.

#### 6.89.2 Example URI

/BloodPressureResURI

#### 6.89.3 Resource type

The resource type (rt) is defined as: ['oic.r.blood.pressure'].

#### 6.89.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Blood Pressure",
```
"version": "v1.1.0-20160519",
"license": {
  "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
}

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ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.

"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 (from oic.r.baseresource) is omitted the default
is 0 to +MAXFLOAT. Retrieves blood pressure of an object.
",
      "parameters": [
        {"$ref": "#/parameters/interface"}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.blood.pressure"],
            "id": "unique_example_id",
            "systolic": 110,
            "diastolic": 85,
            "units": "mmHg"
          }
        },
        "schema": { "$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": {
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "readOnly": true,
          }
        }
      }
    }
  }
}
"type": "array",
"map": {
"description": "Mean Arterial Pressure (MAP)",
"minimum": 0,
"readOnly": true,
"type": "number",
"precision": {
"description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number"
},
"n": {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"units": {
"description": "Blood pressure unit",
"enum": [
"mmHg",
"kPa"
],
"readOnly": true,
"type": "string"
},
"range": {
"description": "The valid range for the value Property",
"items": {
"anyOf": [
{
"type": "number"
},
{
"type": "integer"
}
]
},
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"systolic": {
"description": "Systolic blood pressure",
"minimum": 0,
"readOnly": true,
"type": "number"
},
"step": {
"anyOf": [
{
"type": "integer"
},
{
"type": "number"
}
]
},
"description": "Step value across the defined range",
"readOnly": true,
"type": "number"
},
"diastolic": {

Table 181 – The Property definitions of the Resource with type 'rt' = ['oic.r.blood.pressure']

<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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
</tbody>
</table>
### Table 182 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.blood.pressure']

<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>

### 6.90 Blood Pressure Monitor Atomic Measurement Batch Representation

#### 6.90.1 Introduction

This resource describes the properties associated with 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).

Retrieves the current blood pressure.

#### 6.90.2 Example URI

/BloodPressureMonitorAMResURI

#### 6.90.3 Resource type

The resource type (rt) is defined as: ['oic.r.bloodpressuremonitor-am', 'oic.wk.atomicmeasurement'].

#### 6.90.4 OpenAPI 2.0 definition

```yaml
{
  "swagger": "2.0",
  "info": {
    "title": "Blood Pressure Monitor Atomic Measurement Batch Representation",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:\n  1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.\n  2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.\n  THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE."
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BloodPressureMonitorAMResURI?if=oic.if.b" : {
      "get": {
        "description": "This resource describes the properties associated with Blood Pressure Monitor."
      }
    }
  }
}
```

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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).
Retrieves the current blood pressure.

```

"parameters": [
  {"$ref": "#/parameters/interface-b"}
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "href": "/myBloodPressureResURI",
      "rep": {
        "systolic": 120,
        "diastolic": 80,
        "units": "mmHg"
      }
    },
    "href": "/myPulseRateResURI",
    "rep": {
      "pulserate": 70
    }
  }
},
"schema": { "$ref": "#/definitions/batch-retrieve" }
```

```

"/BloodPressureMonitorAMResURI?if=oic.if.ll" : {
  "get": {
    "description": "This resource describes the properties associated with 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).
Retrieves the current blood pressure.

"parameters": [
  {"$ref": "#/parameters/interface-ll"}
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "href": "/myBloodPressureResURI",
      "rt": ["oic.r.blood.pressure"],
      "if": ["oic.if.s", "oic.if.baseline"]
    },
    "href": "/myPulseRateResURI",
    "rt": ["oic.r.pulserate"],
    "if": ["oic.if.s", "oic.if.baseline"]
  }
},
"schema": { "$ref": "#/definitions/links" }
```

```

"/BloodPressureMonitorAMResURI?if=oic.if.baseline" : {
  "get": {
    "description": "This resource describes the properties associated with 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).
Retrieves the current blood pressure.

"parameters": [
```
"type": "string",
},
"rep": {
  "oneOf": [
    { "description": "The response payload from a single resource",
      "type": "object"
    },
    { "description": "The response payload from a collection (batch) resource",
      "type": "array"
    }
  ]
},
"required": [
  "href",
  "rep"
],
"type": "object"
}
},
"links": {
  "type": "array"
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  }
},
"baseline": {
  "properties": {
    "rt": {
      "items": {
        "enum": [
          "oic.r.bloodpressuremonitor-am",
          "oic.wk.atomicmeasurement"
        ],
        "maxItems": 2,
        "minItems": 2,
        "type": "array",
        "uniqueItems": true
      }
    },
    "links": {
      "description": "A set of simple or individual OIC Links.",
      "items": {
        "properties": {
          "anchor": {
            "description": "This is used to override the context URI e.g. override the URI of the containing collection.",
            "format": "uri",
            "maxLength": 256,
            "type": "string"
          },
          "di": {
            "description": "The Device ID formatted according to IETF RFC 4122.",
            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
            "type": "string"
          }
        }
      }
    }
  }
}
"eps": {  
  "description": "the Endpoint information of the target Resource",  
  "items": {  
    "properties": {  
      "ep": {  
        "description": "Transport Protocol Suite + Endpoint Locator",  
        "format": "uri",  
        "type": "string"  
      },  
      "pri": {  
        "description": "The priority among multiple Endpoints",  
        "minimum": 1,  
        "type": "integer"  
      }  
    },  
    "type": "object"  
  },  
  "type": "array"  
},  
"href": {  
  "description": "This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.",  
  "format": "uri",  
  "maxLength": 256,  
  "type": "string"  
},  
"if": {  
  "description": "The interface set supported by this resource",  
  "items": {  
    "enum": [  
      "oic.if.baseline",  
      "oic.if.ll",  
      "oic.if.b",  
      "oic.if.m",  
      "oic.if.r",  
      "oic.if.a",  
      "oic.if.s"  
    ],  
    "type": "string"  
  },  
  "minItems": 1,  
  "type": "array"  
},  
"ins": {  
  "description": "The instance identifier for this web link in an array of web links - used in collections",  
  "type": "integer"  
},  
"p": {  
  "description": "Specifies the framework policies on the Resource referenced by the target URI",  
  "properties": {  
    "bm": {  
      "description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",  
      "type": "integer"  
    }  
  },  
  "required": [  
    "bm"  
  ],  
  "type": "object"  
},  
"rel": {  
  "description": "The relation of the target URI referenced by the link to the context URI",  
  "oneOf": [  
    {  
      "default": [  
        "hosts"  
      ],  
      "items": [  

"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
},
"default": "hosts",
"maxLength": 64,
"type": "string"
}
],
"rt": {
"description": "Resource Type of the Resource",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
},
"title": {
"description": "A title for the link relation. Can be used by the UI to provide a context.",
"maxLength": 64,
"type": "string"
},
"default": "application/cbor",
"description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
}
],
"required": [
"href",
"rt",
"rt"
],
"type": "object"
},
"type": "array"
},
"n": {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"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"
]
},
"minItems": 1,
"type": "array",
"uniqueItems": true
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"rts-m": {
  "description": "This contains all mandatory resource types for this atomic measurement.",
  "items": {
    "enum": [
      "oic.r.blood.pressure"
    ],
    "maxItems": 1,
    "minItems": 1,
    "type": "array",
    "uniqueItems": true
  },

  "if": {
    "description": "The interface set supported by this resource",
    "items": {
      "enum": [
        "oic.if.baseline",
        "oic.if.ll",
        "oic.if.b",
        "oic.if.lb",
        "oic.if.rw",
        "oic.if.r",
        "oic.if.a",
        "oic.if.s"
      ],
      "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
  }
},

"oic.oic-link": {
  "properties": {
    "anchor": {
      "description": "This is used to override the context URI e.g. override the URI of the
      containing collection.",
      "format": "uri",
      "maxLength": 256,
      "type": "string"
    },
    "di": {
      "description": "The Device ID formatted according to IETF RFC 4122.",
      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
      "type": "string"
    },
    "eps": {
      "description": "the Endpoint information of the target Resource",
      "items": {
        "properties": {
          "ep": {
            "description": "Transport Protocol Suite + Endpoint Locator",
            "format": "uri",
            "type": "object",
            "required": ["rts-m"]
          }
        }
      }
    }
  }
}
"type": "string"
    },
  "p": {  
    "description": "The priority among multiple Endpoints",
    "minimum": 1,
    "type": "integer"
  }  
},
  "type": "object"
},
  "type": "array"
},
  "href": {  
    "description": "This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.",
    "format": "uri",
    "maxLength": 256,
    "type": "string"
  },
  "if": {  
    "description": "The interface set supported by this resource",
    "items": {  
      "enum": [  
        "oic.if.baseline",
        "oic.if.ll",
        "oic.if.b",
        "oic.if.rw",
        "oic.if.r",
        "oic.if.a",
        "oic.if.s"
      ],
      "type": "string"
    },
    "minItems": 1,
    "type": "array"
  },
  "ins": {  
    "description": "The instance identifier for this web link in an array of web links - used in collections",
    "type": "integer"
  },
  "p": {  
    "description": "Specifies the framework policies on the Resource referenced by the target URI",
    "properties": {  
      "bm": {  
        "description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
        "type": "integer"
      }
    },
    "required": [  
      "bm"
    ],
    "type": "object"
  },
  "rel": {  
    "description": "The relation of the target URI referenced by the link to the context URI",
    "oneOf": [  
      {  
        "default": [  
          "hosts"
        ],
        "items": [  
          "maxLength": 64,
          "type": "string"
        ],
        "minItems": 1,
        "type": "array"
      },
      {  
        "default": "hosts",
        "items": [  
          "maxLength": 64,
          "type": "string"
        ],
        "minItems": 1,
        "type": "array"
      }
    ]}
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>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>URI of the target resource relative assuming the collection URI as anchor</td>
</tr>
<tr>
<td>rep</td>
<td>multiple types:</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
<tr>
<td></td>
<td>see schema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>if</td>
<td>array: see</td>
<td>No</td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td></td>
<td>schema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>id</strong></td>
<td><strong>string</strong></td>
<td><strong>No</strong></td>
<td><strong>Read Only</strong></td>
<td><strong>Instance ID of this specific resource</strong></td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
<td>--------</td>
<td>---------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td><strong>rts</strong></td>
<td>array: see schema</td>
<td><strong>No</strong></td>
<td><strong>Read Write</strong></td>
<td>This contains all possible resource types for this atomic measurement.</td>
</tr>
<tr>
<td><strong>rt</strong></td>
<td>array: see schema</td>
<td><strong>No</strong></td>
<td><strong>Read Write</strong></td>
<td></td>
</tr>
<tr>
<td><strong>links</strong></td>
<td>array: see schema</td>
<td><strong>No</strong></td>
<td><strong>Read Write</strong></td>
<td>A set of simple or individual OIC Links.</td>
</tr>
<tr>
<td><strong>rts-m</strong></td>
<td>array: see schema</td>
<td><strong>Yes</strong></td>
<td><strong>Read Write</strong></td>
<td>This contains all mandatory resource types for this atomic measurement.</td>
</tr>
<tr>
<td><strong>rel</strong></td>
<td>multiple types: see schema</td>
<td><strong>No</strong></td>
<td><strong>Read Write</strong></td>
<td>The relation of the target URI referenced by the link to the context URI</td>
</tr>
<tr>
<td><strong>ins</strong></td>
<td>integer</td>
<td><strong>No</strong></td>
<td><strong>Read Write</strong></td>
<td>The instance identifier for this web link in an array of web links - used in collections</td>
</tr>
<tr>
<td><strong>p</strong></td>
<td>object: see schema</td>
<td><strong>No</strong></td>
<td><strong>Read Write</strong></td>
<td>Specifies the framework policies on the Resource referenced by the target URI</td>
</tr>
<tr>
<td><strong>type</strong></td>
<td>array: see schema</td>
<td><strong>No</strong></td>
<td><strong>Read Write</strong></td>
<td>A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.</td>
</tr>
<tr>
<td><strong>if</strong></td>
<td>array: see schema</td>
<td><strong>Yes</strong></td>
<td><strong>Read Write</strong></td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td><strong>href</strong></td>
<td>string</td>
<td><strong>Yes</strong></td>
<td><strong>Read Write</strong></td>
<td>This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.</td>
</tr>
</tbody>
</table>
Table 184 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.bloodpressuremonitor-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>

6.90.6 CRUDN behaviour

Table 184 defines the CRUDN operations that are supported on the ['oic.r.bloodpressuremonitor-am', 'oic.wk.atomicmeasurement'] Resource Type

6.91 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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.

Retrieves BMI of an object.

6.91.2 Example URI

/BMIResource

6.91.3 Resource type

The resource type (rt) is defined as: ['oic.r.bmi'].

6.91.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "BMI",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
        }
    }
}
```
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"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 (from oic.r.baseresource) is omitted the default is 0 to MAXFLOAT. Retrieves BMI of an object."
"parameters": [
{"$ref": "/#parameters/interface"}
],
"responses": {
"200": {
"description": "",
"x-example": {
"rt": ["oic.r.bmi"],
"id": "unique_example_id",
"bmi": 20
}
}
}
}
},
"parameters": {
"interface" : {
"in" : "query",
"name" : "if",
"type" : "string",
"enum" : ["oic.if.s", "oic.if.baseline"]
}
},
"definitions": {
"BMI" : {
"properties": {
"rt": {
"description": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"}
},
"bmi": {
"description": "Body Mass Index (BMI) in kg/m^2",
"minimum": 0,
"readOnly": true,
"type": "number"}
},
"precision" : {
}}
"description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number"
},
"n" :
  {
    "description": "Friendly name of the resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },
"range" :
  {
    "description": "The valid range for the value Property",
    "items": {
      "anyOf": [
        {
          "type": "number"
        },
        {
          "type": "integer"
        }
      ]
    },
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
  },
"step" :
  {
    "anyOf": [
      {
        "type": "integer"
      },
      {
        "type": "number"
      }
    ]
  },
"id" :
  {
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },
"if" :
  {
    "description": "The interface set supported by this resource",
    "items": {
      "enum": [
        "oic.if.baseline",
        "oic.if.ll",
        "oic.if.lb",
        "oic.if.lb",
        "oic.if.rw",
        "oic.if.r",
        "oic.if.a",
        "oic.if.s"
      ],
      "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
  }
},
"type": "object"
]
6.91.5 Property definition

Table 185 defines the Properties that are part of the ['oic.r.bmi'] 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 interface set supported by this resource</td>
</tr>
<tr>
<td>bmi</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Body Mass Index (BMI) in kg/m^2</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
</tbody>
</table>

6.91.6 CRUDN behaviour

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></td>
<td></td>
<td></td>
<td>observe</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 %.

