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Part 4: Resource type specification

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

Partie 4: Spécification des types de ressources

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Foreword

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

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

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

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

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

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

This second edition cancels and replaces the first edition (ISO/IEC 30118-4:2018), which has been technically revised.

The main changes compared to the previous edition are as follows:

— renaming of smarthome to generic applicable resource specification;

— addition of various new resources;

— addition of clarifications throughout.

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

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

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Introduction

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

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

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

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

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

- Core framework
  - Part 1: Core Specification
  - Part 2: Security Specification
  - Part 13: Onboarding Tool Specification
- Bridging framework and bridges
  - Part 3: Bridging Specification
  - Part 6: Resource to Alljoyn Interface Mapping Specification
  - Part 8: OCF Resource to oneM2M Resource Mapping Specification
  - Part 14: OCF Resource to BLE Mapping Specification
  - Part 15: OCF Resource to EnOcean Mapping Specification
  - Part 16: OCF Resource to UPlus Mapping Specification
  - Part 17: OCF Resource to Zigbee Cluster Mapping Specification
  - Part 18: OCF Resource to Z-Wave Mapping Specification
- Resource and Device models
  - Part 4: Resource Type Specification
  - Part 5: Device Specification

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

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Information technology — Open Connectivity Foundation (OCF) Specification —

Part 4:
Resource type specification

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1 Scope

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

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

This document is built on top of ISO/IEC 30118-1. ISO/IEC 30118-1 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.

ISO/IEC 30118-1 *Information technology -- Open Connectivity Foundation (OCF) Specification -- Part 1: Core specification*
https://www.iso.org/standard/53238.html

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 and the following apply.

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

– ISO Online browsing platform: available at https://www.iso.org/obp

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

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3.1 Terms and definitions

3.1.1
actuator
Resource with support of the UPDATE operation

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

3.1.3
sensor
Resource without support of the UPDATE operation

3.2 Symbols and abbreviated terms

CRUDN Create Retrieve Update Delete Notify

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.

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

4.2 Notation

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

Required (or shall or mandatory).

> These basic features shall be implemented to comply with 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.

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DEPRECATED

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

Conditionally allowed (CA)

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

Conditionally required (CR)

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

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

Words that are emphasized are printed in *italic*.

5 Baseline model constructs

5.1 URI

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

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

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

5.2 OCF Interfaces

5.2.1 Introduction

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

The difference between using sensor/actuator and read/write OCF 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 OCF 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.

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5.2.2 Restricting OCF 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 OCF Interfaces accordingly.

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

When the resource is defined with the OCF Interface "oic.if.rw", and the UPDATE operation is removed then the OCF 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. ISO/IEC 30118-1 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 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 ISO/IEC 30118-1.

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[1]

Resource	Create	Retrieve	Update	Delete	Notify
/example	post	get	post	delete	N/A

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

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

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5.4 Property definition

5.4.1 Common Properties

ISO/IEC 30118-1 specifies a number of Properties that may be defined for 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 defined “/oic/res/” Resource Type through which the 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 a 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 defined baseline OCF Interface ("oic.if.baseline") by specifying this in a query parameter.

Table 2 – Common Properties for Resources

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

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5.4.2 Resource Properties

5.4.2.1 Introduction

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

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

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

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Table 3 – Property definitions of a basic Resource Type

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

For Resources, which by their nature have more than one physical parameter, the value Property can be replaced with multiple Properties specifying the different physical parameters, or with further structures such as arrays of Properties, objects, or Collections. The type of the value shall be indicated in the OpenAPI Specification 2.0 definition of the Resource Type and should be suitable for the conveyed value. All Property Names and Property Values defined in this document are case sensitive.

5.4.2.2 "range" Property

The "range" defines the valid range for the Property in the Resource as a two element array. This is either an integer or a number range. The first value in the array is the minimum value, the second value in the array is the maximum value.

5.4.2.3 "step" Property

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

5.4.2.4 "precision" Property

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

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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 4 – Return codes behaviour in OpenAPI specification 2.0

Response Code	Meaning
200	Payload of the response will confirm the change. The OpenAPI Specification 2.0 definition will contain a schema to define the payload.
201	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.
204	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 a Server.
403	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).

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5.5 Example Resource definitions

Please see the 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 defines a mechanism by which Resources can advertise themselves as “Observable” to a 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.

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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 5 – Conditional Notification Properties

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

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”

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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 “minnotofyperiod” 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

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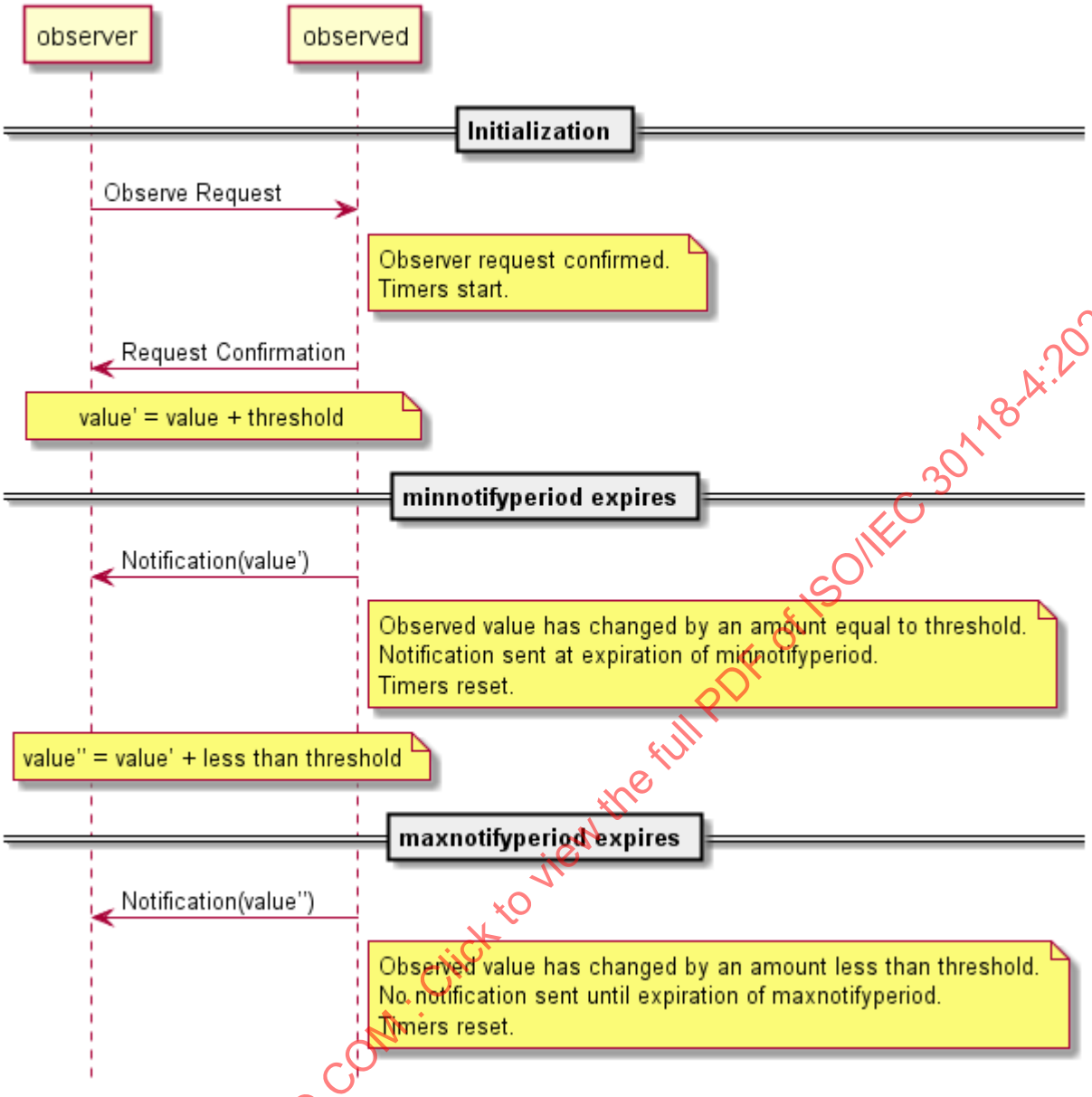


Figure 2 – Conditional Notification example flow

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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 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 defined oic.if.b interface.

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

Figure 3 – Composite Resource example

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5.8 Document version

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

5.9 Data types

This document adopts the types defined in ISO/IEC 30118-1 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. See ISO/IEC 30118-1 clause 12.4 for specifics.

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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 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

Friendly Name (informative)	Resource Type (rt)	Clause
3D Printer	oic.r.printer.3d	6.88
Acceleration Sensor	oic.r.sensor.acceleration	6.56
Activity	oic.r.activity	6.127
Activity Count	oic.r.sensor.activity.count	6.24
Activity Tracker Atomic Measurement	oic.r.activitytracker-am	6.128
Air Flow	oic.r.airflow	6.2
Air Flow Control	oic.r.airflowcontrol	6.3
Air Quality	oic.r.airquality	6.66
Air Quality Collection	oic.r.airqualitycollection	6.67
Alarm	oic.r.alarm	6.129
Altimeter	oic.r.altimeter	6.61
Atmospheric Pressure	oic.r.sensor.atmosphericpressure	6.25
Audio Controls	oic.r.audio	6.26
Auto Focus	oic.r.autofocus	6.27
Automatic Document Feeder	oic.r.automaticdocumentfeeder	6.28
Auto White Balance	oic.r.colour.autowhitebalance	6.32
Battery	oic.r.energy.battery	6.4
Battery Material	oic.r.batterymaterial	6.79
Body Composition Analyser Atomic Measurement	oic.r.bodycompositionanalyser-am	6.155
Binary switch	oic.r.switch.binary	6.5
Blood Pressure	oic.r.blood.pressure	6.89
Blood Pressure Monitor Atomic Measurement	oic.r.bloodpressuremonitor-am	6.90
BMI	oic.r.bmi	6.91
Body Fat	oic.r.body.fat	6.92
Body Fat Free Mass	oic.r.body.ffm	6.93
Body Location Temperature	oic.r.body.location.temperature	6.94
Body Scale Atomic Measurement	oic.r.body.scale-am	6.95
Body Soft Lean Mass	oic.r.body.slm	6.96
Body Thermometer Atomic Measurement	oic.r.bodythermometer-am	6.97

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Friendly Name (informative)	Resource Type (rt)	Clause
Body Water	oic.r.body.water	6.98
Brewing	oic.r.brewing	6.80
Brightness	oic.r.light.brightness	6.6
Button Switch	oic.r.button	6.29
Cadence	oic.r.cadence	6.144
Calibrate for Continuous Glucose Meter (CGM)	oic.r.cgm.calibrate	6.131
Calorific Value	oic.r.calorificvalue	6.116
Carbon Dioxide Sensor	oic.r.sensor.carbondioxide	6.30
Carbon Monoxide Sensor	oic.r.sensor.carbonmonoxide	6.31
Circuit Breaker (IEC 61850)	oic.r.circuitbreaker	6.145
Clock	oic.r.clock	6.62
Colour Chroma	oic.r.colour.chroma	6.7
Colour Hue Saturation	oic.r.colour.hs	6.78
Colour RGB	oic.r.colour.rgb	6.8
Colour Saturation	oic.r.colour.saturation	6.33
Colour Space Coordinates	oic.r.colour.csc	6.76
Colour Temperature	oic.r.colour.colourtemperature	6.77
Consumable	oic.r.consumable	6.68
Consumable Collection	oic.r.consumablecollection	6.69
Contact Sensor	oic.r.sensor.contact	6.34
Continuous Glucose Meter (CGM) Atomic Measurement	oic.r.cgm-am	6.130
Conversion Factor	oic.r.conversionfactor	6.117
Cycling Power	oic.r.cyclingpower	6.146
Delay Defrost	oic.r.delaydefrost	6.70
Demand Response Load Control (DRLC)	oic.r.energy.drlc	6.35
Deodorization	oic.r.deodorization	6.152
Device Settings - Accessibility	oic.r.settings.accessibility	6.164
Device Settings - Broadcasting	oic.r.settings.broadcasting	6.165
Device Settings - Picture	oic.r.settings.picture	6.166
Device Settings - Sound	oic.r.settings.sound	6.167
Device Settings - Support	oic.r.settings.support	6.168
Device Settings - System	oic.r.settings.system	6.169
Dimming	oic.r.light.dimming	6.9
Door	oic.r.door	6.10
Ecomode	oic.r.ecomode	6.71
Electric Vehicle Connector	oic.r.vehicle.connector	6.86
Electrical Energy	oic.r.energy.electrical	6.81
Energy Consumption	oic.r.energy.consumption	6.11
Energy Generation	oic.r.energy.generation	6.82
Energy Overload/Circuit Breaker	oic.r.energy.overload	6.36
Energy Usage	oic.r.energy.usage	6.12

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Friendly Name (informative)	Resource Type (rt)	Clause
Gas Consumption	oic.r.gas.consumption	6.118
Gas Usage	oic.r.gas.usage	6.119
Fault Interrupter Switch	oic.r.switch.fault	6.156
Foaming	oic.r.foaming	6.83
Generic Sensor	oic.r.sensor	6.37
Geolocation Sensor	oic.r.sensor.geolocation	6.63
Glass Break Sensor	oic.r.sensor.glassbreak	6.38
Glucose	oic.r.glucose	6.99
Glucose Meter Complex Carbohydrates	oic.r.glucose.carb	6.100
Glucose Meter Exercise	oic.r.glucose.exercise	6.101
Glucose Meter HbA1c	oic.r.glucose.hba1c	6.102
Glucose Meter Context Health	oic.r.glucose.health	6.103
Glucose Meter Context Meal	oic.r.glucose.meal	6.104
Glucose Meter Context Medication	oic.r.glucose.medication	6.105
Glucose Meter Atomic Measurement	oic.r.glucosemeter-am	6.106
Glucose Meter Context Sample Location	oic.r.glucose.samplelocation	6.107
Glucose Meter Context Tester	oic.r.glucose.tester	6.108
Grinder	oic.r.grinder	6.84
HVAC Capacity	Oic.r.hvac.capacity	6.157
Heart Rate	oic.r.heartrate	6.136
Heart Rate Monitor Atomic Measurement Representation	oic.r.heartratemonitor-am	6.137
Heart Rate Zone Sensor	oic.r.sensor.heart.zone	6.39
Heating Zone	oic.r.heatingzone	6.72
Heating Zone Collection	oic.r.heatingzonecollection	6.73
Height	oic.r.height	6.64
Humidity	oic.r.humidity	6.13
IAS Zone Info	oic.r.iaszoneinfo	6.124
IAS Zone Collection	oic.r.iaszone	6.125
Icemaker	oic.r.icemaker	6.14
Illuminance Sensor	oic.r.sensor.illuminance	6.40
Impact Sensor	oic.r.impactsensor	6.120
Inverter (IEC 61850)	oic.r.inverter	6.147
KeyCard Switch	oic.r.keycardswitch	6.153
Keypad Character	oic.r.keypadchar	6.121
Liquid Level	oic.r.liquid.level	6.85
Lock	oic.r.lock.status	6.15
Lock Code	oic.r.lock.code	6.16
Magnetic Field Direction	oic.r.sensor.magneticfielddirection	6.41
Media	oic.r.media	6.42
Media Audio	oic.r.media.audio	6.158
Media Core	oic.r.media.core	6.159

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Friendly Name (informative)	Resource Type (rt)	Clause
Media Image	oic.r.media.image	6.160
Media Source	oic.r.mediasource	6.43
Media Source List	oic.r.mediasourcelist	6.44
Media Source Input	oic.r.media.input	6.45
Media Source Output	oic.r.media.output	6.46
Media Text	oic.r.media.text	6.161
Media Video	oic.r.media.video	6.162
Mode	oic.r.mode	6.17
Movement	oic.r.movement.linear	6.57
Motion Sensor	oic.r.sensor.motion	6.47
Muscle Oxygen Saturation	oic.r.muscleoxygensaturation	6.154
Night Mode	oic.r.nightmode	6.48
Opaque Data	oic.r.opaquedata	6.122
Open Level	oic.r.openlevel	6.18
Operational State	oic.r.operational.state	6.19
Optical RFID Station	oic.r.orfid.station	6.109
Optical RFID Tag	oic.r.orfid.tag	6.110
Pan Tilt Zoom Movement	oic.r.ptz	6.50
Power Source	oic.r.powersource	6.111
Presence Sensor	oic.r.sensor.presence	6.49
Print Queue	oic.r.printer.queue	6.112
Pulsatile Characteristic for Pulse Oximeter	oic.r.pulsatilecharacteristic	6.138
Pulsatile Occurrence for Pulse Oximeter	oic.r.pulsatileoccurrence	6.139
Pulse Oximeter Atomic Measurement Representation	oic.r.pulseoximeter-am	6.140
Pulse Rate	oic.r.pulserate	6.113
PV array system connection terminal (IEC 61850)	oic.r pvconnectionterminal	6.148
Ramp Time	oic.r.light.ramptime	6.20
Refrigeration	oic.r.refrigeration	6.21
Restricted Switch	oic.r.switch.restricted	6.163
Sampling Interface for Continuous Glucose Meter (CGM)	oic.r.cgm.samplinginterval	6.132
Selectable Levels	oic.r.selectablelevels	6.74
Sensor for Continuous Glucose Meter (CGM)	oic.r.cgm.sensor	6.133
Sensor Properties	oic.r.sensor.props	6.114
Signal Strength	oic.r.signalstrength	6.51
Sleep	oic.r.sleep	6.141
Sleep Monitor Atomic Measurement Batch Representation	oic.r.sleepmonitor-am	6.142
Sleep Sensor	oic.r.sensor.sleep	6.58
Smoke Sensor	oic.r.sensor.smoke	6.59
Speech Synthesis	oic.r.speech.tts	6.52

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Friendly Name (informative)	Resource Type (rt)	Clause
Speed	oic.r.speed	6.149
SpO2 for Pulse Oximeter	oic.r.spo2	6.143
Status for Continuous Glucose Meter (CGM)	oic.r.cgm.status	6.134
Temperature	oic.r.temperature	6.22
Three Axis Sensor	oic.r.sensor.threeaxis	6.60
Threshold for Continuous Glucose Meter (CGM)	oic.r.cgm.threshold	6.135
Time Period	oic.r.time.period	6.23
Time Stamp	oic.r.time.stamp	6.87
Torque	oic.r.torque	6.150
Touch Sensor	oic.r.sensor.touch	6.53
UV Radiation	oic.r.sensor.radiation.uv	6.54
User ID	oic.r.userid	6.115
User Info for Application Layer	oic.r.userinfo	6.123
Value Conditional	oic.r.value.conditional	6.75
Water Info	oic.r.waterinfo	6.151
Water Sensor	oic.r.sensor.water	6.55
Weight	oic.r.weight	6.65
Window Covering	oic.r.windowcovering	6.126

6.2 Air Flow

6.2.1 Introduction

This Resource describes Properties associated with air flow.

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

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

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

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

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

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

6.2.2 Example URI

/AirFlowResURI

6.2.3 Resource type

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

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6.2.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Air Flow",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AirFlowResURI" : {
      "get": {
        "description": "This Resource describes Properties associated with air flow.\nThe Property
\"supporteddirections\" is the set of valid values for the direction property for a particular instance
of this Resource Type.\nThe Property \"direction\" is the directionality of the air flow if applicable,
if Property \"supporteddirections\" is also present it must be a value from that set.\n The values of
Property \"direction\" are dependent on the capabilities of the unit.\nThe Property \"speed\" is an
integer representing the current speed level for the unit.\nThe Property \"range\" is an array of the
min,max values for the speed level. If not present the \"range\" defaults to [0,100].\n Property
\"automode\" is the status of the automode feature; Off means automode is not enabled, On means
automode is active and the speed is automatically controlled by the Device.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.airflow"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "supporteddirections": ["left", "right", "centre"],
                  "direction": "left",
                  "speed": 5,
                  "range": [1, 7],
                  "automode": "Off"
                },
              "schema": { "$ref": "#/definitions/AirFlow" }
            }
        }
      },
      "post": {
        "description": "When \"automode\" is set to true, \"direction\" and \"speed\" are not utilized
by the device.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/AirFlow" },
            "x-example":
              {
                "direction": "right",
                "speed": 3
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "direction": "right",
                  "speed": 3
                },
```


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```
              "schema": {"$ref": "#/definitions/AirFlow" }
            },
            "403": {
              "description": "This response is generated by the OCF Server when the client sends:\n  An
UPDATE with an invalid Property value for direction.\n  An UPDATE with an out of range property value
for speed.\nThe server may respond with the current resource representation.\n",
              "x-example":
                {
                  "supporteddirections": ["left", "right", "centre"],
                  "direction": "right",
                  "speed": 3
                },
              "schema": { "$ref": "#/definitions/AirFlow" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AirFlow" : {
      "properties": {
        "rt" : {
          "description": "The Resource Type",
          "items": {
              "enum": ["oic.r.airflow"],
              "maxLength": 64,
              "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "speed" : {
          "description": "The current speed level.",
          "type": "integer"
        },
        "direction" : {
          "description": "The directionality of the air flow, a value indicated by
\"supporteddirections\".",
          "type": "string"
        },
        "automode" : {
          "description": "The status of the automode feature, if on speed is set by the Device.",
          "enum": [
            "On",
            "Off"
          ],
          "type": "string"
        },
        "supporteddirections" : {
          "description": "The array of possible direction settings for this instance of the Resource
Type.",
          "items": {
            "minItems": 1,
            "type": "string",
            "uniqueItems": true
          },
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
```


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```
schema.json#/definitions/id"
        },
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["speed"]
    }
  }
}
```

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"

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

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6.2.6 CRUDN behaviour

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

Table 8 – The CRUDN operations of the Resource with type "rt" = "oic.r.airflow"

Create	Read	Update	Delete	Notify
	get	post		observe

6.3 Air Flow Control

6.3.1 Introduction

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

The Resource is a Collection of:
AirFlow Resource
BinarySwitch Resource

6.3.2 Example URI

/AirFlowControlResURI

6.3.3 Resource type

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

6.3.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Air Flow Control",
    "version": "20190307",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AirFlowControlResURI?if=oic.if.ll" : {
      "get": {
        "description": "This Resource describes the attributes associated with control of air
flow,\nfor example as modelled by a Thermostat (fan), Room A/C or other device.\nThe Resource is a
Collection of:\n  AirFlow Resource\n  BinarySwitch Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": [
              {"href": "/BinarySwitchResURI", "rt":["oic.r.switch.binary"],
"if":["oic.if.a","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
              {"href": "/AirFlowResURI", "rt":["oic.r.airflow"], "if":["oic.if.a","oic.if.baseline"],
```

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```
"eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
            ],
            "schema": { "$ref": "#/definitions/AirFlowControl-ll" }
          }
        }
      }
    },
    "/AirFlowControlResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the attributes associated with control of air
flow,\nfor example as modelled by a Thermostat (fan), Room A/C or other device.\nThe Resource is a
Collection of:\n  AirFlow Resource\n  BinarySwitch Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":  [
              {
                "href": "/BinarySwitchResURI",
                "rep": {
                  "value": true
                }
              },
              {
                "href": "/AirFlowResURI",
                "rep": {
                  "supporteddirections": ["left","right","centre"],
                  "direction":  "right",
                  "speed":      3,
                  "range":      [1,7],
                  "automode":   "Off"
                }
              }
            ],
            "schema": { "$ref": "#/definitions/AirFlowControlBatch-Retrieve" }
          }
        }
      },
      "post": {
        "description": "Sets the current air flow control values using the batch OCF Interface\n",
        "parameters": [
          {"$ref": "#/parameters/interface-b"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/AirFlowControlBatch-Update" },
            "x-example": [
              {
                "href": "/AirFlowResURI",
                "rep": {
                  "direction": "left",
                  "speed":     4
                }
              }
            ]
          }
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": [
              {
                "href": "/BinarySwitchResURI",
                "rep": {
                  "value": true
                }
              },
              {
                "href": "/AirFlowResURI",
                "rep": {
                  "supporteddirections": ["left","right","centre"],
                  "direction":  "left",
                  "speed":      4,
                  "range":      [1,7],
```


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```
                  "automode":   "Off"
                }
              }
            ],
            "schema": { "$ref": "#/definitions/AirFlowControlBatch-Retrieve" }
          }
        }
      }
    },
    "/AirFlowControlResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This Resource describes the attributes associated with control of air
flow,\nfor example as modelled by a Thermostat (fan), Room A/C or other device.\nThe Resource is a
Collection of:\n  AirFlow Resource\n  BinarySwitch Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":  {
              "rt":   ["oic.r.airflowcontrol"],
              "rts":  ["oic.r.airflow","oic.r.switch.binary"],
              "if":   ["oic.if.ll","oic.if.b","oic.if.baseline"],
              "links":[
                {"href": "/BinarySwitchResURI", "rt":["oic.r.switch.binary"],
"if":["oic.if.a","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/AirFlowResURI", "rt":["oic.r.airflow"], "if":["oic.if.a","oic.if.baseline"],
"eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
              ]
            },
            "schema": { "$ref": "#/definitions/AirFlowControl-baseline" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface-b" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.b"]
    },
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AirFlowControl-ll" : {
      "type": "array",
      "minItems": 2,
      "uniqueItems": true,
      "readOnly": true,
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      }
    },
    "oic.oic-link": {
      "type": "object",
      "properties": {
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
```


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```
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        },
        "if": {
          "description": "The OCF Interfaces supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "type": "array",
          "readOnly": true
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.switch.binary","oic.r.airflow"]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ]
    },
    "AirFlowControl-baseline" : {
      "properties": {
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "rt": {
          "description": "Resource Type of this Resource",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.airflowcontrol"]
          },
          "minItems": 1,
```


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```
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rts": {
          "items": {
            "type": "string",
            "enum": ["oic.r.airflow","oic.r.switch.binary"],
            "maxLength": 64
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        },
        "if": {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "links": {
          "description": "A set of simple or individual OCF Links.",
          "items": {
            "$ref": "#/definitions/oic.oic-link"
          },
          "type": "array",
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true
        }
      },
      "type" : "object",
      "required": ["rt","rts","if","links"]
    },
    "AirFlowControlBatch-Retrieve" : {
      "type": "array",
      "minItems": 2,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "anyOf": [
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/AirFlowResURI.swagger.json#/definitions/Air
Flow"},
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BinarySwitchResURI.swagger.json#/definition
s/BinarySwitch"}
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ]
      }
    },
    "AirFlowControlBatch-Update" : {
      "type": "array",
```


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```
      "minItems": 1,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "anyOf": [
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/AirFlowResURI.swagger.json#/definitions/Air
Flow"},
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BinarySwitchResURI.swagger.json#/definition
s/BinarySwitch"}
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ]
      }
    }
  }
}
```

6.3.5 Property definition

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

Table 9 – The Property definitions of the Resource with type "rt" = "oic.r.airflowcontrol"

Property name	Value type	Mandatory	Access mode	Description
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interfaces supported by the target Resource
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
n	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
id	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	Resource Type of this Resource
rts	array: see schema	Yes	Read Only	
if	array: see schema	Yes	Read Only	The OCF Interfaces supported by this Resource
links	array: see schema	Yes	Read Only	A set of simple or individual OCF Links.
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	

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"

Create	Read	Update	Delete	Notify
	get			observe

6.4 Battery

6.4.1 Introduction

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

6.4.2 Example URI

/BatteryResURI

6.4.3 Resource type

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

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6.4.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Battery",
    "version": "20190618",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BatteryResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with a battery. The Property
\"charge\" is an integer showing the current battery charge level as a percentage in the range 0 (fully
discharged) to 100 (fully charged). The Property \"capacity\" represents the total capacity of battery
in Amp Hours (Ah). The \"charging\" status and \"discharging\" status are represented by boolean values
set to \"true\" indicating enabled and \"false\" indicating disabled. Low battery status is represented
by a boolean value set to \"true\" indicating low charge level and \"false\" indicating otherwise,
based upon the battery threshold represented as a percentage.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
            {
              "rt": ["oic.r.energy.battery"],
              "if": ["oic.if.rw", "oic.if.baseline"],
              "charge": 50,
              "capacity": 3000,
              "charging": true,
              "discharging": false,
              "lowbattery": false,
              "batterythreshold": 20,
              "defect": false,
              "timestamp": "2015-11-05T14:30:00.20Z"
            },
            "schema": { "$ref": "#/definitions/Battery" }
          }
        }
      },
      "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":
            {
              "batterythreshold": 20
            },
            "schema": { "$ref": "#/definitions/BatteryUpdate" }
          }
        }
```


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


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```
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.rw",
                "oic.if.baseline"
              ],
              "type": "string"
            },
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type" : "object",
        "required": ["charge"]
      },
      "BatteryUpdate": {
        "properties": {
          "batterythreshold": {
            "description": "The threshold percentage for the low battery warning.",
            "maximum": 100,
            "minimum": 0,
            "type": "integer"
          }
        },
        "type" : "object",
        "required": ["batterythreshold"]
      }
    }
}
```

6.4.5 Property definition

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

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
discharging	boolean	No	Read Only	The status of discharging.
lowbattery	boolean	No	Read Only	The status of the low battery warning based upon the defined threshold.
capacity	number	No	Read Only	The total capacity in Amp-hours (Ah).
batterythreshold	integer	No	Read Write	The threshold percentage for the low battery warning.
charge	integer	Yes	Read Only	The current charge percentage.
charging	boolean	No	Read Only	The status of charging.
defect	boolean	No	Read Only	Battery defect detected. True = defect, False = no defect

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Property name	Value type	Mandatory	Access mode	Description
timestamp	string	No	Read Only	An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Note that 1/100 time resolution should be used.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
batterythreshold	integer	Yes	Read Write	The threshold percentage for the low battery warning.

6.4.6 CRUDN behaviour

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

Table 12 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.battery"

Create	Read	Update	Delete	Notify
	get	post		observe

6.5 Binary Switch

6.5.1 Introduction

This Resource describes a binary switch (on/off).
The Property "value" is a boolean.
A value of 'true' means that the switch is on.
A value of 'false' means that the switch is off.

6.5.2 Example URI

/BinarySwitchResURI

6.5.3 Resource type

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

6.5.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Binary Switch",
    "version": "20190222",
    "license": {
        "name": "OCF Data Model License",
```

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```
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BinarySwitchResURI" : {
      "get": {
        "description": "This Resource describes a binary switch (on/off).\nThe Property \"value\" is a
boolean.\nA value of 'true' means that the switch is on.\nA value of 'false' means that the switch is
off.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.switch.binary"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "value": false
                },
              "schema": { "$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":
                {
                  "value": true
                },
              "schema": { "$ref": "#/definitions/BinarySwitch" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "BinarySwitch" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.switch.binary"],
            "maxLength": 64,
            "type": "string"
```


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```
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The status of the switch.",
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```


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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Write	The status of the switch.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.5.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get	post		observe

6.6 Brightness

6.6.1 Introduction

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

6.6.2 Example URI

/BrightnessResURI

6.6.3 Resource type

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

6.6.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Brightness",
    "version": "20190222",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BrightnessResURI" : {
      "get": {
        "description": "This Resource describes the brightness of a light or lamp.\nThe Property
\"brightness\" is an integer showing the current brightness level as a quantized representation in the
range 0-100.\nA brightness of 0 is the minimum for the resource.\nA brightness of 100 is the maximum
for the resource.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.light.brightness"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "brightness": 50
                },
              "schema": { "$ref": "#/definitions/Brightness" }
            }
        }
      },
      "post": {
```

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```
        "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":
                {
                  "brightness": 10
                },
              "schema": { "$ref": "#/definitions/Brightness" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Brightness" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.light.brightness"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "brightness": {
          "description": "The Quantized representation in the range 0-100 of the current sensed or set
value for Brightness.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
```


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```
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": ["brightness"]
      }
    }
}
```

6.6.5 Property definition

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

Table 15 – The Property definitions of the Resource with type "rt" = "oic.r.light.brightness"

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

6.6.6 CRUDN behaviour

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

Table 16 – The CRUDN operations of the Resource with type "rt" = "oic.r.light.brightness"

Create	Read	Update	Delete	Notify
	get	post		observe

6.7 Colour Chroma

6.7.1 Introduction

This Resource describes the colour using chroma conventions.
Properties are "hue", "saturation", "csc", and "ct".
The Property "hue" is the hue angle, it is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).
The Property "saturation" is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).
The Property "maximumsaturation" is the upper bound on the saturation supported by the Device. If not present the maximum value for "saturation" is 32767.

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The Property "csc" is the colour space coordinates in CIE colour space.
  The first item in the array is the X coordinate.
  The second item in the array is the Y coordinate.
The Property "nct" is the Mired colour temperature.
The Resource provides the colour using chroma conventions.

6.7.2 Example URI

/example/ColourChromaResURI

6.7.3 Resource type

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

6.7.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Chroma",
    "version": "20190215",
     "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/example/ColourChromaResURI" : {
      "get": {
        "description": "This Resource describes the colour using chroma conventions.\nProperties are
\"hue\", \"saturation\", \"csc\", and \"ct\".\nThe Property \"hue\" is the hue angle, it is an integer
value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).\nThe Property
\"saturation\" is an integer value as defined by the CIECAM02 model definition (see reference [CIE
CIE159:2004]).\nThe Property \"maximumsaturation\" is the upper bound on the saturation supported by
the Device.\nIf not present the maximum value for \"saturation\" is 32767.\nThe Property \"csc\" is the
colour space coordinates in CIE colour space.\n  The first item in the array is the X coordinate.\n
The second item in the array is the Y coordinate.\nThe Property \"nct\" is the Mired colour
temperature.\nThe Resource provides the colour using chroma conventions.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.colour.chroma"],
                  "if": [ "oic.if.a", "oic.if.baseline"],
                  "hue": 256.0,
                  "saturation": 212,
                  "maximumsaturation": 1000,
                  "csc": [0.41, 0.51],
                  "ct": 457
                },
              "schema": { "$ref": "#/definitions/ColourChroma" }
            }
        }
      },
      "post": {
        "description": "Sets current colour chroma values\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
```

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```
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ColourChroma" },
            "x-example":
              {
                "hue": 300.0,
                "saturation": 212,
                "csc": [0.41, 0.51],
                "ct": 457
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "hue": 300.0,
                  "saturation": 212,
                  "csc": [0.41, 0.51],
                  "ct": 467
                },
              "schema": { "$ref": "#/definitions/ColourChroma" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
       "ColourChroma" : {
          "properties": {
                "rt" : {
                  "description": "The Resource Type.",
                  "items": {
                    "enum": ["oic.r.colour.chroma"],
                    "maxLength": 64,
                    "type": "string"
                  },
                  "minItems": 1,
                  "uniqueItems": true,
                  "readOnly": true,
                  "type": "array"
                },
                "ct" : {
                  "description": "The Mired colour temperature.",
                  "minimum": 0,
                  "type": "integer"
                },
                "hue" : {
                  "description": "The hue angle as defined by the CIECAM02 model definition.",
                  "maximum": 360.0,
                  "minimum": 0.0,
                  "type": "number"
                },
                "saturation" : {
                  "description": "The saturation as defined by the CIECAM02 model definition.",
                  "maximum": 32767,
                  "minimum": 0,
                  "type": "integer"
                },
                "maximumsaturation" : {
                  "description": "The maximum supported value of \"saturation\" for this Device.",
                  "maximum": 32767,
                  "minimum": 0,
                  "readOnly": true,
                  "type": "integer"
                },
                "csc" :  {
```

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```
                  "description": "The X and Y coordinates of the colour in CIE colour space",
                  "items": {
                    "maximum": 1,
                    "minimum": 0,
                    "type": "number"
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "type": "array"
                },
                "n": {
                  "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
                },
                "id": {
                  "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
                },
                "if" :  {
                  "description": "The OCF Interface set supported by this Resource.",
                  "items": {
                    "enum": [
                      "oic.if.a",
                      "oic.if.baseline"
                    ],
                    "maxLength": 64,
                    "type": "string"
                  },
                  "minItems": 2,
                  "uniqueItems": true,
                  "readOnly": true,
                  "type": "array"
                }
            },
            "type" : "object",
            "required": ["hue", "saturation", "csc"]
        }
    }
}
```

6.7.5 Property definition

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

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
ct	integer	No	Read Write	The Mired colour temperature.
hue	number	Yes	Read Write	The hue angle as defined by the CIECAM02 model definition.
saturation	integer	Yes	Read Write	The saturation as defined by the CIECAM02 model definition.
maximumsaturation	integer	No	Read Only	The maximum supported value of "saturation" for this Device.

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Property name	Value type	Mandatory	Access mode	Description
csc	array: see schema	Yes	Read Write	The X and Y coordinates of the colour in CIE colour space
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.7.6 CRUDN behaviour

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

Table 18 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.chroma"

Create	Read	Update	Delete	Notify
	get	post		observe

6.8 Colour RGB

6.8.1 Introduction

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

6.8.2 Example URI

/ColourRGBResURI

6.8.3 Resource type

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

6.8.4 OpenAPI 2.0 definition

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

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```
  "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.\nEach colour value is described with a Red, Green, Blue component.\nThese colour
values are encoded as an array of integer values ([R,G,B]).\nThe minimum and maximum colour value per
component may be described by the Property \"range\".\nWhen \"range\" is omitted, then the \"range\" is
[0,255].",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.colour.rgb"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "rgbValue": [255, 255, 255],
                  "range": [0, 255]
                },
              "schema": { "$ref": "#/definitions/ColourRGB" }
            }
        }
      },
      "post": {
        "description": "Sets the current colourRGB value\n",
        "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":
                {
                  "rgbValue": [255, 0, 0]
                },
              "schema": { "$ref": "#/definitions/ColourRGB" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ColourRGB" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.colour.rgb"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```


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```
        },
        "rgbValue": {
          "description": "The RGB value; the first item is the R, second the G, third the B.",
          "items": {
            "type": "integer"
          },
          "maxItems": 3,
          "minItems": 3,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["rgbValue"]
    }
  }
}
```


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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
rgbValue	array: see schema	Yes	Read Write	The RGB value; the first item is the R, second the G, third the B.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.8.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get	post		observe

6.9 Dimming

6.9.1 Introduction

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

6.9.2 Example URI

/DimmingResURI

6.9.3 Resource type

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

6.9.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Dimming",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/DimmingResURI" : {
      "get": {
        "description": "This Resource describes a dimming function.\nThe Property \"dimmingSetting\" is
```

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```
an integer showing the current dimming level.\nIf Property \"step\" is present then it represents the
increment between dimmer values.\nWhen the Property \"range\" is omitted, then the range is [0,100].\nA
value of 0 means total dimming; a value of 100 means no dimming.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.light.dimming"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "dimmingSetting": 30,
                  "step": 5,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/Dimming" }
            }
        }
      },
      "post": {
        "description": "Sets the desired dimming level.\n",
        "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.\nThe new dimming level is
provided in the response.\n",
              "x-example":
                {
                  "dimmingSetting": 40
                },
              "schema": { "$ref": "#/definitions/Dimming" }
            },
            "403": {
              "description": "This response is generated by the OCF Server when the client sends:\n  An
update with an out of range property value for dimmingSetting.\nThe server responds with the current
resource representation.\n",
              "x-example":
                {
                  "dimmingSetting": 40
                },
              "schema": { "$ref": "#/definitions/Dimming" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Dimming" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.light.dimming"],
            "maxLength": 64,
            "type": "string"
```


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```
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "dimmingSetting": {
          "description": "The current dimming value.",
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["dimmingSetting"]
    }
  }
}
```

6.9.5 Property definition

Table 21 defines the Properties that are part of the "oic.r.light.dimming" Resource Type.

Table 21 – The Property definitions of the Resource with type "rt" = "oic.r.light.dimming"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
dimmingSetting	integer	Yes	Read Write	The current dimming value.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.9.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get	post		observe

6.10 Door

6.10.1 Introduction

This Resource describes the open state of the door.
A door is modelled by means of openState (Open/Closed), openDuration (ISO 8601 Time), and openAlarm (boolean).
For Property "openState", the value 'Open' indicates the door is open.
The value 'Closed' indicates the door is closed.
The type of Property "openDuration" is an RFC Time encoded string.
The Property "openAlarm" value 'true' indicates that the open alarm is active.
The openAlarm value 'false' indicates that open alarm is not active.
retrieves the state of the Door.

6.10.2 Example URI

/DoorResURI

6.10.3 Resource type

The ResourceType is defined as: "oic.r.door".

6.10.4 OpenAPI 2.0 definition

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

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```
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/DoorResURI" : {
      "get": {
        "description": "This Resource describes the open state of the door.\nA door is modelled by
means of openState (Open/Closed), openDuration (ISO 8601 Time), and openAlarm (boolean).\nFor Property
\"openState\", the value 'Open' indicates the door is open.\nThe value 'Closed' indicates the door is
closed.\nThe type of Property \"openDuration\" is an RFC Time encoded string.\nThe Property
\"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": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt": ["oic.r.door"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "openState": "Open",
              "openDuration": "P0Y0M0DT2H25M5S",
              "openAlarm": true
            },
            "schema": { "$ref": "#/definitions/Door" }
          }
        }
      },
      "post": {
        "description": "Sets the current Door properties.\nThe only property that can be set as part of
an update operation is\n  the openAlarm.\nThis can be made active (true) or inactive (false)\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/DoorUpdate" },
            "x-example": {
              "openAlarm":  false
            }
          }
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "openAlarm":  false
            },
            "schema": { "$ref": "#/definitions/DoorUpdate" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Door" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.door"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```


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```
        },
        "openDuration": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/duration"
        },
        "openState": {
          "description": "The state of the door (open or closed).",
          "enum": [
            "Open",
            "Closed"
          ],
          "readOnly": true,
          "type": "string"
        },
        "openAlarm": {
          "description": "The state of the door open alarm.",
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["openState"]
    },
     "DoorUpdate" : {
      "properties": {
        "openAlarm": {
          "description": "The state of the door open alarm.",
          "type": "boolean"
        }
      },
      "type": "object",
      "required": ["openAlarm"]
    }
  }
}
```

6.10.5 Property definition

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

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Table 23 – The Property definitions of the Resource with type "rt" = "oic.r.door"

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

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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.11 Energy Consumption

6.11.1 Introduction

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

6.11.2 Example URI

/EnergyConsumptionResURI

6.11.3 Resource type

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

6.11.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Consumption",
```

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```
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyConsumptionResURI" : {
      "get": {
        "description": "This Resource describes the energy consumed by the Device since power up (the
energy value is in Watt Hours [Wh]) \nand the instantaneous power draw of the device (the power value
is in Watts [W]) at the time the resource was queried.\nThe Property \"power\" value is in Watts
[W].\nThe Property \"energy\" value is in Watt Hours [Wh].\nThe Resource provides the current power
draw and cumulative energy usage.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.energy.consumption"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "power": 2000.1,
                  "energy": 3500.4
                },
              "schema": { "$ref": "#/definitions/Consumption" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Consumption" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.energy.consumption"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "power": {
          "description": "The instantaneous Power.",
          "readOnly": true,
          "type": "number"
        },
        "energy": {
          "description": "The energy consumed.",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
```


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```
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["power", "energy"]
    }
  }
}
```

6.11.5 Property definition

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

Table 25 – The Property definitions of the Resource with type "rt" = "oic.r.energy.consumption"

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

6.11.6 CRUDN behaviour

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

Table 26 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.consumption"

Create	Read	Update	Delete	Notify
	get			observe

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6.12 Energy Usage

6.12.1 Introduction

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

6.12.2 Example URI

/EnergyUsageResURI

6.12.3 Resource type

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

6.12.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Usage",
    "version": "20190307",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyUsageResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes a cumulative time-based energy usage query.\nThe
Resource is a Collection of:\n  TimePeriod Resource\n  EnergyConsumption Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              [
                {"href": "/TimePeriodResURI", "rt":["oic.r.time.period"],
"if":["oic.if.a","oic.if.baseline"], "eps":[{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/EnergyConsumptionResURI", "rt":["oic.r.energy.consumption"],
"if":["oic.if.s","oic.if.baseline"], "eps":[{"ep": "coaps://[fe80::b1d6]:1122"}]}
              ],
            "schema": { "$ref": "#/definitions/Usage-ll" }
          }
        }
      }
    },
    "/EnergyUsageResURI?if=oic.if.b" : {
      "get": {
        "description": "This Resource describes a cumulative time-based energy usage query.\nThe
Resource is a Collection of:\n  TimePeriod Resource\n  EnergyConsumption Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
```


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```
            "description" : "",
            "x-example": [
              {
                "href": "/TimePeriodResURI",
                "rep": {
                  "startTime":"2015-01-09T14:30Z",
                  "stopTime": "2015-01-09T14:45Z"
                }
              },
              {
                "href": "/EnergyConsumptionResURI",
                "rep": {
                  "power":  2000.1,
                  "energy": 3500.4
                }
              }
            ],
            "schema": { "$ref": "#/definitions/EnergyUsageBatch-Retrieve" }
          }
        }
      },
      "post": {
        "description": "Sets the timer period of the query using the batch OCF Interface\n",
        "parameters": [
          {"$ref": "#/parameters/interface-b"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/EnergyUsageBatch-Update" },
            "x-example": [
              {
                "href": "/TimePeriodResURI",
                "rep": {
                  "startTime":"2015-03-15T10:30Z",
                  "stopTime": "2015-03-15T10:45Z"
                }
              }
            ]
          }
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": [
              {
                "href": "/TimePeriodResURI",
                "rep": {
                  "startTime":"2015-03-15T10:30Z",
                  "stopTime": "2015-03-15T10:45Z"
                }
              },
              {
                "href": "/EnergyConsumptionResURI",
                "rep": {
                  "power":  1500.1,
                  "energy": 2200.4
                }
              }
            ],
            "schema": { "$ref": "#/definitions/EnergyUsageBatch-Retrieve" }
          }
        }
      }
    },
    "/EnergyUsageResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This Resource describes a cumulative time-based energy usage query..\nThe
Resource is a Collection of:\n  TimePeriod Resource\n  EnergyConsumption Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
```

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```
            "x-example":
              {
                "rt": ["oic.r.energy.usage"],
                "if": ["oic.if.ll","oic.if.b","oic.if.baseline"],
                "rts": ["oic.r.time.period","oic.r.energy.consumption"],
                "links": [
                  {"href": "/TimePeriodResURI", "rt":["oic.r.time.period"],
"if":["oic.if.a","oic.if.baseline"], "eps":[{"ep": "coaps://[fe80::b1d6]:1122"}]},
                  {"href": "/EnergyConsumptionResURI", "rt":["oic.r.energy.consumption"],
"if":["oic.if.s","oic.if.baseline"], "eps":[{"ep": "coaps://[fe80::b1d6]:1122"}]}
                ]
              },
            "schema": { "$ref": "#/definitions/Usage-baseline" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
    },
    "interface-b" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.b"]
    }
  },
  "definitions": {
    "Usage-ll": {
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      },
      "type": "array"
    },
    "oic.oic-link": {
      "type": "object",
      "properties": {
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
```


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```
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        },
        "if": {
          "description": "The OCF Interfaces supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "type": "array",
          "readOnly": true
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.time.period","oic.r.energy.consumption"]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ]
    },
    "Usage-baseline": {
      "properties": {
        "rt": {
          "description": "Resource Type of this Resource",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.energy.usage"]
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "rts": {
          "items": {
            "enum": [
              "oic.r.time.period",
              "oic.r.energy.consumption"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "links": {
          "description": "A set of simple or individual OCF Links.",
          "type": "array",
          "items": {
            "$ref": "#/definitions/oic.oic-link"
          }
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
```


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```
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["rt","if","links"]
    },
    "EnergyUsageBatch-Retrieve" : {
      "type": "array",
      "minItems": 2,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "anyOf": [
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimePeriodResURI.swagger.json#/definitions/
TimePeriod"},
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/EnergyConsumptionResURI.swagger.json#/defin
itions/Consumption"}
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ]
      }
    },
    "EnergyUsageBatch-Update" : {
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "anyOf": [
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimePeriodResURI.swagger.json#/definitions/
TimePeriod"}
            ]
          }
```

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```
        },
        "required": [
          "href",
          "rep"
        ]
      }
    }
  }
}
```

6.12.5 Property definition

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

Table 27 – The Property definitions of the Resource with type "rt" = "oic.r.energy.usage"

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

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Property name	Value type	Mandatory	Access mode	Description
rep	multiple types: see schema	Yes	Read Write	
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	

6.12.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get			observe

6.13 Humidity

6.13.1 Introduction

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

6.13.2 Example URI

/HumidityResURI

6.13.3 Resource type

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

6.13.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Humidity",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HumidityResURI" : {
      "get": {
        "description": "This Resource describes a sensed or desired humidity.\nThe Property
\"humidity\" is an integer describing the percentage measured relative humidity.\nThe Property
\"desiredHumidity\" is an integer showing the desired target relative humidity.",
        "parameters": [
```

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```
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current (relative) humidity level.",
              "x-example":
                {
                  "rt": ["oic.r.humidity"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "humidity": 40,
                  "desiredHumidity": 40
                },
              "schema": { "$ref": "#/definitions/Humidity" }
            }
        }
      },
      "post": {
        "description": "Sets the desired relative humidity level.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/HumidityUpdate" },
            "x-example":
              {
                "desiredHumidity" : 45
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the relative humidity level was changed.\nThe new
relative humidity level is provided in the response.",
              "x-example":
                {
                  "desiredHumidity": 45
                },
              "schema": { "$ref": "#/definitions/HumidityUpdate" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Humidity" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.humidity"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "desiredHumidity": {
          "description": "The desired value for humidity.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "humidity": {
          "description": "The current sensed value for humidity.",
          "maximum": 100,
```


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```
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["humidity"]
    },
    "HumidityUpdate" : {
      "properties": {
        "desiredHumidity": {
          "description": "Desired value for Humidity",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        }
      },
      "type": "object",
      "required": ["desiredHumidity"]
    }
  }
}
```


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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
desiredHumidity	integer	No	Read Write	The desired value for humidity.
humidity	integer	Yes	Read Only	The current sensed value for humidity.
n	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
desiredHumidity	integer	Yes	Read Write	Desired value for Humidity

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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.14 Ice Maker

6.14.1 Introduction

This Resource describes an the operational state of an Ice Maker.
The Property "status" is a string containing a value from the set of possible ice maker statuses.
The possible statuses are defined by the enumeration ["on", "off", "full"]
A status of "on" means that the Ice Maker is operating.
A status of "off" means that the Ice Maker is not operating.
A status of "full" means that the ice collection bin is full (Ice Maker is operating).

6.14.2 Example URI

/IceMakerResURI

6.14.3 Resource type

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

6.14.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Ice Maker",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/IceMakerResURI" : {
```

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```
      "get": {
        "description": "This Resource describes an the operational state of an Ice Maker.\nThe Property
\"status\" is a string containing a value from the set of possible ice maker statuses.\nThe possible
statuses are defined by the enumeration [\"on\", \"off\", \"full\"]\nA status of \"on\" means that the
Ice Maker is operating.\nA status of \"off\" means that the Ice Maker is not operating.\nA status of
\"full\" means that the ice collection bin is full (Ice Maker is operating).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current Ice Maker status.",
              "x-example":
                {
                  "rt": ["oic.r.icemaker"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "status": "on"
                },
              "schema": { "$ref": "#/definitions/IceMaker" }
            }
        }
      },
      "post": {
        "description": "Sets the desired Ice Maker status.\nOnly valid settings for \"status\" in a
UPDATE shall be \"on\" or \"off\".",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/IceMakerUpdate" },
            "x-example":
              {
                "status": "off"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the Ice Maker status was changed.\nThe new status  is
provided in the response.\n",
              "x-example":
                {
                  "status": "off"
                },
              "schema": { "$ref": "#/definitions/IceMakerUpdate" }
            },
            "403": {
              "description" : "This response is generated by the OCF Server when the client sends:\n
An UPDATE with an invalid property value for \"status\".\nThe OCF Server responds with the current
resource representation.\n",
              "x-example":
                {
                  "status": "off"
                },
              "schema": { "$ref": "#/definitions/IceMakerUpdate" }
            }
        }
      }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "IceMaker" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.icemaker"],
```


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```
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "status": {
          "description": "The status of the Ice Maker.",
          "enum": [
            "on",
            "off",
            "full"
          ],
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["status"]
    },
    "IceMakerUpdate" : {
      "properties": {
        "status": {
          "description": "Set the status of the Ice Maker.",
          "enum": [
            "on",
            "off"
          ]
        }
      },
      "type": "object",
      "required": ["status"]
    }
  }
}
```


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6.14.5 Property definition

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

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

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

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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.15 Lock

6.15.1 Introduction

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

6.15.2 Example URI

/LockStatusResURI

6.15.3 Resource type

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

6.15.4 OpenAPI 2.0 definition

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

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```
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/LockStatusResURI" : {
      "get": {
        "description": "The Resource describing a lock.\nThe Property \"lockState\" is a string. The
value 'Locked' indicates that the door is Locked.\nThe value 'Unlocked' indicates that the door is
Unlocked.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the state of the lock.",
              "x-example":
                {
                  "rt": ["oic.r.lock.status"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "lockState": "Locked"
                },
              "schema": { "$ref": "#/definitions/Lock" }
            }
        }
      },
      "post": {
        "description": "Sets the current lock state.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Lock" },
            "x-example":
              {
                "lockState": "Unlocked"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "lockState": "Unlocked"
                },
              "schema": { "$ref": "#/definitions/Lock" }
            },
            "403": {
              "description" : "This response is generated by the OCF Server when the client sends:\n
An UPDATE with an invalid property value for \"lockState\".\nThe server responds with the current
resource representation.\n",
              "x-example":
                {
                  "lockState": "Unlocked"
                },
              "schema": { "$ref": "#/definitions/Lock" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Lock" : {
      "properties": {
        "rt": {
          "description": "Resource Type",
```

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```
          "items": {
            "enum": ["oic.r.lock.status"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "lockState": {
          "description": "The state of the lock.",
          "enum": [
            "Locked",
            "Unlocked"
          ],
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["lockState"]
    }
  }
}
```


6.15.5 Property definition

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

Table 33 – The Property definitions of the Resource with type "rt" = "oic.r.lock.status"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
lockState	string	Yes	Read Write	The state of the lock.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.16 Lock Code

6.16.1 Introduction

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

6.16.2 Example URI

/LockCodeResURI

6.16.3 Resource type

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

6.16.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Lock Code",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/LockCodeResURI" : {
      "get": {
        "description": "The Resource describing a lock code.\nThe Property \"lockCodeList\" is an array
of possible codes that may be associated with a lock.\nThe codes are all presented as strings.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current lock code values.",
              "x-example":
                {
                  "rt": ["oic.r.lock.code"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "lockCodeList": ["012345", "112233"]
                },
              "schema": { "$ref": "#/definitions/LockCode" }
            }
```

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```
        }
      },
      "post": {
        "description": "Updates the current lock code values. e.g. all value in the property
\"lockCodeList\"",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/LockCode" },
            "x-example":
              {
                "lockCodeList": ["543210", "332211"]
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "lockCodeList": ["543210", "332211"]
                },
              "schema": { "$ref": "#/definitions/LockCode" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "LockCode" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.lock.code"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "lockCodeList": {
          "items": {
            "description": "The value for the lock code.",
            "type": "string"
          },
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
```


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```
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["lockCodeList"]
    }
  }
}
```

6.16.5 Property definition

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

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
lockCodeList	array: see schema	Yes	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.16.6 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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.17 Mode

6.17.1 Introduction

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

6.17.2 Example URI

/ModeResURI

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6.17.3 Resource type

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

6.17.4 OpenAPI 2.0 definition


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


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

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```
    },
    "ModeUpdate" : {
      "properties": {
        "modes": {
          "description": "Desired mode",
          "items": {
            "type": "string"
          },
          "type": "array"
        }
      },
      "type": "object",
      "required": ["modes"]
    }
  }
}
```

6.17.5 Property definition

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

Table 37 – The Property definitions of the Resource with type "rt" = "oic.r.mode"

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

6.17.6 CRUDN behaviour

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		observe

6.18 Open Level

6.18.1 Introduction

This Resource describes how open or ajar an entity such as a window, door, blind or shutter is.
The Property "openLevel" can be read (acting as a sensor).
The "openLevel" can also be set (acting as an actuator).
The "openLevel" is device dependent across the range provided.

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

6.18.2 Example URI

/OpenLevelResURI

6.18.3 Resource type

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

6.18.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Open Level",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/OpenLevelResURI" : {
      "get": {
        "description": "This Resource describes how open or ajar an entity such as a window, door,
blind or shutter is.\nThe Property \"openLevel\" can be read (acting as a sensor).\nThe \"openLevel\"
can also be set (acting as an actuator).\nThe \"openLevel\" is device dependent across the range
provided.\nWhen the Property \"range\" is omitted then 0 to 100 is assumed where 0 means closed, 100
means fully open.\nIf a \"range\" is provided then the lower bound=closed, upper bound=open.\nIf
Property \"step\" is present then it represents the increment between possible values; if not provided
1 is assumed.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current openLevel.",
              "x-example":
                {
                  "rt": ["oic.r.openlevel"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "openLevel": 50,
                  "step": 2,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/OpenLevel" }
            }
        }
      },
      "post": {
        "description": "Sets the desired openLevel.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/OpenLevel" },
```


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```
            "x-example":
              {
                "openLevel": 0
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "openLevel": 0
                },
              "schema": { "$ref": "#/definitions/OpenLevel" }
            },
            "403": {
              "description" : "This response is generated by the OCF Server when the client sends:\n
An UPDATE with an out of range property value for \"openLevel\".\nThe OCF Server responds with the
current resource representation.\n",
              "x-example":
                {
                  "openLevel": 50,
                  "step": 2,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/OpenLevel" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "OpenLevel" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.openlevel"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "openLevel": {
          "description": "How open or ajar the entity is.",
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
```

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

6.18.5 Property definition

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

Table 39 – The Property definitions of the Resource with type "rt" = "oic.r.openlevel"

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

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"

Create	Read	Update	Delete	Notify
	get	post		observe

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

6.19.2 Example URI

/OperationalStateResURI

6.19.3 Resource type

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

6.19.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Operational State",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/OperationalStateResURI": {
      "get": {
        "description": "This Resource describes the operational and job states on a device.\nThe states
can be read or set, setting indicates a desired state.\nA device may reject an attempt to set a state
that would result\nin adverse operational characteristics.\nThe Property \"machineStates\" is an array
of the possible operational states.\nThe Property \"currentMachineState\" is the current state of
operation of the device.\nThe Property \"jobStates\" is an array of the possible job states.\nThe
Property \"currentJobState\" is the currently active jobState.\nThe Property \"runningTime\" is the
ISO8601 encoded elapsed time in the current operational state.\nThe Property \"remainingTime\" is the
ISO8601 encoded time till completion of the current operational state.\nThe Property
\"progressPercentage\" is the percentage completeness of the current jobState.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "RETRIEVES the current operational and job states.",
            "x-example": {
              "rt": ["oic.r.operational.state"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "machineStates": ["pause", "stopped", "idle", "active"],
```

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```
              "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": { "$ref": "#/definitions/OperationUpdate" },
            "x-example": {
              "currentMachineState": "pause",
              "currentJobState": "wash"
            }
          }
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "currentMachineState": "pause",
              "currentJobState": "wash"
            },
            "schema": { "$ref": "#/definitions/OperationUpdate" }
          },
          "403": {
            "description" : "This response is generated by the OCF Server when the client sends:\n  An
UPDATE with an value for \"currentMachineState\" that is not found in\"machineStates\".\n  An UPDATE
with an value for \"currentJobState\" that is not found in \"jobStates\".\nThe OCF Server responds with
the current resource representation.\n",
            "x-example": {
              "machineStates": ["pause", "stopped", "idle", "active"],
              "currentMachineState": "active",
              "jobStates": ["preWash", "wash", "rinse", "spin", "dry", "airDry", "wrinklePrevent"],
              "currentJobState": "rinse",
              "runningTime": "PT15M20S",
              "remainingTime": "PT10M40S",
              "progressPercentage": 75
            },
            "schema": { "$ref": "#/definitions/Operation" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Operation" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.operational.state"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```


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```
        },
        "currentMachineState": {
          "description": "The current state of operation of the device.",
          "type": "string"
        },
        "currentJobState": {
          "description": "The currently active jobState.",
          "type": "string"
        },
        "machineStates": {
          "description": "The array of the possible operational states.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "runningTime": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/duration"
        },
        "remainingTime": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/duration"
        },
        "progressPercentage": {
          "description": "The percentage completeness of the current jobState.",
          "maximum": 100,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "jobStates": {
          "description": "The Array of the possible job states.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["machineStates", "currentMachineState"]
    },
    "OperationUpdate" : {
      "properties": {
         "currentMachineState": {
          "description": "The current state of operation of the device.",
          "type": "string"
        },
        "currentJobState": {
          "description": "THe currently active jobState.",
          "type": "string"
```


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```
        }
      },
      "type": "object"
    }
  }
}
```

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"

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

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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"

Create	Read	Update	Delete	Notify
	get	post		observe

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6.20 Ramp Time

6.20.1 Introduction

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

6.20.2 Example URI

/RampTimeResURI

6.20.3 Resource type

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

6.20.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Ramp Time",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/RampTimeResURI" : {
      "get": {
        "description": "This Resource that describes the ramp time of a dimming function.\nIt specifies
the actual speed of changing between 2 dimming values.\nThe Property \"ramptime\" is specified in
milliseconds [ms].\nWhen range is omitted the maximum value is 100 ms.\nThe ramp time of 0ms indicates
the minimal delay possible by the implementation.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "RETRIEVES the current RampTime.",
            "x-example":
              {
                "rt": ["oic.r.light.ramptime"],
                "if": ["oic.if.a", "oic.if.baseline"],
                "rampTime": 40,
                "range": [0, 100]
              },
            "schema": { "$ref": "#/definitions/RampTime" }
          }
        }
      },
      "post": {
        "description": "Sets the current RampTime.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
```

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```
            "required": true,
            "schema": { "$ref": "#/definitions/RampTime" },
            "x-example":
              {
                "rampTime": 50
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "This response is generated by the OCF Server when the client sends an
UPDATE with an in range Property value for \"rampTime\". The OCF Server responds with the current
resource representation.",
              "x-example":
                {
                  "rampTime": 50,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/RampTime" }
            },
            "403": {
              "description" : "Error response. This response is generated by the OCF Server when the
client sends an UPDATE with an out of range Property value for \"rampTime\".",
              "x-example":
                {
                  "rampTime": 40,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/RampTime" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "RampTime" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.light.ramptime"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rampTime":
          {
          "description": "The actual speed of changing between 2 dimming values.",
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
```


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```
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["rampTime"]
    }
  }
}
```


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"

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

6.20.6 CRUDN behaviour

Table 44 defines the CRUDN operations that are supported on the "oic.r.light.ramptime" Resource Type.

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Table 44 – The CRUDN operations of the Resource with type "rt" = "oic.r.light.ramptime"

Create	Read	Update	Delete	Notify
	get	post		observe

6.21 Refrigeration

6.21.1 Introduction

This Resource describes a refrigeration function.
The Property "filter" is a read-only value providing the percentage life time remaining for the water filter.
The Property "rapidFreeze" is a boolean that controls the rapid freeze capability if present.
The Property "rapidCool" is a boolean that controls the rapid cool capability if present.
The Property "defrost" is a boolean that controls the defrost cycle if present.
At least one of the listed Properties shall be present in a Resource Instance.

6.21.2 Example URI

/RefrigerationResURI

6.21.3 Resource type

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

6.21.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Refrigeration",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/RefrigerationResURI" : {
      "get": {
        "description": "This Resource describes a refrigeration function.\nThe Property \"filter\" is a
read-only value providing the percentage life time remaining for the water filter.\nThe Property
\"rapidFreeze\" is a boolean that controls the rapid freeze capability if present.\nThe Property
\"rapidCool\" is a boolean that controls the rapid cool capability if present.\nThe Property
\"defrost\" is a boolean that controls the defrost cycle if present.\nAt least one of the listed
Properties shall be present in a Resource Instance.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Retrieves the current Refrigeration function status; all Properties
supported by the Device are returned.",
              "x-example":
                {
                  "rt": ["oic.r.refrigeration"],
                  "if": ["oic.if.a", "oic.if.baseline"],
```

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```
                  "filter": 75,
                  "rapidFreeze": false,
                  "rapidCool": false,
                  "defrost": true
                },
              "schema": { "$ref": "#/definitions/Refrigeration" }
            }
          }
        },
        "post": {
          "description": "Activates the desired Refrigeration functions.\nSuported values are
\"rapidFreeze\", \"rapidCool\" and \"defrost\".\nAt least on of the supported values shall be
provided.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/RefrigerationUpdate" },
              "x-example":
                {
                  "rapidFreeze": true
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "Indicates that the Refrigeration function was changed.\nThe new status
can be provided in the response.\n",
                "x-example":
                  {
                    "rapidFreeze": true
                  },
                "schema": { "$ref": "#/definitions/RefrigerationUpdate" }
              }
          }
        }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Refrigeration" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.refrigeration"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rapidFreeze": {
          "description": "Indicates whether the unit has a rapid freeze capability active.",
          "type": "boolean"
        },
        "defrost": {
          "description": "Indicates whether a defrost cycle is currently active.",
          "type": "boolean"
        },
        "filter": {
          "description": "Percentage life time remaining for the water filter.",
          "maximum": 100,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
```


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```
        },
        "rapidCool": {
          "description": "Indicates whether the unit has a rapid cool capability active.",
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "type": "array"
        }
      },
      "anyOf": [
          {
            "required": ["filter"]
          },
          {
            "required": ["rapidFreeze"]
          },
          {
            "required": ["rapidCool"]
          },
          {
            "required": ["defrost"]
          }
        ],
        "type": "object"
    },
    "RefrigerationUpdate": {
      "properties": {
         "rapidFreeze": {
          "description": "Indicates whether the unit has a rapid freeze capability active.",
          "type": "boolean"
        },
        "defrost": {
          "description": "Indicates whether a defrost cycle is currently active.",
          "type": "boolean"
        },
        "rapidCool": {
          "description": "Indicates whether the unit has a rapid cool capability active.",
          "type": "boolean"
        }
      },
      "anyOf": [
          {
            "required": ["rapidFreeze"]
          },
          {
            "required": ["rapidCool"]
          },
          {
            "required": ["defrost"]
          }
      ],
      "type": "object"
    }
  }
}
```


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6.21.5 Property definition

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

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

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

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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.22 Temperature

6.22.1 Introduction

This Resource describes a sensed or actuated Temperature value.
The Property "temperature" describes the current value measured.

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

6.22.2 Example URI

/TemperatureResURI

6.22.3 Resource type

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

6.22.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Temperature",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/TemperatureResURI" : {
      "get": {
        "description": "This Resource describes a sensed or actuated Temperature value.\nThe Property
\"temperature\" describes the current value measured.\nThe Property \"units\" is a single value that is
one of \"C\", \"F\" or \"K\".\nIt 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 the Property \"range\" is omitted the default is +/- MAXINT.\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.",
        "parameters":[
          {"$ref": "#/parameters/interface"},
          {"$ref": "#/parameters/unit"}
        ],
        "responses": {
          "200": {
            "description" : "Retrieves the current temperature value.",
            "x-example":
              {
                "rt": ["oic.r.temperature"],
                "if": [ "oic.if.a", "oic.if.baseline"],
                "temperature": 20.0,
                "units": "C"
              }
              ,
            "schema": { "$ref": "#/definitions/Temperature" }
          },
          "403": {
            "description" : "This response is generated by the OCF Server when the client sends:\n  A
RETRIEVE with queryParameter indicating a unit that the server does not support.\nThe server responds
with the current resource representation including the\n\"units\" property illustrating the supported
units and the error.",
```


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```
              "x-example":
                {
                  "temperature": 20.0,
                  "units": "C"
                },
              "schema": { "$ref": "#/definitions/Temperature" }
            }
        }
      },
      "post": {
        "description": "Sets the desired temperature value.\nIf a \"unit\" is included and the server
may not support the unit indicated the request will fail.\nIf the units are omitted value is taken to
be in C.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Temperature" },
            "x-example":
              {
                "temperature": 18.0,
                "units": "F"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "temperature": 18.0,
                  "units": "F"
                }
                ,
              "schema": { "$ref": "#/definitions/Temperature" }
            },
            "403": {
              "description" : "This response is generated by the OCF Server when the client sends:\n
An UPDATE with an out of range property value for temperature.\n  An UPDATE with an unsupported unit
for this server.\nThe OCF Server responds with the current resource representation including\nthe
\"range\" property illustrating the supported range and the error.",
              "x-example":
                {
                  "temperature": 20.0,
                  "units": "C"
                }
                ,
              "schema": { "$ref": "#/definitions/Temperature" }
            }
        }
      }
    }
  },
  "parameters": {
        "interface" : {
            "in" : "query",
            "name" : "if",
            "type" : "string",
            "enum" : ["oic.if.a", "oic.if.s", "oic.if.baseline"]
        },
        "unit" :  {
            "in": "query",
            "description": "Units",
            "type": "string",
            "enum": ["C", "F", "K"],
            "name": "units",
            "x-queryexample" : "/TemperatureResURI?units=C"
      }
  },
  "definitions": {
    "Temperature" : {
        "properties": {
            "rt" : {
              "description": "The Resource Type.",
              "items": {
```

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

6.22.5 Property definition

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

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

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

6.22.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get	post		observe

6.23 Time Period

6.23.1 Introduction

This Resource describes the time period over which any additionally provided information is derived or bounded.
The Property "startTime" and "stopTime" are RFC3339 encoded strings. The Property "startTime" must be present.
The interval is the interval of the time period in minutes, if present this value must be no less than 0 minute.
The intervalsecond is the interval of the time period in seconds, if present this value must be numerical zero or greater.
The repeat is the number of the time period's iteration, which means how many times to repeat the time period. The Property "repeat" accepts only negative one, numerical zero, and positive number. When this value is numerical zero, the time period will be repeated infinitely until a client makes it

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stop by inputting negative one for the value.
The Property "stoptime" and "interval" are mutually exclusive; both Properties cannot be present in a Resource instance.
The Property "intervalsecond" cannot be presented with the Property "stopTime". In case of both the Property "interval" and "intervalsecond" are presented together, the total time interval is the sum of "interval" and "intervalsecond".
The Property "triggertiming" describes a specific time to execute an action. This property must have one of the values among "startTime", "stopTime", and "totalInterval". The totalInterval means the sum of the Property "interval" and "intervalsecond". If one of the properties does not exist, the value of the unexpressed property is taken as a numerical zero.
The Property "state" describes a state of time interval. This property must have one of the values among "preInterval", "inInterval", and "postInterval".
The Resource defines a time period for information retrieval, action or other behaviour.

6.23.2 Example URI

/TimePeriodResURI

6.23.3 Resource type

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

6.23.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Time Period",
    "version": "20191001",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/TimePeriodResURI" : {
      "get": {
        "description": "This Resource describes the time period over which any additionally provided
information is derived or bounded.\nThe Property \"startTime\" and \"stopTime\" are RFC3339 encoded
strings. The Property \"startTime\" must be present.\nThe interval is the interval of the time period
in minutes, if present this value must be no less than 0 minute.\nThe intervalsecond is the interval of
the time period in seconds, if present this value must be numerical zero or greater.\nThe repeat is the
number of the time period's iteration, which means how many times to repeat the time period. The
Property \"repeat\" accepts only negative one, numerical zero, and positive number. When this value is
numerical zero, the time period will be repeated infinitely until a client makes it stop by inputting
negative one for the value.\nThe Property \"stoptime\" and \"interval\" are mutually exclusive; both
Properties cannot be present in a Resource instance.\nThe Property \"intervalsecond\" cannot be
presented with the Property \"stopTime\". In case of both the Property \"interval\" and
\"intervalsecond\" are presented together, the total time interval is the sum of \"interval\" and
\"intervalsecond\".\nThe Property \"triggertiming\" describes a specific time to execute an action.
This property must have one of the values among \"startTime\", \"stopTime\", and \"totalInterval\". The
totalInterval means the sum of the Property \"interval\" and \"intervalsecond\". If one of the
properties does not exist, the value of the unexpressed property is taken as a numerical zero.\nThe
Property \"state\" describes a state of time interval. This property must have one of the values among
\"preInterval\", \"inInterval\", and \"postInterval\".\nThe Resource defines a time period for
information retrieval, action or other behaviour.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
```


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```
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.time.period"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "startTime":"2015-01-09T14:30:00Z",
                  "stopTime": "2015-01-09T14:45:00Z"
                },
              "schema": { "$ref": "#/definitions/TimePeriod" }
            }
        }
      },
      "post": {
        "description": "Sets or updates a time period for information retrieval, action or other
behavior.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/TimePeriod" },
            "x-example":
              {
                "startTime":"2015-01-09T14:30:00Z",
                "stopTime": "2015-01-09T14:45:00Z"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "startTime":"2015-01-09T14:30:00Z",
                  "stopTime": "2015-01-09T14:45:00Z"
                },
              "schema": { "$ref": "#/definitions/TimePeriod" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "TimePeriod": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.time.period"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "interval": {
          "description": "The time interval in minutes after the \"startTime\", if present the Property
\"stopTime\" cannot be present.",
          "type": "integer",
          "minimum": 0
        },
        "intervalsecond": {
          "description": "The time interval in seconds after the \"startTime\", if present the Property
\"stopTime\" cannot be present.",
          "type": "integer",
          "minimum": 0
```


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```
        },
        "stopTime": {
          "description": "The stop time for the time period, if present the Property \"interval\" or
\"intervalsecond\" cannot be present.",
          "type": "string",
          "format": "date-time"
        },
        "startTime": {
          "description": "The start time for the time period.",
          "type": "string",
          "format": "date-time"
        },
        "repeat": {
          "description": "The number of times to repeat the time period",
          "type": "integer",
          "minimum": -1
        },
        "triggertiming": {
          "description": "The desired timing to trigger an action execution",
          "type": "string",
          "enum": [
            "startTime",
            "stopTime",
            "totalInterval"
          ]
        },
        "state": {
          "description": "The current state of the time interval",
          "type": "string",
          "readOnly": true,
          "enum": [
            "preInterval",
            "inInterval",
            "postInterval"
          ]
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["startTime"]
    }
  }
}
```


6.23.5 Property definition

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

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
interval	integer	No	Read Write	The time interval in minutes after the "startTime", if present the Property "stopTime" cannot be present.
intervalsecond	integer	No	Read Write	The time interval in seconds after the "startTime", if present the Property "stopTime" cannot be present.
stopTime	string	No	Read Write	The stop time for the time period, if present the Property "interval" or "intervalsecond" cannot be present.
startTime	string	Yes	Read Write	The start time for the time period.
Repeat	integer	No	Read Write	The number of times to repeat the time period
triggertiming	string	No	Read Write	The desired timing to trigger an action execution
State	string	No	Read Only	The current state of the time interval
n	multiple types: see schema	No	Read Write	
Id	multiple types: see schema	No	Read Write	
If	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.24 Activity Count

6.24.1 Introduction

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

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6.24.2 Example URI

/ActivityCountResURI

6.24.3 Resource type

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

6.24.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Activity Count",
    "version": "20190222",
     "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ActivityCountResURI" : {
      "get": {
        "description": "This Resource specifies an activity count.\nThe Resource can be readonly
(oic.if.s interface) in which instance it represents a count.\nThe Resource can be readwrite (oic.if.a
interface) in which instance it represents a goal or target for a count.\nThe Property \"count\" is an
integer representing either the current count or goal value.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.activity.count"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "count": 2500
                },
              "schema": { "$ref": "#/definitions/Count" }
            }
        }
      },
      "post": {
        "description": "Sets the \"count\" target.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Count" },
            "x-example":
              {
                "count": 5000
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "count": 5000
                },
              "schema": { "$ref": "#/definitions/Count" }
```

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```
            }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.a", "oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Count" : {
        "properties": {
          "rt": {
            "description": "The Resource Type.",
            "items": {
              "maxLength": 64,
              "type": "string",
              "enum": ["oic.r.sensor.activity.count"]
            },
            "minItems": 1,
            "uniqueItems" : true,
            "readOnly": true,
            "type": "array"
          },
          "count": {
            "description": "The current or Target count.",
            "type": "integer"
          },
          "n": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "id": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "range": {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
          },
          "step": {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.a",
                "oic.if.s",
                "oic.if.baseline"
              ],
              "type": "string"
            },
            "minItems": 2,
            "readOnly": true,
            "uniqueItems": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": ["count"]
      }
    }
}
```


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6.24.5 Property definition

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

Table 51 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.activity.count"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
count	integer	Yes	Read Write	The current or Target count.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.24.6 CRUDN behaviour

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

Table 52 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.activity.count"

Create	Read	Update	Delete	Notify
	get	post		observe

6.25 Atmospheric Pressure Sensor

6.25.1 Introduction

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

6.25.2 Example URI

/AtmosphericPressureResURI

6.25.3 Resource type

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

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6.25.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Atmospheric Pressure Sensor",
    "version": "20190225",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "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.\nThe Property \"atmosphericPressure\" is a float which
describes the atmospheric pressure in hPa (hectoPascals).\nNote that hPa and the also commonly used
unit of millibars (mbar) are numerically equivalent.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.atmosphericpressure"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "atmosphericPressure": 1000.4
                },
              "schema": { "$ref": "#/definitions/atmosphericPressure" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "atmosphericPressure" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.atmosphericpressure"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "atmosphericPressure": {
          "description": "The current atmospheric pressure in hPa.",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
```

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```
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "precision": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["atmosphericPressure"]
    }
  }
}
```

6.25.5 Property definition

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

Table 53 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.atmosphericpressure"

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

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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 Property "volume" is an integer containing a percentage [0,100].
A volume of 0 (zero) means no sound produced.
A volume of 100 means maximum sound production.
The Property "mute" is implemented as a boolean.
A mute value of true means that the device is muted (no audio).
A mute value of false means that the device is not muted (audio).

6.26.2 Example URI

/AudioResURI

6.26.3 Resource type

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

6.26.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Audio Controls",
    "version": "20190620",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AudioResURI" : {
      "get": {
        "description": "This Resource defines basic audio control functions.\nThe Property \"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 Property \"mute\" 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).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
```

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```
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.audio"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "volume": 50,
                  "mute": false
                },
              "schema": { "$ref": "#/definitions/Audio" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Audio-update" },
            "x-example":
              {
                "volume": 75
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "volume": 75,
                  "mute": false
                },
              "schema": { "$ref": "#/definitions/Audio" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Audio" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.audio"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "mute": {
          "description": "The mute setting of an audio rendering device.",
          "type": "boolean"
        },
        "volume": {
          "description": "The volume setting of an audio rendering device.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "n": {
            "$ref":
```


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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["volume", "mute"]
    },
    "Audio-update" : {
      "properties": {
        "mute": {
          "description": "The mute setting of an audio rendering device.",
          "type": "boolean"
        },
        "volume": {
          "description": "The volume setting of an audio rendering device.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        }
      }
    }
  }
}
```


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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
mute	boolean	Yes	Read Write	The mute setting of an audio rendering device.
volume	integer	Yes	Read Write	The volume setting of an audio rendering device.
n	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
mute	boolean		Read Write	The mute setting of an audio rendering device.
volume	integer		Read Write	The volume setting of an audio rendering device.

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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.27 Auto Focus

6.27.1 Introduction

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

6.27.2 Example URI

/AutoFocusResURI

6.27.3 Resource type

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

6.27.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Auto Focus",
    "version": "20190222",
     "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
```

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```
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AutoFocusResURI" : {
      "get": {
        "description": "This Resource describes an auto focus on/off feature.\nThe Property
\"autoFocus\" is a boolean.\nAn \"autoFocus\" value of 'true' means that the auto focus feature is
on.\nAn \"autoFocus\" value of 'false' means that the auto focus feature is off.\nNote that when Pan
Tilt Zoom (see 'Pan Tilt Zoom' Resource definition) is used the autofocus works only in the selected
area.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.autofocus"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "autoFocus": false
                },
              "schema": { "$ref": "#/definitions/AutoFocus" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/AutoFocus" },
            "x-example":
              {
                "autoFocus": true
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "autoFocus": true
                },
              "schema": { "$ref": "#/definitions/AutoFocus" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AutoFocus" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.autofocus"],
            "maxLength": 64,
            "type": "string"
          },
```


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```
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "autoFocus": {
          "description": "The status of the Auto Focus feature.",
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["autoFocus"]
    }
  }
}
```


6.27.5 Property definition

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

Table 57 – The Property definitions of the Resource with type "rt" = "oic.r.autofocus"

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

6.27.6 CRUDN behaviour

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

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Table 58 – The CRUDN operations of the Resource with type "rt" = "oic.r.autofocus"

Create	Read	Update	Delete	Notify
	get	post		observe

6.28 Automatic Document Feeder

6.28.1 Introduction

This Resource describes the state of an automatic document feeder, typically used with a scanner.
The Property "adfstates" and "currentAdfState" are read only.
The Property "adfStates" is an array of the possible operational states.
The Property "adfProcessing" is the OK state, other states are errors or require 'user attention'.
The currentAdfState is the current value of the ADF state on the device.

6.28.2 Example URI

/AutomaticDocumentFeederResURI

6.28.3 Resource type

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

6.28.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
     "title": "Automatic Document Feeder",
     "version": "20190222",
     "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AutomaticDocumentFeederResURI" : {
      "get": {
        "description": "This Resource describes the state of an automatic document feeder, typically
used with a scanner.\nThe Property \"adfstates\" and \"currentAdfState\" are read only.\nThe Property
\"adfStates\" is an array of the possible operational states.\nThe Property \"adfProcessing\" is the OK
state, other states are errors or require 'user attention'.\nThe currentAdfState is the current value
of the ADF state on the device.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.automaticdocumentfeeder"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "adfStates": ["adfProcessing", "adfEmpty", "adfJam", "adfLoaded", "adfMispick",
"adfHatchOpen", "adfDuplexPageTooShort", "adfDuplexPageTooLong", "adfMultipickDetected",
"adfInputTrayFailed", "adfInputTrayOverloaded"],
                  "currentAdfState": "adfProcessing"
                },
              "schema": { "$ref": "#/definitions/AutomaticDocumentFeeder" }
```

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```
            }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "AutomaticDocumentFeeder" : {
        "properties": {
           "rt": {
            "description": "The Resource Type.",
            "items": {
              "enum": ["oic.r.automaticdocumentfeeder"],
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "adfStates": {
            "description": "The array of the possible adf states.",
            "items": {
              "type": "string"
            },
            "readOnly": true,
            "uniqueItems": true,
            "type": "array"
          },
          "currentAdfState": {
            "description": "The current adf state.",
            "readOnly": true,
            "type": "string"
          },
          "n": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "id": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.s",
                "oic.if.baseline"
              ],
              "type": "string"
            },
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": ["adfStates", "currentAdfState"]
      }
    }
}
```

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6.28.5 Property definition

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

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
adfStates	array: see schema	Yes	Read Only	The array of the possible adf states.
currentAdfState	string	Yes	Read Only	The current adf state.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.28.6 CRUDN behaviour

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

Table 60 – The CRUDN operations of the Resource with type "rt" = "oic.r.automaticdocumentfeeder"

Create	Read	Update	Delete	Notify
	get			observe

6.29 Button Switch

6.29.1 Introduction

This Resource describes the operation of a button style switch.
The Property "value" is a boolean.
A value of 'true' means that the button is being pushed/pressed.
A value of 'false' means that the button is not being pushed/pressed.

6.29.2 Example URI

/ButtonResURI

6.29.3 Resource type

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

6.29.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Button Switch",
```

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```
    "version": "20190222",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ButtonResURI" : {
      "get": {
        "description": "This Resource describes the operation of a button style switch.\nThe Property
\"value\" is a boolean.\nA value of 'true' means that the button is being pushed/pressed.\nA value of
'false' means that the button is not being pushed/pressed.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.button"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                }
                ,
              "schema": { "$ref": "#/definitions/Button" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Button" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.button"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The status of the button",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
```


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

6.29.5 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"

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

6.29.6 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"

Create	Read	Update	Delete	Notify
	get			observe

6.30 Carbon Dioxide Sensor

6.30.1 Introduction

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

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6.30.2 Example URI

/CarbonDioxideResURI

6.30.3 Resource type

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

6.30.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Carbon Dioxide Sensor",
    "version": "20191118",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
        "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CarbonDioxideResURI" : {
      "get": {
        "description": "This Resource describes whether carbon dioxide has been sensed or not.\nThe
Property \"value\" is a boolean.\nA value of 'true' means that carbon dioxide has been detected.\nA
value of 'false' means that carbon dioxide has not been detected.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":    ["oic.r.sensor.carbondioxide"],
                  "id":    "unique_example_id",
                  "value": true
                },
              "schema": { "$ref": "#/definitions/CO2" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "CO2": {
      "properties": {
        "rt":  {
          "description": "The Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor.carbondioxide"]
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
```

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```
        },
        "value":  {
          "description": "The carbon dioxide indicator, true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "measurement":  {
          "type": "number",
          "description": "Measured value for this sensor, units are in ppm",
          "readOnly": true
        },
        "precision":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "id":  {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if":  {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": 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.

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

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

6.30.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get			observe

6.31 Carbon Monoxide Sensor

6.31.1 Introduction

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

6.31.2 Example URI

/CarbonMonoxideResURI

6.31.3 Resource type

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

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6.31.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Carbon Monoxide Sensor",
    "version": "20191118",
    "license": {
     "name": "OCF Data Model License",
     "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
     "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
   },
   "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CarbonMonoxideResURI" : {
      "get": {
        "description": "This Resource describes whether carbon monoxide has been sensed or not.\nThe
Property \"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.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":     ["oic.r.sensor.carbonmonoxide"],
                  "id":     "unique_example_id",
                  "value":  true
                },
              "schema": { "$ref": "#/definitions/CO" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "CO": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor.carbonmonoxide"]
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "value":  {
          "description": "The carbon monoxide indicator, true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "measurement":  {
          "type": "number",
          "description": "Measured value for this sensor, units are in ppm",
          "readOnly": true
        },
        "precision":  {
```

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```
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "id":  {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if":  {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["value"]
    }
  }
}
```

6.31.5 Property definition

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

Table 65 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.carbonmonoxide"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
value	boolean	Yes	Read Only	The carbon monoxide indicator, true = sensed, false = not sensed.
measurement	number	No	Read Only	Measured value for this sensor, units are in ppm
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.31.6 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"

Create	Read	Update	Delete	Notify
	get			observe

6.32 Auto White Balance

6.32.1 Introduction

This Resource describes an auto balance on/off feature.
The Property "autoWhiteBalance" is a boolean.
An AutoWhiteBalance value of 'true' means that the auto white balance feature is on.
An AutoWhiteBalance value of 'false' means that the auto white balance feature is off.

6.32.2 Example URI

/AutoWhiteBalanceResURI

6.32.3 Resource type

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

6.32.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
     "title": "Auto White Balance",
     "version": "20190222",
     "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
```

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```
    "/AutoWhiteBalanceResURI" : {
      "get": {
        "description": "This Resource describes an auto balance on/off feature.\nThe Property
\"autoWhiteBalance\" is a boolean.\nAn AutoWhiteBalance value of 'true' means that the auto white
balance feature is on.\nAn AutoWhiteBalance value of 'false' means that the auto white balance feature
is off.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.colour.autowhitebalance"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "autoWhiteBalance": false
                },
              "schema": { "$ref": "#/definitions/AutoWhiteBalance" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/AutoWhiteBalance" },
            "x-example":
              {
                "autoWhiteBalance": true
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "autoWhiteBalance": true
                },
              "schema": { "$ref": "#/definitions/AutoWhiteBalance" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AutoWhiteBalance" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.colour.autowhitebalance"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "autoWhiteBalance": {
          "description": "The status of the Auto White balance feature.",
          "type": "boolean"
        },
```

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```
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["autoWhiteBalance"]
    }
  }
}
```

6.32.5 Property definition

Table 67 defines the Properties that are part of the "oic.r.colour.autowhitebalance" Resource Type.

Table 67 – The Property definitions of the Resource with type "rt" = "oic.r.colour.autowhitebalance"

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

6.32.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get	post		observe

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6.33 Colour Saturation

6.33.1 Introduction

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

6.33.2 Example URI

/ColourSaturationResURI

6.33.3 Resource type

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

6.33.4 OpenAPI 2.0 definition

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

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```
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Saturation" },
            "x-example":
              {
                "colourSaturation": 60
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "colourSaturation": 60
                }
                ,
              "schema": { "$ref": "#/definitions/Saturation" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Saturation" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.colour.saturation"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "colourSaturation": {
          "description": "The colour saturation value.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
```


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```
      "type": "object",
      "required": ["colourSaturation"]
    }
  }
}
```

6.33.5 Property definition

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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
colourSaturation	integer	Yes	Read Write	The colour saturation value.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.33.6 CRUDN behaviourc

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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.34 Contact Sensor

6.34.1 Introduction

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

6.34.2 Example URI

/ContactResURI

6.34.3 Resource type

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

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6.34.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Contact Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ContactResURI" : {
      "get": {
        "description": "This Resource describes whether a contact sensor has been tripped or
not.\nTypical use case is in Security Systems detecting window or door open.\nThe Property \"value\" is
a boolean.\nA value of 'true' means that contact has been broken (open).\nA value of 'false' means that
contact is in place (closed).\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description": "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.contact"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/Contact" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Contact": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.contact"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The contact indication, true = broken (open), false = in place (closed).",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
```

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```
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

6.34.5 Property definition

Table 71 defines the Properties that are part of the "oic.r.sensor.contact" Resource Type.

Table 71 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.contact"

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

6.34.6 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"

Create	Read	Update	Delete	Notify
	get			observe

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6.35 Demand Response Load Control (DRLC)

6.35.1 Introduction

This Resource describes any to be applied or currently being applied DRLC signal.
The Property "DRType" is the ApplianceLoadReductionType defined in Zigbee/HA Smart Energy Profile 2.0.
The Property "start" is a string containing an RFC3339 encoded start time.
The Property "duration" value is in minutes.
The Property "Override" indicates whether the consumer has overridden the request (true) or not (false).
The Resource provides the current DRLC action that is being applied.
A duration of 0 (zero) means that no DRLC is currently active.