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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.

Retrieves Body fat of an object.

6.92.2 Example URI

/BODYFATRESURI

6.92.3 Resource type

The resource type (rt) is defined as: ['oic.r.body.fat'].

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6.92.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Body Fat",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.
2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
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OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
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ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.
"
    },
    "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 %. 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 (from oic.r.baseresource) is omitted the default is 0 to
+MAXFLOAT. Retrieves Body fat of an object.",
                "parameters": [],
                "responses": {
                    "200": {
                        "description" : "",
                        "x-example": {
                            "rt": ["oic.r.body.fat"],
                            "id": "unique_example_id",
                            "bodyfat": 20,
                            "units": "kg"
                        }
                    }
                },
                "schema": { "$ref": "#/definitions/BodyFat" }
            }
        }
    }
}
```


"maxLength": 64,
"type": "string"
],
"minItems": 1,
"readOnly": true,
"type": "array"
],

"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
],

"bodyfat": {
  "description": "Body fat."
},
  "minimum": 0,
  "readOnly": true,
  "type": "number"
],

"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
],

"units": {
  "description": "Body fat units",
  "enum": [
    "kg",
    "lb",
    "%"
  ],
  "readOnly": true,
  "type": "string"
],

"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      "type": "number"
    ],
    "type": "integer"
  }
},
"description": "The value sensed or actuated by this Resource",
"step": {
  "anyOf": [
    {
      "type": "integer"
    },
    {
      "type": "number"
    }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}
}

**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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>value</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The value sensed or actuated by this Resource</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>bodyfat</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Body fat.</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>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Body fat units</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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 %.

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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.

Retrieves Body fat free mass of an object.

6.93.2 Example URI

/BodyFatFreeMassResURI

6.93.3 Resource type

The resource type (rt) 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": "v1.1.0-20160519",
"license": {
"name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
"x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

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},
"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 %.
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.
The range (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.
Retrieves Body fat free mass of an object.
",
"parameters": [
{"$ref": "#/parameters/interface"}
],
"responses": {
"200": {
"description": "",
"x-example": {
"rt": ["oic.r.body.ffm"],
"id": "unique_example_id",
"ffm": 40,
"units": "kg"
}
}
],
"schema": {
"$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": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
}
}
}
"ffm": {
  "description": "Body fat free mass.",
  "minimum": 0,
  "readOnly": true,
  "type": "number"
},

"value": {
  "anyOf": [
    "type": "array"
  ],
  "description": "The value sensed or actuated by this Resource"
},

"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"units": {
  "description": "Body fat free mass units",
  "enum": [
    "kg",
    "lb",
    "%"
  ],
  "readOnly": true,
  "type": "string"
},

"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      "type": "number"
    ],
    "type": "integer"
  }
},

"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
Table 189 defines the Properties that are part of the ['oic.r.body.ffm'] Resource Type

Table 189 – The Property definitions of the Resource with type 'rt' = ['oic.r.body.ffm']

<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>value</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The value sensed or actuated by this Resource</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>-------</td>
<td>--------</td>
<td>----</td>
<td>-----------</td>
<td>--------------------------</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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>ffm</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Body fat free mass.</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>

6.93.6 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

6.94.1 Introduction

This resource describes the properties associated with Body location of a person. The bloc Property is a read-only value that is provided by the server. Retrieves Body location of a person.

6.94.2 Example URI

/Bod yLocationResURI

6.94.3 Resource type

The resource type (rt) is defined as: ['oic.r.body.location'].

6.94.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Body Location",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  }
}
```
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LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL The Open Connectivity
Foundation, Inc. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
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ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.

"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
"/BodyLocationResURI": {
"get": {
"description": "This resource describes the properties associated with Body location of a
person. The bloc Property is a read-only value that is provided by the server. Retrieves Body
location of a person."

"parameters": [
{"$ref": "#/parameters/interface"}
],
"responses": {
"200": {
"description": "",
"x-example": {
"rt": ["oic.r.body.location"],
"id": "unique_example_id",
"bloc": "axillary"
}
},
"schema": {
"$ref": "#/definitions/BodyLocation"}
}
}
"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.s", "oic.if.baseline"]
}
"definitions": {
"BodyLocation": {
"properties": {
"rt": {
"description": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
},
"precision": {
"description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number"
},
"value": {
"anyOf": [
}
{ "type": "array" },
{ "type": "string" },
{ "type": "boolean" },
{ "type": "integer" },
{ "type": "number" },
{ "type": "object" },
"description": "The value sensed or actuated by this Resource" },
"n": {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string" },
"range": {
"description": "The valid range for the value Property",
"items": {
"anyOf": [
{ "type": "number" },
{ "type": "integer" }
]
},
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array" },
"bloc": {
"description": "A list of all potential body locations",
"enum": [
"axillary",
"body",
"ear",
"finger",
"gittract",
"mouth",
"rectum",
"toe",
"tympanum" ],
"readOnly": true,
"type": "string" },
"step": {
"anyOf": [
{ "type": "integer" }]}
6.94.5 Property definition

Table 191 defines the Properties that are part of the ['oic.r.body.location'] Resource Type

Table 191 – The Property definitions of the Resource with type 'rt' = ['oic.r.body.location']

<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>Resource Type</td>
</tr>
<tr>
<td>precision</td>
<td>number</td>
<td></td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>bloc</td>
<td>string</td>
<td></td>
<td>Read Only</td>
<td>A list of all potential body locations</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td></td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td></td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td></td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
</tbody>
</table>
The value sensed or actuated by this Resource

<table>
<thead>
<tr>
<th>Type</th>
<th>value</th>
<th>multiple types: see schema</th>
<th>Read Write</th>
<th>The value sensed or actuated by this Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>if</td>
<td>array</td>
<td>see schema</td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
<td></td>
</tr>
</tbody>
</table>

### 6.94.6 CRUDN behaviour

Table 192 defines the CRUDN operations that are supported on the ['oic.r.body.location'] Resource Type

Table 192 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.body.location']

<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 Location Temperature

#### 6.95.1 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. Retrieves Body location for temperature measurement of a person.

#### 6.95.2 Example URI

/BdLoclTempResURI

#### 6.95.3 Resource type

The resource type (rt) is defined as: ['oic.r.body.location.temperature'].

#### 6.95.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Body Location Temperature",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:\n1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.\n2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.\nTHIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BodyLocationTemperatureResURI": {
```

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"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. Retrieves Body location for temperature measurement of a person."
},
"parameters": [
  {"$ref": "#/parameters/interface"},
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "rt": ["oic.r.body.location.temperature"],
        "id": "unique_example_id",
        "bloc": "ear"
      }
    },
    "schema": { "$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": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "value": {
        "anyOf": [
          { "type": "array" },
          { "type": "string" },
          { "type": "boolean" },
          { "type": "integer" },
          { "type": "number" }
        ]
      }
    }
  }
}
"type": "object",
"
",
"description": "The value sensed or actuated by this Resource",
",
"n": {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},

"range": {
"description": "The valid range for the value Property",
"items": {
"anyOf": [
{
"type": "number"
},
{
"type": "integer"
}
]
},
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},

"bloc": {
"description": "A list specific to temperature site",
"enum": [
"axillary",
"body",
"ear",
"finger",
"giptrac",
"mouth",
"rectum",
"toe",
"tympanum"
],
"readOnly": true,
"type": "string"
},

"step": {
"anyOf": [
{
"type": "integer"
},
{
"type": "number"
}
]
},
"description": "Step value across the defined range",
"readOnly": true
},

"id": {
"description": "Instance ID of this specific resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"if" : 
    
    "description": "The interface set supported by this resource",
    "items": {
        "enum": [
            "oic.if.baseline",
            "oic.if.ll",
            "oic.if.b",
            "oic.if.lb",
            "oic.if.rw",
            "oic.if.r",
            "oic.if.a",
            "oic.if.s"
        ],
        "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
}

6.95.5 Property definition

Table 193 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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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>value</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The value sensed or actuated by this Resource</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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
</tbody>
</table>
6.95.6 CRUDN behaviour

Table 194 defines the CRUDN operations that are supported on the
['oic.r.body.location.temperature'] Resource Type

Table 194 – The CRUDN operations of the Resource with type 'rt' =
['oic.r.body.location.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></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.96 Body Scale Atomic Measurement

6.96.1 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).

Retrieves the current weight.

6.96.2 Example URI

/BodyScaleAMResURI

6.96.3 Resource type

The resource type (rt) is defined as: ['oic.r.bodyscale-am', 'oic.wk.atomicmeasurement'].

6.96.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Body Scale Atomic Measurement Linked List Representation",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BodyScaleAMResURI?if=oic.if.ll" : {
      "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). Retrieves the current weight.",
        "parameters": ["$ref": "/parameters/interface-ll"
      }
    }
  }
}
```
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "href": "/myWeightResURI",
      "rt": ["oic.r.weight"],
      "if": ["oic.if.s", "oic.if.baseline"]
    },
    "href": "/myBMIResURI",
    "rt": ["oic.r.bmi"],
    "if": ["oic.if.s", "oic.if.baseline"]
  },
  "schema": { "$ref": "/definitions/links" }
},
"/BodyScaleAMResURI?if=oic.if.baseline": {
  "get": {
    "description": "This resource describes the properties associated with Body Scale.\nThe 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).\nRetrieves the current weight.\n",
    "parameters": [
      {"$ref": "/parameters/interface-baseline"}
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.bodyscale-am", "oic.wk.atomicmeasurement"],
          "if": ["oic.if.b", "oic.if.ll", "oic.if.baseline"],
          "rts": ["oic.r.weight", "oic.r.bmi"],
          "rts-m": ["oic.r.weight"],
          "links": {
            "href": "/myWeightResURI",
            "rt": ["oic.r.weight"],
            "if": ["oic.if.s", "oic.if.baseline"]
          }
        }
      },
      "/BodyScaleAMResURI?if=oic.if.b": {
        "get": {
          "description": "This resource describes the properties associated with Body Scale.\nThe resource is an atomic measurement of Weight (oic.r.weight), Body Mass Index (BMI) (oic.r.bmi), Height (oic.r.height), Body Fat (oic.r.body.fat), Body Water (oic.r.body.water), Body Soft Lean Mass (oic.r.body.slm), Body Fat Free Mass (oic.r.body.ffm), Observed time (oic.r.time.stamp), and User ID (oic.r.userid).\nRetrieves the current weight.\n",
          "parameters": [
            {"$ref": "/parameters/interface-b"}
          ],
          "responses": {
            "200": {

"description": "",
"x-example": {
  "href": "/myWeightResURI",
  "rep": {
    "weight": 80,
    "units": "kg"
  }
},
  "href": "/myBMIResURI",
  "rep": {
    "bmi": 20
  }
}

"schema": { "$ref": "/definitions/batch-retrieve" }

"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", "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"]
      }
    }
  }
}
"maxItems": 2,
"minItems": 2,
"type": "array",
"uniqueItems": true
},