6.35.2 Example URI

/DRLCResURI

6.35.3 Resource type

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

6.35.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Demand Response Load Control (DRLC)",
    "version": "20190709",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/DRLCResURI": {
      "get": {
        "description": "This Resource describes any to be applied or currently being applied DRLC
signal.\nThe Property \"DRType\" is the ApplianceLoadReductionType defined in Zigbee/HA Smart Energy
Profile 2.0.\nThe Property \"start\" is a string containing an RFC3339 encoded start time.\nThe
Property \"duration\" value is in minutes.\nThe Property \"Override\" indicates whether the consumer
has overridden the request (true) or not (false).\nThe Resource provides the current DRLC action that
is being applied.\nA duration of 0 (zero) means that no DRLC is currently active.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description": "",
              "x-example":
                {
                  "rt": ["oic.r.energy.drlc"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "DRType": 1,
                  "start": "2015-01-09T16:45:00Z",
                  "duration": 10,
                  "override": false,
                  "drlevel": 2,
                  "mandate": true
                },
```

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```
              "schema": { "$ref": "#/definitions/DRLC" }
            }
          }
        },
        "post": {
          "description": "Provides the DRLC action to be applied to the device or updates an existing
action.",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": {"$ref": "#/definitions/DRLC"},
              "x-example": {
                "DRType": 1,
                "start": "2015-01-09T17:00:00Z",
                "duration": 10
              }
            }
          ],
          "responses": {
            "200": {
              "description" : "Indicates that the target DRLC resource was changed.\nThe new resource
attributes are provided in the response.",
              "x-example": {
                "DRType": 1,
                "start": "2015-01-09T17:00:00Z",
                "duration": 15,
                "override": false
              },
              "schema": {"$ref": "#/definitions/DRLC"}
            }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "DRLC" : {
        "properties": {
          "rt": {
            "description": "The Resource Type.",
            "items": {
              "enum": ["oic.r.energy.drlc"],
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "start": {
            "description": "The start time for the application of DR.",
            "type": "string",
            "format": "date-time"
          },
          "duration": {
            "description": "The duration of the to be applied DR type in minutes. A value of 0 means no
applied DR.",
            "type": "integer",
            "minimum": 0
          },
          "override": {
            "description": "Whether the consumer has overriden the application of DR.",
            "type": "boolean"
          },
          "DRType": {
            "description": "The to be applied demand-response type.",
```


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```
          "type": "integer"
        },
        "drlevel": {
          "type": "integer",
          "minimum": 0,
          "maximum": 3,
          "description": "Indicator of the strength of the DR response that is requested; 0-0%, 1-30%,
2-50%, 3-70%"
        },
        "mandate" : {
          "type": "boolean",
          "description": "Whether overriding the DR request by the consumer is allowed"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["DRType"]
    }
  }
}
```

6.35.5 Property definition

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

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
start	string	No	Read Write	The start time for the application of DR.
duration	integer	No	Read Write	The duration of the to be applied DR type in minutes. A value of 0 means no applied DR.
override	boolean	No	Read Write	Whether the consumer has overriden the application of DR.
DRType	integer	Yes	Read Write	The to be applied demand-response type.

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Property name	Value type	Mandatory	Access mode	Description
drlevel	integer	No	Read Write	Indicator of the strength of the DR response that is requested; 0-0%, 1-30%, 2-50%, 3-70%
mandate	boolean	No	Read Write	Whether overriding the DR request by the consumer is allowed
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.35.6 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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.36 Energy Overload/Circuit Breaker

6.36.1 Introduction

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

6.36.2 Example URI

/EnergyOverloadResURI

6.36.3 Resource type

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

6.36.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Overload/Circuit Breaker",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
```

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```
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyOverloadResURI" : {
      "get": {
        "description": "This Resource describes whether an energy overload detector/circuit breaker is
currently tripped.\nThe Property \"value\" is a boolean.\nA value of 'true' means that energy overload
has been tripped.\nA value of 'false' means that energy overload has not been tripped.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.energy.overload"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/EnergyOverload" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "EnergyOverload" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.energy.overload"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The energy overload indication,true = tripped, false = not tripped.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
```


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```
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": ["value"]
      }
    }
}
```

6.36.5 Property definition

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

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Only	The energy overload indication,true = tripped, false = not tripped.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.36.6 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"

Create	Read	Update	Delete	Notify
	get			observe

6.37 Generic Sensor

6.37.1 Introduction

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

6.37.2 Example URI

/GenericSensorResURI

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6.37.3 Resource type

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

6.37.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Generic Sensor",
    "version": "20191118",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GenericSensorResURI" : {
      "get": {
        "description": "This Resource describes whether some value or property or entity has been
sensed or not.\nThe Property \"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.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt":    ["oic.r.sensor"],
              "id":    "unique_example_id",
              "value": true
            },
            "schema": { "$ref": "#/definitions/Sensor" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Sensor": {
      "properties": {
        "rt":  {
          "description": "The Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value":   {
          "description": "true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
```

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```
        "measurement":  {
          "type": "number",
          "description": "Measured value for this sensor, units depend on the specific type of sensor",
          "readOnly": true
        },
        "precision":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "id":  {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if" :  {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["value"]
    }
  }
}
```

6.37.5 Property definition

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

Table 77 – The Property definitions of the Resource with type "rt" = "oic.r.sensor"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
value	boolean	Yes	Read Only	true = sensed, false = not sensed.
measurement	number	No	Read Only	Measured value for this sensor, units depend on the specific type of sensor
precision	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
n	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.37.6 CRUDN behaviour

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

Table 78 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor"

Create	Read	Update	Delete	Notify
	get			observe

6.38 Glass Break Sensor

6.38.1 Introduction

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

6.38.2 Example URI

/GlassBreakResURI

6.38.3 Resource type

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

6.38.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Glass Break Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
```

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```
  "produces": ["application/json"],
  "paths": {
    "/GlassBreakResURI" : {
      "get": {
        "description": "This Resource describes a glass break sensor.\nThe Property \"value\" is a
boolean.\nA value of 'true' means that glass break has been sensed.\nA value of 'false' means that
glass break not been sensed.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.glassbreak"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/GlassBreak" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "GlassBreak" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.glassbreak"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The glassbreak indication, true = glass break sensed, false = glass break not
sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```


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```
        }
      },
      "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.

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

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

6.38.6 CRUDN behaviour

Table 80 defines the CRUDN operations that are supported on the "oic.r.sensor.glassbreak" Resource Type.

Table 80 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.glassbreak"

Create	Read	Update	Delete	Notify
	get			observe

6.39 Heart Rate Zone

6.39.1 Introduction

This Resource describes a measured heart rate by the current Zone using the Zoladz method. The Zoladz method defines Zones based on maximum heart rate; Zone 1 is the lowest, Zone 5 is the highest.
The heartRateZone is an enumeration containing one of: "Zone1", "Zone2", "Zone3", "Zone4", and "Zone5".

6.39.2 Example URI

/HeartRateZoneResURI

6.39.3 Resource type

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

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6.39.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Heart Rate Zone",
    "version": "2019-03-28",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HeartRateZoneResURI" : {
      "get": {
        "description": "This Resource describes a measured heart rate by the current Zone using the
Zoladz method. The Zoladz method defines Zones based on maximum heart rate; Zone 1 is the lowest, Zone
5 is the highest.\nThe heartRateZone is an enumeration containing one of: \"Zone1\", \"Zone2\",
\"Zone3\", \"Zone4\", and \"Zone5\".\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "rt":            ["oic.r.sensor.heart.zone"],
                "heartRateZone": "Zone3"
              },
            "schema": { "$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": {
            "enum": ["oic.r.sensor.heart.zone"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
```

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```
        "heartRateZone": {
          "description": "Current heart rate zone based on the Zoladz system.",
          "enum": [
            "Zone1",
            "Zone2",
            "Zone3",
            "Zone4",
            "Zone5"
          ],
          "readOnly": true,
          "type": "string"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["heartRateZone"]
    }
  }
}
```

6.39.5 Property definition

Table 81 defines the Properties that are part of the "oic.r.sensor.heart.zone" Resource Type.

Table 81 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.heart.zone"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
heartRateZone	string	Yes	Read Only	Current heart rate zone based on the Zoladz system.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.39.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get			observe

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6.40 Illuminance Sensor

6.40.1 Introduction

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

6.40.2 Example URI

/IlluminanceSensorResURI

6.40.3 Resource type

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

6.40.4 OpenAPI 2.0 definition

```
{
        "swagger": "2.0",
        "info": {
                "title": "Illuminance Sensor",
                "version": "20190808",
                "license": {
                        "name": "OCF Data Model License",
                        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
                        "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All
rights reserved."
                },
                "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
        },
        "schemes": ["http"],
        "consumes": ["application/json"],
        "produces": ["application/json"],
        "paths": {
                "/IlluminanceSensorResURI": {
                        "get": {
                                "description": "This Resource describes an illuminance sensor.\nThe
Property \"illuminance\" is a float and represents the sensed luminous flux per unit area in lux.",
                                "parameters": [
                                        {"$ref": "#/parameters/interface"}
                                ],
                                "responses": {
                                        "200": {
                                                "description": "",
                                                "x-example": {
                                                        "rt": ["oic.r.sensor.illuminance"],
                                                        "if": ["oic.if.s", "oic.if.baseline"],
                                                        "illuminance": 450.0,
                                                        "range": [100.0, 500.0]
                                                },
                                                "schema": {"$ref": "#/definitions/Illuminance"}
                                        }
                                }
                        }
                }
        },
        "parameters": {
                "interface": {
                        "in": "query",
                        "name": "if",
                        "type": "string",
                        "enum": ["oic.if.s", "oic.if.baseline"]
                }
        },
        "definitions": {
                "Illuminance": {
                        "properties": {
                                "rt": {
```

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```
                                        "description": "The Resource Type.",
                                        "items": {
                                                "enum": ["oic.r.sensor.illuminance"],
                                                "maxLength": 64,
                                                "type": "string"
                                        },
                                        "minItems": 1,
                                        "uniqueItems": true,
                                        "readOnly": true,
                                        "type": "array"
                                },
                                "illuminance": {
                                        "description": "The sensed luminous flux per unit area in lux.",
                                        "readOnly": true,
                                        "type": "number"
                                },
                                "n": {
                                        "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
                                },
                                "id": {
                                        "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
                                },
                                "range": {
                                        "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
                                },
                                "if": {
                                        "description": "The OCF Interface set supported by this
Resource.",
                                        "items": {
                                                "enum": [
                                                        "oic.if.s",
                                                        "oic.if.baseline"
                                                ],
                                                "type": "string"
                                        },
                                        "minItems": 2,
                                        "uniqueItems": true,
                                        "readOnly": true,
                                        "type": "array"
                                }
                        },
                        "type": "object",
                        "required": ["illuminance"]
                }
        }
}
```


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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
illuminance	number	Yes	Read Only	The sensed luminous flux per unit area in lux.
n	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.40.6 CRUDN behaviour

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

Table 84 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.illuminance"

Create	Read	Update	Delete	Notify
	get			observe

6.41 Magnetic Field Direction Sensor

6.41.1 Introduction

This Resource describes the direction of the Earth's magnetic field at the observer's current point in space.
Typical use case includes measurement of compass readings on a personal device.
The Property "value" is an array containing Hx, Hy, Hz (in that order) each of which are floats.
Each of Hx, Hy and Hz are expressed in A/m (Amperes per metre).

6.41.2 Example URI

/MagneticFieldDirectionResURI

6.41.3 Resource type

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

6.41.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Magnetic Field Direction Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MagneticFieldDirectionResURI" : {
      "get": {
```

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```
        "description": "This Resource describes the direction of the Earth's magnetic field at the
observer's current point in space.\nTypical use case includes measurement of compass readings on a
personal device.\nThe Property \"value\" is an array containing Hx, Hy, Hz (in that order) each of
which are floats.\nEach of Hx, Hy and Hz are expressed in A/m (Amperes per metre).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.magneticfielddirection"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": [100.0, 15.0, 90.0]
                },
              "schema": { "$ref": "#/definitions/magneticFieldDirection" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "magneticFieldDirection" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.magneticfielddirection"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The array containing Hx, Hy, Hz.",
          "items": {
            "type": "number"
          },
          "maxItems": 3,
          "minItems": 3,
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.s",
                "oic.if.baseline"
              ],
              "type": "string"
            },
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
```


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```
          "type": "array"
        }
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

6.41.5 Property definition

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

Table 85 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.magneticfielddirection"

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

6.41.6 CRUDN behaviour

Table 86 defines the CRUDN operations that are supported on the "oic.r.sensor.magneticfielddirection" Resource Type.

Table 86 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.magneticfielddirection"

Create	Read	Update	Delete	Notify
	get			observe

6.42 Media

6.42.1 Introduction

This Resource specifies the media types that an OCF Server supports.
The resource is an array of media elements. Each element contains:
A URL at which the specified media type can be accessed.
A string array containing the definition of the media using SDP.
Each entry in the sdp array is an SDP line.
Each line shall follow the SDP description syntax as defined in the SDP specification.
The SDP specification can be found at http://tools.ietf.org/html/rfc4566.

6.42.2 Example URI

/MediaResURI

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6.42.3 Resource type

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

6.42.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media",
    "version": "20190508",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MediaResURI" : {
      "get": {
        "description": "This Resource specifies the media types that an OCF Server supports.\nThe
resource is an array of media elements.  Each element contains:\n    A URL at which the specified media
type can be accessed.\n    A string array containing the definition of the media using SDP.\n    Each
entry in the sdp array is an SDP line.\n    Each line shall follow the SDP description syntax as
defined in the SDP specification.\nThe SDP specification can be found at
http://tools.ietf.org/html/rfc4566.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current media resource.",
              "x-example":
                {
                  "rt": ["oic.r.media"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "media": [
                    {
                      "url": "some example url",
                      "sdp": [
                        "m=video 1 RTP/AVP 96",
                        "a=rtpmap:96 H264/9000",
                        "a=fmtp:96 profile-level-id=42A028;packetization-mode=1"
                      ]
                    },
                    {
                      "url": "some other example1 url",
                      "sdp": [
                        "m=audio 2 RTP/AVP 97",
                        "a=rtpmap:97 MP4A-LATM/90000"
                      ]
                    },
                    {
                      "url": "some other example2 url",
                      "sdp": [
                        "m=video 3 RTP/AVP 98",
                        "a=rtpmap:98 jpeg/90000",
                        "a=fmtp:98 sampling=YCbCr-4:2:0;width=256;height=256"
                      ]
                    }
                  ]
                },
              "schema": { "$ref": "#/definitions/Media" }
            }
        }
      },
      "post": {
        "description": "This is to change the URL that can be played back by the device. Note that some
```

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```
devices do not have the capability to set the URL to be played back",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Media" },
            "x-example":
              {
                "media": [
                    {
                      "url": "new example url for playback",
                      "sdp": [
                        "m=video 1 RTP/AVP 100",
                        "a=rtpmap:100 H264/9000",
                        "a=fmtp:100 profile-level-id=42A028;packetization-mode=1"
                      ]
                    }
                  ]
                }
          }
        ],
        "responses": {
            "200": {
              "description" : "The current media resource.",
              "x-example":
                {
                  "rt": ["oic.r.media"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "media": [
                    {
                      "url": "new example url for playback",
                      "sdp": [
                        "m=video 1 RTP/AVP 100",
                        "a=rtpmap:100 H264/9000",
                        "a=fmtp:100 profile-level-id=42A028;packetization-mode=1"
                      ]
                    }
                  ]
                },
              "schema": { "$ref": "#/definitions/Media" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Media" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.media"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "media": {
          "items": {
            "properties": {
              "sdp": {
                "description": "The array of strings, one per SDP line.",
                "items": {
                  "description": "SDP media or attribute line",
```

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```
                "type": "string"
              },
              "type": "array"
            },
            "url": {
              "description": "The url for the media instance.",
              "type": "string"
            }
          },
          "type": "object"
        },
        "type": "array"
      },
      "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
      },
      "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": [
            "oic.if.a",
            "oic.if.s",
            "oic.if.baseline"
          ],
          "type": "string"
        },
        "minItems": 2,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      }
    },
    "type": "object",
    "required": ["media"]
  }
 }
}
```


6.42.5 Property definition

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

Table 87 – The Property definitions of the Resource with type "rt" = "oic.r.media"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
media	array: see schema	Yes	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.42.6 CRUDN behaviour

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

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Table 88 – The CRUDN operations of the Resource with type "rt" = "oic.r.media"

Create	Read	Update	Delete	Notify
	get	post		observe

6.43 Media Source

6.43.1 Introduction

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

6.43.2 Example URI

/mediaSourceResURI

6.43.3 Resource type

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

6.43.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Source",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/mediaSourceResURI" : {
      "get": {
        "description": "This Resource defines a single media source that exists on a device.\nThe
source can be an input source or output source, this resource is agnostic of that.\nThe Property
\"sourceName\" specifies a pre-defined media input or output (e.g.\"HDMI\", \"DVI\").\nThe Property
\"sourceNumber\" is a label to specify the instance (e.g. \"PC\", \"1\").\nThe Property \"sourceType\"
is an enumeration defining whether the source is audio, video or both.\nThe Property \"status\" is a
boolean that determines if the specific source instance is selected or not.\n A status of true means
that the source instance is selected.\n A status of false means that the source instance is not
selected.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
```

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```
                "rt": ["oic.r.mediasource"],
                "if": ["oic.if.a", "oic.if.baseline"],
                "sourceName": "HDMI-CEC",
                "sourceNumber": "1",
                "sourceType": "audioPlusVideo",
                "status": true
              },
            "schema": { "$ref": "#/definitions/mediaSource" }
          }
        }
      },
      "post": {
        "description": "Changes the status of the source.\nAllows changes of the \"sourceName\" and the
\"status\".",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/mediaSource" },
            "x-example":
              {
                "sourceName": "my new name",
                "status": true
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "sourceName": "my new name",
                  "sourceNumber": "1",
                  "sourceType": "audioPlusVideo",
                  "status": true
                },
              "schema": { "$ref": "#/definitions/mediaSource" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "mediaSource": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.mediasource"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "status": {
          "description": "Specifies if the specific source instance is selected or not.",
          "type": "boolean"
        },
        "sourceType": {
          "description": "Specifies the type of the source.",
          "enum": [
            "audioOnly",
            "videoOnly",
            "audioPlusVideo"
```


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```
          ],
          "readOnly": true,
          "type": "string"
        },
        "sourceName": {
          "description": "Specifies a pre-defined media input or output.",
          "type": "string"
        },
        "sourceNumber": {
          "description": "Label to specify the instance.",
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["sourceName", "status"]
    }
  }
}
```

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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
status	boolean	Yes	Read Write	Specifies if the specific source instance is selected or not.
sourceType	string	No	Read Only	Specifies the type of the source.
sourceName	string	Yes	Read Write	Specifies a pre-defined media input or output.
sourceNumber	string	No	Read Write	Label to specify the instance.

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Property name	Value type	Mandatory	Access mode	Description
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.43.6 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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.44 Media Source List

6.44.1 Introduction

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

6.44.2 Example URI

/mediaSourceListResURI

6.44.3 Resource type

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

6.44.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Source List",
    "version": "20190729",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/mediaSourceListResURI" : {
      "get": {
        "description": "This Resource provides the list of all media sources available on the Device
(input and/or output).\nThe sources are an array of mediaSource(s) as separately defined see Resource
Type \"oic.r.mediasource\"",
```

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```
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.mediasourcelist"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "sources": [
                    {
                      "sourceName": "HDMI-CEC",
                      "sourceNumber": "1",
                      "sourceType": "audioPlusVideo",
                      "status": true
                    },
                    {
                      "sourceName": "dualRCA",
                      "sourceNumber": "1",
                      "sourceType": "audioOnly",
                      "status": false
                    }
                  ]
                },
              "schema": { "$ref": "#/definitions/mediaSourceList" }
            }
        }
      },
      "post": {
        "description": "Changes the status of the source(s).\nAllows changes of the sourceName and the
status.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/mediaSourceList" },
            "x-example":
              {
                "sources": [
                  {
                   "sourceName": "my new name",
                   "status": true
                  },
                  {
                    "sourceName": "dualRCA"
                  }
                ]
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "sources": [
                    {
                      "sourceName": "my new name",
                      "sourceNumber": "1",
                      "sourceType": "audioPlusVideo",
                      "status": true
                    },
                    {
                      "sourceName": "dualRCA",
                      "sourceNumber": "1",
                      "sourceType": "audioOnly",
                      "status": false
                    }
                  ]
                },
              "schema": { "$ref": "#/definitions/mediaSourceList" }
            }
        }
      }
```


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


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```
          "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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
sources	array: see schema	Yes	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.44.6 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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.45 Media Source Input

6.45.1 Introduction

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

6.45.2 Example URI

/mediaSourceInputResURI

6.45.3 Resource type

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

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6.45.4 OpenAPI 2.0 definition


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


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```
        "200": {
          "description" : "",
          "x-example": {
            "sources": [
              {
                "sourceName": "my new name",
                "sourceNumber": "1",
                "sourceType": "audioPlusVideo",
                "status": true
              },
              {
                "sourceName": "dualRCA",
                "sourceNumber": "1",
                "sourceType": "audioOnly",
                "status": false
              }
            ]
          },
          "schema": { "$ref": "#/definitions/mediaSourceList" }
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "mediaSourceList" : {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": ["oic.r.media.input"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "sources": {
        "items": {
          "properties": {
            "sourceName": {
              "description": "Specifies a pre-defined media input or output",
              "type": "string"
            },
            "sourceNumber": {
              "description": "Label to specify the instance",
              "readOnly": true,
              "type": "string"
            },
            "sourceType": {
              "description": "Specifies the type of the source",
              "enum": [
                "audioOnly",
                "videoOnly",
                "audioPlusVideo"
              ],
              "readOnly": true,
              "type": "string"
            },
            "status": {
              "description": "Specifies if the specific source instance is selected or not",
              "type": "boolean"
            }
          },
          "type": "object"
        },
        "type": "array"
```


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```
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["sources"]
    }
  }
}
```

6.45.5 Property definition

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

Table 93 – The Property definitions of the Resource with type "rt" = "oic.r.media.input"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
sources	array: see schema	Yes	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.45.6 CRUDN behaviour

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

Table 94 – The CRUDN operations of the Resource with type "rt" = "oic.r.media.input"

Create	Read	Update	Delete	Notify
	get	post		observe

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6.46 Media Source Output

6.46.1 Introduction

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

6.46.2 Example URI

/mediaSourceOutputResURI

6.46.3 Resource type

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

6.46.4 OpenAPI 2.0 definition

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

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```
status.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/mediaSourceList" },
            "x-example": {
              "sources": [
                {
                  "sourceName": "my new name",
                  "status": true
                },
                {
                 "sourceName": "dualRCA"
                }
              ]
            }
          }
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "sources": [
                {
                  "sourceName": "my new name",
                  "sourceNumber": "1",
                  "sourceType": "audioPlusVideo",
                  "status": true
                },
                {
                  "sourceName": "dualRCA",
                  "sourceNumber": "1",
                  "sourceType": "audioOnly",
                  "status": false
                }
              ]
            },
            "schema": { "$ref": "#/definitions/mediaSourceList" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "mediaSourceList" : {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": ["oic.r.media.output"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "sources": {
          "items": {
            "properties": {
              "sourceName": {
                "description": "Specifies a pre-defined media input or output",
                "type": "string"
              },
              "sourceNumber": {
```

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```
                "description": "Label to specify the instance",
                "readOnly": true,
                "type": "string"
              },
              "sourceType": {
                "description": "Specifies the type of the source",
                "enum": [
                  "audioOnly",
                  "videoOnly",
                  "audioPlusVideo"
                ],
                "readOnly": true,
                "type": "string"
              },
              "status": {
                "description": "Specifies if the specific source instance is selected or not",
                "type": "boolean"
              }
            },
            "type": "object"
          },
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["sources"]
    }
  }
}
```


6.46.5 Property definition

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

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
sources	array: see schema	Yes	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.46.6 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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.47 Motion Sensor

6.47.1 Introduction

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

6.47.2 Example URI

/MotionResURI

6.47.3 Resource type

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

6.47.4 OpenAPI 2.0 definition

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

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```
  "produces": ["application/json"],
  "paths": {
    "/MotionResURI" : {
      "get": {
        "description": "This Resource describes whether motion has been sensed or not.\nThe Property
\"value\" is a boolean.\nA value of 'true' means that motion has been sensed.\nA value of 'false' means
that motion not been sensed.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.motion"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/Motion" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Motion" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.motion"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The motion sensor, true = motion sensed, false = motion not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
```

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```
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

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"

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

6.47.6 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"

Create	Read	Update	Delete	Notify
	get			observe

6.48 Night Mode

6.48.1 Introduction

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

6.48.2 Example URI

/NightModeResURI

6.48.3 Resource type

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

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6.48.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Night Mode",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/NightModeResURI" : {
      "get": {
        "description": "This Resource describes a night mode on/off feature.\nA nightMode value of
'true' means that the feature is on.\nA nightMode value of 'false' means that the feature is off.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.nightmode"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "nightMode": false
                },
              "schema": { "$ref": "#/definitions/NightMode" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/NightMode" },
            "x-example":
              {
                "nightMode": true
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "nightMode": true
                },
              "schema": { "$ref": "#/definitions/NightMode" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
```

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


6.48.5 Property definition

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

Table 99 – The Property definitions of the Resource with type "rt" = "oic.r.nightmode"

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

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6.48.6 CRUDN behaviourc

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

Table 100 – The CRUDN operations of the Resource with type "rt" = "oic.r.nightmode"

Create	Read	Update	Delete	Notify
	get	post		observe

6.49 Presence Sensor

6.49.1 Introduction

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

6.49.2 Example URI

/PresenceResURI

6.49.3 Resource type

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

6.49.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Presence Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PresenceResURI" : {
      "get": {
        "description": "This Resource describes whether presence has been sensed or not.\nThe Property
\"value\" is a boolean.\nA value of 'true' means that presence has been sensed.\nA value of 'false'
means that presence not been sensed.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.presence"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
```

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```
              "schema": { "$ref": "#/definitions/Presence" }
            }
          }
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Presence" : {
        "properties": {
          "rt": {
            "description": "The Resource Type.",
            "items": {
              "enum": ["oic.r.sensor.presence"],
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "value": {
            "description": "The presences sensor, true = precense sensed, false = precensenot sensed.",
            "readOnly": true,
            "type": "boolean"
          },
          "n": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "id": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.s",
                "oic.if.baseline"
              ],
              "type": "string"
            },
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": ["value"]
      }
    }
}
```


6.49.5 Property definition

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

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Only	The presences sensor, true = precense sensed, false = precensenot sensed.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.49.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get			observe

6.50 Pan Tilt Zoom Movement

6.50.1 Introduction

This Resource specifies the pan tilt and zoom capabilities of a device.
The Resource Type is dynamic and reflects whether the values apply to
physical movement of the device or digital/virtual enhancements to the image.
For physical movement the Resource Type is "oic.r.movement.ptz".
For digital/virtual image enhancements the Resource Type is "oic.r.image.ptz".
The Properties "pan" and "tilt" are specified in degrees.
The Property "zoomFactor" is a value in the range 1-100 for linear (optical) zoom.
The zoom factor is a value in the range [1x, 2x, 4x, 8x, 16x, 32x] for digital zoom.
If there is no zoom value to set the zoom factor shall be '1x'.
The value 0 degrees means neutral, this is a vendor defined setting.
Note that this resource also can be used to create an offset for physical movement.
When that is the case, the Resource Type value is: "oic.r.movement.offset.ptz"
Note that this resource also can be used to create an offset for image movement.
When that is the case, the Resource Type value is: "oic.r.image.offset.ptz".
When the Property "pan_range" value is omitted, then the range is [-180.0,180.0].
If "pan" is not supported then the range shall be [0.0,0.0]
When the Property "tilt_range" value is omitted, then the range is [-180.0,180.0].
If "tilt" is not supported then the range shall be [0.0,0.0].

6.50.2 Example URI

/PanTiltZoomResURI

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6.50.3 Resource type

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

6.50.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Pan Tilt Zoom Movement",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PanTiltZoomResURI" : {
      "get": {
        "description": "This Resource specifies the pan tilt and zoom capabilities of a device.\nThe
Resource Type is dynamic and reflects whether the values apply to\n  physical movement of the device or
digital/virtual enhancements to the image.\nFor physical movement the Resource Type is
\"oic.r.movement.ptz\".\nFor digital/virtual image enhancements the Resource Type is
\"oic.r.image.ptz\".\nThe Properties \"pan\" and \"tilt\" are specified in degrees.\nThe Property
\"zoomFactor\" is a value in the range 1-100 for linear (optical) zoom.\nThe zoom factor is a value in
the range [1x, 2x, 4x, 8x, 16x, 32x] for digital zoom.\nIf there is no zoom value to set the zoom
factor shall be '1x'.\nThe value 0 degrees means neutral, this is a vendor defined setting.\nNote that
this resource also can be used to create an offset for physical movement.\nWhen that is the case, the
Resource Type value is: \"oic.r.movement.offset.ptz\"\nNote that this resource also can be used to
create an offset for image movement.\nWhen that is the case, the Resource Type value is:
\"oic.r.image.offset.ptz\".\nWhen the Property \"pan_range\" value is omitted, then the range is [-
180.0,180.0].\nIf \"pan\" is not supported then the range shall be [0.0,0.0]\nWhen the Property
\"tilt_range\" value is omitted, then the range is [-180.0,180.0].\nIf \"tilt\" is not supported then
the range shall be [0.0,0.0].",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Retrieves the current pan, tilt and zoom setting.",
              "x-example":
                {
                  "rt": ["oic.r.ptz"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "pan": 0.0,
                  "tilt": 0.0,
                  "zoomFactor": "2x"
                },
              "schema": { "$ref": "#/definitions/PanTiltZoom" }
            }
        }
      },
      "post": {
        "description": "Sets the current pan, tilt and zoom value.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/PanTiltZoom" },
            "x-example":
              {
                "pan": 10.0,
                "tilt": -10.0,
                "zoomFactor": "4x"
              }
```

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```
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "pan": 10.0,
                  "tilt": -10.0,
                  "zoomFactor": "4x"
                },
              "schema": { "$ref": "#/definitions/PanTiltZoom" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "PanTiltZoom" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.ptz"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "tilt_range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "zoomFactor": {
          "description": "The zoom factor value.",
          "type": "string"
        },
        "tilt": {
          "description": "The vertical tilt in degrees.",
          "type": "number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "pan_range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "zoomFactorRange": {
          "description": "The allowed Zoom Factor values. Linear equates to a 1-100 min/max.",
          "enum": [
            "linear",
            "1x",
            "2x",
            "4x",
            "8x",
            "16x",
            "32x"
          ],
          "readOnly": true,
          "type": "string"
        },
```


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```
        "pan": {
          "description": "The horizontal pan in degrees.",
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["pan", "tilt", "zoomFactor"]
    }
  }
}
```


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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
tilt_range	multiple types: see schema	No	Read Write	
zoomFactor	string	Yes	Read Write	The zoom factor value.
tilt	number	Yes	Read Write	The vertical tilt in degrees.
precision	multiple types: see schema	No	Read Write	
pan_range	multiple types: see schema	No	Read Write	
zoomFactorRange	string	No	Read Only	The allowed Zoom Factor values. Linear equates to a 1-100 min/max.
pan	number	Yes	Read Write	The horizontal pan in degrees.

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Property name	Value type	Mandatory	Access mode	Description
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.50.6 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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.51 Signal Strength

6.51.1 Introduction

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

6.51.2 Example URI

/SignalStrengthResURI

6.51.3 Resource type

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

6.51.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Signal Strength",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "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
Property \"lqi\" is a floating point number that represents Link Quality Indicator.\nThe Property
\"rssi\" is a floating point number that represents the received signal strength indicator.",
```

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```
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.signalstrength"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "lqi": 10.0,
                  "rssi": 55.0
                }
                ,
              "schema": { "$ref": "#/definitions/SignalStrength" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "SignalStrength" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.signalstrength"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "lqi": {
          "description": "The current value of Link Quality Indicator.",
          "readOnly": true,
          "type": "number"
        },
        "rssi": {
          "description": "The current value of Received Signal Strength Indicator.",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
```


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```
      },
      "type": "object",
      "required": ["lqi", "rssi"]
    }
  }
}
```

6.51.5 Property definition

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

Table 105 – The Property definitions of the Resource with type "rt" = "oic.r.signalstrength"

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

6.51.6 CRUDN behaviour

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

Table 106 – The CRUDN operations of the Resource with type "rt" = "oic.r.signalstrength"

Create	Read	Update	Delete	Notify
	get			observe

6.52 Speech Synthesis-TTS

6.52.1 Introduction

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

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

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

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

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

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

xml:lang="en-US">

The title of the movie is:

"Monty Pythons The Meaning of Life"

which is directed by Terry Jones.

</speak"

6.52.2 Example URI

/SpeechTTSResURI

6.52.3 Resource type

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

6.52.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Speech Synthesis-TTS",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SpeechTTSResURI" : {
      "get": {
        "description": "This Resource may be created on the OCF Server that is capable of rendering
speech by an OCF Client and allows the client to provide an SSML document with text to render\n or may
be created on the OIC Server by some resident application.\nThe audio rendered is at this stage local
to the Server (i.e. not streamed).\nThe utterance is an SSML document.\nThe supportedLanguages is an
array of the RFC5646 defined language tags that are supported.\nThe supportedVoices is an SSML document
fragment indicating the voices that are supported.\nUtterance in the example shall be a properly
escaped (JSON rules) SSML document. An example:\n  \"<?xml version=\"1.0\" encoding=\"ISO-8859-
1\"?>\n\r\n  <speak version=\"1.1\" xmlns=\"http:\/\/www.w3.org\/2001\/10\/synthesis\"\n\r\n
\txmlns:xsi=\"http:\/\/www.w3.org\/2001\/XMLSchema-instance\"\n\r\n
\txsi:schemaLocation=\"http:\/\/www.w3.org\/2001\/10\/synthesis\n\r\n
\thttp:\/\/www.w3.org\/TR\/speech-synthesis11\/synthesis.xsd\"\n\r\n  \txml:lang=\"en-US\">\n\r\n
\n\r\n  \tThe title of the movie is:\n\r\n  \t\"Monty Pythons The Meaning of Life\"\n\r\n  \twhich is
directed by Terry Jones.\n\r\n  <\/speak\"\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
```


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```
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.speech.tts"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "utterance": "Strange women lying in ponds distributing swords is no basis for a
system of government.",
                  "supportedLanguages": ["en-US", "en-GB", "fr-CA"],
                  "supportedVoices": "<voice gender=\"female\" variant=\"2\"><\/voice>\n\r<voice
name=\"Mike\"><\/voice>"
                },
              "schema": { "$ref": "#/definitions/Speech" }
            }
        }
      },
      "post": {
        "description": "Changes the utterance being rendered.\nExample shows a change in language
selected.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Speech" },
            "x-example":
              {
                "utterance": "Alright, but apart from the sanitation, the medicine, education, wine,
public order, irrigation, roads, the fresh-water system, and public health, what have the Romans ever
done for us?"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "utterance": "Alright, but apart from the sanitation, the medicine, education, wine,
public order, irrigation, roads, the fresh-water system, and public health, what have the Romans ever
done for us?"
                },
              "schema": { "$ref": "#/definitions/Speech" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Speech": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.speech.tts"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "supportedLanguages": {
          "description": "The array of supported language tags.",
          "items": {
            "type": "string"
```


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```
          },
          "readOnly": true,
          "type": "array"
        },
        "supportedVoices": {
          "description": "The SSML document fragment indicating supported voices.",
          "readOnly": true,
          "maxLength": 1024,
          "type": "string"
        },
        "utterance": {
          "description": "The SSML document including the speech body.",
          "maxLength": 1024,
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["utterance"]
    }
  }
}
```


6.52.5 Property definition

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

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
supportedLanguages	array: see schema	No	Read Only	The array of supported language tags.
supportedVoices	string	No	Read Only	The SSML document fragment indicating supported voices.
utterance	string	Yes	Read Write	The SSML document including the speech body.

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Property name	Value type	Mandatory	Access mode	Description
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.52.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get	post		observe

6.53 Touch Sensor

6.53.1 Introduction

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

6.53.2 Example URI

/TouchResURI

6.53.3 Resource type

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

6.53.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Touch Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/TouchResURI" : {
      "get": {
        "description": "This Resource describes whether a touch has been sensed or not.\nThe Property
\"value\" is a boolean.\nA value of 'true' means that touch has been sensed.\nA value of 'false' means
```

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```
that touch not been sensed.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.touch"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/Touch" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Touch" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.touch"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The touch sensor, true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

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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"

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

6.53.6 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"

Create	Read	Update	Delete	Notify
	get			observe

6.54 UV Radiation

6.54.1 Introduction

This Resource specifies UV radiation measurement.
The Property "measurement" is the current measured UV Index

6.54.2 Example URI

/UVRadiationResURI

6.54.3 Resource type

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

6.54.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "UV Radiation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
```

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```
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/UVRadiationResURI" : {
      "get": {
        "description": "This Resource specifies UV radiation measurement.\nThe Property \"measurement\"
is the current measured UV Index",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.radiation.uv"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "measurement": 3.5
                }
                ,
              "schema": { "$ref": "#/definitions/UVRadiation" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "UVRadiation" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.radiation.uv"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "measurement": {
          "description": "The measured UV Index.",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if" :
                {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
```

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```
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["measurement"]
    }
  }
}
```

6.54.5 Property definition

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

Table 111 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.radiation.uv"

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

6.54.6 CRUDN behaviour

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

Table 112 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.radiation.uv"

Create	Read	Update	Delete	Notify
	get			observe

6.55 Water Sensor

6.55.1 Introduction

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

6.55.2 Example URI

/WaterResURI

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6.55.3 Resource type

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

6.55.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Water Sensor",
    "version": "20191118",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/WaterResURI" : {
      "get": {
        "description": "This Resource describes whether water has been sensed or not.\nThe Property
\"value\" is a boolean.\nA value of 'true' means that water has been sensed.\nA value of 'false' means
that water not been sensed.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt":    ["oic.r.sensor.water"],
              "id":    "unique_example_id",
              "value": true
            },
            "schema": { "$ref": "#/definitions/Water" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Water": {
      "properties": {
        "rt":  {
          "description": "The Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor.water"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value":  {
          "description": "true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
```

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```
        "measurement":  {
          "type": "number",
          "description": "Measured value for this sensor in units of litres/hr",
          "readOnly": true
        },
        "precision":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "id":  {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if":  {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["value"]
    }
  }
}
```


6.55.5 Property definition

Table 113 defines the Properties that are part of the "oic.r.sensor.water" Resource Type.

Table 113 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.water"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
value	boolean	Yes	Read Only	true = sensed, false = not sensed.
measurement	number	No	Read Only	Measured value for this sensor in units of litres/hr
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.55.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get			observe

6.56 Acceleration Sensor

6.56.1 Introduction

This Resource provides a measure of proper acceleration (g force) as opposed to co-ordinate acceleration (which is dependent on the co-ordinate system and the observer).
The Property "value" is a float which describes the acceleration experienced by the object in "g".

6.56.2 Example URI

/AccelerationResURI

6.56.3 Resource type

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

6.56.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Acceleration Sensor",
    "version": "20190215",
      "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AccelerationResURI" : {
      "get": {
        "description": "This Resource provides a measure of proper acceleration (g force) as opposed to
```

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```
co-ordinate acceleration (which is dependent on the co-ordinate system and the observer).\nThe Property
\"value\" is a float which describes the acceleration experienced by the object in \"g\".",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.acceleration"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "acceleration": 0.5
                },
              "schema": { "$ref": "#/definitions/acceleration" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "acceleration" : {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor.acceleration"]
          },
          "minItems": 1,
          "uniqueItems" : true,
          "readOnly": true,
          "type": "array"
        },
        "acceleration": {
          "description": "The sensed acceleration experienced in 'g'.",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
```


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```
            "oic.if.s",
            "oic.if.baseline"
          ],
          "type": "string"
        },
        "minItems": 2,
        "readOnly": true,
        "uniqueItems": true,
        "type": "array"
      }
    },
    "type": "object",
    "required": ["acceleration"]
  }
 }
}
```

6.56.5 Property definition

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

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

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

6.56.6 CRUDN behaviour

Table 116 defines the CRUDN operations that are supported on the "oic.r.sensor.acceleration" Resource Type.

Table 116 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.acceleration"

Create	Read	Update	Delete	Notify
	get			observe

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6.57 Movement

6.57.1 Introduction

This Resource specifies linear movement.
The Property "movementSettings" is an array of strings containing possible movement values (e.g. spin, stop, left, right).
The Property "movement" is the currently selected movement value.
The Property "movementModifier" is a modifier to the movement value (e.g. "spin", "90")

6.57.2 Example URI

/MovementResURI

6.57.3 Resource type

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

6.57.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Movement",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MovementResURI" : {
      "get": {
        "description": "This Resource specifies linear movement.\nThe Property \"movementSettings\" is
an array of strings containing possible movement values (e.g. spin, stop, left, right).\nThe Property
\"movement\" is the currently selected movement value.\nThe Property \"movementModifier\" is a modifier
to the movement value (e.g. \"spin\", \"90\")\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses":{
            "200":{
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.movement.linear"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
                  "movement": "rotate",
                  "movementModifier": "90"
                },
              "schema": { "$ref": "#/definitions/movement" }
            }
        }
      },
      "post": {
        "description": "Sets the current device movement.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
```


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```
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/movement" },
            "x-example":
              {
                "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
                "movement": "stop"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
                  "movement": "stop"
                },
              "schema": { "$ref": "#/definitions/movement" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "movement" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.movement.linear"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "movementSettings": {
          "description": "The array of possible movement values.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "movementModifier": {
          "description": "The modifier to the movement value (e.g. spin-90, left-20), units are device
dependent.",
          "type": "string"
        },
        "movement": {
          "description": "The current movement value.",
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
```


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```
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["movementSettings", "movement"]
    }
  }
}
```

6.57.5 Property definition

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

Table 117 – The Property definitions of the Resource with type "rt" = "oic.r.movement.linear"

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

6.57.6 CRUDN behaviour

Table 118 defines the CRUDN operations that are supported on the "oic.r.movement.linear" Resource Type.

Table 118 – The CRUDN operations of the Resource with type "rt" = "oic.r.movement.linear"

Create	Read	Update	Delete	Notify
	get	post		observe

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6.58 Sleep Sensor

6.58.1 Introduction

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

6.58.2 Example URI

/SleepSensorResURI

6.58.3 Resource type

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

6.58.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sleep Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SleepSensorResURI" : {
      "get": {
        "description": "This Resource describes whether human sleep has been sensed or not.\nThe
Property \"value\" is a boolean.\nA value of 'true' means that sleep has been sensed.\nA value of
'false' means that sleep not been sensed.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.sleep"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/sleep" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
```

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

6.58.5 Property definition

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

Table 119 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.sleep"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Only	The sleep sensor, true = sleep sensed, false = sleep not sensed.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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6.58.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get			observe

6.59 Smoke Sensor

6.59.1 Introduction

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

6.59.2 Example URI

/SmokeSensorResURI

6.59.3 Resource type

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

6.59.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Smoke Sensor",
    "version": "20191118",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SmokeSensorResURI" : {
      "get": {
        "description": "This Resource describes whether smoke has been sensed or not.\nThe Property
\"value\" is a boolean.\nA value of 'true' means that smoke has been sensed.\nA 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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```
            "schema": { "$ref": "#/definitions/smoke" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "smoke": {
      "properties": {
        "rt":  {
          "description": "The Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor.smoke"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value":  {
          "description": "The smoke indicator, true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "measurement":  {
          "type": "number",
          "description": "Measured value for this sensor, this is a percentage",
          "readOnly": true
        },
        "precision":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "id":  {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if":  {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
```


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```
            "type": "array"
          }
        },
        "type" : "object",
        "required": ["value"]
      }
    }
}
```

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"

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

6.59.6 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"

Create	Read	Update	Delete	Notify
	get			observe

6.60 Three Axis Sensor

6.60.1 Introduction

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

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6.60.2 Example URI

/ThreeAxisResURI

6.60.3 Resource type

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

6.60.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Three Axis Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ThreeAxisResURI" : {
      "get": {
        "description": "This Resource provides a representation of the measurement from a three-axis
sensor.\nThe Property \"orientation\" is an array of numbers representing x-plane, y-plane and z-plane
values.\nThe unit of measurement for each pane is 'g'.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.threeaxis"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "orientation": [0.7, 1.1, -0.2]
                },
              "schema": { "$ref": "#/definitions/threeAxis" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "threeAxis" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.threeaxis"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
```

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```
          "type": "array"
        },
        "orientation": {
          "description": "The array containing x-plane, y-plane and z-plane orientation in 'g'.",
          "items": {
            "type": "number"
          },
          "maxItems": 3,
          "minItems": 3,
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["orientation"]
    }
  }
}
```


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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
orientation	array: see schema	Yes	Read Only	The array containing x-plane, y-plane and z-plane orientation in 'g'.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.60.6 CRUDN behaviour

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

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Table 124 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.threeaxis"

Create	Read	Update	Delete	Notify
	get			observe

6.61 Altimeter

6.61.1 Introduction

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

6.61.2 Example URI

/AltimeterResURI

6.61.3 Resource type

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

6.61.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Altimeter",
    "version": "20190225",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AltimeterResURI" : {
      "get": {
        "description": "This Resource describes the properties associated with altimeter.\nThe Property
\"alt\" is the distance (metres) above or below 'local' sea-level.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "RETRIEVES the current the distance (metres) above or below 'local' sea-
level.",
            "x-example":
              {
                "rt":  ["oic.r.altimeter"],
                "if":  ["oic.if.s", "oic.if.baseline"],
                "alt": 1500.0
              },
            "schema": { "$ref": "#/definitions/Altimeter" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
```

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```
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Altimeter" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.altimeter"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "alt" :
                {
          "description": "The current distance (metres) above or below 'local' sea-level.",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "precision": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["alt"]
    }
  }
}
```


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6.61.5 Property definition

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

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

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

6.61.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get			observe

6.62 Clock

6.62.1 Introduction

This Resource describes the properties associated with clock and time.
Clock is a time information.
The Property "datetime" is using RFC3339 datetime format (e.g: "2007-04-05T14:30Z")
(Time+Date+Timezone)
The Property "countdown" is the desired total seconds for countdown.

6.62.2 Example URI

/ClockResURI

6.62.3 Resource type

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

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6.62.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Clock",
    "version": "20190327",
     "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ClockResURI" : {
      "get": {
        "description": "This Resource describes the properties associated with clock and time.\nClock
is a time information.\nThe Property \"datetime\" is using RFC3339 datetime format (e.g: \"2007-04-
05T14:30Z\") (Time+Date+Timezone)\nThe Property \"countdown\" is the desired total seconds for
countdown.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.clock"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "datetime": "2015-11-05T14:30:00Z",
                  "countdown": 0.0
                },
              "schema": { "$ref": "#/definitions/Clock" }
            }
        }
      },
      "post": {
        "description": "Sets the desired datetime.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Clock" },
            "x-example":
              {
                "datetime": "2015-11-05T14:30:00Z",
                "countdown": 0.0
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the datetime value was successfully changed.\nThe new
datetime value is provided in the response.\n",
              "x-example":
                {
                  "datetime": "2015-11-05T14:30:00Z",
                  "countdown": 0.0
                }
                ,
              "schema": { "$ref": "#/definitions/Clock" }
            },
            "403": {
              "description" : "Indicates that OIC client sent an invalid property value to the
server.\nThe server responds with the required input representation.\n",
              "x-example":
                {
```

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```
                "datetime": "2015-11-05T14:30:00Z",
                "countdown": 0.0
              }
              ,
            "schema": { "$ref": "#/definitions/Clock" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Clock": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.clock"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "countdown": {
          "description": "The desired total seconds for countdown.",
          "minimum": 0,
          "type": "number"
        },
        "datetime": {
          "description": "Rhe date time using RFC3339 datetime format (e.g: 2007-04-05T14:30:00Z, 2007-
04-05T14:30:00+09:00).",
          "type": "string",
          "format" : "date-time"
        },
         "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["datetime"]
    }
  }
}
```

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6.62.5 Property definition

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

Table 127 – The Property definitions of the Resource with type "rt" = "oic.r.clock"

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

6.62.6 CRUDN behaviour

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

Table 128 – The CRUDN operations of the Resource with type "rt" = "oic.r.clock"

Create	Read	Update	Delete	Notify
	get	post		observe

6.63 Geolocation

6.63.1 Introduction

This Resource describes the properties associated with the current geolocation coordinate.
Geolocation is a geolocation coordinate data.
The Property "latitude" is a device's current Latitude coordinate (degrees).
The Property "longitude" is a device's current Longitude coordinate (degrees).
The Property "alt" is a device's current distance (metres) above or below 'local' sea-level.
The Property "accuracy" is the accuracy level of the latitude and longitude coordinates (metres).
The Property "altitudeAccuracy" is the accuracy level of the altitude coordinates (metres).
The Property "heading" is a direction of travel of device (degree).
The Property "speed" is a device's current velocity (metres per second).

6.63.2 Example URI

/GeolocationResURI

6.63.3 Resource type

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

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6.63.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Geolocation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GeolocationResURI" : {
      "get": {
        "description": "This Resource describes the properties associated with the current geolocation
coordinate.\nGeolocation is a geolocation coordinate data.\nThe Property \"latitude\" is a device's
current Latitude coordinate (degrees).\nThe Property \"longitude\" is a device's current Longitude
coordinate (degrees).\nThe Property \"alt\" is a device's current distance (metres) above or below
'local' sea-level.\nThe Property \"accuracy\" is the accuracy level of the latitude and longitude
coordinates (metres).\nThe Property \"altitudeAccuracy\" is the accuracy level of the altitude
coordinates (metres).\nThe Property \"heading\" is a direction of travel of device (degree).\nThe
Property \"speed\" is a device's current velocity (metres per second).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current geolocation coordinates.",
              "x-example":
                {
                  "rt": ["oic.r.sensor.geolocation"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "latitude": 55.070859,
                  "longitude": -3.60512,
                  "alt": 12.07,
                  "accuracy": 65.0,
                  "altitudeAccuracy": 0.0,
                  "heading": 90.0,
                  "speed": 0.0
                },
              "schema": { "$ref": "#/definitions/Geolocation" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Geolocation" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.geolocation"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```

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```
        },
        "longitude": {
          "description": "The Device's Current Longitude coordinate (degrees).",
          "readOnly": true,
          "type": "number"
        },
        "heading": {
          "description": "The direction of travel of the Device (degree).",
          "maximum": 360,
          "minimum": 0,
          "readOnly": true,
          "type": "number"
        },
        "latitude": {
          "description": "The Device's Current Latitude coordinate (degrees).",
          "readOnly": true,
          "type": "number"
        },
        "altitudeAccuracy": {
          "description": "The accuracy level of the altitude coordinates (metres).",
          "minimum": 0,
          "readOnly": true,
          "type": "number"
        },
        "alt": {
          "description": "The current distance (metres) above or below 'local' sea-level.",
          "readOnly": true,
          "type": "number"
        },
        "accuracy": {
          "description": "The accuracy level of the latitude and longitude coordinates (metres).",
          "minimum": 0,
          "readOnly": true,
          "type": "number"
        },
        "speed": {
          "description": "The Device's current velocity (metres per second).",
          "minimum": 0,
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["latitude", "longitude", "alt"]
    }
  }
}
```


6.63.5 Property definition

Table 129 defines the Properties that are part of the "oic.r.sensor.geolocation" Resource Type.

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Table 129 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.geolocation"

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

6.63.6 CRUDN behaviour

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

Table 130 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.geolocation"

Create	Read	Update	Delete	Notify
	get			observe

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].

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The unit Property is a read-only value that is provided by the server.
When range is omitted the default is 0 to +MAXFLOAT.

6.64.2 Example URI

/HeightResURI

6.64.3 Resource type

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

6.64.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Height",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/HeightResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with height of an object's
physical size.\nThe unit is a single value that is one of m, cm, ft or in.\nIf the unit Property is
missing the default is meters [m].\nThe unit Property is a read-only value that is provided by the
server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.height"
              ],
              "height": 1.8,
              "units": "m"
            },
            "schema": {
              "$ref": "#/definitions/Height"
            }
          }
        }
      },
      "post": {
        "description": "Sets the height.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          },
          {
            "name": "body",
```


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```
            "in": "body",
            "required": true,
            "schema": {
              "$ref": "#/definitions/Height"
            },
            "x-example": {
              "height": 1.75,
              "units": "m"
            }
          }
        ],
        "responses": {
          "200": {
            "description": "Indicates that the height was successfully changed.\nThe new height is
provided in the response.",
            "x-example": {
              "height": 1.75,
              "units": "m"
            },
            "schema": {
              "$ref": "#/definitions/Height"
            }
          },
          "403": {
            "description": "Indicates that OCF Client sent an invalid Property value to the
Server.\nThe Server responds with the current Resource representation.",
            "x-example": {
              "height": 1.8,
              "units": "m"
            },
            "schema": {
              "$ref": "#/definitions/Height"
            }
          }
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [
          "oic.if.a",
          "oic.if.s",
          "oic.if.baseline"
        ]
      }
    },
    "definitions": {
      "Height": {
        "properties": {
          "rt": {
            "description": "Resource Type",
            "items": {
              "enum": [
                "oic.r.height"
              ],
              "type": "string",
              "maxLength": 64
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "height": {
            "description": "Height of an object",
            "minimum": 0,
            "type": "number"
          },
          "units": {
            "description": "Height unit",
            "enum": [
              "m",
              "cm",
```


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```
            "ft",
            "in"
          ],
          "readOnly": true,
          "type": "string",
          "default": "m"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "height"
      ]
    }
  }
}
```


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6.64.5 Property definition

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

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
height	number	Yes	Read Write	Height of an object
units	string	No	Read Only	Height unit
range	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.64.6 CRUDN behaviour

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

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

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 is omitted the default is 0 to +MAXFLOAT.

6.65.2 Example URI

/WeightResURI

6.65.3 Resource type

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

6.65.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Weight",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
```

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```
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/WeightResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with weight of an
object.\nThe unit is a single value that is one of kg, g, lb or oz.\nIf the unit Property is missing
the default is kilograms [kg].\nThe unit Property is a read-only value that is provided by the
server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.weight"
              ],
              "weight": 80.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/Weight"
            }
          }
        }
      },
      "post": {
        "description": "Sets the Weight.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          },
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": {
              "$ref": "#/definitions/Weight"
            },
            "x-example": {
              "weight": 75.0,
              "units": "kg"
            }
          }
        ],
        "responses": {
          "200": {
            "description": "Indicates that the weight was successfully changed.\nThe new weight is
provided in the response.",
            "x-example": {
              "weight": 75.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/Weight"
            }
          },
          "403": {
            "description": "Indicates that OCF client sent an invalid Property value to the
Server.\nThe Server responds with the current resource representation.",
            "x-example": {
              "weight": 80.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/Weight"
            }
          }
```


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```
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.a",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Weight": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.weight"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "weight": {
          "description": "Weight of an object",
          "minimum": 0.0,
          "type": "number"
        },
        "units": {
          "description": "Weight unit",
          "enum": [
            "kg",
            "g",
            "lb",
            "oz"
          ],
          "readOnly": true,
          "type": "string",
          "default": "kg"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
```

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```
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "weight",
        "units"
      ]
    }
  }
}
```


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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
weight	number	Yes	Read Write	Weight of an object
units	string	Yes	Read Only	Weight unit
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.65.6 CRUDN behaviour

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

Table 134 – The CRUDN operations of the Resource with type "rt" = "oic.r.weight"

Create	Read	Update	Delete	Notify
	get	post		observe

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6.66 Air Quality

6.66.1 Introduction

This Resource describes a qualitative or measured contaminant that can be used to infer Air Quality.
The Property "valueType" indicates a qualitative or measured reading within the contaminantvalue Property.
The Property "contaminantvalue" can contain the actual sensed value with units per contaminant type.
Qualitative is a representative value within the range provided where the minimum value is minimum contamination and maximum value is maximum contamination for the specific contaminant.
The Property "contaminantvalue" contains the actual measured or qualitative level.
The Property "range" contains the allowed range for the value that is being reported.
If valueType is 'Measured' then the units for the contaminant types are as follows:
Methanol (also known as Formaldehyde): CH2O (ug/m^3),
Carbon Dioxide: CO2 (ppm),
Carbon Monoxide: CO (ppm),
Particulate Matter (less than 1 micron in diameter): PM1 (ug/m^3),
Particulate Matter (less than 2.5 microns in diameter): PM2.5 (ug/m^3),
Particulate Matter (less than 10 microns in diameter): PM10 (ug/m^3),
Volatile Organic Compounds: VOC (ug/m^3).

6.66.2 Example URI

/AirQualityResURI

6.66.3 Resource type

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

6.66.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Air Quality",
    "version": "20190613",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AirQualityResURI" : {
      "get": {
        "description": "This Resource describes a qualitative or measured contaminant that can be used
to infer Air Quality.\nThe Property \"valueType\" indicates a qualitative or measured reading within
the contaminantvalue Property.\nThe Property \"contaminantvalue\" can contain the actual sensed value
with units per contaminant type.\nQualitative 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.\nThe Property \"contaminantvalue\" contains the actual measured or qualitative level.\nThe
Property \"range\" contains the allowed range for the value that is being reported.\nIf valueType is
'Measured' then the units for the contaminant types are as follows:\n Methanol (also known as
Formaldehyde): CH2O (ug/m^3),\n Carbon Dioxide: CO2 (ppm),\n Carbon Monoxide: CO (ppm),\n Particulate
Matter (less than 1 micron in diameter): PM1 (ug/m^3),\n Particulate Matter (less than 2.5 microns in
diameter): PM2.5 (ug/m^3),\n Particulate Matter (less than 10 microns in diameter): PM10 (ug/m^3),\n
Volatile Organic Compounds: VOC (ug/m^3).",
        "parameters": [
```


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```
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.airquality"],
                  "if":  ["oic.if.s", "oic.if.baseline"],
                  "contaminanttype": "CO",
                  "valuetype": "Measured",
                  "contaminantvalue": 10,
                  "range": [0,500]
                },
              "schema": { "$ref": "#/definitions/AirQuality" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AirQuality" : {
      "properties": {
       "rt" : {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.airquality"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "contaminanttype": {
          "description": "The contaminant being measured.",
          "enum": [
            "CH2O",
            "CO2",
            "CO",
            "PM1",
            "PM2.5",
            "PM10",
            "VOC",
            "Smoke",
            "Odor",
            "AirPollution"
          ],
          "readOnly": true,
          "type": "string"
        },
        "valuetype": {
          "description": "The property that indicates whether the provided value is qualitative or
measured.",
          "enum": [
            "Qualitative",
            "Measured"
          ],
          "readOnly": true,
          "type": "string"
        },
        "contaminantvalue": {
          "description": "The measured or qualitative value for the contaminant.",
          "readOnly": true,
          "type": "integer"
        },
        "n": {
          "$ref":
```


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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "if" : {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["contaminantvalue", "contaminanttype", "valuetype"]
    }
  }
}
```

6.66.5 Property definition

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

Table 135 – The Property definitions of the Resource with type "rt" = "oic.r.airquality"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
contaminanttype	string	Yes	Read Only	The contaminant being measured.
valuetype	string	Yes	Read Only	The property that indicates whether the provided value is qualitative or measured.
contaminantvalue	integer	Yes	Read Only	The measured or qualitative value for the contaminant.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.66.6 CRUDN behaviour

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

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

Create	Read	Update	Delete	Notify
	get			observe

6.67 Air Quality Collection

6.67.1 Introduction

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

6.67.2 Example URI

/AirQualityCollectionResURI

6.67.3 Resource type

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

6.67.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Air Quality Collection",
    "version": "20190307",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AirQualityCollectionResURI?if=oic.if.ll" : {
      "get": {
        "description": "This resource describes a sensor that provides the qualitative or measured Air
Quality.\nThe resource is a collection of instances of oic.r.airquality detailing the individual
exposed contaminant measures\nThere is one collection entry per contaminant type supported by the
device. A device must expose at least one measured or qualitative value.\nRetrieves the current air
quality.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              [
                {"href": "/myCOMeasureResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myCO2ResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
              ],
            "schema": { "$ref": "#/definitions/AirQuality-ll" }
```

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```
          }
        }
      }
    },
    "/AirQualityCollectionResURI?if=oic.if.b": {
      "get": {
        "description": "This resource describes a sensor that provides the qualitative or measured Air
Quality.\nThe resource is a collection of instances of oic.r.airquality detailing the individual
exposed contaminant measures\nThere is one collection entry per contaminant type supported by the
device. A device must expose at least one measured or qualitative value.\nRetrieves the current air
quality.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":  [
              {
                "href": "/AirQualityCOResURI",
                "rep": {
                  "contaminanttype": "CO",
                  "valuetype": "Measured",
                  "contaminantvalue": 10,
                  "range": [0,500]
                }
              },
              {
                "href": "/AirQualitySmokeResURI",
                "rep": {
                  "contaminanttype": "Smoke",
                  "valuetype": "Measured",
                  "contaminantvalue": 100,
                  "range": [0,5000]
                }
              }
            ],
            "schema": { "$ref": "#/definitions/AirQualityCollectionBatch-Retrieve" }
          }
        }
      }
    },
    "/AirQualityCollectionResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This resource describes a sensor that provides the qualitative or measured Air
Quality.\nThe resource is a collection of instances of oic.r.airquality detailing the individual
exposed contaminant measures\nThere is one collection entry per contaminant type supported by the
device. A device must expose at least one measured or qualitative value.\nRetrieves the current air
quality.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "rt":   ["oic.r.airqualitycollection","oic.wk.col"],
                "if":   ["oic.if.baseline","oic.if.ll"],
                "links": [
                  {"href": "/myCOMeasureResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                  {"href": "/myCO2ResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
                ]
              },
            "schema": { "$ref": "#/definitions/AirQuality" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
```


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```
      "enum" : ["oic.if.ll", "oic.if.b","oic.if.baseline"]
    }
  },
  "definitions": {
    "AirQuality-ll": {
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      },
      "type": "array"
    },
    "oic.oic-link": {
      "type": "object",
      "properties": {
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        },
        "if": {
          "description": "The OCF Interfaces supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "type": "array",
          "readOnly": true
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.airquality"]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        }
      },
```

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```
      "required": [
        "href",
        "rt",
        "if"
      ]
    },
    "AirQuality": {
      "type": "object",
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.airqualitycollection",
              "oic.wk.col"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "type": "array",
          "uniqueItems": true
        },
        "links": {
          "description": "A set of simple or individual OCF Links.",
          "type": "array",
          "items": {
            "$ref": "#/definitions/oic.oic-link"
          }
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "rts": {
          "items": {
            "enum": ["oic.r.airquality"],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true
        },
        "if": {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      }
    },
    "AirQualityCollectionBatch-Retrieve" : {
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
```


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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/AirQualityResURI.swagger.json#/definitions/
AirQuality"
          }
        },
        "required": [
          "href",
          "rep"
        ]
      }
    }
  }
}
```


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"

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

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Property name	Value type	Mandatory	Access mode	Description
rts	array: see schema		Read Write	
if	array: see schema		Read Only	The OCF Interfaces supported by this Resource
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	

6.67.6 CRUDN behaviour

Table 138 defines the CRUDN operations that are supported on the "oic.r.airqualitycollection, oic.wk.col" Resource Type.

Table 138 – The CRUDN operations of the Resource with type "rt" = "oic.r.airqualitycollection, oic.wk.col"

Create	Read	Update	Delete	Notify
	get			observe

6.68 Consumable

6.68.1 Introduction

This Resource specifies a thing that can be consumed such as filter material, printer toner etc
The Propert "typeofconsumable" is an enumeration defining the thing being consumed as defined by the Smart Home Device Specification
The Property "remaining" is an integer capturing the percentatge remaining life
The Property "orderpercentage" is an integer capturing the percentage life at which replacement or replenishment is recommended by the manufacturer
The Property "url" is a string containing a URL at which further information may be obtained with respect to the consumable.

6.68.2 Example URI

/ConsumableResURI

6.68.3 Resource type

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

6.68.4 OpenAPI 2.0 definition

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

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```
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ConsumableResURI" : {
      "get": {
        "description": "This Resource specifies a thing that can be consumed such as filter material,
printer toner etc\nThe Propert \"typeofconsumable\" is an enumeration defining the thing being consumed
as defined by the Smart Home Device Specification\nThe Property \"remaining\" is an integer capturing
the percentatge remaining life\nThe Property \"orderpercentage\" is an integer capturing the percentage
life at which replacement or replenishment is recommended by the manufacturer\nThe Property \"url\" is
a string containing a URL at which further information may be obtained with respect to the
consumable.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.consumable"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "typeofconsumable": "tonerBlack",
                  "remaining": 20,
                  "orderpercentage": 10,
                  "url": "http://myreorderURL"
                },
              "schema": { "$ref": "#/definitions/consumable" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "consumable" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.consumable"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "remaining": {
          "description": "The percentage remaining lifespan.",
          "maximum": 100,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "typeofconsumable": {
          "description": "The thing that is being consumed.",
          "readOnly": true,
          "type": "string"
        },
        "url": {
          "description": "The URL at which additional ordering information may be found.",
          "format": "uri",
          "readOnly": true,
          "type": "string"
        },
```


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```
        "orderpercentage": {
          "description": "The percentage at which re-ordering is recommended by the manufacturer.",
          "maximum": 100,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["typeofconsumable", "remaining"]
    }
  }
}
```


6.68.5 Property definition

Table 139 defines the Properties that are part of the "oic.r.consumable" Resource Type.

Table 139 – The Property definitions of the Resource with type "rt" = "oic.r.consumable"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
remaining	integer	Yes	Read Only	The percentage remaining lifespan.
typeofconsumable	string	Yes	Read Only	The thing that is being consumed.
url	string	No	Read Only	The URL at which additional ordering information may be found.
orderpercentage	integer	No	Read Only	The percentage at which re-ordering is recommended by the manufacturer.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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6.68.6 CRUDN behaviour

Table 140 defines the CRUDN operations that are supported on the "oic.r.consumable" Resource Type.

Table 140 – The CRUDN operations of the Resource with type "rt" = "oic.r.consumable"

Create	Read	Update	Delete	Notify
	get			observe

6.69 Consumables

6.69.1 Introduction

This Resource specifies things that can be consumed such as filter material, printer toner etc
The resource is a Collection of instances of oic.r.consumable detailing the individual consumed items
supportedconsumables is the set of consumable types that this instance of the Resource supports

6.69.2 Example URI

/ConsumablesResURI

6.69.3 Resource type

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

6.69.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Consumables",
    "version": "20190613",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ConsumablesResURI?if=oic.if.ll" : {
      "get": {
        "description": "This Resource specifies things that can be consumed such as filter material,
printer toner etc\nThe resource is a Collection of instances of oic.r.consumable detailing the
individual consumed items\nsupportedconsumables is the set of consumable types that this instance of
the Resource supports\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              [
                {"href": "/myTonerBlackResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myTonerCyanResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myTonerMagentaResURI", "rt": ["oic.r.consumable"], "if":
```

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```
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myTonerYellowResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
              ],
            "schema": { "$ref": "#/definitions/consumables-ll" }
          }
        }
      }
    },
    "/ConsumablesResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource specifies things that can be consumed such as filter material,
printer toner etc\nThe resource is a Collection of instances of oic.r.consumable detailing the
individual consumed items\nsupportedconsumables is the set of consumable types that this instance of
the Resource supports\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":  [
              {
                "href": "/tonerCyanResURI",
                "rep": {
                  "typeofconsumable": "tonerCyan",
                  "remaining": 70,
                  "orderpercentage": 10,
                  "url": "http://myreorderURL"
                }
              },
              {
                "href": "/tonerBlackResURI",
                "rep": {
                  "typeofconsumable": "tonerBlack",
                  "remaining": 20,
                  "orderpercentage": 10,
                  "url": "http://myreorderURL"
                }
              }
            ],
            "schema": { "$ref": "#/definitions/ConsumableCollectionBatch-Retrieve" }
          }
        }
      }
    },
    "/ConsumablesResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This Resource specifies things that can be consumed such as filter material,
printer toner etc\nThe resource is a Collection of instances of oic.r.consumable detailing the
individual consumed items\nsupportedconsumables is the set of consumable types that this instance of
the Resource supports\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt":                 ["oic.r.consumablecollection","oic.wk.col"],
              "if":                 ["oic.if.ll","oic.if.b","oic.if.baseline"],
              "rts":                ["oic.r.consumable"],
              "supportedconsumables": ["tonerBlack","tonerCyan","tonerMagenta","tonerYellow"],
              "links": [
                {"href": "/myTonerBlackResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myTonerCyanResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myTonerMagentaResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myTonerYellowResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
              ]
            },
            "schema": { "$ref": "#/definitions/consumables" }
          }
        }
```


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```
      }
    }
  },
  "parameters": {
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
    }
  },
  "definitions": {
    "consumables-ll" : {
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      },
      "type": "array"
    },
    "consumables": {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.consumablecollection",
              "oic.wk.col"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "supportedconsumables": {
          "description": "Array of possible consumables the device measures.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "links": {
          "description": "A set of simple or individual OCF Links.",
          "items": {
            "$ref": "#/definitions/oic.oic-link"
          },
          "type": "array"
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "rts": {
          "items": {
            "enum": ["oic.r.consumable"],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "if": {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
```

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```
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type" : "object"
    },
    "ConsumableCollectionBatch-Retrieve" : {
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/ConsumableResURI-swagger.json#/definitions/
consumable"
          }
        },
        "required": [
          "href",
          "rep"
        ]
      }
    },
    "oic.oic-link": {
      "type": "object",
      "properties": {
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        },
        "if": {
```


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```
        "description": "The OCF Interfaces supported by the target Resource",
        "items": {
          "enum": [
            "oic.if.s",
            "oic.if.baseline"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 2,
        "uniqueItems": true,
        "type": "array",
        "readOnly": true
      },
      "rt": {
        "description": "Resource Type of the target Resource",
        "items": {
          "maxLength": 64,
          "type": "string",
          "enum": ["oic.r.consumable"]
        },
        "minItems": 1,
        "type": "array",
        "uniqueItems": true,
        "readOnly": true
      }
    },
    "required": [
      "href",
      "rt",
      "if"
    ]
  }
 }
}
```


6.69.5 Property definition

Table 141 defines the Properties that are part of the "oic.r.consumablecollection, oic.wk.col" Resource Type.

Table 141 – The Property definitions of the Resource with type "rt" = "oic.r.consumablecollection, oic.wk.col"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema		Read Only	
supportedconsumables	array: see schema		Read Only	Array of possible consumables the device measures.
links	array: see schema		Read Write	A set of simple or individual OCF Links.
n	multiple types: see schema		Read Write	
id	multiple types: see schema		Read Write	
rts	array: see schema		Read Only	
if	array: see schema		Read Only	The OCF Interfaces supported by this Resource
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interfaces supported by the target Resource
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource

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 142 – The CRUDN operations of the Resource with type "rt" = "oic.r.consumablecollection, oic.wk.col"

Create	Read	Update	Delete	Notify
	get			observe

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). (https://www.energystar.gov/sites/default/files/specs//private/ENERGY%20STAR%20Final%20Version%205.0%20Residential%20Refrigerators%20and%20Freezers%20Program%20Requirements.pdf)
The Property "status" is a boolean indicating whether the function is on, if off then defrost is scheduled as part of normal device operation.
The Property "startTime" is an ISO8601 encoded start time for the interval in which defrost shall not occur.
The Property "stopTime" is an ISO8601 encoded stop time for the interval in which defrost shall not occur.
The Property "interval" with additional range restrictions is the time in minutes of the period that starts at starttime (if not present the default is 240).
The Properties "stopTime" and "interval" are mutually exclusive; they cannot both be present in a Resource instance.

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6.70.2 Example URI

/DelayDefrostResURI

6.70.3 Resource type

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

6.70.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Delay Defrost",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/DelayDefrostResURI" : {
      "get": {
        "description": "This Resource describes the delay defrost function as defined by the US Energy
Star Specifications.\nSee Energy Star Refrigerator Requirements Version 5 Section
4).\n(https://www.energystar.gov/sites/default/files/specs//private/ENERGY%20STAR%20Final%20Version%205
.0%20Residential%20Refrigerators%20and%20Freezers%20Program%20Requirements.pdf)\nThe Property
\"status\" is a boolean indicating whether the function is on, if off then defrost is scheduled as part
of normal device operation.\nThe Property \"startTime\" is an ISO8601 encoded start time for the
interval in which defrost shall not occur.\nThe Property \"stopTime\" is an ISO8601 encoded stop time
for the interval in which defrost shall not occur.\nThe Property \"interval\" with additional range
restrictions is the time in minutes of the period that starts at starttime (if not present the default
is 240).\nThe Properties \"stopTime\" and \"interval\" are mutually exclusive; they cannot both be
present in a Resource instance.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description": "",
              "x-example":
                {
                  "rt": ["oic.r.delaydefrost"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "startTime": "T06:00:00Z",
                  "status": false
                },
              "schema": { "$ref": "#/definitions/DelayDefrost" }
            }
        }
      },
      "post": {
        "description": "Activates the desired Delay Defrost functions\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/DelayDefrost" },
            "x-example":
              {
                "status": true,
                "startTime": "T06:00:00Z",
                "interval": 180
```


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```
                }
              }
            ],
            "responses": {
                "200": {
                  "description" : "Indicates that the DelayDefrost function was changed.\nThe new
representation may be provided in the response.\n",
                  "x-example":
                    {
                      "status": true,
                      "startTime": "T06:00:00Z",
                      "interval": 180
                    }
                    ,
                  "schema": { "$ref": "#/definitions/DelayDefrost" }
                },
                "403": {
                  "description" : "Indicates the update to the time properties was rejected.\nReasons for
rejection:\n  invalid time entry\nThe current unchanged representation may be provided in the
response.\n",
                  "x-example":
                    {
                      "status": true,
                      "startTime": "T06:00:00Z",
                      "interval": 180
                    },
                  "schema": { "$ref": "#/definitions/DelayDefrost" }
                }
            }
          }
        }
      },
      "parameters": {
        "interface": {
          "in": "query",
          "name": "if",
          "type": "string",
          "enum": ["oic.if.a", "oic.if.baseline"]
        }
      },
      "definitions": {
        "DelayDefrost" : {
          "properties": {
            "rt": {
              "description": "The Resource Type.",
              "items": {
                "enum": ["oic.r.delaydefrost"],
                "maxLength": 64,
                "type": "string"
              },
              "minItems": 1,
              "uniqueItems": true,
              "readOnly": true,
              "type": "array"
            },
            "status": {
              "description": "Indicates whether any supported delay defrost function is active.",
              "type": "boolean"
            },
            "interval": {
              "description": "Defrost interval as defined by Energy Star.",
              "minimum": 1,
              "maximum": 1440,
              "default": 240,
              "type": "integer"
            },
            "stopTime": {
              "description": "Stop time for the time period, if present interval cannot be present.  This
is the time of day at which the delay interval stops.",
              "type": "string",
              "pattern": "^[T]([0-2][0-9]:[0-5][0-9]:[0-5][0-9])([zZ]|([\\+-])([01]\\d|2[0-3]):?([0-
5]\\d))$"
            },
            "startTime": {
              "description": "Start time for the time period. This is the time of day at which the delay
interval starts.",
              "type": "string",
```


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```
          "pattern": "^[T]([0-2][0-9]:[0-5][0-9]:[0-5][0-9])([zZ]|([\\+-])([01]\\d|2[0-3]):?([0-
5]\\d))$"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object"
    }
  }
}
```


6.70.5 Property definition

Table 143 defines the Properties that are part of the "oic.r.delaydefrost" Resource Type.

Table 143 – The Property definitions of the Resource with type "rt" = "oic.r.delaydefrost"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema		Read Only	The Resource Type.
status	boolean		Read Write	Indicates whether any supported delay defrost function is active.
interval	integer		Read Write	Defrost interval as defined by Energy Star.
stopTime	string		Read Write	Stop time for the time period, if present interval cannot be present. This is the time of day at which the delay interval stops.
startTime	string		Read Write	Start time for the time period. This is the time of day at which the delay interval starts.
n	multiple types: see schema		Read Write	
id	multiple types: see schema		Read Write	
if	array: see schema		Read Only	The OCF Interface set supported by this Resource.

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6.70.6 CRUDN behaviour

Table 144 defines the CRUDN operations that are supported on the "oic.r.delaydefrost" Resource Type.

Table 144 – The CRUDN operations of the Resource with type "rt" = "oic.r.delaydefrost"

Create	Read	Update	Delete	Notify
	get	post		observe

6.71 Eco Mode

6.71.1 Introduction

This Resource specifies the supported and currently active Eco Mode of a Device
The Resource is a deriviative of the Mode Resource (oic.r.mode) with a restriction that the population of supportedmodes and modes Properties is restricted to the set of values:
"disabled","enabled","notsupported".
The adminforced Property indicates that the value has been set by another party (e.g. via some offboard Smart Energy interaction)

6.71.2 Example URI

/EcomodeResURI

6.71.3 Resource type

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

6.71.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Eco Mode",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EcomodeResURI" : {
      "get": {
        "description": "This Resource specifies the supported and currently active Eco Mode of a
Device\nThe Resource is a deriviative of the Mode Resource (oic.r.mode) with a restriction that the
population of supportedmodes and modes Properties is restricted to the set of
values:\n\"disabled\",\"enabled\",\"notsupported\".\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":
                {
```

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```
                "rt": ["oic.r.ecomode"],
                "if": ["oic.if.a", "oic.if.baseline"],
                "supportedModes": ["disabled","enabled"],
                "modes": ["disabled"],
                "adminforced": false
              },
            "schema": { "$ref": "#/definitions/ecomode" }
          }
      }
    },
    "post": {
      "description": "",
      "parameters": [
        {"$ref": "#/parameters/interface"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/ecomode-update" },
          "x-example":
            {
              "modes": ["enabled"]
            }
        }
      ],
      "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "modes": ["enabled"]
              },
            "schema": { "$ref": "#/definitions/ecomode-update" }
          }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "ecomode" : {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.ecomode"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "modes": {
        "description": "The array of the currently active mode(s).",
        "items": {
          "enum": ["disabled", "enabled", "notsupported"],
          "type": "string"
        },
        "uniqueItems": true,
        "type": "array"
      },
      "supportedModes": {
        "description": "The array of possible modes the device supports.",
        "items": {
          "enum": ["disabled", "enabled", "notsupported"],
          "type": "string"
        },
        "readOnly": true,
```


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```
          "type": "array"
        },
        "adminforced": {
          "description": "The indicator that the current mode of operation has been forced by admin
action.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["supportedModes", "modes"]
    },
    "ecomode-update" : {
      "properties": {
        "modes": {
          "description": "The desired mode.",
          "items": {
            "enum": ["disabled", "enabled", "notsupported"],
            "type": "string"
          },
          "type": "array"
        }
      },
      "type": "object",
     "required": ["modes"]
    }
  }
}
```


6.71.5 Property definition

Table 145 defines the Properties that are part of the "oic.r.ecomode" Resource Type.

Table 145 – The Property definitions of the Resource with type "rt" = "oic.r.ecomode"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
modes	array: see schema	Yes	Read Write	The array of the currently active mode(s).
supportedModes	array: see schema	Yes	Read Only	The array of possible modes the device supports.
adminforced	boolean	No	Read Only	The indicator that the current mode of operation has been forced by admin action.

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n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
modes	array: see schema	Yes	Read Write	The desired mode.

6.71.6 CRUDN behaviour

Table 146 defines the CRUDN operations that are supported on the "oic.r.ecomode" Resource Type.

Table 146 – The CRUDN operations of the Resource with type "rt" = "oic.r.ecomode"

Create	Read	Update	Delete	Notify
	get	post		observe

6.72 Heating Zone

6.72.1 Introduction

This Resource provides information about the status of a (single) heating zone of a Cook-Top. It describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the device implements pot recognition).
The Property "maxheatinglevel" defines the max level for the heating zone
The Property "heatinglevel" is the current heating level of the zone
For each element, the value range is from 0 (indication that the zone is not heating) to "maxheatinglevel".

6.72.2 Example URI

/HeatingZoneResURI

6.72.3 Resource type

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

6.72.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Heating Zone",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
```

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```
    "/HeatingZoneResURI" : {
      "get": {
        "description": "This Resource provides information about the status of a (single) heating zone
of a Cook-Top.\nIt describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the
device implements pot recognition).\nThe Property \"maxheatinglevel\" defines the max level for the
heating zone\nThe Property \"heatinglevel\" is the current heating level of the zone\n  For each
element, the value range is from 0 (indication that the zone is not heating) to \"maxheatinglevel\".",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current heating zone information.",
              "x-example":
                {
                  "rt": ["oic.r.heatingzone"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "maxheatinglevel": 6,
                  "heatinglevel": 0
                },
              "schema": { "$ref": "#/definitions/HeatingZone" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "HeatingZone" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.heatingzone"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "heatinglevel": {
          "description": "The current heating level for the zone.",
          "readOnly": true,
          "type": "integer"
        },
        "maxheatinglevel": {
          "description": "The maximum heating level for the zone.",
          "readOnly": true,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
```


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```
            },
            "minItems": 2,
            "uniqueItems": true,
            "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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
heatinglevel	integer	Yes	Read Only	The current heating level for the zone.
maxheatinglevel	integer	Yes	Read Only	The maximum heating level for the zone.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.72.6 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"

Create	Read	Update	Delete	Notify
	get			observe

6.73 Heating Zone Collection

6.73.1 Introduction

This Resource provides information about the status of the heating zones of a Cook-Top.
It describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the device implements pot recognition).
The resource is a Collection of instances of oic.r.heatingzone detailing the individual cooktop zones
Retrieves the current heating zone information.

6.73.2 Example URI

/HeatingZoneResURI

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6.73.3 Resource type

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

6.73.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Heating Zone Collection",
    "version": "20190613",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HeatingZoneResURI?if=oic.if.ll" : {
      "get": {
        "description": "This Resource provides information about the status of the heating zones of a
Cook-Top.\nIt describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the
device implements pot recognition).\nThe resource is a Collection of instances of oic.r.heatingzone
detailing the individual cooktop zones\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              [
                {"href": "/myZone1ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myZone2ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myZone3ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myZone4ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
              ],
            "schema": { "$ref": "#/definitions/HeatingZone-ll" }
          }
        }
      }
    },
    "/HeatingZoneResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource provides information about the status of the heating zones of a
Cook-Top.\nIt describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the
device implements pot recognition).\nThe resource is a Collection of instances of oic.r.heatingzone
detailing the individual cooktop zones\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":  [
              {
                "href": "/heatingZoneLeftResURI",
                "rep": {
                  "maxheatinglevel": 6,
                  "heatinglevel": 0
                }
              },
              {
                "href": "/heatingZoneRightResURI",
                "rep": {
```

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```
                  "maxheatinglevel": 6,
                  "heatinglevel": 3
                }
              }
            ],
            "schema": { "$ref": "#/definitions/HeatingZoneCollectionBatch-Retrieve" }
          }
        }
      }
    },
    "/HeatingZoneResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This Resource provides information about the status of the heating zones of a
Cook-Top.\nIt describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the
device implements pot recognition).\nThe resource is a Collection of instances of oic.r.heatingzone
detailing the individual cooktop zones\nRetrieves the current heating zone information.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "rt":    ["oic.r.heatingzonecollection","oic.wk.col"],
                "if":    ["oic.if.ll","oic.if.b","oic.if.baseline"],
                "rts":   ["oic.r.heatingzone"],
                "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": { "$ref": "#/definitions/HeatingZone" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
    }
  },
  "definitions": {
    "HeatingZone-ll" : {
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      },
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true
    },
    "oic.oic-link": {
      "type": "object",
      "properties": {
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
```


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```
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        },
        "if": {
          "description": "The OCF Interfaces supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "type": "array",
          "readOnly": true
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.heatingzone"]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ]
    },
    "HeatingZone" : {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.heatingzonecollection",
              "oic.wk.col"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "type": "array",
          "uniqueItems": true
        },
        "links": {
          "items": {
            "$ref": "#/definitions/oic.oic-link"
          },
```


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```
          "type": "array",
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "rts": {
          "items": {
            "enum": ["oic.r.heatingzone"],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "if": {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type" : "object"
    },
    "HeatingZoneCollectionBatch-Retrieve" : {
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/HeatingZoneResURI.swagger.json#/definitions
/HeatingZone"
          }
        },
        "required": [
          "href",
          "rep"
        ]
      }
    }
  }
}
```


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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"

Property name	Value type	Mandatory	Access mode	Description
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interfaces supported by the target Resource
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
rt	array: see schema		Read Write	
links	array: see schema		Read Only	
n	multiple types: see schema		Read Write	
id	multiple types: see schema		Read Write	
rts	array: see schema		Read Only	
if	array: see schema		Read Only	The OCF Interfaces supported by this Resource
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	

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6.73.6 CRUDN behaviour

Table 150 defines the CRUDN operations that are supported on the "oic.r.heatingzonecollection, oic.wk.col" Resource Type.

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Table 150 – The CRUDN operations of the Resource with type "rt" = "oic.r.heatingzonecollection, oic.wk.col".

Create	Read	Update	Delete	Notify
	get			observe

6.74 Selectable Levels

6.74.1 Introduction

This Resource provides a set of device defined levels that can be selected for an operation.
For example where a humidifier has a discrete set that model different humidity levels that can be set.
The Property "availablelevels" is an array of the levels that can be selected, these can be a number or an integer (as subset of integer).
The Property "targetlevel" is the level that has currently been selected and is written to in order to select a new level.
When retrieved the targetlevel provides the actual value that has been selected.

6.74.2 Example URI

/SelectableLevelsResURI

6.74.3 Resource type

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

6.74.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Selectable Levels",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SelectableLevelsResURI" : {
      "get": {
        "description": "This Resource provides a set of device defined levels that can be selected for
an operation.\nFor example where a humidifier has a discrete set that model different humidity levels
that can be set.\nThe Property \"availablelevels\" is an array of the levels that can be selected,
these can be a number or an integer (as subset of integer).\nThe Property \"targetlevel\" is the level
that has currently been selected and is written to in order to select a new level.\nWhen retrieved the
targetlevel provides the actual value that has been selected.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Example is using integers for selection levels.",
              "x-example":
                {
                  "rt": ["oic.r.selectablelevels"],
```

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```
                "if": ["oic.if.a", "oic.if.baseline"],
                "availablelevels":[0, 2, 4, 6, 8],
                "targetlevel": 2
              },
            "schema": { "$ref": "#/definitions/SelectableLevels" }
          }
        }
      },
      "post": {
        "description": "Sets the current level from the set \"availablelevels\".",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/UpdateSchema" },
            "x-example":
              {
                "targetlevel": 4
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "targetlevel": 4
                },
              "schema": { "$ref": "#/definitions/UpdateSchema" }
            },
            "403": {
              "description" : "Generated by a OCF Server when an attempt is made to update to a
targetlevel that is not in the set of availablelevels",
              "x-example":
                {
                  "availablelevels":[0, 2, 4, 6, 8],
                  "targetlevel": 2
                },
              "schema": { "$ref": "#/definitions/SelectableLevels" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "SelectableLevels" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.selectablelevels"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "targetlevel": {
          "description": "The target level from the available selectable set.",
          "type": "number"
        },
        "availablelevels": {
          "description": "The set of levels to select from.",
          "items": {
             "type": "number"
```


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```
        },
        "readOnly": true,
        "type": "array"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource.",
        "items": {
          "enum": [
            "oic.if.a",
            "oic.if.baseline"
          ],
          "type": "string"
        },
        "minItems": 2,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      }
    },
    "type" : "object",
    "required": ["availablelevels", "targetlevel"]
  },
  "UpdateSchema" : {
    "properties": {
      "targetlevel": {
        "description": "The target level from the available selectable set",
        "type": "number"
      }
    },
    "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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
targetlevel	number	Yes	Read Write	The target level from the available selectable set.
availablelevels	array: see schema	Yes	Read Only	The set of levels to select from.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
targetlevel	number	Yes	Read Write	The target level from the available selectable set

6.74.6 CRUDN behaviour

Table 152 defines the CRUDN operations that are supported on the "oic.r.selectablelevels" Resource Type.

Table 152 – The CRUDN operations of the Resource with type "rt" = "oic.r.selectablelevels"

Create	Read	Update	Delete	Notify
	get	post		observe

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6.75 Value Conditional

6.75.1 Introduction

This Resource specifies conditions that can be applied to an observed value in any Resource.
These conditions are applied by the OCF Server exposing the Resource to any generated notifications because of subscriptions to the Resource.
A unicast RETRIEVE to the Resource will receive the most recent value; which may not be the most recent notified value.
An OCF Server exposes this Resource in association with the Resource conveying the observed value.
This is done by means of a new Resource instance with an RT of ["oic.r.<thing being observed>", "oic.r.value.conditional"], e.g ["oic.r.temperature", "oic.r.value.conditional"].
The Property "threshold" is the amount by which the thing being observed must change before a notification is sent.
The Property "minnotifyperiod" is the minimum time in ms (milliseconds) that must elapse before a notification is sent.
If the maxnotifyperiod (time in ms (milliseconds)) elapses then a notification must be sent.
The Property "maxnotifyperiod" is a timer that resets each time a notification is sent.
A value of '0' for any of "threshold"," minnotifyperiod" or "maxnotifyperiod" means that the capability is supported but not active.

6.75.2 Example URI

/ValueConditionalResURI

6.75.3 Resource type

The Resource Type is defined as: "oic.r.value.conditional".

6.75.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Value Conditional",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ValueConditionalResURI" : {
      "get": {
        "description": "This Resource specifies conditions that can be applied to an observed value in
any Resource.\nThese conditions are applied by the OCF Server exposing the Resource to any generated
notifications because of subscriptions to the Resource.\nA unicast RETRIEVE to the Resource will
receive the most recent value; which may not be the most recent notified value.\nAn OCF Server exposes
this Resource in association with the Resource conveying the observed value.\nThis 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\"].\nThe Property \"threshold\" is the amount by
which the thing being observed must change before a notification is sent.\nThe Property
\"minnotifyperiod\" is the minimum time in ms (milliseconds) that must elapse before a notification is
sent.\nIf the maxnotifyperiod (time in ms (milliseconds)) elapses then a notification must be
sent.\nThe Property \"maxnotifyperiod\" is a timer that resets each time a notification is sent.\nA
value of '0' for any of \"threshold\",\" minnotifyperiod\" or \"maxnotifyperiod\" means that the
capability is supported but not active.",
```

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```
      "parameters": [
        {"$ref": "#/parameters/interface"}
      ],
      "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "rt": ["oic.r.value.conditional"],
                "if": ["oic.if.rw", "oic.if.baseline"],
                "threshold": 2,
                "minnotifyperiod": 2000,
                "maxnotifyperiod": 5000
              },
            "schema": { "$ref": "#/definitions/valueconditional" }
          }
      }
    },
    "post": {
      "description": "",
      "parameters": [
        {"$ref": "#/parameters/interface"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/valueconditional" },
          "x-example":
            {
              "threshold": 2,
              "minnotifyperiod": 1500
            }
        }
      ],
      "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "threshold": 2,
                "minnotifyperiod": 1500
              },
            "schema": { "$ref": "#/definitions/valueconditional" }
          }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"]
  }
},
"definitions": {
  "valueconditional" : {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "maxLength": 64,
          "type": "string",
          "enum": ["oic.r.value.conditional"]
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "maxnotifyperiod": {
        "description": "The maximum elapsed time in ms before a notification must be sent.",
        "minimum": 0,
        "type": "integer"
      },
      "minnotifyperiod": {
```


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```
          "description": "The minimum elapsed time in ms before a notification is sent.",
          "minimum": 0,
          "type": "integer"
        },
        "threshold": {
          "description": "The amount by which the measured value must change before a notification is
sent.",
          "minimum": 0,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "anyOf": [
        {
          "required": ["threshold"]
        },
        {
          "required": ["minnotifyperiod"]
        },
        {
          "required": ["maxnotifyperiod"]
        }
      ],
      "type": "object"
    }
  }
}
```


6.75.5 Property definition

Table 153 defines the Properties that are part of the "oic.r.value.conditional" Resource Type.