"links": {
"description": "A set of simple or individual OIC Links.",
"items": {
"properties": {
"anchor": {
"description": "This is used to override the context URI e.g. override the URI of the containing collection.",
"format": "uri",
"maxLength": 256,
"type": "string"
},
"di": {
"description": "The Device ID formatted according to IETF RFC 4122.",
"pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
"type": "string"
},
"eps": {
"description": "the Endpoint information of the target Resource",
"items": {
"properties": {
"ep": {
"description": "Transport Protocol Suite + Endpoint Locator",
"format": "uri",
"type": "string"
},
"pri": {
"description": "The priority among multiple Endpoints",
"minimum": 1,
"type": "integer"
}
},
"type": "object"
},
"type": "object"
},
"href": {
"description": "This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.",
"format": "uri",
"maxLength": 256,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": {
"enum": [
"oic.if.baseline",
"oic.if.ll",
"oic.if.b",
"oic.if.rw",
"oic.if.r",
"oic.if.a",
"oic.if.s"
],
"type": "string"
},
"minItems": 1,
"type": "array"
},
"ins": {
"description": "The instance identifier for this web link in an array of web links - used in collections",
"type": "integer"
},
"p": {
  "description": "Specifies the framework policies on the Resource referenced by the target URI",
  "properties": {
    "bm": {
      "description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
      "type": "integer"
    }
  },
  "required": [
    "bm"
  ],
  "type": "object"
},
"rel": {
  "description": "The relation of the target URI referenced by the link to the context URI",
  "oneOf": [
    {
      "default": ["hosts"],
      "items": {
        "maxLength": 64,
        "type": "string"
      },
      "minItems": 1,
      "type": "array"
    },
    {
      "default": "hosts",
      "maxLength": 64,
      "type": "string"
    }
  ]
},
"rt": {
  "description": "Resource Type of the Resource",
  "items": {
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "type": "array"
},
"title": {
  "description": "A title for the link relation. Can be used by the UI to provide a context."
},

"maxLength": 64,
"type": "string"
},
"type": {
  "default": "application/cbor",
  "description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting."
},
"items": {
  "maxLength": 64,
  "type": "string"
},
"minItems": 1,
"type": "array"
},
"required": [
  "href",
  "rt",
  "if"
],
"type": "object"
"m": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"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"
    ],
    "minItems": 1,
    "type": "array",
    "uniqueItems": true
  }
},

"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"rts-m": {
  "description": "This contains all mandatory resource types for this atomic measurement.",
  "items": {
    "enum": [
      "oic.r.weight"
    ],
    "maxItems": 1,
    "minItems": 1,
    "type": "array",
    "uniqueItems": true
  }
},

"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "minItems": 1,
    "type": "string"
  }
}
"readOnly": true,
"type": "array"
}
,"type": "object"
,"required": ["rts-m"]
}
,"batch-retrieve": {
"title": "Collection Batch Retrieve Format"
,"minItems": 1
,"items": {
"additionalProperties": true,
"properties": {
"href": {
"description": "URI of the target resource relative assuming the collection URI as anchor",
"type": "string"
}
,"rep": {
"oneOf": [ 
{ "description": "The response payload from a single resource",
"type": "object" }, 
{ "description": "The response payload from a collection (batch) resource",
"type": "array" } ]
"
,"required": [ 
"href",
"rep" 
]
,"type": "object" 
}
,"type": "array"
,"oic.oic-link": {
"properties": {
"anchor": {
"description": "This is used to override the context URI e.g. override the URI of the containing collection.",
"format": "uri",
"maxLength": 256,
"type": "string"
},
"di": {
"description": "The Device ID formatted according to IETF RFC 4122.",
"pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
"type": "string"
},
"eps": {
"description": "the Endpoint information of the target Resource",
"items": {
"properties": {
"ep": {
"description": "Transport Protocol Suite + Endpoint Locator",
"format": "uri" 
} 
} 
} 
} 
}
"type": "string"
},
"pri": {
  "description": "The priority among multiple Endpoints",
  "minimum": 1,
  "type": "integer"
}
},
"type": "object"
},
"href": {
  "description": "This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.",
  "format": "uri",
  "maxLength": 256,
  "type": "string"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.foundation",
      "oic.if.ln",
      "oic.if.b",
      "oic.if.r",
      "oic.if.a",
      "oic.if.m"
    ],
    "type": "string"
  },
  "maxItems": 1,
  "type": "array"
},
"ins": {
  "description": "The instance identifier for this web link in an array of web links - used in collections",
  "type": "integer"
},
"p": {
  "description": "Specifies the framework policies on the Resource referenced by the target URI",
  "properties": {
    "bm": {
      "description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
      "type": "integer"
    }
  },
  "required": [
    "bm"
  ],
  "type": "object"
},
"rel": {
  "description": "The relation of the target URI referenced by the link to the context URI",
  "oneOf": [
    {
      "default": ["hosts"
    },
    {
      "items": {
        "maxLength": 64,
        "type": "string"
      },
      "minItems": 1,
      "type": "array"
    },
    {
      "default": "hosts"
    }
  ]}
6.96.5 Property definition

Table 195 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>rep</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>URI of the target resource relative assuming the collection URI as anchor</td>
</tr>
<tr>
<td>href</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>URI of the target resource relative assuming the collection URI as anchor</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Resource Type of the Resource</td>
</tr>
<tr>
<td>title</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>A title for the link relation. Can be used by the UI to provide a context.</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Default</td>
<td>Read Write</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td>---------</td>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>type</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.</td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The relation of the target URI referenced by the link to the context URI</td>
</tr>
<tr>
<td>ins</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The instance identifier for this web link in an array of web links - used in collections</td>
</tr>
<tr>
<td>p</td>
<td>object: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Specifies the framework policies on the Resource referenced by the target URI</td>
</tr>
<tr>
<td>href</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.</td>
</tr>
<tr>
<td>di</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>The Device ID formatted according to IETF RFC 4122.</td>
</tr>
<tr>
<td>eps</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The Endpoint information of the target Resource</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>anchor</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>This is used to override the context URI e.g. override the URI of the containing collection.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>A set of simple or individual OIC Links.</td>
</tr>
<tr>
<td>links</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>
Table 196 defines the CRUDN operations that are supported on the ['oic.r.bodyscale-am', 'oic.wk.atomicmeasurement'] 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>

6.96.6 CRUDN behaviour

6.97 Body Soft Lean Mass

6.97.1 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 %. 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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT. Retrieves Body soft lean mass of an object.

6.97.2 Example URI

/BgodySoftLeanMassResURI

6.97.3 Resource type

The resource type (rt) is defined as: ['oic.r.body.slm'].

6.97.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "BodySoftLeanMass",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
        }
    }
}
```
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

"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 %. 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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT. Retrieves Body soft lean mass of an object."
    },
    "parameters": ["$ref": "/parameters/interface"],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.body.slm"],
          "id": "unique_example_id",
          "slm": 20,
          "units": "kg"
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "BodySoftLeanMass": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "units": {
        "description": "Body soft lean mass units",
        "enum": ["kg", "lb", "%"],
        "readOnly": true,
        "type": "string"
      }
    }
  }
}

"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},

"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"slm": {
  "description": "Body soft lean mass.",
  "minimum": 0,
  "readOnly": true,
  "type": "number"
},

"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      {
        "type": "number"
      },
      {
        "type": "integer"
      }
    ]
  },
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},

"step": {
  "anyOf": [
    {
      "type": "integer"
    },
    {
      "type": "number"
    }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},

"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ]
  }
}
6.97.5 Property definition

Table 197 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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>slm</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Body soft lean mass.</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>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Body soft lean mass units</td>
</tr>
</tbody>
</table>

6.97.6 CRUDN behaviour

Table 198 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>observe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.98 Body Thermometer Atomic Measurement

6.98.1 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).
Retrieves the current body temperature.

6.98.2 Example URI

/BodyThermometerAMResURI

6.98.3 Resource type

The resource type (rt) is defined as: ["oic.r.bodythermometer-am", "oic.wk.atomicmeasurement"].

6.98.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Body Thermometer Atomic Measurement Batch Representation",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
        1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
        2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

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        HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE."
    }
  },
  "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).\n
Retrieves the current body temperature.\n",
        "parameters": [
          {
            "$ref": "#/parameters/interface-b"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myTemperatureResURI",
                "rep": {
                  "temperature": 38,
                  "units": "C"
                }
              },
              {
                "href": "/myBodyLocationForTemperatureResURI",
                "rep": {
                  "bloc": "mouth"
                }
              }
            ]
          }
        },
        "schema": { "$ref": "#/definitions/batch-retrieve" }
      }
    }
  }
}```
"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). Retrieves the current body temperature."
  "$ref": "#/parameters/interface-ll"
},
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "href": "/myTemperatureResURI",
        "rt": ["oic.r.temperature"],
        "if": ["oic.if.s", "oic.if.baseline"]
      },
      "href": "/myBodyLocationForTemperatureResURI",
      "rt": ["oic.r.body.location.temperature"],
      "if": ["oic.if.s", "oic.if.baseline"]
    }
  }
},
  "schema": { "$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). Retrieves the current body temperature."
  "$ref": "#/parameters/interface-baseline"
},
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "rt": ["oic.r.bodythermometer-am", "oic.wk.atomicmeasurement"],
        "if": ["oic.if.b", "oic.if.ll", "oic.if.baseline"],
        "rts": ["oic.r.temperature", "oic.r.body.location.temperature"],
        "rts-m": ["oic.r.temperature"],
        "links": ["href": "/myTemperatureResURI",
          "rt": ["oic.r.temperature"],
          "if": ["oic.if.s", "oic.if.baseline"]
        ],
      },
      "href": "/myBodyLocationForTemperatureResURI",
      "rt": ["oic.r.body.location.temperature"],
      "if": ["oic.if.s", "oic.if.baseline"]
    }
  }
},
  "schema": { "$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", "oic.if.baseline"]
  }
},
"definitions": {
  "batch-retrieve": {
    "title": "Collection Batch Retrieve Format",
    "minItems": 1,
    "items": {
      "additionalProperties": true,
      "properties": {
        "href": {
          "description": "URI of the target resource relative assuming the collection URI as anchor",
          "type": "string"
        },
        "rep": {
          "oneOf": [
            {"description": "The response payload from a single resource",
             "type": "object"},
            {"description": "The response payload from a collection (batch) resource",
             "type": "array"}
          ]
        }
      }
    }
  }
}
"items": [
    {
      "$ref": "/definitions/oic.oic-link"
    }
  ],
  "baseline": {
    "properties": {
      "$t": {
        "items": {
          "enum": [
            "oic.r.bodythermometer-am",
            "oic.wk.atomicmeasurement"
          ],
          "maxItems": 2,
          "minItems": 2,
          "type": "array",
          "uniqueItems": true
        },
        "links": {
          "description": "A set of simple or individual OIC Links.",
          "items": {
            "properties": {
              "anchor": {
                "description": "This is used to override the context URI e.g. override the URI of the containing collection.",
                "format": "uri",
                "maxLength": 256,
                "type": "string"
              },
              "di": {
                "description": "The Device ID formatted according to IETF RFC 4122.",
                "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
                "type": "string"
              },
              "eps": {
                "description": "the Endpoint information of the target Resource",
                "items": {
                  "properties": {
                    "ep": {
                      "description": "Transport Protocol Suite + Endpoint Locator",
                      "format": "uri",
                      "type": "string"
                    },
                    "pri": {
                      "description": "The priority among multiple Endpoints",
                      "minimum": 1,
                      "type": "integer"
                    }
                  },
                  "type": "object"
                },
                "type": "object"
              },
              "href": {
                "description": "This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.",
                "format": "uri",
                "maxLength": 256,
                "type": "string"
              }
            },
            "if": {
              "description": "The interface set supported by this resource",
              "items": {
                "enum": ["...
```
"oic.if.baseline",
"oic.if.ll",
"oic.if.b",
"oic.if.rw",
"oic.if.r",
"oic.if.a",
"oic.if.s"
},
"type": "string"
},

"minItems": 1,
"type": "array"
}],
"ins": {
"description": "The instance identifier for this web link in an array of web links – used in collections",
"type": "integer"
},

"p": {
"description": "Specifies the framework policies on the Resource referenced by the target URI",
"properties": {
"bm": {
"description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
"type": "integer"
}
"required": ["bm"
],
"type": "object"
},

"rel": {
"description": "The relation of the target URI referenced by the link to the context URI",
"oneOf": [
{
"default": ["hosts"
],
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
}],
"default": "hosts",
"maxLength": 64,
"type": "string"
}
},
"rt": {
"description": "Resource Type of the Resource",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
},

"title": {
"description": "A title for the link relation. Can be used by the UI to provide a context.",
"maxLength": 64,
"type": "string"
},

"type": {
"default": "application/cbor",
"type": "string"
}
"description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.",

"items": {
  "type": "object",
  "properties": {
    "href": {
      "description": "This contains all possible resource types for this atomic measurement."
    },
    "rt": {
      "description": "This contains all mandatory resource types for this atomic measurement."
    },
    "if": {
      "description": "The interface set supported by this resource"
    }
  }
},

"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"rts": {
  "description": "This contains all possible resource types for this atomic measurement."
},

"rts-m": {
  "description": "This contains all mandatory resource types for this atomic measurement."
},