Table 153 – The Property definitions of the Resource with type "rt" = "oic.r.value.conditional"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
maxnotifyperiod	integer	Yes	Read Write	The maximum elapsed time in ms before a notification must be sent.
minnotifyperiod	integer	No	Read Write	The minimum elapsed time in ms before a notification is sent.

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Property name	Value type	Mandatory	Access mode	Description
threshold	number	No	Read Write	The amount by which the measured value must change before a notification is sent.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.75.6 CRUDN behaviour

Table 154 defines the CRUDN operations that are supported on the "oic.r.value.conditional" Resource Type.

Table 154 – The CRUDN operations of the Resource with type "rt" = "oic.r.value.conditional"

Create	Read	Update	Delete	Notify
	get	post		observe

6.76 Colour Space Coordinates

6.76.1 Introduction

This Resource describes the colour using colour space co-ordinates.
The Property "csc" is the colour space coordinates in CIE colour space.
The first item in the array is the X coordinate.
The second item in the array is the Y coordinate.
If the Property "precision" is provided it applies to both the X and Y coordinates.
The Resource provides the colour using colour space coordinates.

6.76.2 Example URI

/example/ColourSpaceCoordinatesResURI

6.76.3 Resource type

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

6.76.4 OpenAPI 2.0 definition

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

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```
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/example/ColourSpaceCoordinatesResURI" : {
      "get": {
        "description": "This Resource describes the colour using colour space co-ordinates.\nThe
Property \"csc\" is the colour space coordinates in CIE colour space.\n  The first item in the array is
the X coordinate.\n  The second item in the array is the Y coordinate.\n  If the Property \"precision\"
is provided it applies to both the X and Y coordinates.\nThe Resource provides the colour using colour
space coordinates.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.colour.csc"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "csc": [0.41, 0.51]
                },
              "schema": { "$ref": "#/definitions/ColourCSC" }
            }
        }
      },
      "post": {
        "description": "Sets current colour space coordinates\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ColourCSC" },
            "x-example":
              {
                "csc": [0.40, 0.70]
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "csc": [0.40, 0.70]
                },
              "schema": {"$ref": "#/definitions/ColourCSC" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ColourCSC" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.colour.csc"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
```


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```
          "type": "array"
        },
        "csc": {
          "description": "The X and Y coordinates of the colour in CIE colour space.",
          "items": {
            "maximum": 1,
            "minimum": 0,
            "type": "number"
          },
          "maxItems": 2,
          "minItems": 2,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "precision": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["csc"]
    }
  }
}
```


6.76.5 Property definition

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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
csc	array: see schema	Yes	Read Write	The X and Y coordinates of the colour in CIE colour space.
n	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
id	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.76.6 CRUDN behaviour

Table 156 defines the CRUDN operations that are supported on the "oic.r.colour.csc" Resource Type.

Table 156 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.csc"

Create	Read	Update	Delete	Notify
	get	post		observe

6.77 Colour Temperature

6.77.1 Introduction

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

6.77.2 Example URI

/example/ColourTemperatureResURI

6.77.3 Resource type

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

6.77.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Temperature",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/example/ColourTemperatureResURI" : {
      "get": {
        "description": "This Resource describes the colour using colour temperature conventions.\nThe
Property \"ct\" is the Mired colour temperature.\nThe equivalent value in Kelvin is obtained by Colour
```

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```
Temp(K) = 1,000,000/Colour Temp(Mired)\nTHe Resource provides the colour using colour temperature
conventions.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.colour.colourtemperature"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "ct": 457
                },
              "schema": { "$ref": "#/definitions/ColourTemp" }
            }
        }
      },
      "post": {
        "description": "Sets current colour temperature value\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ColourTemp" },
            "x-example":
              {
                "ct": 457
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "ct": 467
                },
              "schema": { "$ref": "#/definitions/ColourTemp" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ColourTemp" : {
      "properties": {
        "rt" :
                {
          "description": "The Resource Type.",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.colour.colourtemperature"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "ct": {
          "description": "The Mired colour temperature.",
          "minimum": 0,
          "type": "integer"
        },
        "n": {
            "$ref":
```

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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["ct"]
    }
  }
}
```

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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
ct	integer	Yes	Read Write	The Mired colour temperature.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.78 Colour Hue and Saturation

6.78.1 Introduction

This Resource describes the colour using hue-saturation conventions.
The Property "hue" is the hue angle, it is a number value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).
A Device that does not support fractional hue angles can provide integer values.
If Property "precision" is provided it applies to the hue angle.
The Property "saturation" is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).
The Property "saturation" can be converted to a percentage by saturation/maximumsaturation X 100; where maximumsaturation is 32767 if the Property itself is not present.
The Property "maximumsaturation" is the upper bound on the saturation supported by the Device.
If not present the maximum value for saturation is 32767.
The Resource provides the colour using hue and saturation conventions.

6.78.2 Example URI

/example/ColourHueSaturationResURI

6.78.3 Resource type

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

6.78.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Hue and Saturation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/example/ColourHueSaturationResURI" : {
      "get": {
        "description": "This Resource describes the colour using hue-saturation conventions.\nThe
Property \"hue\" is the hue angle, it is a number value as defined by the CIECAM02 model definition
(see reference [CIE CIE159:2004]).\nA Device that does not support fractional hue angles can provide
```

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```
integer values.\nIf Property \"precision\" is provided it applies to the hue angle.\nThe Property
\"saturation\" is an integer value as defined by the CIECAM02 model definition (see reference [CIE
CIE159:2004]).\n The Property \"saturation\" can be converted to a percentage by
saturation/maximumsaturation X 100; where maximumsaturation is 32767 if the Property itself is not
present.\nThe Property \"maximumsaturation\" is the upper bound on the saturation supported by the
Device.\nIf not present the maximum value for saturation is 32767.\nThe Resource provides the colour
using hue and saturation conventions.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.colour.hs"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "hue": 300.0,
                  "saturation": 212,
                  "maximumsaturation": 1000
                },
              "schema": { "$ref": "#/definitions/ColourHS" }
            }
        }
      },
      "post": {
        "description": "Sets current colour hue and saturation values.\nAt least one of hue or
saturation shall be provided in the payload.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ColourHS" },
            "x-example":
              {
                "hue": 300.0,
                "saturation": 212
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "hue": 300.0,
                  "saturation": 212
                },
              "schema": { "$ref": "#/definitions/ColourHS" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ColourHS" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.colour.hs"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
```


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```
          "type": "array"
        },
        "hue": {
          "description": "The hue angle as defined by the CIECAM02 model definition.",
          "maximum": 360.0,
          "minimum": 0.0,
          "type": "number"
        },
        "saturation": {
          "description": "The saturation as defined by the CIECAM02 model definition.",
          "maximum": 32767,
          "minimum": 0,
          "type": "integer"
        },
        "maximumsaturation": {
          "description": "The maximum supported value of \"saturation\" for this Device.",
          "maximum": 32767,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "n": {
           "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
           "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "precision": {
           "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["hue", "saturation"]
    }
  }
}
```


6.78.5 Property definition

Table 159 defines the Properties that are part of the "oic.r.colour.hs" Resource Type.

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Table 159 – The Property definitions of the Resource with type "rt" = "oic.r.colour.hs"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
hue	number	Yes	Read Write	The hue angle as defined by the CIECAM02 model definition.
saturation	integer	Yes	Read Write	The saturation as defined by the CIECAM02 model definition.
maximumsaturation	integer	No	Read Only	The maximum supported value of "saturation" for this Device.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.78.6 CRUDN behaviour

Table 160 defines the CRUDN operations that are supported on the "oic.r.colour.hs" Resource Type.

Table 160 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.hs"

Create	Read	Update	Delete	Notify
	get	post		observe

6.79 Battery Material

6.79.1 Introduction

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

6.79.2 Example URI

/BatteryMaterialResURI

6.79.3 Resource type

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

6.79.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Battery Material",
    "version": "20190222",
```

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```
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BatteryMaterialResURI" : {
      "get": {
        "description": "This Resource describes the battery material represented as an enumerated set
of strings.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                    "rt": ["oic.r.batterymaterial"],
                    "if": ["oic.if.s", "oic.if.baseline"],
                    "material": "Alkaline"
                },
              "schema": { "$ref": "#/definitions/BatteryMaterial" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "BatteryMaterial" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.batterymaterial"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "material": {
          "description": "The battery construction material (type).",
          "enum": [
            "Alkaline",
            "Aluminium Air",
            "Aluminium Ion",
            "Atomic Betavoltaics",
            "Atomic Optoelectric Nuclear",
            "Atomic Nuclear",
            "Bunsen Cell",
            "Chromic Acid Cell",
            "Poggendorff Cell",
            "Clark Cell",
            "Daniell Cell",
            "Dry Cell",
            "Earth",
            "Flow",
            "Flow Vanadium Redox",
            "Flow Zinc Bromine",
```


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```
            "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 Oxyride",
            "Nickel Zinc",
            "Organic Radical",
            "Paper",
            "Polymer Based",
            "Polysulfide Bromide",
            "Potassium Ion",
            "Pulvermachers Chain",
            "Silicon Air",
            "Silver Calcium",
            "Silver Oxide",
            "Silver Zinc",
            "Sodium Ion",
            "Sodium Sulfur",
            "Solid State",
            "Sugar",
            "Super Iron",
            "UltraBattery",
            "Voltaic Pile",
            "Voltaic Pile Penny",
            "Voltaic Pile Trough",
            "Water Activated",
            "Weston Cell",
            "Zinc Air",
            "Zinc Carbon",
            "Zinc Chloride",
            "Zinc Ion",
            "Unknown"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
```

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

6.79.5 Property definition

Table 161 defines the Properties that are part of the "oic.r.batterymaterial" Resource Type.

Table 161 – The Property definitions of the Resource with type "rt" = "oic.r.batterymaterial"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
material	string	Yes	Read Only	The battery construction material (type).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.79.6 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"

Create	Read	Update	Delete	Notify
	get			observe

6.80 Brewing

6.80.1 Introduction

This Resource describes the attributes associated with brewing. This resource is used for configuration only. The Operation of the Device is handled independently of this Resource. The amount requested is in ml. The strength of a brewed drink is an integer, the range of which may be enforced by the presence of a strengthrange Property.

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6.80.2 Example URI

/BrewingResURI

6.80.3 Resource type

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

6.80.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Brewing",
    "version": "20190222",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BrewingResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with brewing. This resource
is used for configuration only. The Operation of the Device is handled independently of this Resource.
The amount requested is in ml. The strength of a brewed drink is an integer, the range of which may be
enforced by the presence of a strengthrange Property.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.brewing"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "amountrequested": 120,
                  "strength": 8,
                  "strengthrange": [1, 10]
                },
              "schema": { "$ref": "#/definitions/Brewing" }
            }
        }
      },
      "post": {
        "description": "Sets the brewing values\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Brewing" },
            "x-example":
              {
                "amountrequested": 120,
                "strength": 8
              }
          }
        ],
        "responses": {
            "200": {
```

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```
              "description" : "",
              "x-example":
                {
                  "amountrequested": 120,
                  "strength": 8
                }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Brewing" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.brewing"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "strength": {
          "description": "The strength of a brewed drink.",
          "type": "integer"
        },
        "amountrequested": {
          "description": "The amount requested in ml.",
          "type": "integer"
        },
        "strengthrange": {
          "items": {
            "type": "integer"
          },
          "maxItems": 2,
          "minItems": 2,
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```

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```
        }
      },
      "type": "object",
      "required": ["amountrequested"]
    }
  }
}
```

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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
strength	integer	No	Read Write	The strength of a brewed drink.
amountrequested	integer	Yes	Read Write	The amount requested in ml.
strengthrange	array: see schema	No	Read Only	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.80.6 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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.81 Energy

6.81.1 Introduction

This Resource describes the attributes associated with electrical energy. This Resource can be used for either rated (read-only), desired (read-write) or measured (read-only) energy. The Property "voltage" is in Volts (V), The Property "current" in Amps (A), and The Property "frequency" is in Hertz (Hz).

6.81.2 Example URI

/EnergyResURI

6.81.3 Resource type

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

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6.81.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with electrical energy. This
Resource can be used for either rated (read-only), desired (read-write) or measured (read-only) energy.
The Property \"voltage\" is in Volts (V), The Property \"current\" in Amps (A), and The Property
\"frequency\" is in Hertz (Hz).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Retrieves the current energy.",
              "x-example":
                {
                  "rt": ["oic.r.energy.electrical"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "voltage": 120.0,
                  "current": 5.0,
                  "frequency": 60.0
                },
              "schema": { "$ref": "#/definitions/Energy" }
            }
        }
      },
      "post": {
        "description": "Sets the desired energy values\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/EnergyUpdate" },
            "x-example":
              {
                "desiredvoltage": 130.0,
                "desiredcurrent": 6.0
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "desiredvoltage": 130.0,
                  "desiredcurrent": 6.0
                }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
```

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```
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Energy" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.energy.electrical"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "desiredcurrent": {
          "description": "The desired electric current in Amps (A).",
          "type": "number"
        },
        "current": {
          "description": "The electric current in Amps (A).",
          "readOnly": true,
          "type": "number"
        },
        "frequency": {
          "description": "The electric frequency in Hertz (Hz).",
          "readOnly": true,
          "type": "number"
        },
        "voltage": {
          "description": "The electric voltage in Volts (V).",
          "readOnly": true,
          "type": "number"
        },
        "desiredfrequency": {
          "description": "The desired electric frequency in Hertz (Hz).",
          "type": "number"
        },
        "desiredvoltage": {
          "description": "The desired electric voltage in Volts (V).",
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["voltage", "current", "frequency"]
    }
    ,
    "EnergyUpdate" : {
```


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```
      "properties": {
        "desiredcurrent": {
          "description": "The desired electric current in Amps (A).",
          "type": "number"
        },
        "desiredfrequency": {
          "description": "The desired electric frequency in Hertz (Hz).",
          "type": "number"
        },
        "desiredvoltage": {
          "description": "The desired electric voltage in Volts (V).",
          "type": "number"
        }
      },
      "anyOf": [
        {
          "required": ["desiredvoltage"]
        },
        {
          "required": ["desiredcurrent"]
        },
        {
          "required": ["desiredfrequency"]
        }
      ],
      "type": "object"
    }
  }
}
```

6.81.5 Property definition

Table 165 defines the Properties that are part of the "oic.r.energy.electrical" Resource Type.

Table 165 – The Property definitions of the Resource with type "rt" = "oic.r.energy.electrical"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
desiredcurrent	number	No	Read Write	The desired electric current in Amps (A).
current	number	Yes	Read Only	The electric current in Amps (A).
frequency	number	Yes	Read Only	The electric frequency in Hertz (Hz).
voltage	number	Yes	Read Only	The electric voltage in Volts (V).
desiredfrequency	number	No	Read Write	The desired electric frequency in Hertz (Hz).
desiredvoltage	number	No	Read Write	The desired electric voltage in Volts (V).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
desiredcurrent	number	No	Read Write	The desired electric current in Amps (A).
desiredfrequency	number	Yes	Read Write	The desired electric frequency in Hertz (Hz).
desiredvoltage	number	No	Read Write	The desired electric voltage in Volts (V).

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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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.82 Energy Generation

6.82.1 Introduction

This Resource describes the attributes associated with energy generation
The Property "energygenerated" is a number that provides the energy generated in Watt-hour(Wh).

6.82.2 Example URI

/EnergyGenerationResURI

6.82.3 Resource type

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

6.82.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Generation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyGenerationResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with energy generation\nThe
Property \"energygenerated\" is a number that provides the energy generated in Watt-hour(Wh).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description": "",
              "x-example":
                {
                  "rt": ["oic.r.energy.generation"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "energygenerated": 3000.00
                },
              "schema": { "$ref": "#/definitions/EnergyGeneration" }
            }
        }
```

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```
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "EnergyGeneration" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.energy.generation"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "energygenerated": {
          "description": "The energy generated in Watt-hour(Wh).",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["energygenerated"]
    }
  }
}
```


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6.82.5 Property definition

Table 167 defines the Properties that are part of the "oic.r.energy.generation" Resource Type.

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Table 167 – The Property definitions of the Resource with type "rt" = "oic.r.energy.generation"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
energygenerated	number	Yes	Read Only	The energy generated in Watt-hour(Wh).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.82.6 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"

Create	Read	Update	Delete	Notify
	get			observe

6.83 Foaming

6.83.1 Introduction

This Resource describes the attributes associated with foaming. The Property "foamstrength" of the liquid is represented as an integer.
The foam strength is an integer, the range of which may be enforced by the presence of the Property "range".

6.83.2 Example URI

/FoamingResURI

6.83.3 Resource type

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

6.83.4 OpenAPI 2.0 definition

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

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```
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/FoamingResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with foaming. The Property
\"foamstrength\" of the liquid is represented as an integer.\nThe foam strength is an integer, the
range of which may be enforced by the presence of the Property \"range\".",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the state of foaming.",
              "x-example":
                {
                  "rt": ["oic.r.foaming"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "foamstrength": 50,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/Foaming" }
            }
        }
      },
      "post": {
        "description": "Sets foaming value\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Foaming" },
            "x-example":
              {
                "foamstrength": 50
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "foamstrength": 50
                },
              "schema": { "$ref": "#/definitions/Foaming" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Foaming" : {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": ["oic.r.foaming"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```

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```
        },
        "foamstrength": {
          "description": "The desired foaminess of the liquid.",
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The interface set supported by this resource",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["foamstrength"]
    }
  }
}
```

6.83.5 Property definition

Table 169 defines the Properties that are part of the "oic.r.foaming" Resource Type.

Table 169 – The Property definitions of the Resource with type "rt" = "oic.r.foaming"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
foamstrength	integer	Yes	Read Write	The desired foaminess of the liquid.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The interface set supported by this resource

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6.83.6 CRUDN behaviour

Table 170 defines the CRUDN operations that are supported on the "oic.r.foaming" Resource Type.

Table 170 – The CRUDN operations of the Resource with type "rt" = "oic.r.foaming"

Create	Read	Update	Delete	Notify
	get	post		observe

6.84 Grinder

6.84.1 Introduction

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

6.84.2 Example URI

/GrinderResURI

6.84.3 Resource type

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

6.84.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Grinder",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GrinderResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with a grinder. The Property
\"coarseness\" of the grounds is an integer. The higher the value, the less coarse. The Property
\"remaining\" is a percentage that represents the unground material left.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the state of a grinder.",
              "x-example":
                {
                  "rt": ["oic.r.grinder"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "coarseness": 10,
                  "remaining": 50
                },
              "schema": { "$ref": "#/definitions/Grinder" }
```

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```
            }
          }
        },
        "post": {
          "description": "Sets grinding values.",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/GrinderUpdate" },
              "x-example":
                {
                  "coarseness": 10
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "coarseness": 10
                  },
                "schema": { "$ref": "#/definitions/GrinderUpdate" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.rw", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Grinder" : {
        "properties": {
          "rt": {
            "description": "Resource Type",
            "items": {
              "enum": ["oic.r.grinder"],
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "coarseness": {
            "description": "The desired coarseness when grinding.",
            "type": "integer"
          },
          "remaining": {
            "description": "The percentage of unground material left.",
            "maximum": 100,
            "minimum": 0,
            "readOnly": true,
            "type": "integer"
          },
          "n": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "id": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "range": {
              "$ref":
```


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```
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["coarseness"]
    },
    "GrinderUpdate" : {
      "properties": {
        "coarseness": {
          "description": "The desired coarseness when grinding.",
          "type": "integer"
        }
      },
      "type": "object",
      "required": ["coarseness"]
    }
  }
}
```

6.84.5 Property definition

Table 171 defines the Properties that are part of the "oic.r.grinder" Resource Type.

Table 171 – The Property definitions of the Resource with type "rt" = "oic.r.grinder"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
coarseness	integer	Yes	Read Write	The desired coarseness when grinding.
remaining	integer	No	Read Only	The percentage of unground material left.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
coarseness	integer	Yes	Read Write	The desired coarseness when grinding.

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6.84.6 CRUDN behaviour

Table 172 defines the CRUDN operations that are supported on the "oic.r.grinder" Resource Type.

Table 172 – The CRUDN operations of the Resource with type "rt" = "oic.r.grinder"

Create	Read	Update	Delete	Notify
	get	post		observe

6.85 Liquid Level

6.85.1 Introduction

This Resource describes the attributes associated with liquid level. The Property "currentlevel" and "desiredlevel" are defined in terms of a percentage. The behaviour of when the currentlevel and desiredlevel are not equal is determined by the device manufacturer.

6.85.2 Example URI

/LiquidLevelResURI

6.85.3 Resource type

The Resource Type is defined as: "oic.r.liquid.level".

6.85.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Liquid Level",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/LiquidLevelResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with liquid level. The
Property \"currentlevel\" and \"desiredlevel\" are defined in terms of a percentage. The behaviour of
when the currentlevel and desiredlevel are not equal is determined by the device manufacturer.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the state of liquid level.",
              "x-example":
                {
                  "rt": ["oic.r.liquid.level"],
                  "if": ["oic.if.rw", "oic.if.r", "oic.if.baseline"],
                  "currentlevel": 60,
                  "desiredlevel": 80
                },
```

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```
            "schema": { "$ref": "#/definitions/LiquidLevel" }
          }
        }
      },
      "post": {
        "description": "Sets liquid level value.",
        "parameters": [
          {"$ref": "#/parameters/interface-rw"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/LiquidLevelUpdate" },
            "x-example":
              {
                "desiredlevel": 80
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "desiredlevel": 80
                },
              "schema": { "$ref": "#/definitions/LiquidLevelUpdate" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.r", "oic.if.baseline"]
    },
    "interface-rw" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "LiquidLevel" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.liquid.level"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "currentlevel": {
          "description": "The current level of the liquid in percentage.",
          "maximum": 100,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "desiredlevel": {
          "description": "The desired level of the liquid in percentage.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
```

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```
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["currentlevel"]
    },
    "LiquidLevelUpdate" : {
      "properties": {
        "desiredlevel": {
          "description": "The desired level of the liquid in percentage.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        }
      },
      "type": "object",
      "required": ["desiredlevel"]
    }
  }
}
```

6.85.5 Property definition

Table 173 defines the Properties that are part of the "oic.r.liquid.level" Resource Type.

Table 173 – The Property definitions of the Resource with type "rt" = "oic.r.liquid.level"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
currentlevel	integer	Yes	Read Only	The current level of the liquid in percentage.
desiredlevel	integer	No	Read Write	The desired level of the liquid in percentage.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
desiredlevel	integer	Yes	Read Write	The desired level of the liquid in percentage.

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"

Create	Read	Update	Delete	Notify
	get	post		observe

6.86 Vehicle Connector

6.86.1 Introduction

This Resource describes the attributes associated with an electric vehicle charging connector. The Property "connected" is a boolean indicating the status of the connector (False = disconnected, True = connected). The Property "ratedchargingcapacity" and "rateddischargingcapacity" are in Amps (A).

6.86.2 Example URI

/VehicleConnectorResURI

6.86.3 Resource type

The Resource Type is defined as: "oic.r.vehicle.connector".

6.86.4 OpenAPI 2.0 definition

```
{
  "swagger":"2.0",
  "info": {
    "title": "Vehicle Connector",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/VehicleConnectorResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with an electric vehicle
charging connector. The Property \"connected\" is a boolean indicating the status of the connector
```

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```
(False = disconnected, True = connected). The Property \"ratedchargingcapacity\" and
\"rateddischargingcapacity\" are in Amps (A).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.vehicle.connector"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "connected": true,
                  "ratedchargingcapacity": 20.0,
                  "rateddischargingcapacity": 5.0
                },
              "schema": { "$ref": "#/definitions/VehicleConnector" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "VehicleConnector" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.vehicle.connector"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "connected": {
          "description": "The connection state.",
          "readOnly": true,
          "type": "boolean"
        },
        "ratedchargingcapacity": {
          "description": "The rated charging capacity in Amps (A).",
          "readOnly": true,
          "type": "number"
        },
        "rateddischargingcapacity": {
          "description": "The rated discharging capacity in Amps (A).",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
```

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```
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["connected"]
    }
  }
}
```


6.86.5 Property definition

Table 175 defines the Properties that are part of the "oic.r.vehicle.connector" Resource Type.

Table 175 – The Property definitions of the Resource with type "rt" = "oic.r.vehicle.connector"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
connected	boolean	Yes	Read Only	The connection state.
ratedchargingcapacity	number	No	Read Only	The rated charging capacity in Amps (A).
rateddischargingcapacity	number	No	Read Only	The rated discharging capacity in Amps (A).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.86.6 CRUDN behaviour

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

Table 176 – The CRUDN operations of the Resource with type "rt" = "oic.r.vehicle.connector"

Create	Read	Update	Delete	Notify
	get			observe

6.87 Time Stamp

6.87.1 Introduction

This Resource describes Properties associated with a timestamp.
The "timestamp" Property is a string that captures a timestamp using the RFC3339 datetime format (e.g: 2007-04-05T14:30Z) (Time+Date+Timezone).

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6.87.2 Example URI

/TimeStampResURI

6.87.3 Resource type

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

6.87.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Time Stamp",
    "version": "20190327",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/TimeStampResURI" : {
      "get": {
        "description": "This Resource describes Properties associated with a timestamp.\nThe
\"timestamp\" Property is a string that captures a timestamp using the RFC3339 datetime format (e.g:
2007-04-05T14:30Z) (Time+Date+Timezone).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.time.stamp"],
                  "if": ["oic.if.s", "oic.if.r", "oic.if.baseline"],
                  "timestamp": "2015-11-05T14:30:00Z"
                },
              "schema": { "$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": "The Resource Type.",
          "items": {
            "enum": ["oic.r.time.stamp"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
```

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```
          "type": "array"
        },
        "timestamp": {
          "description": "An RFC3339 formated 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": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["timestamp"]
    }
  }
}
```


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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
timestamp	string	Yes	Read Only	An RFC3339 formated time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.87.6 CRUDN behaviour

Table 178 defines the CRUDN operations that are supported on the "oic.r.time.stamp" Resource Type.

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Table 178 – The CRUDN operations of the Resource with type "rt" = "oic.r.time.stamp"

Create	Read	Update	Delete	Notify
	get			observe

6.88 3D Printer

6.88.1 Introduction

This Resource describes the attributes associated with 3D Printer. The type of 3D printing technology is specified by an enumerated string value. The maximum sizes in mm are included for the x, y, and z dimensions. A designation of whether the device is capable of WAN connectivity is represented in a boolean. The memory capacity is captured in MB.

6.88.2 Example URI

/3DPrinterResURI

6.88.3 Resource type

The Resource Type is defined as: "oic.r.printer.3d".

6.88.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "3D Printer",
    "version": "20190222",
     "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/3DPrinterResURI": {
      "get": {
        "description": "This Resource describes the attributes associated with 3D Printer. The type of
3D printing technology is specified by an enumerated string value. The maximum sizes in mm are included
for the x, y, and z dimensions. A designation of whether the device is capable of WAN connectivity is
represented in a boolean. The memory capacity is captured in MB.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt" : ["oic.r.printer.3d"],
                  "if" : ["oic.if.r", "oic.if.baseline"],
                  "3dprinttype" : "Digital Light Processing",
                  "printsizex" : 300.00,
                  "printsizey" : 200.50,
                  "printsizez" : 250.75,
                  "wanconnected" : false,
                  "memorysize" : 120.5
                },
              "schema": { "$ref": "#/definitions/3DPrinter" }
```

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```
            }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.r", "oic.if.baseline"]
      }
    },
    "definitions": {
      "3DPrinter": {
        "properties": {
          "rt": {
            "description": "The Resource Type",
            "items": {
              "maxLength": 64,
              "type": "string",
              "enum": ["oic.r.printer.3d"]
            },
            "minItems": 1,
            "uniqueItems" : true,
            "readOnly": true,
            "type": "array"
          },
          "printsizey": {
            "description": "This Property represents the maximum size of printing object in the direction
of Y-axis. The unit is mm.",
            "readOnly": true,
            "type": "number"
          },
          "memorysize": {
            "description": "This Property represents the total memory size of the printer. The unit is
MB(Mega Bytes)",
            "readOnly": true,
            "type": "number"
          },
          "3dprinttype": {
            "description": "The type of 3D printing technology.",
            "enum": [
              "Fused Filament Fabrication",
              "Fused Deposition Modeling",
              "Digital Light Processing",
              "Powder Bed & inkjet head 3D Printing",
              "Photopolymer Jetting Technology",
              "Laminated Object Manufacturing",
              "Stereolithography Apparatus",
              "Selective Laser Sintering",
              "Unknown"
            ],
            "readOnly": true,
            "type": "string"
          },
          "wanconnected": {
            "description": "This Property indicates the connectivity capability of the 3D printer. If the
value is false, the printer does not have network facility to Wide Area Network such as internet and
GSM. If the value is true, the printer has network connectivity",
            "readOnly": true,
            "type": "boolean"
          },
          "printsizex": {
            "description": "This Property represents the maximum size of printing object in the direction
of X-axis. The unit is mm.",
            "readOnly": true,
            "type": "number"
          },
          "printsizez": {
            "description": "This Property represents the maximum size of printing object in the direction
of Z-axis. The unit is mm.",
            "readOnly": true,
            "type": "number"
          },
          "n": {
              "$ref":
```


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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["3dprinttype", "printsizex", "printsizey", "printsizez", "wanconnected",
"memorysize"]
    }
  }
}
```


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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
printsizey	number	Yes	Read Only	This Property represents the maximum size of printing object in the direction of Y-axis. The unit is mm.
memorysize	number	Yes	Read Only	This Property represents the total memory size of the printer. The unit is MB(Mega Bytes)
3dprinttype	string	Yes	Read Only	The type of 3D printing technology.
wanconnected	boolean	Yes	Read Only	This Property indicates the connectivity capability of the 3D printer. If the value is false, the printer does not have network facility to Wide Area Network such as internet and GSM. If the value is true, the printer has network connectivity

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Property name	Value type	Mandatory	Access mode	Description
printsizex	number	Yes	Read Only	This Property represents the maximum size of printing object in the direction of X-axis. The unit is mm.
printsizez	number	Yes	Read Only	This Property represents the maximum size of printing object in the direction of Z-axis. The unit is mm.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.88.6 CRUDN behaviour

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

Table 180 – The CRUDN operations of the Resource with type "rt" = "oic.r.printer.3d"

Create	Read	Update	Delete	Notify
	get			observe

6.89 Blood Pressure

6.89.1 Introduction

This Resource describes the Properties associated with a person's blood pressure.
The unit is a single value that is one of mmHg or kPa.
If the unit Property is missing the default is a millimeter of mercury [mmHg].
The bloodpressure and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

6.89.2 Example URI

/BloodPressureResURI

6.89.3 Resource type

The Resource Type is defined as: "oic.r.blood.pressure".

6.89.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Blood Pressure",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
```

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```
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BloodPressureResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's blood
pressure.\nThe unit is a single value that is one of mmHg or kPa.\nIf the unit Property is missing the
default is a millimeter of mercury [mmHg].\nThe bloodpressure and unit Properties are read-only values
that are provided by the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.blood.pressure"
              ],
              "systolic": 110.0,
              "diastolic": 85.0,
              "map": 93.0,
              "range": [20.0, 300.0],
              "step": 1.0,
              "units": "mmHg"
            },
            "schema": {
              "$ref": "#/definitions/BloodPressure"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "BloodPressure": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.blood.pressure"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
```


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```
        "map": {
          "description": "Mean arterial pressure (MAP)",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "units": {
          "description": "Blood pressure unit",
          "enum": [
            "mmHg",
            "kPa"
          ],
          "readOnly": true,
          "type": "string",
          "default": "mmHg"
        },
        "systolic": {
          "description": "Systolic blood pressure",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "diastolic": {
          "description": "Diastolic blood pressure",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        }
      },
      "type": "object",
      "required": [
        "systolic",
        "diastolic"
      ]
    }
  }
}
```


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6.89.5 Property definition

Table 181 defines the Properties that are part of the "oic.r.blood.pressure" Resource Type.

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
map	number	No	Read Only	Mean arterial pressure (MAP)
units	string	No	Read Only	Blood pressure unit
systolic	number	Yes	Read Only	Systolic blood pressure
diastolic	number	Yes	Read Only	Diastolic blood pressure
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	

6.89.6 CRUDN behaviour

Table 182 defines the CRUDN operations that are supported on the "oic.r.blood.pressure" Resource Type.

Table 182 – The CRUDN operations of the Resource with type "rt" = "oic.r.blood.pressure"

Create	Read	Update	Delete	Notify
	get			observe

6.90 Blood Pressure Monitor Atomic Measurement

6.90.1 Introduction

This Resource describes the Properties associated with a blood pressure monitor.
The Resource is an Atomic Measurement of blood pressure (oic.r.blood.pressure), pulse rate (oic.r.pulserate), observed time (oic.r.time.stamp), and user id (oic.r.userid).

6.90.2 Example URI

/BloodPressureMonitorAMResURI

6.90.3 Resource type

The Resource Type is defined as: "oic.r.bloodpressuremonitor-am, oic.wk.atomicmeasurement".

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6.90.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Blood Pressure Monitor Atomic Measurement",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BloodPressureMonitorAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with a blood pressure
monitor.\nThe Resource is an Atomic Measurement of blood pressure (oic.r.blood.pressure),  pulse rate
(oic.r.pulserate), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myBloodPressureResURI",
                "rep": {
                  "systolic": 120.0,
                  "diastolic": 80.0,
                  "map": 93.0,
                  "range": [20.0, 300.0],
                  "step": 1,
                  "units": "mmHg"
                }
              },
              {
                "href": "/myPulseRateResURI",
                "rep": {
                  "pulserate": 70,
                  "range": [20, 220],
                  "step": 1
                }
              },
              {
                "href": "/myUserId",
                "rep": {
                  "userid": "USER1"
                }
              },
              {
                "href": "/myTimeStamp",
                "rep": {
                  "timestamp": "2018-11-08T21:00+08:00"
                }
              }
            ],
            "schema": {
              "$ref": "#/definitions/batch-retrieve"
            }
          }
        }
```


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```
      }
    },
    "/BloodPressureMonitorAMResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes the Properties associated with a blood pressure
monitor.\nThe Resource is an Atomic Measurement of blood pressure (oic.r.blood.pressure),  pulse rate
(oic.r.pulserate), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myBloodPressureResURI",
                "rt": [
                  "oic.r.blood.pressure"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myPulseRateResURI",
                "rt": [
                  "oic.r.pulserate"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
                "rt": [
                  "oic.r.userid"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myTimeStamp",
                "rt": [
                  "oic.r.time.stamp"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              }
            ],
            "schema": {
              "$ref": "#/definitions/links"
            }
          }
        }
      }
    },
    "/BloodPressureMonitorAMResURI?if=oic.if.baseline": {
      "get": {
        "description": "This Resource describes the Properties associated with a blood pressure
monitor.\nThe Resource is an Atomic Measurement of blood pressure (oic.r.blood.pressure),  pulse rate
(oic.r.pulserate), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
```

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```
          "x-example": {
            "rt": [
              "oic.r.bloodpressuremonitor-am",
              "oic.wk.atomicmeasurement"
            ],
            "if": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "rts-m": [
              "oic.r.blood.pressure"
            ],
            "rts": [
              "oic.r.blood.pressure",
              "oic.r.pulserate",
              "oic.r.userid",
              "oic.r.time.stamp"
            ],
            "links": [
              {
                "href": "/myBloodPressureResURI",
                "rt": [
                  "oic.r.blood.pressure"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myPulseRateResURI",
                "rt": [
                  "oic.r.pulserate"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
                "rt": [
                  "oic.r.userid"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myTimeStamp",
                "rt": [
                  "oic.r.time.stamp"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              }
            ]
          },
          "schema": {
            "$ref": "#/definitions/baseline"
          }
        }
      }
    }
  }
},
"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b",
```


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```
        "oic.if.ll",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "batch-retrieve": {
      "minItems": 1,
      "items": {
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BloodPressureResURI.swagger.json#/definitio
ns/BloodPressure"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PulseRateResURI.swagger.json#/definitions/P
ulseRate"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/User
ID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/T
imeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "links": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      }
    },
    "baseline": {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.bloodpressuremonitor-am",
              "oic.wk.atomicmeasurement"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rts": {
          "description": "This contains all possible Resource Types for this Atomic Measurement.",
          "items": {
            "enum": [
              "oic.r.blood.pressure",
              "oic.r.pulserate",
```


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```
              "oic.r.userid",
              "oic.r.time.stamp"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rts-m": {
          "description": "This contains all mandatory Resource Types for this Atomic Measurement.",
          "items": {
            "enum": [
              "oic.r.blood.pressure"
            ],
            "type": "string",
            "maxLength": 64
          },
          "maxItems": 1,
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 3,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "links": {
          "$ref": "#/definitions/links"
        }
      },
      "type": "object",
      "required": [
        "rt","if","rts","rts-m","links"
      ]
    },
    "oic.oic-link": {
      "properties": {
        "if": {
          "type": "array",
          "readOnly": true,
          "uniqueItems": true,
          "minItems": 1,
          "items": {
            "type": "string",
            "maxLength": 64,
            "enum": [
              "oic.if.s",
              "oic.if.r",
              "oic.if.baseline"
            ]
          }
        },
```

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```
        "rt": {
          "type": "array",
          "readOnly": true,
          "uniqueItems": true,
          "minItems": 1,
          "items": {
            "type": "string",
            "maxLength": 64,
            "enum": [
              "oic.r.blood.pressure",
              "oic.r.pulserate",
              "oic.r.userid",
              "oic.r.time.stamp"
            ]
          }
        },
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```


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6.90.5 Property definition

Table 183 defines the Properties that are part of the "oic.r.bloodpressuremonitor-am, oic.wk.atomicmeasurement" Resource Type.

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Table 183 – The Property definitions of the Resource with type "rt" = "oic.r.bloodpressuremonitor-am, oic.wk.atomicmeasurement"

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	Yes	Read Only	
rts	array: see schema	Yes	Read Only	This contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	Yes	Read Only	The OCF Interface set supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
links	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Only	
rt	array: see schema	Yes	Read Only	
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

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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.

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Table 184 – The CRUDN operations of the Resource with type "rt" = "oic.r.bloodpressuremonitor-am, oic.wk.atomicmeasurement"

Create	Read	Update	Delete	Notify
	get			observe

6.91 Body Mass Index(BMI)

6.91.1 Introduction

This Resource describes the Properties associated with a person's Body Mass Index (BMI).
The unit, which is the default unit, is kg/m^2.
The bmi and unit Properties are read-only values that are provided by the server.
When range is omitted the default is 0 to +MAXFLOAT.

6.91.2 Example URI

/BMIResURI

6.91.3 Resource type

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

6.91.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Mass Index(BMI)",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BMIResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's Body Mass
Index (BMI).\nThe unit, which is the default unit, is kg/m^2.\nThe bmi and unit Properties are read-
only values that are provided by the server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.bmi"
              ],
```

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```
              "bmi": 20.0
            },
            "schema": {
              "$ref": "#/definitions/BMI"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "BMI": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.bmi"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "bmi": {
          "description": "Body Mass Index (BMI) in kg/m^2",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
```


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```
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "bmi"
      ]
    }
  }
}
```


6.91.5 Property definition

Table 185 defines the Properties that are part of the "oic.r.bmi" Resource Type.

Table 185 – The Property definitions of the Resource with type "rt" = "oic.r.bmi"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
bmi	number	Yes	Read Only	Body Mass Index (BMI) in kg/m^2
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.91.6 CRUDN behaviour

Table 186 defines the CRUDN operations that are supported on the "oic.r.bmi" Resource Type.

Table 186 – The CRUDN operations of the Resource with type "rt" = "oic.r.bmi"

Create	Read	Update	Delete	Notify
	get			observe

6.92 Body Fat

6.92.1 Introduction

This Resource describes the Properties associated with a person's body fat.
The unit is a single value that is one of kg, lb or percent.
If the unit Property is missing the default is kilograms [kg].

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The bodyfat and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

6.92.2 Example URI

/BodyFatResURI

6.92.3 Resource type

The Resource Type is defined as: "oic.r.body.fat".

6.92.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Fat",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyFatResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's body
fat.\nThe unit is a single value that is one of kg, lb or percent.\nIf the unit Property is missing the
default is kilograms [kg].\nThe bodyfat and unit Properties are read-only values that are provided by
the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.body.fat"
              ],
              "bodyfat": 20.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/BodyFat"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
```


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```
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "BodyFat": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.body.fat"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "bodyfat": {
          "description": "Body fat.",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "units": {
          "description": "Body fat units",
          "enum": [
            "kg",
            "lb",
            "percent"
          ],
          "readOnly": true,
          "type": "string",
          "default": "kg"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
```


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```
        }
      },
      "type": "object",
      "required": [
        "bodyfat"
      ]
    }
  }
}
```


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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
bodyfat	number	Yes	Read Only	Body fat.
units	string	No	Read Only	Body fat units
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.92.6 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"

Create	Read	Update	Delete	Notify
	get			observe

6.93 Body Fat Free Mass

6.93.1 Introduction

This Resource describes the Properties associated with a person's body fat free mass.
The unit is a single value that is one of kg, lb or percent.
If the unit Property is missing the default is kilograms [kg].
The ffm and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

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6.93.2 Example URI

/BodyFatFreeMassResURI

6.93.3 Resource type

The Resource Type is defined as: "oic.r.body.ffm".