"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"rts-m": {
  "description": "This contains all mandatory resource types for this atomic measurement."
}

`oic.if.ll"],
    "oic.if.b",
    "oic.if.lb",
    "oic.if.rw",
    "oic.if.r",
    "oic.if.a",
    "oic.if.s"
],
"type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"
}
},
"required": ["rts-m"]
}
,oic.oic-link": {
"properties": {
"anchor": {
"description": "This is used to override the context URI e.g. override the URI of the
containing collection.",
"format": "uri",
"maxLength": 256,
"type": "string"
},
"di": {
"description": "The Device ID formatted according to IETF RFC 4122.",
"pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
"type": "string"
},
"eps": {
"description": "the Endpoint information of the target Resource",
"items": {
"properties": {
"ep": {
"description": "Transport Protocol Suite + Endpoint Locator",
"format": "uri",
"type": "string"
},
"pri": {
"description": "The priority among multiple Endpoints",
"minimum": 1,
"type": "integer"
}
},
"type": "object"
},
"href": {
"description": "This is the target URI, it can be specified as a Relative Reference or
fully-qualified URI.",
"format": "uri",
"maxLength": 256,
"type": "string"
},
"if": {
"description": "The interface set supported by this resource",
"items": {
"enum": [
"oic.if.baseline",
"oic.if.ll",
"oic.if.b",
"oic.if.lb",
"oic.if.rw",
"oic.if.r",
"oic.if.a",
"oic.if.s"}
"type": "string",
},
"minItems": 1,
"type": "array"
},
"ins": {
"description": "The instance identifier for this web link in an array of web links - used in collections",
"type": "integer"},
"p": {
"description": "Specifies the framework policies on the Resource referenced by the target URI",
"properties": {
"bm": {
"description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
"type": "integer"
}
},
"required": [
"bm"
],
"type": "object"},
"rel": {
"description": "The relation of the target URI referenced by the link to the context URI",
"oneOf": [
{
"default": [
"hosts"
],
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
}
],
"default": "hosts",
"maxLength": 64,
"type": "string"
}]
},
"rt": {
"description": "Resource Type of the Resource",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
},
"title": {
"description": "A title for the link relation. Can be used by the UI to provide a
ccontext.",
"maxLength": 64,
"type": "string"
],
"type": {
"default": "application/cbor",
"description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"type": "array"
6.98.5 Property definition

Table 199 defines the Properties that are part of the ['oic.r.bodythermometer-am', 'oic.wk.atomicmeasurement'] Resource Type.

Table 199 – The Property definitions of the Resource with type 'rt' = ['oic.r.bodythermometer-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>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.</td>
</tr>
<tr>
<td>ins</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The instance identifier for this web link in an array of web links - used in collections</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Resource Type of the Resource</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The relation of the target URI referenced by the link to the context URI</td>
</tr>
<tr>
<td>title</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>A title for the link relation. Can be used by the UI to provide a context.</td>
</tr>
<tr>
<td>di</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>The Device ID formatted according to IETF RFC 4122.</td>
</tr>
<tr>
<td>anchor</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>This is used to override the context URI e.g. override the URI of the containing collection.</td>
</tr>
<tr>
<td>p</td>
<td>object: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Specifies the framework policies on the Resource referenced by the target URI</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------</td>
<td>----</td>
<td>------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>type</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.</td>
</tr>
<tr>
<td>eps</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>the Endpoint information of the target Resource</td>
</tr>
<tr>
<td>rts-m</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>This contains all mandatory resource types for this atomic measurement.</td>
</tr>
<tr>
<td>rt</td>
<td>array: 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>
<tr>
<td>links</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>A set of simple or individual OIC Links.</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>This contains all possible resource types for this atomic measurement.</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>href</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>URI of the target resource relative assuming the collection URI as anchor</td>
</tr>
<tr>
<td>rep</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.98.6 CRUDN behaviour

Table 200 defines the CRUDN operations that are supported on the ['oic.r.bodythermometer-am', 'oic.wk.atomicmeasurement'] Resource Type
Table 200 – The CRUDN operations of the Resource with type 'rt' =
['oic.r.bodythermometer-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>

6.99 Body Water

6.99.1 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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.
Retrieves Body water of an object.

6.99.2 Example URI

 `/BodyWaterResURI`

6.99.3 Resource type

The resource type (rt) is defined as: ['oic.r.body.water'].

6.99.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Body Water",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.  2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.
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WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.
IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
OTHERWISE ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BodyWaterResURI" : {
      "get": {
        "description": "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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.
Retrieves Body water of an object.",
        "parameters": [ ]
      }
    }
  }
}
```

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"rt": ["oic.r.body.water"],
"id": "unique_example_id",
"bwater": 20,
"units": "kg"
}

"schema": { "$ref": "/definitions/BodyWater" }
"description": "The valid range for the value Property",
"items": { 
  "anyOf": [ 
    { 
      "type": "number"
    },
    { 
      "type": "integer"
    } 
  ]
},
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"id": { 
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"bwater": { 
  "description": "Body water.",
  "minimum": 0,
  "readOnly": true,
  "type": "number"
},
"if": { 
  "description": "The interface set supported by this resource",
  "items": [ 
    "oic.if.baseline",
    "oic.if.ll",
    "oic.if.b",
    "oic.if.lb",
    "oic.if.rw",
    "oic.if.r",
    "oic.if.a",
    "oic.if.s"
  ],
  "type": "string"
},
"rt": { 
  "description": "Resource Type",
  "items": [ 
    { 
      "enum": [ 
        "oic.if.baseline",
        "oic.if.ll",
        "oic.if.b",
        "oic.if.lb",
        "oic.if.rw",
        "oic.if.r",
        "oic.if.a",
        "oic.if.s"
      ],
      "type": "string"
    },
    { 
      "minItems": 1,
      "readOnly": true,
      "type": "array"
    }
  ]
},
"required": [ "bwater"]
}

6.99.5 Property definition

Table 201 defines the Properties that are part of the ['oic.r.body.water'] Resource Type

Table 201 – 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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>bwater</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>Body water.</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
</tbody>
</table>
### precision
<table>
<thead>
<tr>
<th>number</th>
<th>No</th>
<th>Read Only</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accuracy granularity of the exposed value</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### step
<table>
<thead>
<tr>
<th>multiple types: see schema</th>
<th>No</th>
<th>Read Only</th>
<th><strong>Step value across the defined range</strong></th>
</tr>
</thead>
</table>

### units
<table>
<thead>
<tr>
<th>string</th>
<th>No</th>
<th>Read Only</th>
<th><strong>Body water unit</strong></th>
</tr>
</thead>
</table>

### if
<table>
<thead>
<tr>
<th>array: see schema</th>
<th>No</th>
<th>Read Only</th>
<th><strong>The interface set supported by this resource</strong></th>
</tr>
</thead>
</table>

### range
<table>
<thead>
<tr>
<th>array: see schema</th>
<th>No</th>
<th>Read Only</th>
<th><strong>The valid range for the value Property</strong></th>
</tr>
</thead>
</table>

### id
<table>
<thead>
<tr>
<th>string</th>
<th>No</th>
<th>Read Only</th>
<th><strong>Instance ID of this specific resource</strong></th>
</tr>
</thead>
</table>

#### 6.99.6 CRUDN behaviour
Table 202 defines the CRUDN operations that are supported on the ['oic.r.body.water'] 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 202 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.body.water']

### 6.100 Glucose

#### 6.100.1 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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT. Retrieves glucose level of a person.

#### 6.100.2 Example URI
/GlucoseResURI

#### 6.100.3 Resource type
The resource type (rt) is defined as: ['oic.r.glucose'].

#### 6.100.4 OpenAPI 2.0 definition
```json
{  "swagger": "2.0",  "info": {    "title": "Glucose",    "version": "v1.1.0-20160519",    "license": {      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
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```
"parameters": [ {
"$ref": "#/parameters/interface"}
],
"responses": { "200": { "description": "", "x-example": {
"rt": ["oic.r.glucose"],
"id": "unique_example_id",
"glucose": 90,
"units": "mg/dL"
} },
"schema": { "$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": { "maxLength": 64,
"type": "string" },
"minItems": 1,
"readOnly": true,
"type": "array" },
"precision": { "description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number" },
"value": { "anyOf": [ { "type": "array" } ] } } } } }
"type": "string",
},
    "type": "boolean",
},
    "type": "integer",
},
    "type": "number",
},
    "type": "object"
}
],
"description": "The value sensed or actuated by this Resource",
},
"n": {
    "description": "Friendly name of the resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},
"units": {
    "description": "Glucose unit",
    "enum": [
        "mg/dL",
        "mmol/L"
    ],
    "readOnly": true,
    "type": "string"
},
"range": {
    "description": "The valid range for the value Property",
    "items": {
        "anyOf": [
            { "type": "number" },
            { "type": "integer" }
        ]
    }
},
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"step": {
    "anyOf": [
        { "type": "integer" },
        { "type": "number" }
    ],
    "description": "Step value across the defined range",
    "readOnly": true
}
"glucose":
  {
    "description": "A measurement of glucose concentration in the blood",
    "minimum": 0,
    "readOnly": true,
    "type": "number"
  },

"id":
  {
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },

"if":
  {
    "description": "The interface set supported by this resource",
    "items": {
      "enum": [
        "oic.if.baseline",
        "oic.if.ll",
        "oic.if.lb",
        "oic.if.l",
        "oic.if.rw",
        "oic.if.r",
        "oic.if.rz",
        "oic.if.rr",
        "oic.if.rz"
      ],
      "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
  }
}

"type": "object",

"required": ["glucose"]

6.100.5 Property definition

Table 203 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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>value</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The value sensed or actuated by this Resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Glucose unit</td>
</tr>
</tbody>
</table>
precision | number | No | Read Only | Accuracy granularity of the exposed value
--- | --- | --- | --- | ---
glucose | number | Yes | Read Only | A measurement of glucose concentration in the blood
step | multiple types: see schema | No | Read Only | Step value across the defined range
if | array: see schema | No | Read Only | The interface set supported by this resource

6.100.6 CRUDN behaviour

Table 204 defines the CRUDN operations that are supported on the ['oic.r.glucose'] Resource Type

Table 204 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.glucose']

<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>

6.101 Context Carbohydrates for Glucose Meter

6.101.1 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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT. Retrieves Context Carbohydrates for Glucose Meter.

6.101.2 Example URI

/GlucoseCarbResURI

6.101.3 Resource type

The resource type (rt) is defined as: ['oic.r.glucose.carb'].

6.101.4 OpenAPI 2.0 definition

```json
{  
  "swagger": "2.0",
  "info": {  
    "title": "Context Carbohydrates for Glucose Meter",
    "version": "v1.1.0-20160519",
    "license": {  
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:\n  1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
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    }
  }
}
```


"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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT. Retrieves Context Carbohydrates for Glucose Meter.",
      "parameters": [
        
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {

          }
        }
      },
      "parameters": {
        "interface": {
          "in": "query",
          "name": "if",
          "type": "string",
          "enum": ["oic.if.s", "oic.if.baseline"]
        }
      }
    }
  }
}
"description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number"
},
"n": {
"description": "Friendly name of the resource",
"maxLength": 64,
"readOnly": true,
"type": "string"
},
"range": {
"description": "The valid range for the value Property",
"items": {  
"anyOf": [{  
"type": "number"
}, {  
"type": "integer"
}]
},  
"maxItems": 2,
"minItems": 2,
"readOnly": true,
"type": "array"
},
"carb": {
"description": "The amount of carbohydrates undertaken in grams",
"readOnly": true,
"type": "number"
},
"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"
},
"if": {
"description": "The interface set supported by this resource",
"items": {  
"enum": [  
"oic.if.baseline",
"oic.if.ll",
"oic.if.b",
"oic.if.lb",
"oic.if.rw",
"oic.if.r",
"oic.if.a",
"oic.if.s"
],  
"type": "string"
},  
"minItems": 1,
6.101.5 Property definition

Table 205 defines the Properties that are part of the ['oic.r.glucose.carb'] 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>meal</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
<td>Recorded time of carbohydrates intake</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>carb</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
<td>The amount of carbohydrates undertaken in grams</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
</tbody>
</table>

6.101.6 CRUDN behaviour

Table 206 defines the CRUDN operations that are supported on the ['oic.r.glucose.carb'] 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>get</td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

6.102 Exercise for Glucose Meter

6.102.1 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.
Retrieves the level of exercise undertaken in percentage.
6.102.2 Example URI

/ExerciseResURI

6.102.3 Resource type

The resource type (rt) is defined as: ['oic.r.glucose.exercise'].