6.93.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Fat Free Mass",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyFatFreeMassResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's body fat free
mass.\nThe unit is a single value that is one of kg, lb or percent.\nIf the unit Property is missing
the default is kilograms [kg].\nThe ffm and unit Properties are read-only values that are provided by
the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.body.ffm"
              ],
              "ffm": 40.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/BodyFatFreeMass"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
```

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```
  },
  "definitions": {
    "BodyFatFreeMass": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.body.ffm"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "ffm": {
          "description": "Body fat free mass.",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "units": {
          "description": "Body fat free mass units",
          "enum": [
            "kg",
            "lb",
            "percent"
          ],
          "readOnly": true,
          "type": "string",
          "default": "kg"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
```


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```
      "required": [
        "ffm"
      ]
    }
  }
}
```

6.93.5 Property definition

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"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
ffm	number	Yes	Read Only	Body fat free mass.
units	string	No	Read Only	Body fat free mass units
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.93.6 CRUDN behaviour

Table 190 defines the CRUDN operations that are supported on the "oic.r.body.ffm" Resource Type.

Table 190 – The CRUDN operations of the Resource with type "rt" = "oic.r.body.ffm"

Create	Read	Update	Delete	Notify
	get			observe

6.94 Body Location Temperature

6.94.1 Introduction

This Resource describes the Properties associated with body location for temperature measurement of a person.
The bloc Property is a read-only value that is provided by the Server.

6.94.2 Example URI

/BodyLocationTemperatureResURI

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6.94.3 Resource type

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

6.94.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Location Temperature",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyLocationTemperatureResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with body location for
temperature measurement of a person.\nThe bloc Property is a read-only value that is provided by the
Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.body.location.temperature"
              ],
              "bloc": "ear"
            },
            "schema": {
              "$ref": "#/definitions/BodyLocationTemperature"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "BodyLocationTemperature": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
```


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```
              "oic.r.body.location.temperature"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "bloc": {
          "description": "A list specific to temperature site",
          "enum": [
            "axillary",
            "body",
            "ear",
            "finger",
            "gitract",
            "mouth",
            "rectum",
            "toe",
            "tympanum"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "bloc"
      ]
    }
  }
}
```


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6.94.5 Property definition

Table 191 defines the Properties that are part of the "oic.r.body.location.temperature" Resource Type.

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Table 191 – The Property definitions of the Resource with type "rt" = "oic.r.body.location.temperature"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
bloc	string	Yes	Read Only	A list specific to temperature site
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.94.6 CRUDN behaviour

Table 192 defines the CRUDN operations that are supported on the "oic.r.body.location.temperature" Resource Type.

Table 192 – The CRUDN operations of the Resource with type "rt" = "oic.r.body.location.temperature"

Create	Read	Update	Delete	Notify
	get			observe

6.95 Body Scale Atomic Measurement

6.95.1 Introduction

This Resource describes the Properties associated with body scale.
The Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI) (oic.r.bmi), height (oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body soft lean mass (oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time (oic.r.time.stamp), and user id (oic.r.userid).

6.95.2 Example URI

/BodyScaleAMResURI

6.95.3 Resource type

The Resource Type is defined as: "oic.r.bodyscale-am, oic.wk.atomicmeasurement".

6.95.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Scale Atomic Measurement",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
```

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```
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyScaleAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with body scale.\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).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myWeight",
                "rep": {
                  "weight": 80.0,
                  "units": "kg"
                }
              },
              {
                "href": "/myBMI",
                "rep": {
                  "bmi": 20.0
                }
              },
              {
                "href": "/myHeight",
                "rep": {
                  "height": 1.8,
                  "units": "m"
                }
              },
              {
                "href": "/myBodyFat",
                "rep": {
                  "bodyfat": 20.0,
                  "units": "kg"
                }
              },
              {
                "href": "/myBodyWater",
                "rep": {
                  "bwater": 20.0,
                  "units": "kg"
                }
              },
              {
                "href": "/myBodySoftLeanMass",
                "rep": {
                  "slm": 20.0,
                  "units": "kg"
                }
              },
              {
                "href": "/myBodyFatFreeMass",
                "rep": {
                  "ffm": 40.0,
                  "units": "kg"
                }
              },
```


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```
              {
                "href": "/myUserId",
                "rep": {
                  "userid": "USER1"
                }
              },
              {
                "href": "/myTimeStamp",
                "rep": {
                  "timestamp": "2018-11-09T12:15+08:00"
                }
              }
            ],
            "schema": {
              "$ref": "#/definitions/batch-retrieve"
            }
          }
        }
      }
    },
    "/BodyScaleAMResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes the Properties associated with body scale.\nThe
Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI) (oic.r.bmi), height
(oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body soft lean mass
(oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time (oic.r.time.stamp), and user id
(oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myWeight",
                "rt": [
                  "oic.r.weight"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myBMI",
                "rt": [
                  "oic.r.bmi"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myHeight",
                "rt": [
                  "oic.r.height"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myBodyFat",
                "rt": [
                  "oic.r.body.fat"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
```


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```
              "href": "/myBodyWater",
              "rt": [
                "oic.r.body.water"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myBodySoftLeanMass",
              "rt": [
                "oic.r.body.slm"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myBodyFatFreeMass",
              "rt": [
                "oic.r.body.ffm"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myUserId",
              "rt": [
                "oic.r.userid"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myTimeStamp",
              "rt": [
                "oic.r.time.stamp"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            }
          ],
          "schema": {
            "$ref": "#/definitions/links"
          }
        }
      }
    },
    "/BodyScaleAMResURI?if=oic.if.baseline": {
      "get": {
        "description": "This Resource describes the Properties associated with body scale.\nThe
Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI) (oic.r.bmi), height
(oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body soft lean mass
(oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time (oic.r.time.stamp), and user id
(oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.bodyscale-am",
                "oic.wk.atomicmeasurement"
              ],
```


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```
"if": [
  "oic.if.b",
  "oic.if.ll",
  "oic.if.baseline"
],
"rts": [
  "oic.r.weight",
  "oic.r.bmi",
  "oic.r.height",
  "oic.r.body.fat",
  "oic.r.body.water",
  "oic.r.body.slm",
  "oic.r.body.ffm",
  "oic.r.userid",
  "oic.r.time.stamp"
],
"rts-m": [
  "oic.r.weight"
],
"links": [
  {
    "href": "/myWeight",
    "rt": [
      "oic.r.weight"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBMI",
    "rt": [
      "oic.r.bmi"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myHeight",
    "rt": [
      "oic.r.height"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBodyFat",
    "rt": [
      "oic.r.body.fat"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBodyWater",
    "rt": [
      "oic.r.body.water"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBodySoftLeanMass",
    "rt": [
      "oic.r.body.slm"
    ],
    "if": [
      "oic.if.s",
```


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```
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myBodyFatFreeMass",
              "rt": [
                "oic.r.body.ffm"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myUserId",
              "rt": [
                "oic.r.userid"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myTimeStamp",
              "rt": [
                "oic.r.time.stamp"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            }
          ]
        },
        "schema": {
          "$ref": "#/definitions/baseline"
        }
      }
    }
  }
},
"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b",
      "oic.if.ll",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "links": {
    "type": "array",
    "items": {
      "$ref": "#/definitions/oic.oic-link"
    }
  },
  "baseline": {
    "properties": {
      "rt": {
        "items": {
          "enum": [
            "oic.r.bodyscale-am",
            "oic.wk.atomicmeasurement"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 2,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
```

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```
        },
        "rts": {
          "description": "This contains all possible Resource Types for this Atomic Measurement.",
          "items": {
            "enum": [
              "oic.r.weight",
              "oic.r.bmi",
              "oic.r.height",
              "oic.r.body.fat",
              "oic.r.body.water",
              "oic.r.body.slm",
              "oic.r.body.ffm",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rts-m": {
          "description": "This contains all mandatory Resource Types for this Atomic Measurement.",
          "items": {
            "enum": [
              "oic.r.weight"
            ],
            "type": "string",
            "maxLength": 64
          },
          "maxItems": 1,
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 3,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "links": {
          "$ref": "#/definitions/links"
        }
      },
      "type": "object",
      "required": [
        "rt","if","links","rts","rts-m"
      ]
    },
    "batch-retrieve": {
      "minItems": 1,
      "items": {
        "properties": {
```

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```
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/WeightResURI.swagger.json#/definitions/Weig
ht"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BMIResURI.swagger.json#/definitions/BMI"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/HeightResURI.swagger.json#/definitions/Heig
ht"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodyFatResURI.swagger.json#/definitions/Bod
yFat"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodyWaterResURI.swagger.json#/definitions/B
odyWater"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodySoftLeanMassResURI.swagger.json#/defini
tions/BodySoftLeanMass"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodyFatFreeMassResURI.swagger.json#/definit
ions/BodyFatFreeMass"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/User
ID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/T
imeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "oic.oic-link": {
      "properties": {
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "enum": [
              "oic.r.weight",
              "oic.r.bmi",
              "oic.r.height",
              "oic.r.body.fat",
              "oic.r.body.water",
              "oic.r.body.slm",
              "oic.r.body.ffm",
              "oic.r.time.stamp",
```


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```
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "description": "The OCF Interface set supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```


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6.95.5 Property definition

Table 193 defines the Properties that are part of the "oic.r.bodyscale-am, oic.wk.atomicmeasurement" Resource Type.

Table 193 – The Property definitions of the Resource with type "rt" = "oic.r.bodyscale-am, oic.wk.atomicmeasurement"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	Yes	Read Only	
rts	array: see schema	Yes	Read Only	This contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	Yes	Read Only	The OCF Interface set supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
links	multiple types: see schema	Yes	Read Write	
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
if	array: see schema	Yes	Read Only	The OCF Interface set supported by the target Resource
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

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6.95.6 CRUDN behaviour

Table 194 defines the CRUDN operations that are supported on the "oic.r.bodyscale-am, oic.wk.atomicmeasurement" Resource Type.

Table 194 – The CRUDN operations of the Resource with type "rt" = "oic.r.bodyscale-am, oic.wk.atomicmeasurement"

Create	Read	Update	Delete	Notify
	get			observe

6.96 Body Soft Lean Mass

6.96.1 Introduction

This Resource describes the Properties associated with a person's body soft lean mass.
The unit is a single value that is one of kg, lb or percent.
If the unit Property is missing the default is kilograms [kg].
The slm and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

6.96.2 Example URI

/BodySoftLeanMassResURI

6.96.3 Resource type

The Resource Type is defined as: "oic.r.body.slm".

6.96.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Soft Lean Mass",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodySoftLeanMassResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's body soft
lean mass.\nThe unit is a single value that is one of kg, lb or percent.\nIf the unit Property is
missing the default is kilograms [kg].\nThe slm and unit Properties are read-only values that are
provided by the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
```

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```
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.body.slm"
              ],
              "slm": 20.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/BodySoftLeanMass"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "BodySoftLeanMass": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.body.slm"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "slm": {
          "description": "Body soft lean mass.",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "units": {
          "description": "Body soft lean mass units",
          "enum": [
            "kg",
            "lb",
            "percent"
          ],
          "readOnly": true,
          "type": "string",
          "default": "kg"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
```


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```
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "slm"
      ]
    }
  }
}
```


6.96.5 Property definition

Table 195 defines the Properties that are part of the "oic.r.body.slm" Resource Type.

Table 195 – The Property definitions of the Resource with type "rt" = "oic.r.body.slm"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
slm	number	Yes	Read Only	Body soft lean mass.
units	string	No	Read Only	Body soft lean mass units
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

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6.96.6 CRUDN behaviour

Table 196 defines the CRUDN operations that are supported on the "oic.r.body.slm" Resource Type.

Table 196 – The CRUDN operations of the Resource with type "rt" = "oic.r.body.slm"

Create	Read	Update	Delete	Notify
	get			observe

6.97 Body Thermometer Atomic Measurement

6.97.1 Introduction

This Resource describes the Properties associated with body thermometer.
The Resource is an Atomic Measurement of temperature (oic.r.temperature), body location for temperature (oic.r.body.location.temperature), observed time (oic.r.time.stamp), and user id (oic.r.userid).

6.97.2 Example URI

/BodyThermometerAMResURI

6.97.3 Resource type

The Resource Type is defined as: "oic.r.bodythermometer-am, oic.wk.atomicmeasurement".

6.97.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Thermometer Atomic Measurement",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyThermometerAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with body thermometer.\nThe
Resource is an Atomic Measurement of temperature (oic.r.temperature), body location for temperature
(oic.r.body.location.temperature), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
```

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```
            "description": "",
            "x-example": [
              {
                "href": "/myTemperature",
                "rep": {
                  "temperature": 38.0,
                  "units": "C"
                }
              },
              {
                "href": "/myBodyLocationForTemperature",
                "rep": {
                  "bloc": "mouth"
                }
              },
              {
                "href": "/myUserId",
                "rep": {
                  "userid": "USER1"
                }
              },
              {
                "href": "/myTimeStamp",
                "rep": {
                  "timestamp": "2018-11-09T12:15+08:00"
                }
              }
            ],
            "schema": {
              "$ref": "#/definitions/batch-retrieve"
            }
          }
        }
      }
    },
    "/BodyThermometerAMResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes the Properties associated with body thermometer.\nThe
Resource is an Atomic Measurement of temperature (oic.r.temperature), body location for temperature
(oic.r.body.location.temperature), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myTemperature",
                "rt": [
                  "oic.r.temperature"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myBodyLocationForTemperature",
                "rt": [
                  "oic.r.body.location.temperature"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
                "rt": [
                  "oic.r.userid"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
```


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```
              ]
            },
            {
              "href": "/myTimeStamp",
              "rt": [
                "oic.r.time.stamp"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            }
          ],
          "schema": {
            "$ref": "#/definitions/links"
          }
        }
      }
    }
  },
  "/BodyThermometerAMResURI?if=oic.if.baseline": {
    "get": {
      "description": "This Resource describes the Properties associated with body thermometer.\nThe
Resource is an Atomic Measurement of temperature (oic.r.temperature), body location for temperature
(oic.r.body.location.temperature), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": [
              "oic.r.bodythermometer-am",
              "oic.wk.atomicmeasurement"
            ],
            "if": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "rts": [
              "oic.r.temperature",
              "oic.r.body.location.temperature",
              "oic.r.userid",
              "oic.r.time.stamp"
            ],
            "rts-m": [
              "oic.r.temperature"
            ],
            "links": [
              {
                "href": "/myTemperature",
                "rt": [
                  "oic.r.temperature"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myBodyLocationForTemperature",
                "rt": [
                  "oic.r.body.location.temperature"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
                "rt": [
                  "oic.r.userid"
```


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```
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myTimeStamp",
                "rt": [
                  "oic.r.time.stamp"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              }
            ]
          },
          "schema": {
            "$ref": "#/definitions/baseline"
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.b",
        "oic.if.ll",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "batch-retrieve": {
      "minItems": 1,
      "items": {
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TemperatureResURI.swagger.json#/definitions
/Temperature"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodyLocationTemperatureResURI.swagger.json#
/definitions/BodyLocationTemperature"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/User
ID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/T
imeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
```


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```
      ],
      "type": "object"
    },
    "type": "array"
  },
  "links": {
    "type": "array",
    "items": {
      "$ref": "#/definitions/oic.oic-link"
    }
  },
  "baseline": {
    "properties": {
      "rt": {
        "items": {
          "enum": [
            "oic.r.bodythermometer-am",
            "oic.wk.atomicmeasurement"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 2,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "rts": {
        "description": "This contains all possible Resource Types for this Atomic Measurement.",
        "items": {
          "enum": [
            "oic.r.temperature",
            "oic.r.body.location.temperature",
            "oic.r.time.stamp",
            "oic.r.userid"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "rts-m": {
        "description": "This contains all mandatory Resource Types for this Atomic Measurement.",
        "items": {
          "enum": [
            "oic.r.temperature"
          ],
          "type": "string",
          "maxLength": 64
        },
        "maxItems": 1,
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "if": {
        "description": "The OC Interface set supported by this Resource",
        "items": {
          "enum": [
            "oic.if.b",
            "oic.if.ll",
            "oic.if.baseline"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 3,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "$ref":
```


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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "links": {
          "$ref": "#/definitions/links"
        }
      },
      "type": "object",
      "required": [
        "rt","if","links","rts","rts-m"
      ]
    },
    "oic.oic-link": {
      "properties": {
        "if": {
          "description": "The OCF Interface set supported by target Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s",
              "oic.if.r"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "enum": [
              "oic.r.temperature",
              "oic.r.body.location.temperature",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
```


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```
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```


6.97.5 Property definition

Table 197 defines the Properties that are part of the "oic.r.bodythermometer-am, oic.wk.atomicmeasurement" Resource Type.

Table 197 – The Property definitions of the Resource with type "rt" = "oic.r.bodythermometer-am, oic.wk.atomicmeasurement"

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	Yes	Read Only	
rts	array: see schema	Yes	Read Only	This contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	Yes	Read Only	The OC Interface set supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
links	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interface set supported by target Resource
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
anchor	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

6.97.6 CRUDN behaviour

Table 198 defines the CRUDN operations that are supported on the "oic.r.bodythermometer-am, oic.wk.atomicmeasurement" Resource Type.

Table 198 – The CRUDN operations of the Resource with type "rt" = "oic.r.bodythermometer-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

6.98 Body Water

6.98.1 Introduction

This Resource describes the Properties associated with a person's body water.
The unit is a single value that is one of kg or lb.
If the unit Property is missing the default is kilograms [kg].
The bwater and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

6.98.2 Example URI

/BodyWaterResURI

6.98.3 Resource type

The Resource Type is defined as: "oic.r.body.water".

6.98.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Water",
    "version": "2019-03-22",
    "license": {
```

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```
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyWaterResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's body
water.\nThe unit is a single value that is one of kg or lb.\nIf the unit Property is missing the
default is kilograms [kg].\nThe bwater and unit Properties are read-only values that are provided by
the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.body.water"
              ],
              "bwater": 20.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/BodyWater"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "BodyWater": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.body.water"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "bwater": {
          "description": "Body water.",
```


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```
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "units": {
          "description": "Body water unit",
          "enum": [
            "kg",
            "lb"
          ],
          "readOnly": true,
          "type": "string",
          "default": "kg"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "bwater"
      ]
    }
  }
}
```


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6.98.5 Property definition

Table 199 defines the Properties that are part of the "oic.r.body.water" Resource Type.

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Table 199 – The Property definitions of the Resource with type "rt" = "oic.r.body.water"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
bwater	number	Yes	Read Only	Body water.
units	string	No	Read Only	Body water unit
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.98.6 CRUDN behaviour

Table 200 defines the CRUDN operations that are supported on the "oic.r.body.water" Resource Type.

Table 200 – The CRUDN operations of the Resource with type "rt" = "oic.r.body.water"

Create	Read	Update	Delete	Notify
	get			observe

6.99 Glucose

6.99.1 Introduction

This Resource describes the Properties associated with a person's glucose level.
The unit is a single value that is one of mg/dL, mmol/L.
If the unit Property is missing the default is milligrams per decilitre [mg/dL].
The glucose and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

6.99.2 Example URI

/GlucoseResURI

6.99.3 Resource type

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

6.99.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Glucose",
    "version": "2019-03-22",
```

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```
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's glucose
level.\nThe unit is a single value that is one of mg/dL, mmol/L.\nIf the unit Property is missing the
default is milligrams per decilitre [mg/dL].\nThe glucose and unit Properties are read-only values that
are provided by the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose"
              ],
              "glucose": 90.0,
              "units": "mg/dL",
              "range": [
                20.0,
                600.0
              ],
              "step": 1
            },
            "schema": {
              "$ref": "#/definitions/Glucose"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Glucose": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
```


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```
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "glucose": {
          "description": "A measurement of glucose concentration in the blood",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "units": {
          "description": "Glucose unit",
          "enum": [
            "mg/dL",
            "mmol/L"
          ],
          "readOnly": true,
          "type": "string",
          "default": "mg/dL"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "glucose"
      ]
    }
  }
}
```


6.99.5 Property definition

Table 201 defines the Properties that are part of the "oic.r.glucose" Resource Type.

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Table 201 – The Property definitions of the Resource with type "rt" = "oic.r.glucose"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
glucose	number	Yes	Read Only	A measurement of glucose concentration in the blood
units	string	No	Read Only	Glucose unit
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.99.6 CRUDN behaviour

Table 202 defines the CRUDN operations that are supported on the "oic.r.glucose" Resource Type.

Table 202 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose"

Create	Read	Update	Delete	Notify
	get			observe

6.100 Context Carbohydrates for Glucose Meter

6.100.1 Introduction

This Resource describes the Properties associated with a context carbohydrates.
The carb Property has a default unit of grams[g].
The carb and meal Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

6.100.2 Example URI

/GlucoseCarbResURI

6.100.3 Resource type

The Resource Type is defined as: "oic.r.glucose.carb".

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6.100.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Context Carbohydrates for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICEN
SE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseCarbResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a context
carbohydrates.\nThe carb Property has a default unit of grams[g].\nThe carb and meal Properties are
read-only values that are provided by the Server.\nWhen range is omitted the default is 0 to
+MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.carb"
              ],
              "carb": 100.0,
              "meal": "breakfast"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseCarb"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "GlucoseCarb": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.carb"
            ],
```


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```
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "carb": {
          "description": "The amount of carbohydrates undertaken in grams",
          "readOnly": true,
          "type": "number",
          "minimum": 0.0
        },
        "meal": {
          "description": "Recorded time of carbohydrates intake",
          "enum": [
            "breakfast",
            "lunch",
            "dinner",
            "snack",
            "drink",
            "supper",
            "brunch",
            "undetermined",
            "other",
            "no_entry",
            "no_ingestion"
          ],
          "readOnly": true,
          "type": "string"
        },
        "range": {
          "description": "The range applies to the carb property only",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "description": "The step applies to the carb property only",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "description": "The precision applies to the carb property only",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
```


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```
        }
      },
      "type": "object",
      "required": [
        "carb",
        "meal"
      ]
    }
  }
}
```

6.100.5 Property definition

Table 203 defines the Properties that are part of the "oic.r.glucose.carb" Resource Type.

Table 203 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.carb"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
carb	number	Yes	Read Only	The amount of carbohydrates undertaken in grams
meal	string	Yes	Read Only	Recorded time of carbohydrates intake
range	multiple types: see schema	No	Read Write	The range applies to the carb property only
step	multiple types: see schema	No	Read Write	The step applies to the carb property only
precision	multiple types: see schema	No	Read Write	The precision applies to the carb property only
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.100.6 CRUDN behaviour

Table 204 defines the CRUDN operations that are supported on the "oic.r.glucose.carb" Resource Type.

Table 204 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.carb"

Create	Read	Update	Delete	Notify
	get			observe

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6.101 Exercise for Glucose Meter

6.101.1 Introduction

This Resource describes the Properties associated with glucose exercise.
The exercise Property has a default unit of percentage.
The exercise Property is a read-only value that is provided by the Server.

6.101.2 Example URI

/ExerciseResURI

6.101.3 Resource type

The Resource Type is defined as: "oic.r.glucose.exercise".

6.101.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Exercise for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ExerciseResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with glucose exercise.\nThe
exercise Property has a default unit of percentage.\nThe exercise Property is a read-only value that is
provided by the Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.exercise"
              ],
              "exercise": 30.0
            },
            "schema": {
              "$ref": "#/definitions/Exercise"
            }
          }
        }
      }
    }
  },
```

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```
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Exercise": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.exercise"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "exercise": {
          "description": "The level of exercise undertaken in percentage",
          "maximum": 100.0,
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
```


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```
      "type": "object",
      "required": [
        "exercise"
      ]
    }
  }
}
```

6.101.5 Property definition

Table 205 defines the Properties that are part of the "oic.r.glucose.exercise" Resource Type.

Table 205 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.exercise"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
exercise	number	Yes	Read Only	The level of exercise undertaken in percentage
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.101.6 CRUDN behaviour

Table 206 defines the CRUDN operations that are supported on the "oic.r.glucose.exercise" Resource Type.

Table 206 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.exercise"

Create	Read	Update	Delete	Notify
	get			observe

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

6.102.1 Introduction

This Resource describes the Properties associated with a person's hba1c level.
The unit is a single value that is percentage.
The hba1c Property is a read-only value that is provided by the Server.

6.102.2 Example URI

/GlucoseHbA1cResURI

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6.102.3 Resource type

The Resource Type is defined as: "oic.r.glucose.hba1c".

6.102.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Hemoglobin Bound to Glucose A1c Form (HbA1c) for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseHbA1cResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's hba1c
level.\nThe unit is a single value that is percentage.\nThe hba1c Property is a read-only value that is
provided by the Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.hba1c"
              ],
              "hba1c": 5.0
            },
            "schema": {
              "$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": {
            "enum": [
```

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```
              "oic.r.glucose.hba1c"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "hba1c": {
          "description": "Current HbA1c measurement in percentage",
          "maximum": 100.0,
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "hba1c"
      ]
    }
  }
}
```


6.102.5 Property definition

Table 207 defines the Properties that are part of the "oic.r.glucose.hba1c" Resource Type.

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Table 207 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.hba1c"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
hba1c	number	Yes	Read Only	Current HbA1c measurement in percentage
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.102.6 CRUDN behaviour

Table 208 defines the CRUDN operations that are supported on the "oic.r.glucose.hba1c" Resource Type.

Table 208 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.hba1c"

Create	Read	Update	Delete	Notify
	get			observe

6.103 Context Health for Glucose Meter

6.103.1 Introduction

This Resource describes the Properties associated with context health.
The health Property is a read-only value that is provided by the Server where
minor and major are related to the general health or the level of illness of the person;
menses refers to the female menstrual cycle;
stress refers to physiological or psychological stress.

6.103.2 Example URI

/GlucoseHealthResURI

6.103.3 Resource type

The Resource Type is defined as: "oic.r.glucose.health".

6.103.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Context Health for Glucose Meter",
    "version": "2019-03-22",
```

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```
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseHealthResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with context health.\nThe
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.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.health"
              ],
              "health": "major"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseHealth"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "GlucoseHealth": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.health"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "health": {
          "description": "The various levels of health a person feels when taking a glucose.",
          "enum": [
```


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```
            "minor",
            "major",
            "menses",
            "stress",
            "none"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "health"
      ]
    }
  }
}
```


6.103.5 Property definition

Table 209 defines the Properties that are part of the "oic.r.glucose.health" Resource Type.

Table 209 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.health"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
health	string	Yes	Read Only	The various levels of health a person feels when taking a glucose.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.103.6 CRUDN behaviour

Table 210 defines the CRUDN operations that are supported on the "oic.r.glucose.health" Resource Type.

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Table 210 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.health"

Create	Read	Update	Delete	Notify
	get			observe

6.104 Context Meal for Glucose Meter

6.104.1 Introduction

This Resource describes the Properties associated with context meal.
Preprandial means pre-meal.
Postprandial means post-meal.
Fasting means the effect of long-term absence of food intake (overnight).
The meal Property is a read-only value that is provided by the Server.

6.104.2 Example URI

/GlucoseMealResURI

6.104.3 Resource type

The Resource Type is defined as: "oic.r.glucose.meal".

6.104.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Context Meal for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseMealResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with context
meal.\nPreprandial means pre-meal.\nPostprandial means post-meal.\nFasting means the effect of long-
term absence of food intake (overnight).\nThe meal Property is a read-only value that is provided by
the Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.meal"
```

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```
              ],
              "meal": "preprandial"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseMeal"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "GlucoseMeal": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.meal"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "meal": {
          "description": "Time of day when the measurement is taken.",
          "enum": [
            "preprandial",
            "postprandial",
            "fasting",
            "bedtime",
            "casual"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
```


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```
      "type": "object",
      "required": [
        "meal"
      ]
    }
  }
}
```

6.104.5 Property definition

Table 211 defines the Properties that are part of the "oic.r.glucose.meal" Resource Type.

Table 211 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.meal"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
meal	string	Yes	Read Only	Time of day when the measurement is taken.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.104.6 CRUDN behaviour

Table 212 defines the CRUDN operations that are supported on the "oic.r.glucose.meal" Resource Type.

Table 212 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.meal"

Create	Read	Update	Delete	Notify
	get			observe

6.105 Context Medication for Glucose Meter

6.105.1 Introduction

This Resource describes the Properties associated with context medication.
The unit is a single value that is one of mg and mL.
The medication Property has a default unit of milligrams[mg].
The medication, unit and regimen Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

6.105.2 Example URI

/GlucoseMedicationResURI

6.105.3 Resource type

The Resource Type is defined as: "oic.r.glucose.medication".

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6.105.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Context Medication for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/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 medication, unit and regimen Properties are read-only values that are provided by
the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.medication"
              ],
              "medication": 100.0,
              "units": "mg",
              "regimen": "rapidacting"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseMedication"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "GlucoseMedication": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.medication"
            ],
            "type": "string",
```


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```
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "regimen": {
          "description": "Medication regimen",
          "enum": [
            "rapidacting",
            "shortacting",
            "intermediateacting",
            "longacting",
            "premix"
          ],
          "readOnly": true,
          "type": "string"
        },
        "medication": {
          "description": "The amount of medication taken",
          "readOnly": true,
          "type": "number",
          "minimum": 0.0
        },
        "units": {
          "description": "Unit for the amount of medication taken",
          "enum": [
            "mg",
            "mL"
          ],
          "readOnly": true,
          "type": "string",
          "default": "mg"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
```


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```
      "required": [
        "medication"
      ]
    }
  }
}
```

6.105.5 Property definition

Table 213 defines the Properties that are part of the "oic.r.glucose.medication" Resource Type.

Table 213 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.medication"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
regimen	string	No	Read Only	Medication regimen
medication	number	Yes	Read Only	The amount of medication taken
units	string	No	Read Only	Unit for the amount of medication taken
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.105.6 CRUDN behaviour

Table 214 defines the CRUDN operations that are supported on the "oic.r.glucose.medication" Resource Type.

Table 214 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.medication"

Create	Read	Update	Delete	Notify
	get			observe

6.106 Glucose Meter Atomic Measurement

6.106.1 Introduction

This Resource describes the Properties associated with glucose meter.
The Resource is an Atomic Measurement of glucose (oic.r.glucose), context carbohydrates (oic.r.glucose.carb), context exercise (oic.r.glucose.exercise), Hemoglobin Bound to glucose a1c Form (HbA1c) (oic.r.glucose.hba1c), context health (oic.r.glucose.health), context meal (oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location (oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time (oic.r.time.stamp), and user id (oic.r.userid).

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6.106.2 Example URI

/GlucoseMeterAMResURI

6.106.3 Resource type

The Resource Type is defined as: "oic.r.glucosemeter-am, oic.wk.atomicmeasurement".

6.106.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Glucose Meter Atomic Measurement",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/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 Form
(HbA1c) (oic.r.glucose.hba1c), context health (oic.r.glucose.health), context meal
(oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location
(oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time
(oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myGlucose",
                "rep": {
                  "glucose": 100.0,
                  "units": "mg/dL",
                  "range": [
                    20.0,
                    600.0
                  ],
                  "step": 1
                }
              },
              {
                "href": "/myGlucoseCarb",
                "rep": {
                  "carb": 100.0,
                  "meal": "breakfast"
                }
              },
              {
                "href": "/myGlucoseExercise",
```


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```
              "rep": {
                "exercise": 30.0
              }
            },
            {
              "href": "/myGlucoseHbA1c",
              "rep": {
                "hba1c": 5.0
              }
            },
            {
              "href": "/myGlucoseHealth",
              "rep": {
                "health": "major"
              }
            },
            {
              "href": "/myGlucoseMeal",
              "rep": {
                "meal": "preprandial"
              }
            },
            {
              "href": "/myGlucoseMeditation",
              "rep": {
                "medication": 100.0,
                "units": "mg",
                "regimen": "rapidacting"
              }
            },
            {
              "href": "/myGlucoseSampleLocation",
              "rep": {
                "samplelocation": "finger"
              }
            },
            {
              "href": "/myGlucoseTester",
              "rep": {
                "tester": "self"
              }
            },
            {
              "href": "/myUserId",
              "rep": {
                "userid": "USER1"
              }
            },
            {
              "href": "/myTimeStamp",
              "rep": {
                "timestamp": "2018-11-09T12:15+08:00"
              }
            }
          ],
          "schema": {
            "$ref": "#/definitions/batch-retrieve"
          }
        }
      }
    }
  },
  "/GlucoseMeterAMResURI?if=oic.if.ll": {
    "get": {
      "description": "This Resource describes the Properties associated with glucose meter.\nThe
Resource is an Atomic Measurement of glucose (oic.r.glucose), context carbohydrates
(oic.r.glucose.carb), context exercise (oic.r.glucose.exercise), hemoglobin bound to glucose a1c Form
(HbA1c) (oic.r.glucose.hba1c), context health (oic.r.glucose.health), context meal
(oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location
(oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time
(oic.r.time.stamp), and user id (oic.r.userid).",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
```


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```
"200": {
  "description": "",
  "x-example": [
    {
      "href": "/myGlucose",
      "rt": [
        "oic.r.glucose"
      ],
      "if": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    },
    {
      "href": "/myGlucoseCarb",
      "rt": [
        "oic.r.glucose.carb"
      ],
      "if": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    },
    {
      "href": "/myGlucoseExercise",
      "rt": [
        "oic.r.glucose.exercise"
      ],
      "if": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    },
    {
      "href": "/myGlucoseHbA1c",
      "rt": [
        "oic.r.glucose.hba1c"
      ],
      "if": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    },
    {
      "href": "/myGlucoseHealth",
      "rt": [
        "oic.r.glucose.health"
      ],
      "if": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    },
    {
      "href": "/myGlucoseMeal",
      "rt": [
        "oic.r.glucose.meal"
      ],
      "if": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    },
    {
      "href": "/myGlucoseMedication",
      "rt": [
        "oic.r.glucose.medication"
      ],
      "if": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    },
    {
      "href": "/myGlucoseSampleLocation",
      "rt": [
        "oic.r.glucose.samplelocation"
```


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```
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myGlucoseTester",
                "rt": [
                  "oic.r.glucose.tester"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
                "rt": [
                  "oic.r.userid"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myTimeStamp",
                "rt": [
                  "oic.r.time.stamp"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              }
            ],
            "schema": {
              "$ref": "#/definitions/links"
            }
          }
        }
      }
    },
    "/GlucoseMeterAMResURI?if=oic.if.baseline": {
      "get": {
        "description": "This Resource describes the Properties associated with glucose meter.\nThe
Resource is an Atomic Measurement of glucose (oic.r.glucose), context carbohydrates
(oic.r.glucose.carb), context exercise (oic.r.glucose.exercise), Hemoglobin Bound to glucose a1c Form
(HbA1c) (oic.r.glucose.hba1c), context health (oic.r.glucose.health), context meal
(oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location
(oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time
(oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucosemeter-am",
                "oic.wk.atomicmeasurement"
              ],
              "if": [
                "oic.if.b",
                "oic.if.ll",
                "oic.if.baseline"
              ],
              "rts": [
                "oic.r.glucose",
                "oic.r.glucose.carb",
                "oic.r.glucose.exercise",
                "oic.r.glucose.hba1c",
                "oic.r.glucose.health",
```


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```
      "oic.r.glucose.meal",
      "oic.r.glucose.medication",
      "oic.r.glucose.samplelocation",
      "oic.r.glucose.tester",
      "oic.r.userid",
      "oic.r.time.stamp"
    ],
    "rts-m": [
      "oic.r.glucose"
    ],
    "links": [
      {
        "href": "/myGlucose",
        "rt": [
          "oic.r.glucose"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myGlucoseCarb",
        "rt": [
          "oic.r.glucose.carb"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myGlucoseExercise",
        "rt": [
          "oic.r.glucose.exercise"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myGlucoseHbA1c",
        "rt": [
          "oic.r.glucose.hba1c"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myGlucoseHealth",
        "rt": [
          "oic.r.glucose.health"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myGlucoseMeal",
        "rt": [
          "oic.r.glucose.meal"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myGlucoseMedication",
        "rt": [
          "oic.r.glucose.medication"
        ],
        "if": [
```


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```
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myGlucoseSampleLocation",
              "rt": [
                "oic.r.glucose.samplelocation"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myGlucoseTester",
              "rt": [
                "oic.r.glucose.tester"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myUserId",
              "rt": [
                "oic.r.userid"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myTimeStamp",
              "rt": [
                "oic.r.time.stamp"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            }
          ]
        },
        "schema": {
          "$ref": "#/definitions/baseline"
        }
      }
    }
  }
},
"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b",
      "oic.if.ll",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "links": {
    "type": "array",
    "items": {
      "$ref": "#/definitions/oic.oic-link"
    }
  },
  "batch-retrieve": {
    "minItems": 1,
    "items": {
      "properties": {
```

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```
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseResURI.swagger.json#/definitions/Glu
cose"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseCarbResURI.swagger.json#/definitions
/GlucoseCarb"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/ExerciseResURI.swagger.json#/definitions/Ex
ercise"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseHbA1cResURI.swagger.json#/definition
s/HbA1c"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseHealthResURI.swagger.json#/definitio
ns/GlucoseHealth"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseMealResURI.swagger.json#/definitions
/GlucoseMeal"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseMedicationResURI.swagger.json#/defin
itions/GlucoseMedication"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseSampleLocationResURI.swagger.json#/d
efinitions/GlucoseSampleLocation"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseTesterResURI.swagger.json#/definitio
ns/GlucoseTester"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/User
ID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/T
imeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "baseline": {
      "properties": {
        "rt": {
```


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```
          "items": {
            "enum": [
              "oic.r.glucosemeter-am",
              "oic.wk.atomicmeasurement"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rts": {
          "description": "This contains all possible Resource Types for this Atomic Measurement.",
          "items": {
            "enum": [
              "oic.r.glucose",
              "oic.r.glucose.carb",
              "oic.r.glucose.exercise",
              "oic.r.glucose.hba1c",
              "oic.r.glucose.health",
              "oic.r.glucose.meal",
              "oic.r.glucose.medication",
              "oic.r.glucose.samplelocation",
              "oic.r.glucose.tester",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rts-m": {
          "description": "This contains all mandatory Resource Types for this Atomic Measurement.",
          "items": {
            "enum": [
              "oic.r.glucose"
            ],
            "type": "string",
            "maxLength": 64
          },
          "maxItems": 1,
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 3,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
```


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```
        },
        "links": {
          "$ref": "#/definitions/links"
        }
      },
      "type": "object",
      "required": [
        "rt","if","links","rts","rts-m"
      ]
    },
    "oic.oic-link": {
      "properties": {
        "if": {
          "description": "The OCF Interface set supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "enum": [
              "oic.r.glucose",
              "oic.r.glucose.carb",
              "oic.r.glucose.exercise",
              "oic.r.glucose.hba1c",
              "oic.r.glucose.health",
              "oic.r.glucose.meal",
              "oic.r.glucose.medication",
              "oic.r.glucose.samplelocation",
              "oic.r.glucose.tester",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
```


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```
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```


6.106.5 Property definition

Table 215 defines the Properties that are part of the "oic.r.glucosemeter-am, oic.wk.atomicmeasurement" Resource Type.

Table 215 – The Property definitions of the Resource with type "rt" = "oic.r.glucosemeter-am, oic.wk.atomicmeasurement"

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	Yes	Read Only	
rts	array: see schema	Yes	Read Only	This contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	Yes	Read Only	The OCF Interface set supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
links	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interface set supported by the target Resource
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
anchor	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

6.106.6 CRUDN behaviour

Table 216 defines the CRUDN operations that are supported on the "oic.r.glucosemeter-am, oic.wk.atomicmeasurement" Resource Type.

Table 216 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucosemeter-am, oic.wk.atomicmeasurement"

Create	Read	Update	Delete	Notify
	get			observe

6.107 Context Sample Location for Glucose Meter

6.107.1 Introduction

This Resource describes the Properties associated with context sample Location.
AST means Alternative Site Test specifying that the location of test performed was from an alternative site on the body.
The samplelocation Property is a read-only value that is provided by the Server.

6.107.2 Example URI

/GlucoseSampleLocationResURI

6.107.3 Resource type

The Resource Type is defined as: "oic.r.glucose.samplelocation".

6.107.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Context Sample Location for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
```

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```
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseSampleLocationResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with context sample
Location.\nAST means Alternative Site Test specifying that the location of test performed was from an
alternative site on the body.\nThe samplelocation Property is a read-only value that is provided by the
Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.samplelocation"
              ],
              "samplelocation": "finger"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseSampleLocation"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.r",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "GlucoseSampleLocation": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.samplelocation"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "samplelocation": {
          "description": "The possible blood locations where the blood sample may be taken.",
          "enum": [
            "finger",
            "ast",
```


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```
            "earlobe",
            "ctrlsolution"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "samplelocation"
      ]
    }
  }
}
```


6.107.5 Property definition

Table 217 defines the Properties that are part of the "oic.r.glucose.samplelocation" Resource Type.

Table 217 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.samplelocation"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
samplelocation	string	Yes	Read Only	The possible blood locations where the blood sample may be taken.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.107.6 CRUDN behaviour

Table 218 defines the CRUDN operations that are supported on the "oic.r.glucose.samplelocation" Resource Type.

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Table 218 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.samplelocation"

Create	Read	Update	Delete	Notify
	get			observe

6.108 Context Tester for Glucose Meter

6.108.1 Introduction

This Resource describes the Properties associated with context tester.
The tester Property is a read-only value that is provided by the Server where especially hcp stands for HealthCare Professional.

6.108.2 Example URI

/GlucoseTesterResURI

6.108.3 Resource type

The Resource Type is defined as: "oic.r.glucose.tester".

6.108.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Context Tester for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseTesterResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with context tester.\nThe
tester Property is a read-only value that is provided by the Server where especially\nhcp stands for
HealthCare Professional.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.tester"
              ],
```

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```
              "tester": "self"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseTester"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.r",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "GlucoseTester": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.tester"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "tester": {
          "description": "The possible cases of testers who may perform the blood sugar measurement.",
          "enum": [
            "self",
            "hcp",
            "lab"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
```


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```
        "tester"
      ]
    }
  }
}
```

6.108.5 Property definition

Table 219 defines the Properties that are part of the "oic.r.glucose.tester" Resource Type.

Table 219 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.tester"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
tester	string	Yes	Read Only	The possible cases of testers who may perform the blood sugar measurement.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.108.6 CRUDN behaviour

Table 220 defines the CRUDN operations that are supported on the "oic.r.glucose.tester" Resource Type.

Table 220 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.tester"

Create	Read	Update	Delete	Notify
	get			observe

6.109 Optical RFID Station

6.109.1 Introduction

The Property "process" represents the stage of the product in the product line which has an optical RFID tag on its body.
The Property "event" is represented by a Boolean value set to "true" and "false" alarming the issue when additional action is requested for the tagged product.
The Property "actionrequest" represent necessary actions like the isolation of the product, to send the product back to other specific line to modify or fix the issue.

6.109.2 Example URI

/ORFIDStationResURI

6.109.3 Resource type

The Resource Type is defined as: "oic.r.orfid.station".

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6.109.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Optical RFID Station",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ORFIDStationResURI" : {
      "get": {
        "description": "The Property \"process\" represents the stage of the product in the product
line which has an optical RFID tag on its body.\nThe Property \"event\" is represented by a Boolean
value set to \"true\" and \"false\" alarming the issue when additional action is requested for the
tagged product.\nThe Property \"actionrequest\" represent necessary actions like the isolation of the
product, to send the product back to other specific line to modify or fix the issue.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the station information from optical augmented RFID reader in
smart factory environment.",
              "x-example":
                {
                  "rt": ["oic.r.orfid.station"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "process": 17,
                  "event": true,
                  "actionrequest": 2
                },
              "schema": { "$ref": "#/definitions/ORFID" }
            }
        }
      },
      "post": {
        "description": "Sets necessary action in accordance with Tag Information.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ORFID" },
            "x-example":
              {
                "event": false,
                "actionrequest": 0
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "event": false,
                  "actionrequest": 0
                },
              "schema": { "$ref": "#/definitions/ORFID" }
            }
        }
      }
    }
  },
```


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```
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ORFID" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.orfid.station"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "process": {
          "description": "The process step that is being performed at this station.",
          "readOnly": true,
          "type": "integer"
        },
        "actionrequest": {
          "description": "The action request identifier.",
          "type": "integer"
        },
        "event": {
          "description": "The Event indicator, when True, the action request should be applied to the
product identified by the tagid.",
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["event", "actionrequest"]
    }
  }
}
```


6.109.5 Property definition

Table 221 defines the Properties that are part of the "oic.r.orfid.station" Resource Type.

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Table 221 – The Property definitions of the Resource with type "rt" = "oic.r.orfid.station"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
process	integer	No	Read Only	The process step that is being performed at this station.
actionrequest	integer	Yes	Read Write	The action request identifier.
event	boolean	Yes	Read Write	The Event indicator, when True, the action request should be applied to the product identified by the tagid.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.109.6 CRUDN behaviour

Table 222 defines the CRUDN operations that are supported on the "oic.r.orfid.station" Resource Type.

Table 222 – The CRUDN operations of the Resource with type "rt" = "oic.r.orfid.station"

Create	Read	Update	Delete	Notify
	get	post		observe

6.110 Optical RFID Tag

6.110.1 Introduction

The Property "tagid" is an integer showing the currently read optical augmented RFID tag's identity information.

6.110.2 Example URI

/ORFIDTagResURI

6.110.3 Resource type

The Resource Type is defined as: "oic.r.orfid.tag".