6.102.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Exercise for Glucose Meter",
        "version": "v1.1.0-20160519",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

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OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE."
    }

    "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. Retrieves the level of exercise undertaken in
percentage."
            }
        }
    },
    "parameters": {
        "$ref": "#/parameters/interface"
    },
    "responses": {
        "200": {
            "description": "",
            "x-example": {
                "rt": ['oic.r.glucose.exercise'],
                "id": "unique_example_id",
                "exercise": 30
            }
        }
    },
    "schemes": { "$ref": "#/definitions/Exercise" }
}
```

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"properties": {
    "rt": {
        "description": "Resource Type",
        "items": {
            "maxLength": 64,
            "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
    },
    "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
    },
    "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
    },
    "range": {
        "description": "The valid range for the value Property",
        "items": {
            "anyOf": [
                {
                    "type": "number"
                },
                {
                    "type": "integer"
                }
            ]
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
    },
    "step": {
        "anyOf": [
            {
                "type": "integer"
            },
            {
                "type": "number"
            }
        ]
    },
    "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
    },
    "exercise": {
        "description": "The level of exercise undertaken in percentage",
        "maximum": 100,
        "minimum": 0,
        "readOnly": true,
        "type": "number"
    }
}
6.102.5 Property definition

Table 207 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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>

6.102.6 CRUDN behaviour

Table 208 defines the CRUDN operations that are supported on the ['oic.r.glucose.exercise'] Resource Type
Table 208 – The CRUDN operations of the Resource with type 'rt' = '
[oic.r.glucose.exercise]'

<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>

6.103 Hemoglobin Bound to Glucose A1c Form (HbA1c) for Glucose Meter

6.103.1 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.

Retrieves Hemoglobin Bound to Glucose A1c Form (HbA1c) for Glucose Meter.

6.103.2 Example URI

/GlucoseHbA1cResURI

6.103.3 Resource type

The resource type (rt) is defined as: ['oic.r.glucose.hba1c'].

6.103.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Hemoglobin Bound to Glucose A1c Form (HbA1c) for Glucose Meter",
      "version": "v1.1.0-20160519",
      "license": {
         "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
         "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

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      }
   },
   "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.
            Retrieves Hemoglobin Bound to Glucose A1c Form (HbA1c) for Glucose Meter.
            
            "parameters": [
               {
                  "$ref": "/parameters/interface"
               }]
         },
         "responses": {
            "200": {
               "description": ",
               "x-example": {
                  "rt": ["oic.r.glucose.hba1c"],
                  "id": "unique_example_id",
                  "hba1c": 5
               }
            }
         }
      }
   }
}
```
"schema": { "$ref": "#/definitions/HbA1c" }  

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

"definitions": {  
  "HbA1c": {  
    "properties": {  
      "rt": {  
        "description": "Resource Type",  
        "items": {  
          "maxLength": 64,  
          "type": "string"  
        },  
        "minItems": 1,  
        "readOnly": true,  
        "type": "array"  
      },  
      "hba1c": {  
        "description": "Current HbA1c measurement in percentage",  
        "maximum": 100,  
        "minimum": 0,  
        "readOnly": true,  
        "type": "number"  
      },  
      "value": {  
        "anyOf": [  
          {  
            "type": "array"  
          },  
          {  
            "type": "string"  
          },  
          {  
            "type": "boolean"  
          },  
          {  
            "type": "integer"  
          },  
          {  
            "type": "number"  
          },  
          {  
            "type": "object"  
          }  
        ],  
        "description": "The value sensed or actuated by this Resource"  
      },  
      "n": {  
        "description": "Friendly name of the resource",  
        "maxLength": 64,  
        "readOnly": true,  
        "type": "string"  
      }  
    }  
  }
"range": {
  "description": "The valid range for the value Property",
  "items": [
    "anyOf": [
      { "type": "number" },
      { "type": "integer" }
    ]
  ],
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},
"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},
"step": {
  "anyOf": [
    { "type": "integer" },
    { "type": "number" }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.db",
      "oic.if.db",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}
,"type" : "object",
,"required": ["hba1c"]
6.103.5 Property definition

Table 209 defines the Properties that are part of the ['oic.r.glucose.hba1c'] 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>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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the 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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>value</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The value sensed or actuated 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.hba1c'] 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>

6.104 Context Health for Glucose Meter

6.104.1 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.

Retrieves Context Health for Glucose Meter.

6.104.2 Example URI

/GlucoseHealthResURI


6.104.3 Resource type

The resource type (rt) is defined as: `[oic.r.glucose.health]`.

6.104.4 OpenAPI 2.0 definition

```json
{
   "swagger": "2.0",
   "info": {
      "title": "Context Health for Glucose Meter",
      "version": "v1.1.0-20160519",
      "license": {
         "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
         "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

         1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
         2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

         IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE."
      }
   },
   "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\nminor and major are related to the general health or the level of illness of the person;\nmenses refers to the female menstrual cycle;\nstress refers to physiological or psychological stress.\nRetrieves Context Health for Glucose Meter."
            "parameters": [
               {"$ref": "#/parameters/interface"}
            ],
            "responses": {
               "200": {
                  "description": "",
                  "x-example": {
                     "rt": ["oic.r.glucose.health"],
                     "id": "unique_example_id",
                     "health": "major"
                  }
               }
            },
            "schema": { "$ref": "#/definitions/GlucoseHealth" }
         }
      }
   }
}
```

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"description": "Resource Type",
"items": {
  "maxLength": 64,
  "type": "string"
},
"minItems": 1,
"readOnly": true,
"type": "array"},

"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},

"value": {
  "anyOf": [
    { "type": "array" },
    { "type": "string" },
    { "type": "boolean" },
    { "type": "integer" },
    { "type": "number" },
    { "type": "object" }
  ],
  "description": "The value sensed or actuated by this Resource"
},

"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      { "type": "number" },
      { "type": "integer" }
    ]
  },
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},

"health": {
  "description": "The various levels of health a person feels when taking a glucose."
"enum": [
  "minor",
  "major",
  "menses",
  "stress",
  "none"
],
"readOnly": true,
"type": "string"
},

"step": {
  "anyOf": [
    { "type": "integer" },
    { "type": "number" }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},

"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}

6.104.5 Property definition

Table 211 defines the Properties that are part of the ['oic.r.glucose.health'] Resource Type

Table 211 – The Property definitions of the Resource with type 'rt' = ['oic.r.glucose.health']
### Table 212 – The CRUDN operations of the Resource with type ‘rt’ = [‘oic.r.glucose.health’]

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Access</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
</tr>
<tr>
<td>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
</tr>
<tr>
<td>value</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>No</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>health</td>
<td>string</td>
<td>Yes</td>
<td>Read Only</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

#### 6.104.6 CRUDN behaviour

Table 212 defines the CRUDN operations that are supported on the [‘oic.r.glucose.health’] Resource Type.

**Table 212 – 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>get</td>
<td></td>
<td></td>
<td></td>
<td>observe</td>
</tr>
</tbody>
</table>

#### 6.105 Context Meal for Glucose Meter

##### 6.105.1 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.

Retrieves Context Meal for Glucose Meter.

##### 6.105.2 Example URI

/GlucoseMealResURI

##### 6.105.3 Resource type

The resource type (rt) is defined as: [‘oic.r.glucose.meal’].

##### 6.105.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
```
"title": "Context Meal for Glucose Meter",
"version": "v1.1.0-20160519",
"license": {
"name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
"x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
  1. Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.
  2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.
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LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
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OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE."
}
"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. Retrieves Context Meal for Glucose Meter."
  
  "parameters": [ {
    "$ref": "#/parameters/interface"
  },
  "responses": {
    "200": { 
      "description": "",
      "x-example": {
        "rt": ["oic.r.glucose.meal"],
        "id": "unique_example_id",
        "meal": "preprandial"
      }
    }
  },
  "schema": {
    "$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": { 
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      }
    },
  }
}
"step": {
  "anyOf": [
    { "type": "integer" }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},

"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},

"value": {
  "anyOf": [
    { "type": "array" },
    { "type": "string" },
    { "type": "boolean" },
    { "type": "integer" },
    { "type": "number" },
    { "type": "object" }
  ],
  "description": "The value sensed or actuated by this Resource"
},

"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      { "type": "number" },
      { "type": "integer" }
    ],
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
  },
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"meal": {
  "description": "Time of day when the measurement is taken.",
  "enum": [
    "preprandial",
    "postprandial",
    "fasting",
    "bedtime",
    "casual"
  ],
  "readOnly": true,
  "type": "string"
},

"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
}

6.105.5 Property definition

Table 213 defines the Properties that are part of the ['oic.r.glucose.meal'] 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>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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
</tbody>
</table>
Table 214 defines the CRUDN operations that are supported on the ['oic.r.glucose.meal'] Resource Type.

Table 214 – 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>

6.105.6 CRUDN behaviour

6.106 Context Medication for Glucose Meter

6.106.1 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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.

Retrieves Context Medication for Glucose Meter.

6.106.2 Example URI

/GlucoseMedicationResURI

6.106.3 Resource type

The resource type (rt) is defined as: ['oic.r.glucose.medication'].

6.106.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Context Medication for Glucose Meter",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  }
}
```
"schemes": ["http"],
"consumes": ["application/json"],
"produces": ["application/json"],
"paths": {
  "/GlucoseMedicationResURI": {
    "get": {
      "description": "This resource describes the properties associated with context
      medication.\nThe unit is a single value that is one of mg and mL.\nThe medication property has a
default unit of milligrams[mg].\nThe unit and regimen 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.\n\nRetrieves Context Medication for Glucose Meter.\n",
      "parameters": [ 
{"$ref": "/#parameters/interface"} ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.glucose.medication"],
            "id": "unique_example_id",
            "medication": 100,
            "units": "mg",
            "regimen": "rapidacting"
          }
        },
        "schema": { "$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": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "regimen": {
        "description": "Medication regimen",
        "enum": ["rapidacting", "shortacting", "intermediateacting", "longacting", "premix"
      },
"medication": {
    "description": "The level of medication undertaken",
    "readOnly": true,
    "type": "number"
},

"precision": {
    "description": "Accuracy granularity of the exposed value",
    "readOnly": true,
    "type": "number"
},

"value": {
    "anyOf": [
        {
            "type": "array"
        },
        {
            "type": "string"
        },
        {
            "type": "boolean"
        },
        {
            "type": "integer"
        },
        {
            "type": "number"
        },
        {
            "type": "object"
        }
    ],
    "description": "The value sensed or actuated by this Resource"
},

"n": {
    "description": "Friendly name of the resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
},

"units": {
    "description": "Current exercise movement type measurement",
    "enum": [
        "mg",
        "mL"
    ],
    "readOnly": true,
    "type": "string"
},

"range": {
    "description": "The valid range for the value Property",
    "items": {
        "anyOf": [
            {
                "type": "number"
            }
        ]
    }
}
Table 215 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>
</table>

### 6.106.5 Property definition

Table 215 – The Property definitions of the Resource with type 'rt' = ['oic.r.glucose.medication']
<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Access</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</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>regimen</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
</tr>
<tr>
<td>units</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
</tr>
<tr>
<td>value</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
</tr>
<tr>
<td>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
</tr>
<tr>
<td>medication</td>
<td>number</td>
<td>Yes</td>
<td>Read Only</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

Table 216 defines the CRUDN operations that are supported on the ['oic.r.glucose.medication'] Resource Type

### 6.107.6 CRUDN behaviour

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

### 6.107 Glucose Meter Atomic Measurement Linked List Representation

#### 6.107.1 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 (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). Retrieves the current glucose.

#### 6.107.2 Example URI

```
/GlucoseMeterAMResURI
```
6.107.3 Resource type
The resource type (rt) is defined as: ['oic.r.glucosemeter-am', 'oic.wk.atomicmeasurement'].

6.107.4 OpenAPI 2.0 definition

```json
{  
  "swagger": "2.0",
  "info": {
    "title": "Glucose Meter Atomic Measurement Linked List Representation",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
correction, are permitted provided that the following conditions are met:\n1. Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n3. LIMIT TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n4. IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
or CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\nHOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GlucoseMeterAMResURI?if=oic.if.ll" : {
      "get": {
        "description": "This resource describes the properties associated with glucose meter.\nThe 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 (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).\nRetrieves the current glucose.",
        "parameters": {
          "$ref": "#/parameters/interface-ll"
        },
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "href": "/myGlucoseResURI",
              "rt": ["oic.r.glucose"],
              "if": ["oic.if.s", "oic.if.baseline"]
            }
          }
        }
      }
    },
    "/GlucoseMeterAMResURI?if=oic.if.b" : {
      "get": {
        "description": "This resource describes the properties associated with glucose meter.\nThe resource is an atomic measurement of glucose (oic.r.glucose), context carbohydrates (oic.r.glucose.carb), context exercise (oic.r.glucose.exercise), Hemoglobin Bound to Glucose A1c (HbA1c) (oic.r.glucose.hba1c), context health (oic.r.glucose.health), context meal (oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location (oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time (oic.r.time.stamp), and user ID (oic.r.userid).\nRetrieves the current glucose.",
        "parameters": {
          "$ref": "#/parameters/interface-ll"
        },
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "href": "/myHbA1cResURI",
              "rt": ["oic.r.glucose.hba1c"],
              "if": ["oic.if.s", "oic.if.baseline"]
            }
          }
        }
      }
    }
  }
}
```

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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). \nRetrieves the current glucose.

"parameters": [
  {"$ref": "/#parameters/interface-b"}
],
"responses": {
  "200": {
    "description": "",
    "x-example": [
      {
        "href": "/myGlucoseResURI",
        "rep": {
          "glucose": 100,
          "units": "mg/dL"
        }
      },
      {
        "href": "/myHbA1cResURI",
        "rep": {
          "hba1c": 5
        }
      }
    ],
    "schema": { "$ref": "/definitions/batch-retrieve" }
  }
}

"GlucoseMeterAMResURI?if=oic.if.baseline": {
  "get": {
    "description": "This resource describes the properties associated with glucose meter.\nThe 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). \nRetrieves the current glucose.\n",
    "parameters": [
      {"$ref": "/#parameters/interface-baseline"}
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.glucosemeter-am", "oic.wk.atomicmeasurement"],
          "if": ["oic.if.b", "oic.if.ll", "oic.if.baseline"],
          "rts": ["oic.r.glucose", "oic.r.glucose.hba1c"],
          "rts-m": ["oic.r.glucose"],
          "links": [
            {
              "href": "/myGlucoseResURI",
              "rt": ["oic.r.glucose"],
              "if": ["oic.if.s", "oic.if.baseline"]
            },
            {
              "href": "/myHbA1cResURI",
              "rt": ["oic.r.glucose.hba1c"],
              "if": ["oic.if.s", "oic.if.baseline"]
            }
          ]
        }
      }
    }
  }
}
"parameters": {
  "interface-ll": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.ll"]
  },
  "interface-b": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.b"]
  },
  "interface-baseline": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.baseline"]
  },
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.b", "oic.if.ll", "oic.if.baseline"]
  }
},
"definitions": {
  "links": {
    "type": "array",
    "items": {
      "$ref": "#/definitions/oic.oic-link"
    }
  },
  "batch-retrieve": {
    "title": "Collection Batch Retrieve Format",
    "minItems": 1,
    "items": {
      "additionalProperties": true,
      "properties": {
        "href": {
          "description": "URI of the target resource relative assuming the collection URI as anchor",
          "type": "string"
        },
        "rep": {
          "type": "object"
        }
      }
    },
    "href": {
      "description": "The response payload from a single resource",
      "type": "object"
    },
    "rep": {
      "type": "array"
    }
  },
  "required": [
    "href",
    "rep"
  ]
}
"rep",
"type": "object"
}

"type": "array"

"baseline": {
"properties": {
"rt": {
"items": {
"enum": [
"oic.r.glucosemeter-am",
"oic.wk.atomicmeasurement"
]
},
"maxItems": 2,
"minItems": 2,
"type": "array",
"uniqueItems": true
},

"links": {
"description": "A set of simple or individual OIC Links.",
"items": {
"properties": {
"anchor": {
"description": "This is used to override the context URI e.g. override the URI of
the containing collection.",
"format": "uri",
"maxLength": 256,
"type": "string"
},
"di": {
"description": "The Device ID formatted according to IETF RFC 4122.",
"pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}\$",
"type": "string"
},

"eps": {
"description": "the Endpoint information of the target Resource",
"items": {
"properties": {
"ep": {
"description": "Transport Protocol Suite + Endpoint Locator",
"format": "uri",
"type": "string"
},

"pri": {
"description": "The priority among multiple Endpoints",
"minimum": 1,
"type": "integer"
}
}

"type": "object"
},

"type": "array"
},

"href": {
"description": "This is the target URI, it can be specified as a Relative Reference
or fully-qualified URI.",
"format": "uri",
"maxLength": 256,
"type": "string"
},

"if": {
"description": "The interface set supported by this resource",

"items": {
  "enum": [
    "oic.if.baseline",
    "oic.if.ll",
    "oic.if.b",
    "oic.if.rw",
    "oic.if.r",
    "oic.if.a",
    "oic.if.s"
  ],
  "type": "string"
},
"minItems": 1,
"type": "array"
},
"ins": {
  "description": "The instance identifier for this web link in an array of web links used in collections",
  "type": "integer"
},
"p": {
  "description": "Specifies the framework policies on the Resource referenced by the target URI",
  "properties": {
    "bm": {
      "description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
      "type": "integer"
    }
  },
  "required": ["bm"],
  "type": "object"
},
"rel": {
  "description": "The relation of the target URI referenced by the link to the context URI",
  "oneOf": [
    {"default": ["hosts"],"items": {
      "maxLength": 64,
      "type": "string"
    },
    "minItems": 1,
    "type": "array"},
    {"default": "hosts",
     "maxLength": 64,
     "type": "string"}
  ]
},
"rt": {
  "description": "Resource Type of the Resource",
  "items": {
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "type": "array"
},
"title": {
  "description": "A title for the link relation. Can be used by the UI to provide a context.",
  "maxLength": 64,
  "type": "string"}
"type": {
  "default": "application/cbor",
  "description": "A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.",
  "items": {
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "type": "array"
},
"required": [
  "href",
  "rt",
  "if"
],
"type": "object"},
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"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.tester",
      "oic.r.time.observed",
      "oic.r.userid"
    ],
    "minItems": 1,
    "type": "array",
    "uniqueItems": true
  },
  "maxItems": 1,
  "minItems": 1,
  "type": "array"
},
"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"rts-m": {
  "description": "This contains all mandatory resource types for this atomic measurement.",
  "items": {
    "enum": [
      "oic.r.glucose"
    ],
    "maxItems": 1,
    "minItems": 1,
    "type": "array"}
"uniqueItems": true
},
"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
},
"anchor": {
  "description": "This is used to override the context URI e.g. override the URI of the
containing collection.",
  "format": "uri",
  "maxLength": 256,
  "type": "string"
},
"di": {
  "description": "The Device ID formatted according to IETF RFC 4122."
},
  "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{12}$",
  "type": "string"
},
"eps": {
  "description": "The Endpoint information of the target Resource",
  "items": {
    "properties": {
      "ep": {
        "description": "Transport Protocol Suite + Endpoint Locator",
        "format": "uri",
        "type": "string"
      },
      "pri": {
        "description": "The priority among multiple Endpoints",
        "minimum": 1,
        "type": "integer"
      }
    },
    "type": "object"
  },
  "type": "array"
},
"href": {
  "description": "This is the target URI, it can be specified as a Relative Reference or
fully-qualified URI.",
  "format": "uri",
  "maxLength": 256,
  "type": "string"
},
"if": {
  "description": "The interface set supported by this resource",
  "type": "string"
"items": {
  "enum": [
    "oic.if.baseline",
    "oic.if.ll",
    "oic.if.b",
    "oic.if.rw",
    "oic.if.r",
    "oic.if.a",
    "oic.if.s"
  ],
  "type": "string"
},
"minItems": 1,
"type": "array"
},
"ins": {
  "description": "The instance identifier for this web link in an array of web links - used in collections",
  "type": "integer"
},
"p": {
  "description": "Specifies the framework policies on the Resource referenced by the target URI",
  "properties": {
    "bm": {
      "description": "Specifies the framework policies on the Resource referenced by the target URI for e.g. observable and discoverable",
      "type": "integer"
    }
  },
  "required": [
    "bm"
  ],
  "type": "object"
},
"rel": {
  "description": "The relation of the target URI referenced by the link to the context URI",
  "oneOf": [
    {"default": "hosts"},
    {"default": "hosts",
     "maxLength": 64,
     "type": "string"}
  ]
},
"rt": {
  "description": "Resource Type of the Resource",
  "items": {
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "type": "array"
},
"title": {
  "description": "A title for the link relation. Can be used by the UI to provide a context",
  "maxLength": 64,
  "type": "string"
},
"type": {
"default": "application/cbor",
"description": "A hint at the representation of the resource referenced by the target URI.
This represents the media types that are used for both accepting and emitting.",
"items": {
  "maxLength": 64,
  "type": "string"
},
"minItems": 1,
"type": "array"
},
"required": [
  "href",
  "rt",
  "if"
],
"type": "object"
}

<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>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>URI of the target resource relative assuming the collection URI as anchor</td>
</tr>
<tr>
<td>rep</td>
<td>multiple types: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>A set of simple or individual OIC Links.</td>
</tr>
<tr>
<td>links</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The 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>This contains all possible resource types for this atomic measurement.</td>
</tr>
<tr>
<td>rts</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>This contains all mandatory resource types for this atomic measurement.</td>
</tr>
<tr>
<td>rts-m</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.107.5 Property definition

Table 217 defines the Properties that are part of the ['oic.r.glucosemeter-am', 'oic.wk.atomicmeasurement'] Resource Type

Table 217 – The Property definitions of the Resource with type 'rt' = ['oic.r.glucosemeter-am', 'oic.wk.atomicmeasurement']

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<table>
<thead>
<tr>
<th>Title</th>
<th>Type</th>
<th>Required</th>
<th>Access</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>title</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>A title for the link relation. Can be used by the UI to provide a context.</td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Yes</td>
<td>Read Write</td>
<td>The interface set supported by this resource.</td>
</tr>
<tr>
<td>p</td>
<td>object: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>Specifies the framework policies on the Resource referenced by the target URI.</td>
</tr>
<tr>
<td>type</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>A hint at the representation of the resource referenced by the target URI. This represents the media types that are used for both accepting and emitting.</td>
</tr>
<tr>
<td>href</td>
<td>string</td>
<td>Yes</td>
<td>Read Write</td>
<td>This is the target URI, it can be specified as a Relative Reference or fully-qualified URI.</td>
</tr>
<tr>
<td>eps</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The Endpoint information of the target Resource.</td>
</tr>
<tr>
<td>rel</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The relation of the target URI referenced by the link to the context URI.</td>
</tr>
<tr>
<td>ins</td>
<td>integer</td>
<td>No</td>
<td>Read Write</td>
<td>The instance identifier for this web link in an array of web links - used in collections.</td>
</tr>
<tr>
<td>di</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>The Device ID formatted according to IETF RFC 4122.</td>
</tr>
<tr>
<td>anchor</td>
<td>string</td>
<td>No</td>
<td>Read Write</td>
<td>This is used to override the context URI e.g. override the URI of the containing collection.</td>
</tr>
</tbody>
</table>
Table 218 defines the CRUDN operations that are supported on the ['oic.r.glucosemeter-am', 'oic.wk.atomicmeasurement'] 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>

6.108.1 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. Retrieves Context Sample Location for Glucose Meter.

6.108.2 Example URI

/GlucoseSampleLocationResURI

6.108.3 Resource type

The resource type (rt) is defined as: ['oic.r.glucose.samplelocation'].