6.110.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Optical RFID Tag",
    "version": "20190215",
    "license": {
```

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```
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ORFIDTagResURI" : {
      "get": {
        "description": "The Property \"tagid\" is an integer showing the currently read optical
augmented RFID tag's identity information.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the tag information from optical augmented RFID reader in
smart factory environment.",
              "x-example":
                {
                  "rt": ["oic.r.orfid.tag"],
                  "if": ["oic.if.r", "oic.if.baseline"],
                  "tagid": 10965742,
                  "reading": true
                },
              "schema": { "$ref": "#/definitions/ORFID" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ORFID" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.orfid.tag"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "tagid": {
          "description": "The tag read by the RFID reader.",
          "readOnly": true,
          "type": "integer"
        },
        "reading": {
          "description": "The reading indication. true: the tagid is read e.g. being valid. false: the
tagid is invalid.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
```


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```
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.r",
                "oic.if.baseline"
              ],
              "type": "string"
            },
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": ["tagid", "reading"]
      }
    }
}
```

6.110.5 Property definition

Table 223 defines the Properties that are part of the "oic.r.orfid.tag" Resource Type.

Table 223 – The Property definitions of the Resource with type "rt" = "oic.r.orfid.tag"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
tagid	integer	Yes	Read Only	The tag read by the RFID reader.
reading	boolean	Yes	Read Only	The reading indication. true: the tagid is read e.g. being valid. false: the tagid is invalid.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.110.6 CRUDN behaviour

Table 224 defines the CRUDN operations that are supported on the "oic.r.orfid.tag" Resource Type.

Table 224 – The CRUDN operations of the Resource with type "rt" = "oic.r.orfid.tag"

Create	Read	Update	Delete	Notify
	get			observe

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6.111 PowerSource

6.111.1 Introduction

This Resource list the available power sources for the Device. The Property "powersources" is a list that is read only and is informative only.
If there is more than 1 power source active, use multiple Resources to indicate the active power sources. If the power source is unknown use the value "unknown".

6.111.2 Example URI

/PowerSourceResURI

6.111.3 Resource type

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

6.111.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "PowerSource",
    "version": "20190513",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PowerSourceResURI" : {
      "get": {
        "description": "This Resource list the available power sources for the Device. The Property
\"powersources\" is a list that is read only and is informative only.\nIf there is more than 1 power
source active, use multiple Resources to indicate the active power sources. If the power source is
unknown use the value \"unknown\".",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "Retrieves the list of available power sources.",
            "x-example":
            {
              "rt": ["oic.r.powersource"],
              "if": ["oic.if.r", "oic.if.baseline"],
              "powersources": [
                "DC power",
                "Internal Battery",
                "External Battery",
                "Power over Ethernet",
                "USB",
                "AC (Mains) Power",
                "Solar"
              ],
              "sourcefault": false
            },
            "schema": { "$ref": "#/definitions/powerSourceSchema" }
          }
        }
      }
    }
```

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```
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "powerSourceSchema" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.powersource"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "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"
        },
        "sourcefault": {
          "description": "Fault detected in currently active power source. True = fault detected",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["powersources"]
    }
  }
}
```


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6.111.5 Property definition

Table 225 defines the Properties that are part of the "oic.r.powersource" Resource Type.

Table 225 – The Property definitions of the Resource with type "rt" = "oic.r.powersource"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
powersources	array: see schema	Yes	Read Write	
sourcefault	boolean	No	Read Only	Fault detected in currently active power source. True = fault detected
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.111.6 CRUDN behaviour

Table 226 defines the CRUDN operations that are supported on the "oic.r.powersource" Resource Type.

Table 226 – The CRUDN operations of the Resource with type "rt" = "oic.r.powersource"

Create	Read	Update	Delete	Notify
	get			observe

6.112 Print Queue

6.112.1 Introduction

This Resource describes the items in a Printer Queue. The Properties "uri" and "status" are read only items that cannot be changed through this resource.

6.112.2 Example URI

/PrintQueueResURI

6.112.3 Resource type

The Resource Type is defined as: "oic.r.printer.queue".

6.112.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Print Queue",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
```

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```
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PrintQueueResURI" : {
      "get": {
        "description": "This Resource describes the items in a Printer Queue. The Properties \"uri\"
and \"status\" are read only items that cannot be changed through this resource.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "Retrieves the current Print Queue.",
            "x-example": {
              "rt": ["oic.r.printer.queue"],
              "if": ["oic.if.r", "oic.if.baseline"],
              "queue": [
                {
                  "uri": "file://10.10.10.10/3dprinter/queueitem/1",
                  "status": "Printing"
                },
                {
                  "uri": "file://10.10.10.10/3dprinter/queueitem/2",
                  "status": "Pending"
                }
              ]
            },
            "schema": { "$ref": "#/definitions/PrintQueue" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "PrintQueue" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.printer.queue"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "queue": {
          "description": "The array of queue items for the printer.",
          "items": {
            "properties": {
              "status": {
                "description": "The status of the queue item.",
                "enum": [
                  "Printing",
                  "Pending",
                  "Paused",
                  "Error",
                  "Unknown"
                ],
```


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```
                "readOnly": true,
                "type": "string"
              },
              "uri": {
                "description": "The uri of the queue item (i.e. the actual file).",
                "format": "uri",
                "maxLength": 256,
                "readOnly": true,
                "type": "string"
              }
            },
            "required": [
              "uri",
              "status"
            ],
            "type": "object"
          },
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["queue"]
    }
  }
}
```


6.112.5 Property definition

Table 227 defines the Properties that are part of the "oic.r.printer.queue" Resource Type.

Table 227 – The Property definitions of the Resource with type "rt" = "oic.r.printer.queue"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
queue	array: see schema	Yes	Read Only	The array of queue items for the printer.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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6.112.6 CRUDN behaviour

Table 228 defines the CRUDN operations that are supported on the "oic.r.printer.queue" Resource Type.

Table 228 – The CRUDN operations of the Resource with type "rt" = "oic.r.printer.queue"

Create	Read	Update	Delete	Notify
	get			observe

6.113 Pulse Rate

6.113.1 Introduction

This Resource describes the Properties associated with a person's pulse rate.
The unit, which is the default unit, is bpm.
The pulserate and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

6.113.2 Example URI

/PulseRateResURI

6.113.3 Resource type

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

6.113.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Pulse Rate",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/PulseRateResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's pulse
rate.\nThe unit, which is the default unit, is bpm.\nThe pulserate and unit Properties are read-only
values that are provided by the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
```

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```
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.pulserate"
              ],
              "pulserate": 80,
              "range": [20, 220],
              "step": 1
            },
            "schema": {
              "$ref": "#/definitions/PulseRate"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "PulseRate": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.pulserate"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "pulserate": {
          "description": "Pulse rate in bpm.",
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
```


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```
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        }
      },
      "type": "object",
      "required": [
        "pulserate"
      ]
    }
  }
}
```

6.113.5 Property definition

Table 229 defines the Properties that are part of the "oic.r.pulserate" Resource Type.

Table 229 – The Property definitions of the Resource with type "rt" = "oic.r.pulserate"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
pulserate	integer	Yes	Read Only	Pulse rate in bpm.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	

6.113.6 CRUDN behaviour

Table 230 defines the CRUDN operations that are supported on the "oic.r.pulserate" Resource Type.

Table 230 – The CRUDN operations of the Resource with type "rt" = "oic.r.pulserate"

Create	Read	Update	Delete	Notify
	get			observe

6.114 Sensor Properties

6.114.1 Introduction

This Resource describes the properties which guide the reporting of a state change of a Sensor.
The Property "silenttime" represents the period after which a state change report was sent where the Sensor state change is not reported.
The Property "sensitivity" represents the level at which the sensor detects a state change.
These values are completely dependent on the type of Sensor and the manufacturer capability, so no range restrictions are used.
The Properties "range", "step" and "precision" are only applied to the "sensitivity" Property.

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6.114.2 Example URI

/SensorPropsResURI

6.114.3 Resource type

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

6.114.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sensor Properties",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SensorPropsResURI" : {
      "get": {
        "description": "This Resource describes the properties which guide the reporting of a state
change of a Sensor.\nThe Property \"silenttime\" represents the period after which a state change
report was sent where the Sensor state change is not reported.\nThe Property \"sensitivity\" represents
the level at which the sensor detects a state change.\nThese values are completely dependent on the
type of Sensor and the manufacturer capability, so no range restrictions are used.\nThe Properties
\"range\", \"step\" and \"precision\" are only applied to the \"sensitivity\" Property.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Gets current Sensor Property values.",
              "x-example":
                {
                  "rt": ["oic.r.sensor.props"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "silenttime": 10,
                  "sensitivity": 20.5
                },
              "schema": { "$ref": "#/definitions/SensorProps" }
            }
        }
      },
      "post":
        "description": "Sets Sensor Property values\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/SensorProps" },
            "x-example":
              {
                "silenttime": 20,
                "sensitivity": 10.75
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
```

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```
            "x-example":
              {
                "silenttime": 20,
                "sensitivity": 10.75
              },
            "schema": { "$ref": "#/definitions/SensorProps" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "SensorProps" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.props"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "silenttime": {
          "description": "The time in seconds from the previous report that the Sensor restrains from
sending a state change. This is used to avoid repeated state change reports.",
          "type": "integer"
        },
        "sensitivity": {
          "description": "The level of the detection accuracy of the Sensor. This is used to control
the level at which the Sensor detects a state change. The \"range\" Property should be specified per
manufacturer device capabilities.",
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
```


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```
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["silenttime", "sensitivity"]
    }
  }
}
```

6.114.5 Property definition

Table 231 defines the Properties that are part of the "oic.r.sensor.props" Resource Type.

Table 231 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.props"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
silenttime	integer	Yes	Read Write	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.
sensitivity	number	Yes	Read Write	The level of the detection accuracy of the Sensor. This is used to control the level at which the Sensor detects a state change. The "range" Property should be specified per manufacturer device capabilities.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.114.6 CRUDN behaviour

Table 232 defines the CRUDN operations that are supported on the "oic.r.sensor.props" Resource Type.

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Table 232 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.props"

Create	Read	Update	Delete	Notify
	get	post		observe

6.115 User ID

6.115.1 Introduction

This Resource describes the Properties associated with user id of an OCF Client.
The userid Property is a single value of type string.
The userid Property is a read-only value that is provided by the Server.

6.115.2 Example URI

/UserIDResURI

6.115.3 Resource type

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

6.115.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "User ID",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/UserIDResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with user id of an OCF
Client.\nThe userid Property is a single value of type string.\nThe userid Property is a read-only
value that is provided by the Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.userid"
              ],
              "userid": "USER1"
            },
```

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```
            "schema": {
              "$ref": "#/definitions/UserID"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.r",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "UserID": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "userid": {
          "description": "Id of a patient/user of healthcare devices",
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "userid"
      ]
    }
  }
}
```


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6.115.5 Property definition

Table 233 defines the Properties that are part of the "oic.r.userid" Resource Type.

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Table 233 – The Property definitions of the Resource with type "rt" = "oic.r.userid"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
userid	string	Yes	Read Only	Id of a patient/user of healthcare devices
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

6.115.6 CRUDN behaviour

Table 234 defines the CRUDN operations that are supported on the "oic.r.userid" Resource Type.

Table 234 – The CRUDN operations of the Resource with type "rt" = "oic.r.userid"

Create	Read	Update	Delete	Notify
	get			observe

6.116 Calorific Value

6.116.1 Introduction

This Resource describes Properties associated with the energy associated with the consumption of different fuels (including natural gas)
The calorific value is a number
the calorific value is a measure of the available heat energy, used as part of the calculation to convert a volume of a fuel (e.g. m3) to an energy value (e.g. KWh).

6.116.2 Example URI

/CalorificValueResURI

6.116.3 Resource type

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

6.116.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Calorific Value",
    "version": "2019-03-18",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://openconnectivityfoundation.github.io/core/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
```

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```
    "/CalorificValueResURI" : {
      "get": {
        "description": "This Resource describes Properties associated with the energy associated with
the consumption of different fuels (including natural gas)\nThe calorific value is a number\nthe
calorific value is a measure of the available heat energy, used as part of the calculation to convert a
volume of a fuel (e.g. m3) to an energy value (e.g. KWh).\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example": {
              "rt":     ["oic.r.calorificvalue"],
              "calorific":  39.2
            },
            "schema": { "$ref": "#/definitions/Calorific" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Calorific" : {
      "properties": {
        "rt" : {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.calorificvalue"]
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "if" :  {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": ["oic.if.baseline", "oic.if.r"],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "precision" : {
          "description": "Accuracy granularity of the exposed value",
          "readOnly": true,
          "type": "number"
        },
        "calorific" :  {
          "description": "Calorific value of fuel",
          "readOnly": true,
          "type": "number",
                    "minimum": 0,
```


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```
          "exclusiveMinimum": true
        }
      },
      "type" : "object",
      "required": ["calorific"]
    }
  }
}
```

6.116.5 Property definition

Table 235 defines the Properties that are part of the "oic.r.calorificvalue" Resource Type.

Table 235 – The Property definitions of the Resource with type "rt" = "oic.r.calorificvalue"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
if	array: see schema	No	Read Only	The OCF Interfaces supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
precision	number	No	Read Only	Accuracy granularity of the exposed value
calorific	number	Yes	Read Only	Calorific value of fuel

6.116.6 CRUDN behaviour

Table 236 defines the CRUDN operations that are supported on the "oic.r.calorificvalue" Resource Type.

Table 236 – The CRUDN operations of the Resource with type "rt" = "oic.r.calorificvalue"

Create	Read	Update	Delete	Notify
	get			observe

6.117 Conversion Factor

6.117.1 Introduction

This Resource describes Properties associated with the energy associated with the consumption of different fuels (including natural gas)
The conversion factor is a number used as part of the calculation to convert gas volume to gas energy. The value used for this calculation is generally defined by local regulations and the conversion factor resource is therefore configurable.
Provides the conversion factor used/required as part of the calculation to convert from fuel volume (m3) to fuel energy (kWh).

6.117.2 Example URI

/ConversionFactorResURI

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6.117.3 Resource type

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

6.117.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Conversion Factor",
    "version": "2019-03-18",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://openconnectivityfoundation.github.io/core/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ConversionFactorResURI" : {
      "get": {
        "description": "This Resource describes Properties associated with the energy associated with
the consumption of different fuels (including natural gas)\nThe conversion factor is a number used as
part of the calculation to convert gas volume to gas energy. The value used for this calculation is
generally defined by local regulations and the conversion factor resource is therefore
configurable.\nProvides the conversion factor used/required as part of the calculation to convert from
fuel volume (m3) to fuel energy (kWh).\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example":  {
              "rt":     ["oic.r.conversionfactor"],
              "conversion": 1.02264
            },
            "schema": { "$ref": "#/definitions/Conversion" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Conversion" : {
      "properties": {
        "rt" : {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.conversionfactor"]
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "if" :  {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
```

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```
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "conversion" : {
          "description": "Conversion factor to convert a volume of a fuel to energy consumption",
          "readOnly": true,
          "type": "number",
          "minimum": 0,
          "exclusiveMinimum": true
        },
        "precision" :  {
          "description": "Accuracy granularity of the exposed value",
          "readOnly": true,
          "type": "number"
        }
      },
      "type" : "object",
      "required": ["conversion"]
    }
  }
}
```

6.117.5 Property definition

Table 237 defines the Properties that are part of the "oic.r.conversionfactor" Resource Type.

Table 237 – The Property definitions of the Resource with type "rt" = "oic.r.conversionfactor"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
if	array: see schema	No	Read Only	The OCF Interfaces supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
conversion	number	Yes	Read Only	Conversion factor to convert a volume of a fuel to energy consumption
precision	number	No	Read Only	Accuracy granularity of the exposed value

6.117.6 CRUDN behaviour

Table 238 defines the CRUDN operations that are supported on the "oic.r.conversionfactor" Resource Type.

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Table 238 – The CRUDN operations of the Resource with type "rt" = "oic.r.conversionfactor"

Create	Read	Update	Delete	Notify
	get			observe

6.118 Gas Consumption

6.118.1 Introduction

This Resource describes Properties associated with the energy associated with the consumption of natural gas
The gas value is in kilowatt hours [kWh].
The volume value is in metres cubed [m3].
Provides the cumulative gas energy, the cumulative gas volume and the calorific value and conversion factor used/required to convert from gas volume (m3[TB1]) to gas energy (KWh).

6.118.2 Example URI

/GasConsumptionResURI

6.118.3 Resource type

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

6.118.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Gas Consumption",
    "version": "2019-03-18",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://openconnectivityfoundation.github.io/core/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GasConsumptionResURI" : {
      "get": {
        "description": "This Resource describes Properties associated with the energy associated with
the consumption of natural gas\nThe gas value is in kilowatt hours [kWh].\nThe volume value is in
metres cubed [m3].\nProvides the cumulative gas energy, the cumulative gas volume and the calorific
value and conversion factor used/required to convert from gas volume (m3[TB1]) to gas energy (KWh).\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example": {
              "rt":     ["oic.r.gas.consumption"],
              "gas":  11135.41,
              "volume": 1000.0
            },
            "schema": { "$ref": "#/definitions/Consumption" }
          }
        }
      }
    }
  },
```

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```
  "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",
            "enum": ["oic.r.gas.consumption"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if":  {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": ["oic.if.r", "oic.if.baseline"],
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "gas" :  {
          "description": "gas energy consumed in kWh",
          "readOnly": true,
          "type": "number",
                    "minimum": 0
        },
        "precision" :  {
          "description": "Accuracy granularity of the exposed value",
          "readOnly": true,
          "type": "number"
        },
        "volume" :  {
          "description": "gas volume consumed in m3 (metres cubed)",
          "readOnly": true,
          "type": "number",
                    "minimum": 0
        }
      },
      "type" : "object",
      "required": ["gas"]
    }
  }
}
```


6.118.5 Property definition

Table 239 defines the Properties that are part of the "oic.r.gas.consumption" Resource Type.

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Table 239 – The Property definitions of the Resource with type "rt" = "oic.r.gas.consumption"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
if	array: see schema	No	Read Only	The OCF Interfaces supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
gas	number	Yes	Read Only	gas energy consumed in kWh
precision	number	No	Read Only	Accuracy granularity of the exposed value
volume	number	No	Read Only	gas volume consumed in m3 (metres cubed)

6.118.6 CRUDN behaviour

Table 240 defines the CRUDN operations that are supported on the "oic.r.gas.consumption" Resource Type.

Table 240 – The CRUDN operations of the Resource with type "rt" = "oic.r.gas.consumption"

Create	Read	Update	Delete	Notify
	get			observe

6.119 Gas Usage

6.119.1 Introduction

This Resource describes a cumulative time-based gas usage query.
The Resource is a Collection of:
TimePeriod Resource
Gas Consumption Resource

6.119.2 Example URI

/GasUsageResURI

6.119.3 Resource type

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

6.119.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Gas Usage",
    "version": "2019-03-18",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://openconnectivityfoundation.github.io/core/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
```

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```
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GasUsageResURI?if=oic.if.ll" : {
      "get": {
        "description": "This Resource describes a cumulative time-based gas usage query.\nThe Resource
is a Collection of:\n  TimePeriod Resource\n  Gas Consumption Resource\nThe Collection has a single
instance of a Link per Resource Type.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example":
            [
              {
                "href": "/TimeIntervalResURI",
                "rt":   ["oic.r.time.period"],
                "if":   ["oic.if.a","oic.if.baseline"],
                "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
              },
              {
                "href": "/GasConsumptionResURI",
                "rt":   ["oic.r.gas.consumption"],
                "if":   ["oic.if.s","oic.if.baseline"],
                "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
              }
            ],
            "schema": { "$ref": "#/definitions/links" }
          }
        }
      }
    },
    "/GasUsageResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This Resource describes a cumulative time-based gas usage query.\nThe Resource
is a Collection of:\n  TimePeriod Resource\n  Gas Consumption Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example":
            {
              "rt": ["oic.r.gas.usage"],
              "if": ["oic.if.ll","oic.if.b","oic.if.baseline"],
              "resources": [
                {
                  "href": "/TimeIntervalResURI",
                  "rt":   ["oic.r.time.period"],
                  "if":   ["oic.if.a","oic.if.baseline"],
                  "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
                },
                {
                  "href": "/GasConsumptionResURI",
                  "rt":   ["oic.r.gas.consumption"],
                  "if":   ["oic.if.s","oic.if.baseline"],
                  "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
                }
              ]
            },
            "schema": { "$ref": "#/definitions/Usage" }
          }
        }
      }
    },
    "/GasUsageResURI?if=oic.if.b" : {
      "get": {
        "description": "This Resource describes a cumulative time-based gas usage query.\nThe Resource
is a Collection of:\n  TimePeriod Resource\n  Gas Consumption Resource\n",
        "parameters": [
```

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```
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example":
            [
              {
                "href": "/TimeIntervalResURI",
                "rep": {
                  "startTime":"2018-01-09T14:30Z",
                  "stopTime": "2018-01-09T14:45Z"
                }
              },
              {
                "href": "/GasConsumptionResURI",
                "rep": {
                  "gas":  11135.41,
                  "volume": 1000.0
                }
              }
            ],
            "schema": { "$ref": "#/definitions/batch" }
          }
        }
      },
      "post": {
        "description": "Sets the current time period. A Client may also post directly to the exposed
URL for the Time Period Resource.\n",
        "x-method": ["optional"],
        "parameters": [
          {"$ref": "#/parameters/interface-b"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/batchupdate" },
            "x-example":
            [
              {
                "href": "/TimePeriodResURI",
                "rep": {
                  "startTime":"2018-01-15T16:30Z",
                  "stopTime": "2018-01-16T16:30Z"
                }
              }
            ]
          }
        ],
        "responses": {
          "200": {
            "description" : "Success path response code\n"
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
    },
    "interface-b" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.b"]
    }
  },
  "definitions": {
    "links": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      },
```


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```
      "minItems": 2,
      "maxItems": 4
    },
    "oic.oic-link": {
      "properties": {
        "if": {
          "description": "The interface set supported by the Linked Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.a",
              "oic.if.s"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rt": {
          "description": "Resource Type of the linked Resource",
          "items": {
            "enum": [
              "oic.r.time.period",
              "oic.r.gas.consumption",
              "oic.r.conversionfactor",
              "oic.r.calorificvalue"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
```

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```
        "if"
      ],
      "type": "object"
    },
    "batch": {
      "title": "Collection Batch Retrieve Format",
      "minItems": 2,
      "maxItems": 4,
      "type": "array",
      "items": {
        "additionalProperties": true,
        "type": "object",
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimePeriodResURI.swagger.json#/definitions/
TimePeriod"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GasConsumptionResURI.swagger.json#/definiti
ons/Consumption"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/CalorificValueResURI.swagger.json#/definiti
ons/Calorific"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/ConversionFactorResURI.swagger.json#/defini
tions/Conversion"
              }
            ]
          }
        },
        "required": ["href","rep"]
      }
    },
    "batchupdate" : {
      "title": "Collection Batch Update Format",
      "minItems": 1,
      "type": "array",
      "items": {
        "additionalProperties": true,
        "type": "object",
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimePeriodResURI.swagger.json#/definitions/
TimePeriod"
          }
        }
      }
    },
    "Usage" : {
      "properties": {
        "rt" :  {
          "description": "Resource Type",
          "items": {
            "type": "string",
            "enum": ["oic.r.gas.usage"],
            "maxLength": 64
          },
          "minItems": 1,
```

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```
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "rts" :  {
          "description": "Allowed Resource Type",
          "items": {
            "type": "string",
            "enum":
["oic.r.gas.consumption","oic.r.time.period","oic.r.calorificvalue","oic.r.conversionfactor"],
            "maxLength": 64
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "rts-m" :  {
          "description": "Mandatory Resource Type",
          "items": {
            "type": "string",
            "enum": ["oic.r.gas.consumption","oic.r.time.period"],
            "maxLength": 64
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "resources" :  {
          "$ref": "#/definitions/links"
        },
        "if" : {
          "description": "The interface set supported by this resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["resources"]
    }
  }
}
```


6.119.5 Property definition

Table 241 defines the Properties that are part of the "oic.r.gas.usage" Resource Type.

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Table 241 – The Property definitions of the Resource with type "rt" = "oic.r.gas.usage"

Property name	Value type	Mandatory	Access mode	Description
if	array: see schema	Yes	Read Only	The interface set supported by the Linked Resource
rt	array: see schema	Yes	Read Only	Resource Type of the linked Resource
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	
href	multiple types: see schema		Read Write	
rep	multiple types: see schema		Read Write	
rt	array: see schema	No	Read Only	Resource Type
rts	array: see schema	No	Read Only	Allowed Resource Type
rts-m	array: see schema	No	Read Only	Mandatory Resource Type
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
resources	multiple types: see schema	Yes	Read Write	
if	array: see schema	No	Read Only	The interface set supported by this resource

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6.119.6 CRUDN behaviour

Table 242 defines the CRUDN operations that are supported on the "oic.r.gas.usage" Resource Type.

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Table 242 – The CRUDN operations of the Resource with type "rt" = "oic.r.gas.usage"

Create	Read	Update	Delete	Notify
	get			observe

6.120 Impact Sensor

6.120.1 Introduction

This Resource provides a status and properties of an impact sensor. Included is the current status (boolean), horizontal and vertical direction (in degrees) and impact level (g force).

6.120.2 Example URI

/ImpactSensorResURI

6.120.3 Resource type

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

6.120.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Impact Sensor",
    "version": "2019-03-21",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ImpactSensorResURI" : {
      "get": {
        "description": "This Resource provides a status and properties of an impact sensor. Included is
the current status (boolean), horizontal and vertical direction (in degrees) and impact level (g
force).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "The success path response for the Resource.",
              "x-example":
                {
                  "rt": ["oic.r.impactsensor"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "impactstatus": true,
                  "impactlevel": 2.25,
                  "impactdirectionhorizontal": 120.0,
                  "impactdirectionvertical": 240.0
                },
              "schema": { "$ref": "#/definitions/ImpactSensor" }
            }
        }
      }
    }
  },
```

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```
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ImpactSensor": {
      "properties": {
        "rt":  {
          "description": "The Resource Type.",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.impactsensor"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "impactstatus": {
          "type": "boolean",
          "readOnly": true,
          "description": "The \"impactstatus\" Property indicates the impact as: \"true\" A physical
impact is detected, \"false\" Normal status, an impact is not detected."
        },
        "impactlevel": {
          "type": "number",
          "readOnly": true,
          "description": "The \"impactlevel\" Property provides the level of impact. The unit is in
\"G\" (G-force)."
        },
        "impactdirectionhorizontal": {
          "type": "number",
          "readOnly": true,
          "description": "The \"impactdirectionhorizontal\" Property shows a horizontal direction where
the impact comes from. The value is 0 to 360 degrees. 0 is the front of the sensor and clockwise
increment.",
          "minimum": 0,
          "maximum": 360
        },
        "impactdirectionvertical": {
          "type": "number",
          "readOnly": true,
          "description": "The \"impactdirectionvertical\" Property shows a vertical direction where the
impact comes from. The value is 0 to 360 degrees. 0 is the front of the sensor and upward increment.",
          "minimum": 0,
          "maximum": 360
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if":  {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
```


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```
      "type": "object",
      "required": [ "impactstatus" ]
    }
  }
}
```

6.120.5 Property definition

Table 243 defines the Properties that are part of the "oic.r.impactsensor" Resource Type.

Table 243 – The Property definitions of the Resource with type "rt" = "oic.r.impactsensor"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
impactstatus	boolean	Yes	Read Only	The "impactstatus" Property indicates the impact as: "true" A physical impact is detected, "false" Normal status, an impact is not detected.
impactlevel	number	No	Read Only	The "impactlevel" Property provides the level of impact. The unit is in "G" (G-force).
impactdirectionhorizontal	number	No	Read Only	The "impactdirectionhorizontal" Property shows a horizontal direction where the impact comes from. The value is 0 to 360 degrees. 0 is the front of the sensor and clockwise increment.
impactdirectionvertical	number	No	Read Only	The "impactdirectionvertical" Property shows a vertical direction where the impact comes from. The value is 0 to 360 degrees. 0 is the front of the sensor and upward increment.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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6.120.6 CRUDN behaviour

Table 244 defines the CRUDN operations that are supported on the "oic.r.impactsensor" Resource Type.

Table 244 – The CRUDN operations of the Resource with type "rt" = "oic.r.impactsensor"

Create	Read	Update	Delete	Notify
	get			observe

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6.121 KeyPadChar

6.121.1 Introduction

This Resource describes a char (0-9,*,#) which is selected on a number keypad.

6.121.2 Example URI

/KeyPadCharResURI

6.121.3 Resource type

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

6.121.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "KeyPadChar",
    "version": "12122018",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/KeyPadCharResURI" : {
      "get": {
        "description": "This Resource describes a char (0-9,*,#) which is selected on a number
keypad.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Success path response for the Resource",
              "x-example":
                {
                  "rt":       ["oic.r.keypadchar"],
                  "if":       ["oic.if.rw", "oic.if.baseline"],
                  "keyvalue":  "7"
                },
              "schema": { "$ref": "#/definitions/KeyPadChar" }
            }
        }
      },
      "post": {
        "description": "This Resource describes a char (0-9, *, #) which is selected on a number
keypad.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/KeyPadChar" },
            "x-example":
              {
                "keyvalue": "4"
              }
          }
        ],
```


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```
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "keyvalue": "4"
                },
              "schema": { "$ref": "#/definitions/KeyPadChar" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "KeyPadChar" : {
      "properties": {
        "rt":  {
          "description": "The Resource Type.",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.keypadchar"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "keyvalue":  {
          "type" : "string",
          "enum": [
             "0",
             "1",
             "2",
             "3",
             "4",
             "5",
             "6",
             "7",
             "8",
             "9",
             "*",
             "#"
            ],
          "description": "The value of the key pad char."
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if":  {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.rw"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```

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```
        }
      },
      "type": "object",
      "required": ["keyvalue"]
    }
  }
}
```

6.121.5 Property definition

Table 245 defines the Properties that are part of the "oic.r.keypadchar" Resource Type.

Table 245 – The Property definitions of the Resource with type "rt" = "oic.r.keypadchar"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
keyvalue	string	Yes	Read Write	The value of the key pad char.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.121.6 CRUDN behaviour

Table 246 defines the CRUDN operations that are supported on the "oic.r.keypadchar" Resource Type.

Table 246 – The CRUDN operations of the Resource with type "rt" = "oic.r.keypadchar"

Create	Read	Update	Delete	Notify
	get	post		observe

6.122 Opaque Data

6.122.1 Introduction

This Resource defines opaque data that can be transfered between endpoints where the data itself is not interpretable by the OCF endpoints.
The stringdata is a string of ASCII characters.

6.122.2 Example URI

/OpaqueDataResURI

6.122.3 Resource type

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

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6.122.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Opaque Data",
   "version": "12122018",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICEN
SE.md",
      "x-copyright": "copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/OpaqueDataResURI" : {
      "get": {
        "description": "This Resource defines opaque data that can be transfered between endpoints
where the data itself is not interpretable by the OCF endpoints.\nThe stringdata is a string of ASCII
characters.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.opaquedata"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "payload": "asdf0123",
                  "payloadtype": "switch-get",
                  "encoding":  "base64",
                  "size": 8,
                  "hash": "A1A1",
                  "system": "foreign system"
                },
              "schema": { "$ref": "#/definitions/OpaqueData" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/OpaqueData" },
            "x-example":
              {
                "payload": "asdf0123",
                "payloadtype": "switch-get",
                "encoding": "base64",
                "size": 8,
                "hash": "A1A1",
                "system": "foreign system"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "payload": "asdf0123",
                  "payloadtype": "switch-get",
                  "encoding": "base64",
                  "size": 8,
                  "hash": "A1A1",
                  "system": "foreign system"
```

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```
              },
              "schema": { "$ref": "#/definitions/OpaqueData" }
            }
          }
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.rw", "oic.if.baseline"]
      }
    },
    "definitions": {
      "OpaqueData" : {
        "properties": {
          "rt": {
            "description": "The Resource Type.",
            "items": {
              "maxLength": 64,
              "type": "string",
              "enum": ["oic.r.opaquedata"]
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "payload": {
            "type": "string",
            "description": "This Property contains the opaque data."
          },
          "encoding": {
            "type": "string",
            "description": "This Property describes the encoding of the payload, e.g. binary as base64,
json, xml, utf-8."
          },
          "payloadtype": {
            "type": "string",
            "description": "This Property describes the identification of the payload, e.g. what the
payload is representing ."
          },
          "size": {
            "type": "integer",
            "description": "The size in bytes of the decoded binary object."
          },
          "hash": {
            "type": "string",
            "description": "The hash code of the blob. If present, it is used to check the decoded
content of the object data point for integrity. The algorithm used for generating the hash value is
SHA-2 [15]. The data point contains the hash as a hex encoded value."
          },
          "system": {
            "type": "string",
            "description": "The eco system that is using the payload."
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.baseline",
                "oic.if.rw"
              ],
              "type": "string"
            },
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": [ "payload", "encoding", "system" ]
      }
    }
}
```


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6.122.5 Property definition

Table 247 defines the Properties that are part of the "oic.r.opaquedata" Resource Type.

Table 247 – The Property definitions of the Resource with type "rt" = "oic.r.opaquedata"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
payload	string	Yes	Read Write	This Property contains the opaque data.
encoding	string	Yes	Read Write	This Property describes the encoding of the payload, e.g. binary as base64, json, xml, utf-8.
payloadtype	string	No	Read Write	This Property describes the identification of the payload, e.g. what the payload is representing .
size	integer	No	Read Write	The size in bytes of the decoded binary object.
hash	string	No	Read Write	The hash code of the blob. If present, it is used to check the decoded content of the object data point for integrity. The algorithm used for generating the hash value is SHA-2 [15]. The data point contains the hash as a hex encoded value.
system	string	Yes	Read Write	The eco system that is using the payload.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.122.6 CRUDN behaviour

Table 248 defines the CRUDN operations that are supported on the "oic.r.opaquedata" Resource Type.

Table 248 – The CRUDN operations of the Resource with type "rt" = "oic.r.opaquedata"

Create	Read	Update	Delete	Notify
	get	post		observe

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6.123 User Info for Application Layer

6.123.1 Introduction

This Resource defines credentials for user to application layer login. This does not relate to OCF Device to Device or Device to Cloud authentication. The username, password and token are strings.

6.123.2 Example URI

/UserInfoResURI

6.123.3 Resource type

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

6.123.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "User Info for Application Layer",
    "version": "12122018",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/UserInfoResURI" : {
      "get": {
        "description": "This Resource defines credentials for user to application layer login. This
does not relate to OCF Device to Device or Device to Cloud authentication. The username, password and
token are strings.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description": "Success path response for the Resource, note that the info supplied is
NOT returned on RETRIEVE",
              "x-example":
                {
                  "rt": ["oic.r.userinfo"],
                  "if": ["oic.if.rw", "oic.if.baseline"]
                },
              "schema": { "$ref": "#/definitions/UserInfo-retrieve" }
            }
        }
      },
      "post": {
        "description": "This Resource defines credentials for user to application layer login. This
does not relate to OCF Device to Device or Device to Cloud authentication. The username, password and
token are strings.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/UserInfo-update" },
            "x-example":
              {
                "username": "username",
```

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```
                "password": "password",
                "token": "A1A1"
              }
            }
          ],
          "responses": {
              "200": {
                "description" : "The success path response for the Resource.",
                "x-example":
                  {
                    "username": "username",
                    "password": "password",
                    "token": "A1A1"
                  },
                "schema": { "$ref": "#/definitions/UserInfo-update" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.rw", "oic.if.baseline"]
      }
    },
    "definitions": {
      "UserInfo-retrieve": {
        "properties": {
          "rt":  {
            "description": "The Resource Type.",
            "items": {
              "maxLength": 64,
              "type": "string",
              "enum": ["oic.r.userinfo"]
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "n": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "id": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "if":  {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.rw",
                "oic.if.baseline"
              ],
              "type": "string"
            },
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": [ ]
      },
      "UserInfo-update": {
        "properties": {
          "username": {
            "type": "string",
            "description": "Login name."
          },
```

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```
        "password": {
          "type": "string",
          "description": "Login password."
        },
        "token": {
          "type": "string",
          "description": "Authentication token."
        }
      },
      "type": "object",
      "required": [ ]
    }
  }
}
```

6.123.5 Property definition

Table 249 defines the Properties that are part of the "oic.r.userinfo" Resource Type.

Table 249 – The Property definitions of the Resource with type "rt" = "oic.r.userinfo"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
username	string	No	Read Write	Login name.
password	string	No	Read Write	Login password.
token	string	No	Read Write	Authentication token.

6.123.6 CRUDN behaviour

Table 250 defines the CRUDN operations that are supported on the "oic.r.userinfo" Resource Type.

Table 250 – The CRUDN operations of the Resource with type "rt" = "oic.r.userinfo"

Create	Read	Update	Delete	Notify
	get	post		observe

6.124 IAS Zone Info

6.124.1 Introduction

This Resource describes information associated with an Intruder Alert System (IAS) Zone.
Zone Type provides the information about the type of device/alarm.
Zone Status provides an array which has 10 items representing various status information(e.g., battery status, mode, alarm (Up to two), supervision of IAS network, etc.
A Device implementing this Resource can be enrolled to IAS Control and Indicator Equipment (CIE). IAS CIE can allocate an ID for the Device and update this Resource on the Device.
This Resource may provide multiple sensitivity levels (>2). NumberofZoneSensitivityLevelSupported provides the number of the levels. A specific level can be selected as currentzonesensitivityLevel.

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6.124.2 Example URI

/IASZoneInfoResURI

6.124.3 Resource type

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

6.124.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "IAS Zone Info",
    "version": "20190513",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/IASZoneInfoResURI" : {
      "get": {
        "description": "This Resource describes information associated with an Intruder Alert System
(IAS) Zone.\nZone Type provides the information about the type of device/alarm.\nZone Status provides
an array which has 10 items representing various status information(e.g., battery status, mode, alarm
(Up to two), supervision of IAS network, etc.\nA Device implementing this Resource can be enrolled to
IAS Control and Indicator Equipment (CIE). IAS CIE can allocate an ID for the Device and update this
Resource on the Device.\nThis Resource may provide multiple sensitivity levels (>2).
NumberofZoneSensitivityLevelSupported provides the number of the levels. A specific level can be
selected as currentzonesensitivityLevel."
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
            {
              "rt": ["oic.r.iaszoneinfo"],
              "zonetype": "motionsensor",
              "zonestatus": {
                "alarms": ["presence"],
                "tamper": false,
                "zonestatusreports": "statuschangeonly",
                "fault": false,
                "test": false
              },
              "iascieaddress": "ACDE9F56A3FE6B98",
              "zonestate": true,
              "zoneid": 64,
              "numzonesensitivitylevel": 3,
              "currentzonesensitivitylevel": 2
            },
            "schema": { "$ref": "#/definitions/IASZoneInfo" }
          }
        }
      },
      "post": {
        "description": "Sets the current sensitivity level of the IASZone.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-rw"},
          {
            "name": "body",
            "in": "body",
            "required": true,
```


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```
            "schema": { "$ref": "#/definitions/IASZoneInfo-Update" },
            "x-example":
              {
                "currentzonesensitivitylevel": 3
              }
          }
        ],
        "responses": {
          "200": {
            "description" : "Success path response code\n"
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
    },
    "interface-rw" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw"]
    }
  },
  "definitions": {
    "IASZoneInfo" : {
      "properties": {
        "rt" : {
          "description": "Resource Type",
          "items": {
            "type": "string",
            "enum": ["oic.r.iaszoneinfo"]
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "zonestate" : {
          "description": "The IAS zone state. True = enrolled, False = not enrolled.",
          "readOnly": true,
          "type": "boolean"
        },
        "zonestatus" : {
          "description": "Set of alarm indicators.",
          "properties": {
            "alarms": {
              "type": "array",
              "description": "Array of alarms. The alarms exposed are dependent on the zonetype.",
              "readOnly": true,
              "minItems": 1,
              "maxItems": 2,
              "items": {
                "type": "string",
                "enum":
["system","intrusion","presence","1stportalopenclose","2ndportalopenclose","fire","wateroverflow","CO",
"cooking","all","emergencybutton","movement","vibration","panic","emergency","glassbreak"]
              }
            },
            "zonestatusreports": {
              "description": "Controls the generation of status indications",
              "type": "string",
              "enum": ["none","statuschangeonly","alarmclearonly","statuschangeandalarmclear"]
            },
            "tamper": {
              "description": "Tamper status. True = tampered, False = not tampered.",
              "readOnly": true,
              "type": "boolean"
            },
            "test": {
              "description": "Test mode indicator. True = sensor is in test mode, False = sensor is in
operational mode",
              "readOnly": true,
```


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```
            "type": "boolean"
          },
          "fault": {
            "description": "Fault indicator. True = fault detected, False = no fault detected",
            "readOnly": true,
            "type": "boolean"
          }
        },
        "readOnly": true,
        "type": "object"
      },
      "numzonesensitivitylevel" : {
        "description": "Number of supported zone sensitivity levels",
        "minimum": 2,
        "readOnly": true,
        "type": "integer"
      },
      "zoneid" : {
        "description": "ID allocated by the IAS CIE",
        "readOnly": true,
        "type": "integer"
      },
      "iascieaddress" : {
        "description": "EUI-64 Address of the enrolled IAS Control and Indicating Equipment (CIE)",
        "readOnly": true,
        "type": "string"
      },
      "zonetype" :  {
        "description": "IAS zone type. See OCF enumeration map for set of valid values.",
        "readOnly": true,
        "type": "string"
      },
      "currentzonesensitivitylevel" : {
        "description": "Current zone sensitivity level",
        "minimum": 0,
        "type": "integer"
      },
      "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
      },
      "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
      },
      "if" : {
        "description": "The OCF Interface set supported by this Resource",
        "items": {
          "enum": [
            "oic.if.rw",
            "oic.if.baseline"
          ],
          "type": "string"
        },
        "minItems": 2,
                  "maxItems": 2,
        "readOnly": true,
        "type": "array"
      }
    },
      "required": ["zonetype", "zonestate", "zonestatus", "zoneid", "iascieaddress"]
  },
  "IASZoneInfo-Update" : {
    "properties": {
      "currentzonesensitivitylevel" : {
        "description": "Current zone sensitivity level, Client can only set 1 or higher.",
        "minimum": 1,
        "type": "integer"
      }
    },
      "required": ["currentzonesensitivitylevel"]
  }
 }
}
```

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6.124.5 Property definition

Table 251 defines the Properties that are part of the "oic.r.iaszoneinfo" Resource Type.

Table 251 – The Property definitions of the Resource with type "rt" = "oic.r.iaszoneinfo"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
zonestate	boolean	Yes	Read Only	The IAS zone state. True = enrolled, False = not enrolled.
zonestatus	object: see schema	Yes	Read Only	Set of alarm indicators.
numzonesensitivitylevel	integer	No	Read Only	Number of supported zone sensitivity levels
zoneid	integer	Yes	Read Only	ID allocated by the IAS CIE
iascieaddress	string	Yes	Read Only	EUI-64 Address of the enrolled IAS Control and Indicating Equipment (CIE)
zonetype	string	Yes	Read Only	IAS zone type. See OCF enumeration map for set of valid values.
currentzonesensitivitylevel	integer	No	Read Write	Current zone sensitivity level
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
currentzonesensitivitylevel	integer	Yes	Read Write	Current zone sensitivity level, Client can only set 1 or higher.

6.124.6 CRUDN behaviour

Table 252 defines the CRUDN operations that are supported on the "oic.r.iaszoneinfo" Resource Type.