6.108.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Context Sample Location for Glucose Meter",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
        1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
        2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
        3. THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED. IN NO EVENT SHALL THE Open Connectivity Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GlucoseSampleLocationResURI" : {
      "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. Retrieves Context Sample Location for Glucose Meter.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ]
      }
    }
  }
}
```
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.glucose.samplelocation"],
      "id": "unique_example_id",
      "samplelocation": "finger"
    }
  },
  "schema": { "$ref": "#/definitions/GlucoseSampleLocation" }
},
"parameters": {
  "interface": {
    "in":  "query",
    "name":  "if",
    "type":  "string",
    "enum":  ["oic.if.s", "oic.if.baseline"]
  }
},
"definitions": {
  "GlucoseSampleLocation": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "value": {
        "anyOf": [
          { "type": "array" },
          { "type": "string" },
          { "type": "boolean" },
          { "type": "integer" },
          { "type": "number" },
          { "type": "object" }
        ],
        "description": "The value sensed or actuated by this Resource"
      }
    }
  }
}
"n" : 
  { 
    "description": "Friendly name of the resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },

"range" : 
  { 
    "description": "The valid range for the value Property",
    "items": 
      { 
        "anyOf": [ 
          { "type": "number" },
          { "type": "integer" }
        ],
        "maxItems": 2,
        "minItems": 2,
        "readOnly": true,
        "type": "array"
      },

"samplelocation" : 
  { 
    "description": "The possible blood locations where the blood sample may be taken.\n", 
    "enum": [ 
      "finger",
      "ast",
      "earlobe",
      "ctrlsolution"
    ],
    "readOnly": true,
    "type": "string"
  },

"step" : 
  { 
    "anyOf": [ 
      { "type": "integer" },
      { "type": "number" }
    ],
    "description": "Step value across the defined range",
    "readOnly": true
  },

"id" : 
  { 
    "description": "Instance ID of this specific resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },

"if" : 
  { 
    "description": "The interface set supported by this resource",
    "items": 
      { 
        "enum": [ 
          "oic.if.baseline",
          "oic.if.ll",
          "oic.if.lb",
          "oic.if.rw",
          "oic.if.lb",
          "oic.if.rw",
          "oic.if.lub",
          "oic.if.bub",
          "oic.if.ub",
          "oic.if.rb",
          "oic.if.br",
          "oic.if.rb",
          "oic.if.br",
          "oic.if.lb",
          "oic.if.bl",
          "oic.if.bl",
          "oic.if.bl"
        ]
      }
  }
6.108.5 Property definition

Table 219 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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific 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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>value</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The value sensed or actuated by this Resource</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>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>
</tbody>
</table>

6.108.6 CRUDN behaviour

Table 220 defines the CRUDN operations that are supported on the ['oic.r.glucose.samplelocation'] Resource Type
Table 220 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.glucose.samplelocation']

<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 Context Tester for Glucose Meter

6.109.1 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.
Retrieves Context Tester for Glucose Meter.

6.109.2 Example URI

/GlucoseTesterResURI

6.109.3 Resource type

The resource type (rt) is defined as: ['oic.r.glucose.Tester'].

6.109.4 OpenAPI 2.0 definition

Copyright Open Connectivity Foundation, Inc. © 2016-19. All rights Reserved
"schema": { "$ref": "#/definitions/GlucoseTester" }
"parameters": {
"interface": {
"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.s", "oic.if.baseline"]
}
"definitions": {
"GlucoseTester": {
"properties": {
"rt": {
"description": "Resource Type",
"items": {
"maxLength": 64,
"type": "string"
},
"minItems": 1,
"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"
},
"precision": {
"description": "Accuracy granularity of the exposed value",
"readOnly": true,
"type": "number"
},
"value": {
"anyOf": [
{ "type": "array" },
{ "type": "string" },
{ "type": "boolean" },
{ "type": "integer" },
{ "type": "number" },
{ "type": "object" }
],
"description": "The value sensed or actuated by this Resource"}
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      {"type": "number"},
      {"type": "integer"}
    ]
  },
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},

"step": {
  "anyOf": [
    {"type": "integer"},
    {"type": "number"}
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},

"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.1l",
      "oic.if.b",
      "oic.if.1b",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"}
6.109.5 Property definition

Table 221 defines the Properties that are part of the ['oic.r.glucose.Tester'] Resource Type

Table 221 – 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>value</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Write</td>
<td>The value sensed or actuated by this Resource</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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>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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
</tbody>
</table>

6.109.6 CRUDN behaviour

Table 222 defines the CRUDN operations that are supported on the ['oic.r.glucose.Tester'] Resource Type

Table 222 – 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>

6.110 Optical RFID Station

6.110.1 Introduction

The process represents the stage of the product in the product line which has an optical RFID tag on its body.

Event is represented by a Boolean value set to "True" and "False" alarming the issue when additional action is requested for the tagged product.

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.
Retrieves the station information from optical augmented RFID reader in smart factory environment.

6.110.2 Example URI
/ORFIDStationResURI

6.110.3 Resource type
The resource type (rt) is defined as: ['oic.r.orfid.station'].

6.110.4 OpenAPI 2.0 definition
```json
{
  "swagger": "2.0",
  "info": {
    "title": "Optical RFID Station",
    "version": "Version 2018-01-30",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
        1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
        2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

        THIS SOFTWARE IS PROVIDED BY THE Open Connectivity Foundation, INC. "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.
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    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ORFIDStationResURI": {
      "get": {
        "description": "The process represents the stage of the product in the product line which has an optical RFID tag on its body.
Event is represented by a Boolean value set to "True" and "False" alarming the issue when additional action is requested for the tagged product.
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.
Retrieves the station information from optical augmented RFID reader in smart factory environment.
",
        "parameters": [
          {"$ref": "/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ":["oic.r.orfid.station"],
              "id": "unique_example_id",
              "process": 17,
              "event": true,
              "actionrequest": 2
            }
          }
        }
      },
      "post": {
        "description": "Sets necessary action in accordance with Tag Information",
        "parameters": [
          {"$ref": "/definitions/ORFID"}
        ]
      }
    }
  }
}
```
"$ref": "#/parameters/interface"},

"name": "body",
"in": "body",
"required": true,
"schema": { "$ref": "#/definitions/ORFID" },

"x-example":

"event": false,
"actionrequest": 0

"$ref": "#/definitions/ORFID" }

"responses": {

"200": {

"description": "",

"x-example":

"event": false,
"actionrequest": 0

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

"interface": {

"in": "query",
"name": "if",
"type": "string",
"enum": ["oic.if.rw", "oic.if.baseline"]

"definitions": {

"ORFID": {

"properties": {

"rt": {

"description": "Resource Type",

"items": {

"maxLength": 64,
"type": "string"

},

"minItems": 1,
"readOnly": true,
"type": "array"

},

"step": {

"anyOf": [

"type": "integer"

],

"minItems": 1,
"readOnly": true,
"type": "array"

}

"description": "Step value across the defined range",
"readOnly": true

"process": {

"description": "The process step that is being performed at this station",
"readOnly": true,
"type": "integer"

},

"precision": {

"description": "Accuracy granularity of the exposed value",

"type": "integer"

}
"readOnly": true,
"type": "number"
},

{  
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"actionrequest": {
  "description": "the action request identifier",
  "type": "integer"
},

"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      {  
        "type": "number"
      },
      {  
        "type": "integer"
      }
    ],
    "maxItems": 2,
    "minItems": 2,
    "readOnly": true,
    "type": "array"
  }
},

"id": {
  "description": "Instance ID of this specific resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},

"event": {
  "description": "when True, the action request should be applied to the product identified by the tagid",
  "type": "boolean"
},

"if": {
  "description": "The interface set supported by this resource",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.s"
    ],
    "type": "string"
  }
}
6.110.5 Property definition
Table 223 defines the Properties that are part of the ['oic.r.orfid.station'] Resource Type

Table 223 – The Property definitions of the Resource with type ‘rt’ = ['oic.r.orfid.station']

<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>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>actionrequest</td>
<td>integer</td>
<td>Yes</td>
<td>Read Write</td>
<td>the action request identifier</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>event</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Write</td>
<td>when True, the action request should be applied to the product identified by the tagid</td>
</tr>
</tbody>
</table>

6.110.6 CRUDN behaviour
Table 224 defines the CRUDN operations that are supported on the ['oic.r.orfid.station'] Resource Type

Table 224 – 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>

6.111 Optical RFID Tag

6.111.1 Introduction
The tagid is an integer showing the currently read optical augmented RFID tag's identity information.
Retrieves the tag information from optical augmented RFID reader in smart factory environment.
6.111.2 Example URI

/ORFIDTagResURI

6.111.3 Resource type

The resource type (rt) is defined as: ['oic.r.orfid.tag'].

6.111.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "Optical RFID Tag",
        "version": "Version 2018-01-30",
        "license": {
            "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
            "x-description": "Redistribution and use in source and binary forms, with or without
            modification, are permitted provided that the following conditions are met:
            1. Redistributions of source code must retain the above copyright notice, this list of conditions and
            the following disclaimer.
            2. Redistributions in binary form must reproduce the above
            copyright notice, this list of conditions and the following disclaimer in the documentation and/or
            other materials provided with the distribution.
            THIS SOFTWARE IS PROVIDED BY THE Open
            Connectivity Foundation, INC. "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
            LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
            WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.
            IN NO EVENT SHALL THE Open Connectivity
            Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, EXEMPLARY, OR
            CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
            SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
            HOWEVER CAUSED AND ON
            ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
            OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
            SUCH DAMAGE."
        }
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
        "/ORFIDTagResURI" : {
            "get": {
                "description": "The tagid is an integer showing the currently read optical augmented RFID
                tag's identity information. Retrieves the tag information from optical augmented RFID reader in
                smart factory environment.
                
                "parameters": {
                    "$ref": "/parameters/interface"
                },
                "responses": {
                    "200": {
                        "description": "",
                        "x-example": {
                            "rt": ["oic.r.orfid.tag"],
                            "id": "unique_example_id",
                            "tagid": 10965742,
                            "reading": true
                        }
                    },
                    "schema": { "$ref": "/definitions/ORFID" }
                }
            }
        },
        "parameters": {
            "interface" : {
                "in" : "query",
                "name" : "if",
                "type" : "string",
                "enum" : ["oic.if.r", "oic.if.baseline"]
            }
        },
        "definitions": {
            "ORFID": {
```
"properties": {
  "rt": {
    "description": "Resource Type",
    "items": {
      "maxLength": 64,
      "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
  },
  "tagid": {
    "description": "the tag read by the reader",
    "readOnly": true,
    "type": "integer"
  },
  "precision": {
    "description": "Accuracy granularity of the exposed value",
    "readOnly": true,
    "type": "number"
  },
  "n": {
    "description": "Friendly name of the resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },
  "range": {
    "description": "The valid range for the value Property",
    "items": {
      "anyOf": [
        { "type": "number" },
        { "type": "integer" }
      ],
      "maxItems": 2,
      "minItems": 2,
      "readOnly": true,
      "type": "array"
    },
    "step": {
      "anyOf": [
        { "type": "integer" },
        { "type": "number" }
      ],
      "description": "Step value across the defined range",
      "readOnly": true,
      "type": "integer"
    },
    "reading": {
      "description": "true, the tagid is read e.g. being valid. false, the tagid is invalid",
      "readOnly": true,
      "type": "boolean"
    },
    "id": {
      "description": "Instance ID of this specific resource",
      "maxLength": 64,


```
  "if": {
    "description": "The interface set supported by this resource",
    "items": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b",
      "oic.if.lb",
      "oic.if.rw",
      "oic.if.r",
      "oic.if.a",
      "oic.if.e"
    ],
    "type": "string"
  },

  "type": "object",
  "required": ["tagid", "reading"]
}
```

### 6.111.5 Property definition

Table 225 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>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>tagid</td>
<td>integer</td>
<td>Yes</td>
<td>Read Only</td>
<td>the tag read by the reader</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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>reading</td>
<td>boolean</td>
<td>Yes</td>
<td>Read Only</td>
<td>true, the tagid is read e.g. being valid. false, the tagid is invalid</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>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
</tbody>
</table>

Table 225 – The Property definitions of the Resource with type 'rt' = ['oic.r.orfid.tag']
Table 226 defines the CRUDN operations that are supported on the ['oic.r.orfid.tag'] Resource Type

Table 226 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.orfid.tag']

<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 Power Source

6.112.1 Introduction

This resource lists the available power sources for the device. The list 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.

Retrieves the list of available power sources. If the power source is unknown use the value "unknown".

6.112.2 Example URI

/PowernSourcesExampleResourceURI

6.112.3 Resource type

The resource type (rt) is defined as: ['oic.r.powersource'].

6.112.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "PowerSource",
    "version": "0.1",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
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    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PowerSourcesExampleResourceURI": {
      "get": {
        "description": "This resource lists the available power sources for the device. The list 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. Retrieves the list of available power sources. If the power source is unknown use the value \"unknown\"",
        "parameters": [
          {"$ref": "/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description": ""
          }
        }
      }
    }
  }
}
```
"x-example":
{
  "rt": ["oic.r.powersource"],
  "id": "unique_example_id",
  "powerSources": ["DC power",
                   "Internal Battery",
                   "External Battery",
                   "Power over Ethernet",
                   "USB",
                   "AC (Mains) Power",
                   "Solar"]
}

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

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

"definitions": {
  "powerSourceSchema": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "powerSources": {
        "items": {
          "enum": ["unknown",
                    "DC power",
                    "Internal Battery",
                    "External Battery",
                    "Power over Ethernet",
                    "USB",
                    "AC (Mains) Power",
                    "Solar"],
          "minItems": 1,
          "type": "string",
          "uniqueItems": true
        },
        "type": "array"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      }
    }
  }
}
6.112.5 Property definition

Table 227 defines the Properties that are part of the ['oic.r.powersource'] 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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
<tr>
<td>if</td>
<td>array: see</td>
<td>No</td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
</tr>
<tr>
<td>powerSources</td>
<td>array: see</td>
<td>Yes</td>
<td>Read Write</td>
<td></td>
</tr>
</tbody>
</table>

6.112.6 CRUDN behaviour

Table 228 defines the CRUDN operations that are supported on the ['oic.r.powersource'] 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>

6.113 Print Queue

6.113.1 Introduction

This resource describes the items in a Printer Queue. The URI and status are read only items that cannot be changed through this resource.

Retrieves the current Print Queue.
6.113.2 Example URI

FrePrintQueueResURI

6.113.3 Resource type

The resource type (rt) is defined as: ['oic.r.printer.queue'].

6.113.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Print Queue",
    "version": "v1.1.0-20180115",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

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    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PrintQueueResURI": {
      "get": {
        "description": "This resource describes the items in a Printer Queue. The URI and status are read only items that cannot be changed through this resource.
Retrieves the current Print Queue."
      },
      "parameters": {
        "$ref": "#/parameters/interface"
      },
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.printer.queue"],
            "id": "unique_example_id",
            "queue": {
              ["uri": "10.10.10.10/3dprinter/queueitem/1",
               "status": "Printing"],
              ["uri": "10.10.10.10/3dprinter/queueitem/2",
               "status": "Pending"
              ]
            }
          }"$ref": "#/definitions/PrintQueue"
      },
      "parameters": {
        "$ref": "#/parameters/interface"
      }
    }
  }
}
```
"interface": {
  "in": "query",
  "name": "if",
  "type": "string",
  "enum": ["oic.if.r", "oic.if.baseline"]
},

"definitions": {
  "PrintQueue": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "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.",
            "format": "uri",
            "maxLength": 256,
            "readOnly": true,
            "type": "string"
          }
        }
      },
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "if": {
        "description": "The interface set supported by this resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      }
    }
  }
}
6.113.5 Property definition

Table 229 defines the Properties that are part of the ['oic.r.printer.queue'] 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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>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>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Resource Type</td>
</tr>
</tbody>
</table>

6.113.6 CRUDN behaviour

Table 230 defines the CRUDN operations that are supported on the ['oic.r.printer.queue'] 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 Pulse Rate

6.114.1 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 (from oic.r.baseresource) is omitted the default is 0 to +MAXFLOAT.

Retrieves pulse rate of an object.
6.114.2 Example URI
/PulseRateResURI

6.114.3 Resource type
The resource type (rt) is defined as: ['oic.r.pulserate'].

6.114.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Pulse Rate",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
      modification, are permitted provided that the following conditions are met:
      1. Redistributions of source code must retain the above copyright notice, this list of conditions and
      the following disclaimer.
      2. Redistributions in binary form must reproduce the above
      copyright notice, this list of conditions and the following disclaimer in the documentation and/or
      other materials provided with the distribution.
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      LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
      WARRANTIES OF NONINFRINGEMENT, ARE DISCLAIMED.
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      OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
      SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
      HOWEVER CAUSED AND ON
      ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
      OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
      SUCH DAMAGE."
    }
  },
  "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 (from oic.r.baseresource) is omitted the default
        is 0 to MAXFLOAT. Retrieves pulse rate of an object."
      },
      "parameters": [
        { "$ref": "#/parameters/interface" }]
    },
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": ["oic.r.pulserate"],
          "id": "unique_example_id",
          "pulserate": 80
        }
      }
    },
    "schema": { "$ref": "#/definitions/PulseRate" }
  }
}
```

```
"properties": {
  "rt": {
    "description": "Resource Type",
    "items": {
      "maxLength": 64,
      "type": "string"
    },
    "minItems": 1,
    "readOnly": true,
    "type": "array"
  },
  "step": {
    "anyOf": [
      { "type": "integer" },
      { "type": "number" }
    ],
    "description": "Step value across the defined range",
    "readOnly": true
  },
  "precision": {
    "description": "Accuracy granularity of the exposed value",
    "readOnly": true,
    "type": "number"
  },
  "value": {
    "anyOf": [
      { "type": "array" },
      { "type": "string" },
      { "type": "boolean" },
      { "type": "integer" },
      { "type": "number" },
      { "type": "object" }
    ],
    "description": "The value sensed or actuated by this Resource"
  },
  "n": {
    "description": "Friendly name of the resource",
    "maxLength": 64,
    "readOnly": true,
    "type": "string"
  },
  "range": {
    "description": "The valid range for the value Property",
    "items": {
      "anyOf": [
    
```
6.114.5 Property definition

Table 231 defines the Properties that are part of the ['oic.r.pulserate'] Resource Type

Table 231 – The Property definitions of the Resource with type 'rt' = ['oic.r.pulserate']

<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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</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>precision</td>
<td>number</td>
<td>No</td>
<td><strong>Read Only</strong></td>
<td>Accuracy granularity of the exposed value</td>
</tr>
<tr>
<td>-----------</td>
<td>--------</td>
<td>----</td>
<td>---------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td><strong>Read Only</strong></td>
<td>The valid range for the value Property</td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>No</td>
<td><strong>Read Only</strong></td>
<td>Resource Type</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td><strong>Read Only</strong></td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>pulserate</td>
<td>integer</td>
<td>Yes</td>
<td><strong>Read Only</strong></td>
<td>Pulse rate in bpm.</td>
</tr>
<tr>
<td>value</td>
<td>multiple types: see schema</td>
<td>No</td>
<td><strong>Read Write</strong></td>
<td>The value sensed or actuated by this Resource</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td><strong>Read Only</strong></td>
<td>Step value across the defined range</td>
</tr>
</tbody>
</table>

6.114.6 CRUDN behaviour

Table 232 defines the CRUDN operations that are supported on the [oic.r.pulserate] Resource Type

Table 232 – The CRUDN operations of the Resource with type 'rt' = [oic.r.pulserate]

<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>

6.115 Sensor Properties

6.115.1 Introduction

This resource describes the properties which guide the reporting of a state change of a Sensor. The silenttime represents the period after which a state change report was sent where the Sensor state change is not reported. The 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 range from the baseresource is only applied to the sensitivity.

Ggets current Sensor Property values

6.115.2 Example URI

/SensorPropsResURI

6.115.3 Resource type

The resource type (rt) is defined as: [oic.r.sensor.props].

6.115.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Sensor Properties",
    "version": "v1.1.0-20180115",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  }
}
```
"description": "This resource describes the properties which guide the reporting of a state change of a Sensor. The silenttime represents the period after which a state change report was sent where the Sensor state change is not reported. The 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 range from the baseresource is only applied to the sensitivity. Gets current Sensor Property values",
"parameters": [{$ref: "/#/parameters/interface"}]
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": ["oic.r.sensor.props"],
      "id": "unique_example_id",
      "silenttime": 10,
      "sensitivity": 20.5,
      "range": [0, 100]
    }
  }
},
"post": {
  "description": "Sets Sensor Property values",
  "parameters": [{
    "$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": {
      "id": "unique_example_id",
      "silenttime": 20,
      "sensitivity": 10.75
    }
  }
}
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"]
  }
},
"definitions": {
  "SensorProps": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "silenttime": {
        "description": "The time in seconds from the previous report that the Sensor restraints 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. Range should be specified per manufacturer device capabilities."
      },
      "precision": {
        "description": "Accuracy granularity of the exposed value",
        "readOnly": true,
        "type": "number"
      },
      "n": {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "range": {
        "description": "The valid range for the value Property",
        "items": [
          { "anyOf": [ { "type": "number" }, { "type": "integer" } ] }
        ],
        "maxItems": 2,
        "minItems": 2,
        "readOnly": true,
        "type": "array"
      },
      "step": {
        "anyOf": [ ]
      }
    }
  }
}
6.115.5 Property definition

Table 233 defines the Properties that are part of the ['oic.r.sensor.props'] 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>precision</td>
<td>number</td>
<td>No</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>The valid range for the value Property</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</td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>--------</td>
<td>-----------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>No</td>
<td>Read Only</td>
<td>Step value across the defined range</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>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>
</tbody>
</table>

### 6.115.6 CRUDN behaviour

Table 234 defines the CRUDN operations that are supported on the ['oic.r.sensor.props'] 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>

### 6.116 User ID

#### 6.116.1 Introduction

This resource describes the properties associated with user ID of an OCF client.

- The userid Property is a single value whose type is one of string, number or integer.
- The userid Property is a read-only value that is provided by the server.
- Retrieves User ID of an object.

#### 6.116.2 Example URI

`/UserIDResURI`

#### 6.116.3 Resource type

The resource type (rt) is defined as: ['oic.r.userid'].

#### 6.116.4 OpenAPI 2.0 definition

```json
{
    "swagger": "2.0",
    "info": {
        "title": "User ID",
        "version": "v1.1.0-20160519",
        "license": {}
    },
    "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
}
```
"x-description": "Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

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`]},

"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.\nThe userid Property is a single value whose type is one of string, number or integer.\nThe userid Property is a read-only value that is provided by the server.\nRetrieves User ID of an object.\n",
      "parameters": [
        {"$ref": "/#parameters/interface"}
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": ["oic.r.userid"],
            "id": "unique_example_id",
            "userid": "USER1"
          }
        }
      }
    }
  }
},

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

"definitions": {
  "UserID" : {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "userid" : {
        "description": "ID of a patient/user of healthcare devices",
        "readOnly": true,
        "type": "string"
      }
    }
  }
}`
6.116.5 Property definition

Table 235 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>id</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</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>n</td>
<td>string</td>
<td>No</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
</tr>
</tbody>
</table>

6.116.6 CRUDN behaviour

Table 236 defines the CRUDN operations that are supported on the ['oic.r.userid'] Resource Type
Table 236 – The CRUDN operations of the Resource with type 'rt' = ['oic.r.userid']

<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>

6.117 Base Resource Schema

6.117.1 Introduction

This is the base resource schema on which all other resources defined in this specification build. value is the sensed or actuated value of the Resource. precision is the accuracy granularity of the value. range is the range over which value is valid. step is the step function over the defined range if applicable (e.g. always step by '2'). retrieves the state of the resource.

6.117.2 Example URI

/BaseResourceSchemaResURI

6.117.3 Resource type

The resource type (rt) is defined as: ['oic.baseresource'].

6.117.4 OpenAPI 2.0 definition

```json
{
  "swagger": "2.0",
  "info": {
    "title": "Base Resource Schema",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved."
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BaseResourceSchemaResURI": {
      "get": {
        "description": "This is the base resource schema on which all other resources defined in this specification build. value is the sensed or actuated value of the Resource. precision is the accuracy granularity of the value. range is the range over which value is valid. step is the step function over the defined range if applicable (e.g. always step by '2'). retrieves the state of the resource.",
        "parameters": [
          {"$ref": "#/parameters/interface-baseline"}
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": ["oic.baseresource"],
              "if": ["oic.if.baseline"],
              "id": "unique_example_id"
            }
          }
        }
      }
    }
  }
}
```
"value": 10.5,
"precision": 0.5,
"range": [0.0, 100.0]
}

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


$post": {
  "description": "sets the read-write resource properties",
  "parameters": [
    {
      "$ref": "#/parameters/interface-a",
      "name": "body",
      "in": "body",
      "required": true,
      "schema": {
        "$ref": "#/definitions/base"
      },
      "x-example": {
        "value": 20.5
      }
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "value": 20.5
      }
    }
  }

"parameters": {
  "interface-a": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a"]
  },
  "interface-baseline": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.baseline"]
  }
},
"definitions": {
  "base": {
    "properties": {
      "id": {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "if": {
        "description": "The interface set supported by this resource",
        "items": {
          "enum": ["oic.if.baseline", "oic.if.ll", "oic.if.b", "oic.if.lb", "oic.if.rw", "oic.if.r"]
        }
      }
    }
  }
}
"n": {
  "description": "Friendly name of the resource",
  "maxLength": 64,
  "readOnly": true,
  "type": "string"
},
"precision": {
  "description": "Accuracy granularity of the exposed value",
  "readOnly": true,
  "type": "number"
},
"range": {
  "description": "The valid range for the value Property",
  "items": {
    "anyOf": [
      { "type": "number" },
      { "type": "integer" }
    ]
  },
  "maxItems": 2,
  "minItems": 2,
  "readOnly": true,
  "type": "array"
},
"rt": {
  "description": "Resource Type",
  "items": {
    "maxLength": 64,
    "type": "string"
  },
  "minItems": 1,
  "readOnly": true,
  "type": "array"
},
"step": {
  "anyOf": [
    { "type": "integer" },
    { "type": "number" }
  ],
  "description": "Step value across the defined range",
  "readOnly": true
},
"value": {
  "anyOf": [
    { "type": "array" },
    { "type": "string" },
    { "type": "boolean" },
    { "type": "integer" }
  ]
}
6.117.5 Property definition
Table 237 defines the Properties that are part of the ['oic.baseresource'] Resource Type

Table 237 – The Property definitions of the Resource with type 'rt' = ['oic.baseresource']

<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>value</td>
<td>multiple types: see schema</td>
<td>Read Write</td>
<td>The value sensed or actuated by this Resource</td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>string</td>
<td>Read Only</td>
<td>Friendly name of the resource</td>
<td></td>
</tr>
<tr>
<td>step</td>
<td>multiple types: see schema</td>
<td>Read Only</td>
<td>Step value across the defined range</td>
<td></td>
</tr>
<tr>
<td>range</td>
<td>array: see schema</td>
<td>Read Only</td>
<td>The valid range for the value Property</td>
<td></td>
</tr>
<tr>
<td>if</td>
<td>array: see schema</td>
<td>Read Only</td>
<td>The interface set supported by this resource</td>
<td></td>
</tr>
<tr>
<td>rt</td>
<td>array: see schema</td>
<td>Read Only</td>
<td>Resource Type</td>
<td></td>
</tr>
<tr>
<td>precision</td>
<td>number</td>
<td>Read Only</td>
<td>Accuracy granularity of the exposed value</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>string</td>
<td>Read Only</td>
<td>Instance ID of this specific resource</td>
<td></td>
</tr>
</tbody>
</table>

6.117.6 CRUDN behaviour
Table 238 defines the CRUDN operations that are supported on the ['oic.baseresource'] Resource Type

Table 238 – The CRUDN operations of the Resource with type 'rt' = ['oic.baseresource']

<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>