Table 252 – The CRUDN operations of the Resource with type "rt" = "oic.r.iaszoneinfo"

Create	Read	Update	Delete	Notify
	get	post		observe

6.125 IAS Zone Collection

6.125.1 Introduction

…

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6.125.2 Example URI

/IASZoneCollectionResURI

6.125.3 Resource type

6.125.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "IAS Zone Collection",
    "version": "20190513",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/IASZoneResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This Resource is Collection that fully describes an Intruder Alert System (IAS)
Zone. It is made up of an instance of IAS Zone Info, Battery, and Power Source.",
        "parameters": [
          {"$ref": "#/parameters/interface-baseline"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "schema": { "$ref": "#/definitions/baseline"},
            "x-example":
            {
              "rt": ["oic.r.iaszone"],
              "if": ["oic.if.ll","oic.if.b","oic.if.baseline"],
              "links": [
                {
                 "href": "/myIASZoneInfoResURI",
                 "rt":   ["oic.r.iaszoneinfo"],
                 "if":   ["oic.if.rw", "oic.if.baseline"]
                },
                {
                  "href": "/myBatteryResURI",
                  "rt":   ["oic.r.energy.battery"],
                  "if":   ["oic.if.rw", "oic.if.baseline"]
                },
                {
                  "href": "/myPowersourceResURI",
                  "rt":   ["oic.r.powersource"],
                  "if":   ["oic.if.r", "oic.if.baseline"]
                }
              ]
            }
          }
        }
      }
    },
    "/IASZoneResURI?if=oic.if.ll" : {
      "get": {
        "description": "This Resource is Collection that fully describes an Intruder Alert System (IAS)
Zone. It is made up of an instance of IAS Zone Info, Battery, and Power Source.",
        "parameters": [
          {"$ref": "#/parameters/interface-ll"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "schema": { "$ref": "#/definitions/links"},
```


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```
            "x-example":
            [
              {
                "href": "/myIASZoneInfoResURI",
                "rt":   ["oic.r.iaszoneinfo"],
                "if":   ["oic.if.rw", "oic.if.baseline"]
              },
              {
                "href": "/myBatteryResURI",
                "rt":   ["oic.r.energy.battery"],
                "if":   ["oic.if.rw", "oic.if.baseline"]
              },
              {
                "href": "/myPowersourceResURI",
                "rt":   ["oic.r.powersource"],
                "if":   ["oic.if.r", "oic.if.baseline"]
              }
            ]
          }
        }
      }
    },
    "/IASZoneResURI?if=oic.if.b" : {
      "get": {
        "description": "This Resource is Collection that fully describes an Intruder Alert System (IAS)
Zone. It is made up of an instance of IAS Zone Info, Battery, and Power Source.",
        "parameters": [
          {"$ref": "#/parameters/interface-b"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "schema": { "$ref": "#/definitions/IASZoneCollectionBatch-Retrieve" },
            "x-example":
            [
              {
                "href": "/myIASZoneInfoResURI",
                "rep": {
                  "zonetype": "motionsensor",
                  "zonestatus": {
                    "alarms": ["presence"],
                    "tamper": false,
                    "zonestatusreports": "statuschangeonly",
                    "fault": false,
                    "test": false
                  },
                  "iascieaddress": "ACDE9F56A3FE6B98",
                  "zonestate": true,
                  "zoneid": 64,
                  "numzonesensitivitylevel": 3,
                  "currentzonesensitivitylevel": 2
                }
              },
              {
                "href": "/myBatteryResURI",
                "rep": {
                  "charge": 70,
                  "defect": false
                }
              },
              {
                "href": "/myPowersourceResURI",
                "rep": {
                  "powerSources": ["AC (Mains) Power"],
                  "sourcefault": false
                }
              }
            ]
          }
        }
      },
      "post": {
        "description": "Sets the current sensitivity level of the IASZone.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-b"},
          {
            "name": "body",
```


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```
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/IASZoneCollectionBatch-Update" },
          "x-example":
          [
            {
              "href": "/myIASZoneInfoResURI",
              "rep": {
                "currentzonesensitivitylevel": 3
              }
            }
          ]
        }
      ],
      "responses": {
        "200": {
          "description" : "Success path response code\n"
        }
      }
    }
  }
},
"parameters": {
  "interface-all" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
  },
  "interface-ll" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.ll"]
  },
  "interface-b" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.b"]
  },
  "interface-baseline" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.baseline"]
  }
},
"definitions": {
  "baseline": {
    "properties": {
      "rt" :  {
        "description": "Resource Type",
        "items": {
          "type": "string",
          "enum": ["oic.r.iaszone"]
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "rts" : {
        "description": "Allowed Resources",
        "type": "array",
        "minItems": 3,
        "maxItems": 3,
        "items": {
          "type": "string",
          "enum": ["oic.r.iaszoneinfo","oic.r.energy.battery","oic.r.powersource"]
        }
      },
      "rts-m" : {
        "description": "Mandatory Resources",
        "type": "array",
        "minItems": 3,
        "maxItems": 3,
        "items": {
```

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```
            "type": "string",
            "enum": ["oic.r.iaszoneinfo","oic.r.energy.battery","oic.r.powersource"]
          }
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "links" :  {
          "$ref": "#/definitions/links"
        },
        "if" : {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["links"]
    },
    "links": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      }
    },
    "oic.oic-link": {
      "properties": {
        "if": {
          "description": "The OCF Interface set supported by this resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.rw",
              "oic.if.r"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rt": {
          "description": "Resource Type of the Resource",
          "items": {
            "enum": [
              "oic.r.iaszoneinfo",
              "oic.r.energy.battery",
              "oic.r.powersource"
            ],
            "type": "string"
          },
          "minItems": 1,
          "maxItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
```

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```
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    },
    "IASZoneCollectionBatch-Retrieve": {
      "title": "Collection Batch Retrieve Format",
      "minItems": 3,
      "maxItems": 3,
      "type": "array",
      "uniqueItems": true,
      "items": {
        "additionalProperties": true,
        "type": "object",
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/IASZoneInfoResURI.swagger.json#/definitions
/IASZoneInfo"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BatteryResURI.swagger.json#/definitions/Bat
tery"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PowerSourcesResourceURI.swagger.json#/defin
itions/powerSourceSchema"
              }
            ]
          }
        },
        "required": ["href","rep"]
```


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```
      }
    },
    "IASZoneCollectionBatch-Update" : {
      "title": "Collection Batch Update Format",
      "minItems": 1,
      "type": "array",
      "items": {
        "additionalProperties": true,
        "type": "object",
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/IASZoneInfoResURI.swagger.json#/definitions
/IASZoneInfo-Update"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BatteryResURI.swagger.json#/definitions/
BatteryUpdate"
              }
            ]
          }
        }
      }
    }
  }
}
```


6.125.5 Property definition

Table 253 defines the Properties that are part of the "oic.r.iaszone" Resource Type.

Table 253 – The Property definitions of the Resource with type "rt" = "None"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
rts	array: see schema	No	Read Write	Allowed Resources
rts-m	array: see schema	No	Read Write	Mandatory Resources
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
links	multiple types: see schema	Yes	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
if	array: see schema	Yes	Read Only	The OCF Interface set supported by this resource
rt	array: see schema	Yes	Read Only	Resource Type of the Resource
anchor	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	
href	multiple types: see schema		Read Write	
rep	object: see schema		Read Write	

6.125.6 CRUDN behaviour

Table 254 defines the CRUDN operations that are supported on the "oic.r.iaszone" Resource Type.

Table 254 – The CRUDN operations of the Resource with type "rt" = "None"

Create	Read	Update	Delete	Notify

6.126 Window Covering

6.126.1 Introduction

This Resource describes the information of a window covering, i.e., type, configuration status, and mode.
Velocity associated with lifting the window covering can be changed by updating Lift_Velocity(cm/sec).
Ramp up/down times to reaching the velocity setting can be changed by updating Lift_Acceleration Time/Lift_Deceleration Time (0.1sec).

6.126.2 Example URI

/WindowCoveringResURI

6.126.3 Resource type

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

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6.126.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Window Covering",
    "version": "20190513",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/WindowCoveringResURI" : {
      "get": {
        "description": "This Resource describes the information of a window covering, i.e., type,
configuration status, and mode.\nVelocity associated with lifting the window covering can be changed by
updating Lift_Velocity(cm/sec).\nRamp up/down times to reaching the velocity setting can be changed by
updating Lift_Acceleration Time/Lift_Deceleration Time (0.1sec).",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
            {
              "rt": ["oic.r.windowcovering"],
              "windowcoveringtype": "shutter",
              "configstatus": {
                "operational": true,
                "online": true,
                "rotationdirection": "normal",
                "controllift": "closedloop",
                "controltilt": "closedloop",
                "closedloopliftcontrol": "encoder",
                "closedlooptiltcontrol": "encoder"
              },
              "mode": {
                "motordirection": false,
                "calibration": false,
                "maintenance": false,
                "ledfeedback": true
              },
              "liftvelocity": 5,
              "liftaccelerationtime": 200,
              "liftdecelerationtime": 200
            },
            "schema": { "$ref": "#/definitions/WindowCovering" }
          }
        }
      },
      "post": {
        "description": "Update window covering settings.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/WindowCovering-Update" },
            "x-example":
            {
              "mode": {
                "motordirection": true,
                "calibration": false,
                "maintenance": false,
                "ledfeedback": true
              },
              "liftvelocity": 10,
```


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```
              "liftaccelerationtime": 500,
              "liftdecelerationtime": 500
            }
          }
        ],
        "responses": {
          "200": {
            "description" : "Success path response code\n"
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "WindowCovering" : {
      "properties": {
        "rt" : {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.windowcovering"]
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "windowcoveringtype" : {
          "description": "Window covering type. See OCF enumeration map for set of valid values.",
          "readOnly": true,
          "type": "string"
        },
        "liftvelocity" : {
          "description": "Velocity in cm/sec associated with lifting the covering",
          "type": "integer"
        },
        "configstatus" : {
          "description": "Set of config status indicators.",
          "properties": {
            "controllift": {
              "description": "Closed loop control allows for intermediate settings, open loop supports
only up or down",
              "readOnly": true,
              "type": "string",
              "enum": ["closedloop","openloop"]
            },
            "controltilt": {
              "description": "Closed loop control allows for intermediate settings, open loop supports
only tilted or not tilted",
              "readOnly": true,
              "type": "string",
              "enum": ["closedloop","openloop"]
            },
            "closedloopliftcontrol": {
              "description": "Encoder or timer controlled",
              "readOnly": true,
              "type": "string",
              "enum": ["encoder","timer"]
            },
            "closedlooptiltcontrol": {
              "description": "Encoder or timer controlled",
              "readOnly": true,
              "type": "string",
              "enum": ["encoder","timer"]
            },
            "online": {
              "description": "True = online, False = not online",
              "readOnly": true,
              "type": "boolean"
```


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```
            },
            "operational": {
              "description": "True = operational, False = not operational",
              "readOnly": true,
              "type": "boolean"
            },
            "rotationdirection": {
              "description": "Identifies if the direction of rotation has been reversed to match
physical installation.",
              "readOnly": true,
              "type": "string",
              "enum": ["normal","reversed"]
            }
          },
          "readOnly": true,
          "type": "object"
        },
        "liftaccelerationtime" : {
          "description": "Ramp up time to reach lift velocity (ms)",
          "type": "integer"
        },
        "liftdecelerationtime" : {
          "description": "Ramp down time from the velocity setting (ms)",
          "type": "integer"
        },
        "mode" : {
          "description": "Set of operational modes.",
          "properties": {
            "calibration": {
              "description": "True = calibration mode, False = normal mode",
              "type": "boolean"
            },
            "ledfeedback": {
              "description": "True = feedback enabled, False = LEDs are off",
              "type": "boolean"
            },
            "maintenance": {
              "description": "True = maintenance mode, False = normal mode",
              "type": "boolean"
            },
            "motordirection": {
              "description": "True = direction reversed, False = direction normal",
              "type": "boolean"
            }
          },
          "type": "object"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if" : {
          "description": "The interface set supported by this resource",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
                      "maxItems": 2,
          "readOnly": true,
          "type": "array"
        }
      },
      "required": ["windowcoveringtype", "configstatus", "mode"]
    },
    "WindowCovering-Update" : {
      "properties": {
        "liftaccelerationtime" : {
```


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```
          "description": "Ramp up time to reach lift velocity (ms)",
          "type": "integer"
        },
        "liftdecelerationtime" : {
          "description": "Ramp down time from the velocity setting (ms)",
          "type": "integer"
        },
        "liftvelocity" : {
          "description": "Velocity in cm/sec associated with lifting the covering",
          "type": "integer"
        },
        "mode" : {
          "description": "Set of operational modes.",
          "properties": {
            "calibration": {
              "description": "True = calibration mode, False = normal mode",
              "type": "boolean"
            },
            "ledfeedback": {
              "description": "True = feedback enabled, False = LEDs are off",
              "type": "boolean"
            },
            "maintenance": {
              "description": "True = maintenance mode, False = normal mode",
              "type": "boolean"
            },
            "motordirection": {
              "description": "True = direction reversed, False = direction normal",
              "type": "boolean"
            }
          },
          "type": "object"
        }
      },
      "required": ["mode"]
    }
  }
}
```


6.126.5 Property definition

Table 255 defines the Properties that are part of the "oic.r.windowcovering" Resource Type.

Table 255 – The Property definitions of the Resource with type "rt" = "oic.r.windowcovering"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
windowcoveringtype	string	Yes	Read Only	Window covering type. See OCF enumeration map for set of valid values.
liftvelocity	integer	No	Read Write	Velocity in cm/sec associated with lifting the covering
configstatus	object: see schema	Yes	Read Only	Set of config status indicators.
liftaccelerationtime	integer	No	Read Write	Ramp up time to reach lift velocity (ms)
liftdecelerationtime	integer	No	Read Write	Ramp down time from the velocity setting (ms)
mode	object: see schema	Yes	Read Write	Set of operational modes.
n	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The interface set supported by this resource
liftaccelerationtime	integer	No	Read Write	Ramp up time to reach lift velocity (ms)
liftdecelerationtime	integer	No	Read Write	Ramp down time from the velocity setting (ms)
liftvelocity	integer	No	Read Write	Velocity in cm/sec associated with lifting the covering
mode	object: see schema	Yes	Read Write	Set of operational modes.

6.126.6 CRUDN behaviour

Table 256 defines the CRUDN operations that are supported on the "oic.r.windowcovering" Resource Type.

Table 256 – The CRUDN operations of the Resource with type "rt" = "oic.r.windowcovering"

Create	Read	Update	Delete	Notify
	get	post		observe

6.127 Activity

6.127.1 Introduction

This Resource describes the Properties associated with a person's physical activity.
All Properties are read-only values that are provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

6.127.2 Example URI

/ActivityResURI

6.127.3 Resource type

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

6.127.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Activity",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
```

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```
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ActivityResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's physical
activity.\n All Properties are read-only values that are provided by the server.\n When range (from
\"oic.r.baseresource\") is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.activity"
              ],
              "activity":     "sleep",
              "steps_day":    1000,
              "steps_reset":  500,
              "ccal_day":     3000.0,
              "ccal_reset":   1500.0
            },
            "schema": {
              "$ref": "#/definitions/Activity"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Activity": {
      "properties": {
        "activity":    {
          "description": "This Property describes the recognized current activity type of user",
          "type": "string",
          "enum": [
            "sleep",
            "sit",
            "stand",
            "walk",
            "run",
            "unknown"
          ],
          "readOnly": true
        },
        "steps_day": {
          "description": "This Property describes the user's step count that measures the number of
steps the user has taken since the beginning of the day.",
          "type": "integer",
          "minimum": 0,
          "readOnly": true
        },
```


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```
        "steps_reset": {
          "description": "This Property describes the user's step count that measures the number of
steps the user has taken since the last reset.",
          "type": "integer",
          "minimum": 0,
          "readOnly": true
        },
        "ccal_day": {
          "description": "This Property describes the burned off calories of user since the beginning
of the day.",
          "type": "number",
          "minimum": 0.0,
          "readOnly": true
        },
        "ccal_reset": {
          "description": "This Property describes the burned off calories of user since the last
reset.",
          "type": "number",
          "minimum": 0.0,
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.activity"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s", "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "steps_day_range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "steps_day_step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "steps_reset_range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "steps_reset_step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "ccal_day_range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
```


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```
        "ccal_day_step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "ccal_day_precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "ccal_reset_range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "ccal_reset_step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "ccal_reset_precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "activity"
      ]
    }
  }
}
```


6.127.5 Property definition

Table 257 defines the Properties that are part of the "oic.r.activity" Resource Type.

Table 257 – The Property definitions of the Resource with type "rt" = "oic.r.activity"

Property name	Value type	Mandatory	Access mode	Description
activity	string	Yes	Read Only	This Property describes the recognized current activity type of user
steps_day	integer	No	Read Only	This Property describes the user's step count that measures the number of steps the user has taken since the beginning of the day.
steps_reset	integer	No	Read Only	This Property describes the user's step count that measures the number of steps the user has taken since the last reset.
ccal_day	number	No	Read Only	This Property describes the burned off calories of user since the beginning of the day.
ccal_reset	number	No	Read Only	This Property describes the burned off calories of user since the last reset.

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Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
steps_day_range	multiple types: see schema	No	Read Write	
steps_day_step	multiple types: see schema	No	Read Write	
steps_reset_range	multiple types: see schema	No	Read Write	
steps_reset_step	multiple types: see schema	No	Read Write	
ccal_day_range	multiple types: see schema	No	Read Write	
ccal_day_step	multiple types: see schema	No	Read Write	
ccal_day_precision	multiple types: see schema	No	Read Write	
ccal_reset_range	multiple types: see schema	No	Read Write	
ccal_reset_step	multiple types: see schema	No	Read Write	
ccal_reset_precision	multiple types: see schema	No	Read Write	

6.127.6 CRUDN behaviour

Table 258 defines the CRUDN operations that are supported on the "oic.r.activity" Resource Type.

Table 258 – The CRUDN operations of the Resource with type "rt" = "oic.r.activity"

Create	Read	Update	Delete	Notify
	get			observe

6.128 Activity Tracker Atomic Measurement Representation

6.128.1 Introduction

This Resource describes the Properties associated with Activity Tracker.
The Resource is an Atomic Measurement of activity ("oic.r.activity"), heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").

6.128.2 Example URI

/ActivityTrackerAMResURI

6.128.3 Resource type

The Resource Type is defined as: "oic.r.activitytracker-am, oic.wk.atomicmeasurement".

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6.128.4 OpenAPI 2.0 definition


```
{
    "swagger": "2.0",
    "info": {
      "title": "Activity Tracker Atomic Measurement Representation",
      "version": "2019-03-04",
      "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": [
      "http"
    ],
    "consumes": [
      "application/json"
    ],
    "produces": [
      "application/json"
    ],
    "paths": {
      "/ActivityTrackerAMResURI?if=oic.if.b": {
        "get": {
          "description": "This Resource describes the Properties associated with Activity Tracker.\n
The Resource is an Atomic Measurement of activity (\"oic.r.activity\"), heart rate
(\"oic.r.heartrate\"), observed time (\"oic.r.time.stamp\") and user ID (\"oic.r.userid\").",
          "parameters": [
            {
              "$ref": "#/parameters/interface-all"
            }
          ],
          "responses": {
            "200": {
              "description": "",
              "x-example": [
                {
                  "href": "/myActivity",
                  "rep": {
                    "activity":    "sleep",
                    "steps_day":   1000,
                    "steps_reset":  500,
                    "ccal_day":    3000.0,
                    "ccal_reset":   1500.0
                  }
                },
                {
                  "href": "/myHeartRate",
                  "rep": {
                    "heartrate": 80
                  }
                },
                {
                  "href": "/myUserId",
                  "rep": {
                    "userid": "USER1"
                  }
                },
                {
                  "href": "/myTimeStamp",
                  "rep": {
                    "timestamp": "2018-11-09T12:15:00+08:00"
                  }
                }
              ],
              "schema": {
                "$ref": "#/definitions/batch-retrieve"
              }
            }
          }
        }
      },
      "/ActivityTrackerAMResURI?if=oic.if.ll": {
```


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```
        "get": {
          "description": "This Resource describes the Properties associated with Activity Tracker.\n
The Resource is an Atomic Measurement of activity (\"oic.r.activity\"), heart rate
(\"oic.r.heartrate\"), observed time (\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
          "parameters": [
            {
              "$ref": "#/parameters/interface-all"
            }
          ],
          "responses": {
            "200": {
              "description": "",
              "x-example": [
                {
                  "href": "/myActivity",
                  "rt": [
                    "oic.r.activity"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myHeartRate",
                  "rt": [
                    "oic.r.heartrate"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myUserId",
                  "rt": [
                    "oic.r.userid"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myTimeStamp",
                  "rt": [
                    "oic.r.time.stamp"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                }
              ],
              "schema": {
                "$ref": "#/definitions/links"
              }
            }
          }
        }
      },
      "/ActivityTrackerAMResURI?if=oic.if.baseline": {
        "get": {
          "description": "This Resource describes the Properties associated with Activity Tracker.\n
The Resource is an Atomic Measurement of activity (\"oic.r.activity\"), heart rate
(\"oic.r.heartrate\"), observed time (\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
          "parameters": [
            {
              "$ref": "#/parameters/interface-all"
            }
          ],
          "responses": {
            "200": {
              "description": "",
              "x-example":
                {
                  "rt": [
```

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```
                "oic.r.activitytracker-am",
                "oic.wk.atomicmeasurement"
              ],
              "if": [
                "oic.if.b",
                "oic.if.ll",
                "oic.if.baseline"
              ],
              "rts-m": [
                "oic.r.activity"
              ],
              "rts": [
                "oic.r.activity", "oic.r.heartrate", "oic.r.userid", "oic.r.time.stamp"
              ],
              "links": [
                {
                  "href": "/myActivity",
                  "rt": [
                    "oic.r.activity"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myHeartRate",
                  "rt": [
                    "oic.r.heartrate"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myUserId",
                  "rt": [
                    "oic.r.userid"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myTimeStamp",
                  "rt": [
                    "oic.r.time.stamp"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                }
              ]
            },
            "schema": {
              "$ref": "#/definitions/baseline"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b",
      "oic.if.ll",
      "oic.if.baseline"
    ]
  }
  },
```

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```
    "definitions": {
      "batch-retrieve": {
        "title": "Collection Batch Retrieve Format",
        "minItems": 1,
        "items": {
          "additionalProperties": true,
          "properties": {
            "href": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
            },
            "rep": {
              "type": "object",
              "anyOf": [
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/Activity.swagger.json#/definitions/Activity
"
                },
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/HeartRate.swagger.json#/definitions/HeartRa
te"
                },
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/User
ID"
                },
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/T
imeStamp"
                }
              ]
            }
          },
          "required": [
            "href",
            "rep"
          ],
          "type": "object"
        },
        "type": "array"
      },
      "links": {
        "type": "array",
        "items": {
          "$ref": "#/definitions/oic.oic-link"
        }
      },
      "baseline": {
        "properties": {
          "rt": {
            "items": {
              "enum": [
                "oic.r.activitytracker-am",
                "oic.wk.atomicmeasurement"
              ]
            },
            "minItems": 2,
            "type": "array",
            "uniqueItems": true,
            "readOnly": true
          },
          "links": {
            "$ref": "#/definitions/links"
          },
          "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "rts": {
            "description": "This Property contains all possible Resource Types for this Atomic
Measurement.",
```


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```
            "items": {
              "enum": [
                "oic.r.activity",
                "oic.r.heartrate",
                "oic.r.time.stamp",
                "oic.r.userid"
              ]
            },
            "minItems": 1,
            "type": "array",
            "uniqueItems": true
          },
          "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "rts-m": {
            "description": "This Property contains all mandatory Resource Types for this Atomic
Measurement.",
            "items": {
              "enum": [
                "oic.r.activity"
              ]
            },
            "maxItems": 1,
            "minItems": 1,
            "type": "array",
            "readOnly": true,
            "uniqueItems": true
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.baseline",
                "oic.if.ll",
                "oic.if.b"
              ],
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": [
          "rts-m"
        ]
      },
      "oic.oic-link": {
        "properties": {
          "anchor": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
          },
          "di": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
          },
          "eps": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
          },
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
```


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```
              "enum": [
                "oic.if.baseline",
                "oic.if.s",
                "oic.if.r"
              ],
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "type": "array"
          },
          "ins": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
          },
          "p": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
          },
          "rel": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
          },
          "rt": {
            "description": "The Resource Type.",
            "items": {
              "enum": [
                "oic.r.activity",
                "oic.r.heartrate",
                "oic.r.time.stamp",
                "oic.r.userid"
              ],
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "title": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
          },
          "type": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
          }
        },
        "required": [
          "href",
          "rt",
          "if"
        ],
        "type": "object"
      }
    }
  }
```


6.128.5 Property definition

Table 259 defines the Properties that are part of the "oic.r.activitytracker-am, oic.wk.atomicmeasurement" Resource Type.

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Table 259 – The Property definitions of the Resource with type "rt" = "oic.r.activitytracker-am, oic.wk.atomicmeasurement"

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	No	Read Only	
links	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
rts	array: see schema	No	Read Write	This Property contains all possible Resource Types for this Atomic Measurement.
id	multiple types: see schema	No	Read Write	
rts-m	array: see schema	Yes	Read Only	This Property contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Write	The OCF Interface set supported by this Resource.
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	The Resource Type.
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

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6.128.6 CRUDN behaviour

Table 260 defines the CRUDN operations that are supported on the "oic.r.activitytracker-am, oic.wk.atomicmeasurement" Resource Type.

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Table 260 – The CRUDN operations of the Resource with type "rt" = "oic.r.activitytracker-am, oic.wk.atomicmeasurement"

Create	Read	Update	Delete	Notify
	get			observe

6.129 Alarm

6.129.1 Introduction

This Resource describes the Properties associated with alarm status.

6.129.2 Example URI

/AlarmResURI

6.129.3 Resource type

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

6.129.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Alarm",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/AlarmResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with alarm status.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [ "oic.r.alarm" ],
              "if": [ "oic.if.rw", "oic.if.baseline"],
              "status":   false,
              "duration": 0.0,
              "time":     "2018-06-20T14:30Z",
              "alarmtype": "General"
            },
            "schema": {
```

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```
            "$ref": "#/definitions/Alarm"
          }
        }
      }
    },
    "post": {
      "description": "This Resource describes the Properties associated with alarm status.",
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        },
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/Alarm" },
          "x-example": {
            "status":   true,
            "duration": 30.0,
            "time":     "2019-01-31T14:30Z"
          }
        }

      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": [
              "oic.r.alarm"
            ],
            "status":     true,
            "duration":   30.0,
            "time":       "2019-01-31T14:30Z",
            "alarmtype":  "General"
          },
          "schema": {
            "$ref": "#/definitions/Alarm"
          }
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.rw",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "Alarm": {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": [
            "oic.r.alarm"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "status": {
        "description": "This Property describes the status of the alarm: true - on, false - off.",
        "type": "boolean",
        "readOnly": false
      },
      "duration": {
```


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```
          "description": "This Property describes the alarm duration (seconds).",
          "type": "number",
          "minimum": 0.0,
          "readOnly": false
        },
        "time": {
          "description": "This Property describes the alarm time using ISO 8601 datetime format (e.g:
2007-04-05T14:30Z, 2007-04-05T14:30+09:00).",
          "type": "string",
          "readOnly": false
        },
        "alarmtype": {
          "description": "The Alarm Type.",
          "type": "string",
          "enum": [
            "General",
            "Fire",
            "Flood",
            "Weather",
            "Security"
          ],
          "readOnly": true
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.rw"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "status"
      ]
    }
  }
}
```


6.129.5 Property definition

Table 261 defines the Properties that are part of the "oic.r.alarm" Resource Type.

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Table 261 – The Property definitions of the Resource with type "rt" = "oic.r.alarm"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
status	boolean	Yes	Read Write	This Property describes the status of the alarm: true - on, false - off.
duration	number	No	Read Write	This Property describes the alarm duration (seconds).
time	string	No	Read Write	This Property describes the alarm time using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00).
alarmtype	string	No	Read Only	The Alarm Type.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

6.129.6 CRUDN behaviour

Table 262 defines the CRUDN operations that are supported on the "oic.r.alarm" Resource Type.

Table 262 – The CRUDN operations of the Resource with type "rt" = "oic.r.alarm"

Create	Read	Update	Delete	Notify
	get	post		observe

6.130 Continuous Glucose Meter (CGM) Atomic Measurement Representation

6.130.1 Introduction

This Resource describes the Properties associated with Continuous Glucose Meter.
The Resource is an Atomic Measurement of glucose ("oic.r.glucose"), sensor ("oic.r.cgm.sensor"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").

6.130.2 Example URI

/ContinuousGlucoseMeterAMResURI

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6.130.3 Resource type

The Resource Type is defined as: "oic.r.cgm-am, oic.wk.atomicmeasurement".

6.130.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Continuous Glucose Meter (CGM) Atomic Measurement Representation",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ContinuousGlucoseMeterAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with Continuous Glucose
Meter.\n The Resource is an Atomic Measurement of glucose (\"oic.r.glucose\"), sensor
(\"oic.r.cgm.sensor\"), observed time (\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
        "parameters": [
          {
              "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myGlucose",
                "rep": {
                  "glucose": 100.0,
                  "units": "mg/dL"
                }
              },
              {
                "href": "/myContinuousGlucoseMeterSensor",
                "rep": {
                  "starttime": "2018-06-20T14:30Z",
                  "runtime": 7.0
                }
              },
              {
                "href": "/myUserId",
                "rep": {
                  "userid": "USER1"
                }
              },
              {
                "href": "/myTimeStamp",
                "rep": {
                  "timestamp": "2018-11-09T12:15:00+08:00"
                }
              }
            ],
            "schema": {
              "$ref": "#/definitions/batch-retrieve"
            }
          }
```


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```
        }
      }
    },
    "/ContinuousGlucoseMeterAMResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes the Properties associated with Continuous Glucose
Meter.\n The Resource is an Atomic Measurement of glucose (\"oic.r.glucose\"), sensor
(\"oic.r.cgm.sensor\"), observed time (\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
        "parameters": [
          {
              "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myGlucose",
                "rt": [
                  "oic.r.glucose"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myContinuousGlucoseMeterSensor",
                "rt": [
                  "oic.r.cgm.sensor"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
                "rt": [
                  "oic.r.userid"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myTimeStamp",
                "rt": [
                  "oic.r.time.stamp"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              }
            ],
            "schema": {
              "$ref": "#/definitions/links"
            }
          }
        }
      }
    },
    "/ContinuousGlucoseMeterAMResURI?if=oic.if.baseline": {
      "get": {
        "description": "This Resource describes the Properties associated with Continuous Glucose
Meter.\n The Resource is an Atomic Measurement of glucose (\"oic.r.glucose\"), sensor
(\"oic.r.cgm.sensor\"), observed time (\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
        "parameters": [
          {
              "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
```


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```
          "description": "",
          "x-example":
            {
              "rt": [
                "oic.r.cgm-am",
                "oic.wk.atomicmeasurement"
              ],
              "if": [
                "oic.if.b",
                "oic.if.ll",
                "oic.if.baseline"
              ],
              "rts-m": [
                "oic.r.glucose"
              ],
              "rts": [
                "oic.r.glucose", "oic.r.cgm.sensor"
              ],
              "links": [
                {
                  "href": "/myGlucose",
                  "rt": [
                    "oic.r.glucose"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myContinuousGlucoseMeterSensor",
                  "rt": [
                    "oic.r.cgm.sensor"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myUserId",
                  "rt": [
                    "oic.r.userid"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myTimeStamp",
                  "rt": [
                    "oic.r.time.stamp"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                }
              ]
            },
            "schema": {
              "$ref": "#/definitions/baseline"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.b",
        "oic.if.ll",
```

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```
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "batch-retrieve": {
      "title": "Collection Batch Retrieve Format",
      "minItems": 1,
      "items": {
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseResURI.swagger.json#/definitions/Glu
cose"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/ContinuousGlucoseMeterSensor.swagger.json#/
definitions/ContinuousGlucoseMeterSensor"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/User
ID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/T
imeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "links": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      }
    },
    "baseline": {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.cgm-am",
              "oic.wk.atomicmeasurement"
            ]
          },
          "minItems": 2,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        },
        "links": {
          "$ref": "#/definitions/links"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
```


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```
        "rts": {
          "description": "This Property contains all possible Resource Types for this Atomic
Measurement.",
          "items": {
            "enum": [
              "oic.r.glucose",
              "oic.r.cgm.sensor",
              "oic.r.time.stamp",
              "oic.r.userid"
            ]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "rts-m": {
          "description": "This Property contains all mandatory Resource Types for this Atomic
Measurement.",
          "items": {
            "enum": [
              "oic.r.glucose"
            ]
          },
          "maxItems": 1,
          "minItems": 1,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.ll",
              "oic.if.b"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "rts-m"
      ]
    },
    "oic.oic-link": {
      "properties": {
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
```


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```
              "oic.if.baseline",
              "oic.if.s",
              "oic.if.r"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "type": "array"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.glucose",
              "oic.r.cgm.sensor",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```


6.130.5 Property definition

Table 263 defines the Properties that are part of the "oic.r.cgm-am, oic.wk.atomicmeasurement" Resource Type.

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Table 263 – The Property definitions of the Resource with type "rt" = "oic.r.cgm-am, oic.wk.atomicmeasurement"

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	No	Read Only	
links	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
rts	array: see schema	No	Read Write	This Property contains all possible Resource Types for this Atomic Measurement.
id	multiple types: see schema	No	Read Write	
rts-m	array: see schema	Yes	Read Only	This Property contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Write	The OCF Interface set supported by this Resource.
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	The Resource Type.
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

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6.130.6 CRUDN behaviour

Table 264 defines the CRUDN operations that are supported on the "oic.r.cgm-am, oic.wk.atomicmeasurement" Resource Type.

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Table 264 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm-am, oic.wk.atomicmeasurement"

Create	Read	Update	Delete	Notify
	get			observe

6.131 Calibrate for Continuous Glucose Meter (CGM)

6.131.1 Introduction

This Resource describes the Properties associated with Calibrate for Continuous Glucose Meter (CGM).

6.131.2 Example URI

/ContinuousGlucoseMeterCalibrateResURI

6.131.3 Resource type

The Resource Type is defined as: "oic.r.cgm.calibrate".

6.131.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Calibrate for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ContinuousGlucoseMeterCalibrateResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Calibrate for Continuous
Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.calibrate"
              ],
              "Cvalue": 128.0,
              "Cstatus": true
            },
            "schema": {
```

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```
              "$ref": "#/definitions/ContinuousGlucoseMeterCalibrate"
            }
          }
        }
      },
      "post": {
        "description": "This Resource describes the Properties associated with Calibrate for Continuous
Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          },
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ContinuousGlucoseMeterCalibrate" },
            "x-example": {
              "Cvalue": 130.0,
              "Cstatus": true
            }
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.calibrate"
              ],
              "Cvalue": 130.0,
              "Cstatus": true
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterCalibrate"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.rw",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "ContinuousGlucoseMeterCalibrate": {
      "properties": {
        "Cvalue": {
          "description": "This Property describes the Sensor Calibration Value in mg/dL units. This
blood glucose measurement using other external glucose meter.",
          "type": "number",
          "minimum": 0,
          "readOnly": false
        },
        "Cstatus": {
          "description": "Sensor calibration required flag",
          "type": "boolean",
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.cgm.calibrate"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
```


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```
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "Cvalue", "Cstatus"
      ]
    }
  }
}
```


6.131.5 Property definition

Table 265 defines the Properties that are part of the "oic.r.cgm.calibrate" Resource Type.

Table 265 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.calibrate"

Property name	Value type	Mandatory	Access mode	Description
Cvalue	number	Yes	Read Write	This Property describes the Sensor Calibration Value in mg/dL units. This blood glucose measurement using other external glucose meter.
Cstatus	boolean	Yes	Read Only	Sensor calibration required flag
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	

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Property name	Value type	Mandatory	Access mode	Description
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

6.131.6 CRUDN behaviour

Table 266 defines the CRUDN operations that are supported on the "oic.r.cgm.calibrate" Resource Type.

Table 266 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.calibrate"

Create	Read	Update	Delete	Notify
	get	post		observe

6.132 Sampling Interval for Continuous Glucose Meter (CGM)

6.132.1 Introduction

This Resource describes the Properties associated with Sampling Interval for Continuous Glucose Meter (CGM).

6.132.2 Example URI

/ContinuousGlucoseMeterSamplingIntervalResURI

6.132.3 Resource type

The Resource Type is defined as: "oic.r.cgm.samplinginterval".

6.132.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sampling Interval for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
```

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```
  ],
  "paths": {
    "/ContinuousGlucoseMeterSamplingIntervalResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Sampling Interval for
Continuous Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.samplinginterval"
              ],
              "interval": 10.0
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterSamplingInterval"
            }
          }
        }
      },
      "post": {
        "description": "This Resource describes the Properties associated with Sampling Interval for
Continuous Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          },
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ContinuousGlucoseMeterSamplingInterval" },
            "x-example": {
              "interval": 20.0
            }
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.samplinginterval"
              ],
              "interval": 20.0
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterSamplingInterval"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.a",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "ContinuousGlucoseMeterSamplingInterval": {
      "properties": {
        "interval": {
          "description": "This Property describes the Sampling interval in seconds.",
          "type": "number",
```


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```
          "minimum": 0.0,
          "readOnly": false
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.cgm.samplinginterval"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "interval"
      ]
    }
  }
}
```


6.132.5 Property definition

Table 267 defines the Properties that are part of the "oic.r.cgm.samplinginterval" Resource Type.

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Table 267 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.samplinginterval"

Property name	Value type	Mandatory	Access mode	Description
interval	number	Yes	Read Write	This Property describes the Sampling interval in seconds.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

6.132.6 CRUDN behaviour

Table 268 defines the CRUDN operations that are supported on the "oic.r.cgm.samplinginterval" Resource Type.

Table 268 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.samplinginterval"

Create	Read	Update	Delete	Notify
	get	post		observe

6.133 Sensor for Continuous Glucose Meter (CGM)

6.133.1 Introduction

This Resource describes the Properties associated with Sensor for Continuous Glucose Meter (CGM).

6.133.2 Example URI

/ContinuousGlucoseMeterSensorResURI

6.133.3 Resource type

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

6.133.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sensor for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
```

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```
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ContinuousGlucoseMeterSensorResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Sensor for Continuous
Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.sensor"
              ],
              "starttime": "2018-06-20T14:30Z",
              "runtime": 7.0
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterSensor"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "ContinuousGlucoseMeterSensor": {
      "properties": {
        "starttime": {
          "description": "This Property describes the Sensor start time using ISO 8601 datetime format
(e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00)",
          "type": "string",
          "readOnly": true
        },
        "runtime": {
          "description": "This Property describes the recommended runtime days using CGM",
          "type": "number",
          "minimum": 0.0,
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.cgm.sensor"
            ],
```


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```
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "starttime", "runtime"
      ]
    }
  }
}
```


6.133.5 Property definition

Table 269 defines the Properties that are part of the "oic.r.cgm.sensor" Resource Type.

Table 269 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.sensor"

Property name	Value type	Mandatory	Access mode	Description
starttime	string	Yes	Read Only	This Property describes the Sensor start time using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00)
runtime	number	Yes	Read Only	This Property describes the recommended runtime days using CGM

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Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

6.133.6 CRUDN behaviour

Table 270 defines the CRUDN operations that are supported on the "oic.r.cgm.sensor" Resource Type.

Table 270 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.sensor"

Create	Read	Update	Delete	Notify
	get			observe

6.134 Status for Continuous Glucose Meter (CGM)

6.134.1 Introduction

This Resource describes the Properties associated with Status for Continuous Glucose Meter (CGM).

6.134.2 Example URI

/ContinuousGlucoseMeterStatusResURI

6.134.3 Resource type

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

6.134.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Status for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
```

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```
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ContinuousGlucoseMeterStatusResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Status for Continuous
Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.status"
              ],
              "cgmtype": "Interstitial Fluid",
              "cgmstatus": "working",
              "gtrend": 100.0,
              "malfunction": false
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterStatus"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "ContinuousGlucoseMeterStatus": {
      "properties": {
        "cgmtype": {
          "description": "This Property describes the CGM measurement type.",
          "type": "string",
          "enum": [
            "Capillary Whole blood",
            "Capillary Plasma",
            "Venous Plasma",
            "Arterial Whole blood",
            "Arterial Plasma",
            "Undetermined Whole blood",
            "Undetermined Plasma",
            "Interstitial Fluid"
          ],
          "readOnly": true
        },
        "cgmstatus": {
          "description": "This Property describes the specific notifications given by the CGM device
including, but not limited to, warnings, errors, and handling events.",
          "type": "string",
          "readOnly": true
        },
        "gtrend": {
          "description": "This Property describes the rate of change in glucose measurements at a time
instant.",
          "type": "number",
          "minimum": 0.0,
          "readOnly": true
        },
        "malfunction": {
```


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```
          "description": "This Property describes the sensor malfunction detection check.",
          "type": "boolean",
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.cgm.status"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "cgmtype",
        "cgmstatus",
        "gtrend",
        "malfunction"
      ]
    }
  }
}
```


6.134.5 Property definition

Table 271 defines the Properties that are part of the "oic.r.cgm.status" Resource Type.

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Table 271 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.status"

Property name	Value type	Mandatory	Access mode	Description
cgmtype	string	Yes	Read Only	This Property describes the CGM measurement type.
cgmstatus	string	Yes	Read Only	This Property describes the specific notifications given by the CGM device including, but not limited to, warnings, errors, and handling events.
gtrend	number	Yes	Read Only	This Property describes the rate of change in glucose measurements at a time instant.
malfunction	boolean	Yes	Read Only	This Property describes the sensor malfunction detection check.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

6.134.6 CRUDN behaviour

Table 272 defines the CRUDN operations that are supported on the "oic.r.cgm.status" Resource Type.

Table 272 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.status"

Create	Read	Update	Delete	Notify
	get			observe

6.135 Threshold for Continuous Glucose Meter (CGM)

6.135.1 Introduction

This Resource describes the Properties associated with Threshold for Continuous Glucose Meter (CGM).

6.135.2 Example URI

/ContinuousGlucoseMeterThresholdResURI

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6.135.3 Resource type

The Resource Type is defined as: "oic.r.cgm.threshold".

6.135.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Threshold for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ContinuousGlucoseMeterThresholdResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Threshold for Continuous
Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.threshold"
              ],
              "plow": 100.0,
              "phigh": 180.0,
              "dhypo": 80.0,
              "dhyper": 125.0,
              "gir": 5.0,
              "gdr": 5.0
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterThreshold"
            }
          }
        }
      },
      "post": {
        "description": "This Resource describes the Properties associated with Threshold for Continuous
Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          },
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ContinuousGlucoseMeterThreshold" },
            "x-example": {
              "plow": 70.0,
              "phigh": 150.0,
              "dhypo": 60.0,
```


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```
            "dhyper": 90.0,
            "gir": 3.0,
            "gdr": 3.0
          }
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": [
              "oic.r.cgm.threshold"
            ],
            "plow": 70.0,
            "phigh": 150.0,
            "dhypo": 60.0,
            "dhyper": 90.0,
            "gir": 3.0,
            "gdr": 3.0
          },
          "schema": {
            "$ref": "#/definitions/ContinuousGlucoseMeterThreshold"
          }
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.rw",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "ContinuousGlucoseMeterThreshold": {
    "properties": {
      "plow": {
        "description": "This Property describes the Patient low threshold (mg/dL)",
        "type": "number",
        "minimum": 0.0,
        "readOnly": false
      },
      "phigh": {
        "description": "This Property describes the Patient high threshold (mg/dL)",
        "type": "number",
        "minimum": 0.0,
        "readOnly": false
      },
      "dhypo": {
        "description": "This Property describes the Device hypoglycemia threshold (mg/dL)",
        "type": "number",
        "minimum": 0.0,
        "readOnly": false
      },
      "dhyper": {
        "description": "This Property describes the Device hyperglycemia threshold (mg/dL)",
        "type": "number",
        "minimum": 0.0,
        "readOnly": false
      },
      "gir": {
        "description": "This Property describes the Glucose Increase rate of change threshold (%)",
        "type": "number",
        "minimum": 0.0,
        "readOnly": false
      },
      "gdr": {
        "description": "This Property describes the Glucose DecreaseÂ rate of change threshold (%)",
        "type": "number",
        "minimum": 0.0,
        "readOnly": false
```


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```
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.cgm.threshold"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "plow",
        "phigh",
        "dhypo",
        "dhyper",
        "gir",
        "gdr"
      ]
    }
  }
}
```


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6.135.5 Property definition

Table 273 defines the Properties that are part of the "oic.r.cgm.threshold" Resource Type.

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Table 273 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.threshold"

Property name	Value type	Mandatory	Access mode	Description
plow	number	Yes	Read Write	This Property describes the Patient low threshold (mg/dL)
phigh	number	Yes	Read Write	This Property describes the Patient high threshold (mg/dL)
dhypo	number	Yes	Read Write	This Property describes the Device hypoglycemia threshold (mg/dL)
dhyper	number	Yes	Read Write	This Property describes the Device hyperglycemia threshold (mg/dL)
gir	number	Yes	Read Write	This Property describes the Glucose Increase rate of change threshold (%)
gdr	number	Yes	Read Write	
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

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6.135.6 CRUDN behaviour

Table 274 defines the CRUDN operations that are supported on the "oic.r.cgm.threshold" Resource Type.

Table 274 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.threshold"

Create	Read	Update	Delete	Notify
	get	post		observe

6.136 Heart Rate

6.136.1 Introduction

This Resource describes the Properties associated with a person's heart rate.
The unit, which is the default unit, is bpm.
The heartrate Property is a read-only value that is provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

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6.136.2 Example URI

/HeartRateResURI

6.136.3 Resource type

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

6.136.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Heart Rate",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/HeartRateResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's heart rate.\n
The unit, which is the default unit, is bpm.\n The heartrate Property is a read-only value that is
provided by the server.\n When range (from \"oic.r.baseresource\") is omitted the default is 0 to
+MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.heartrate"
              ],
              "heartrate": 80
            },
            "schema": {
              "$ref": "#/definitions/HeartRate"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
```


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```
  "definitions": {
    "HeartRate": {
      "properties": {
        "heartrate": {
          "description": "This Property describes the heart rate in bpm.",
          "type": "integer",
          "minimum": 0,
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.heartrate"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        }
      },
      "type": "object",
      "required": [
        "heartrate"
      ]
    }
  }
}
```


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6.136.5 Property definition

Table 275 defines the Properties that are part of the "oic.r.heartrate" Resource Type.

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Table 275 – The Property definitions of the Resource with type "rt" = "oic.r.heartrate"

Property name	Value type	Mandatory	Access mode	Description
heartrate	integer	Yes	Read Only	This Property describes the heart rate in bpm.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	

6.136.6 CRUDN behaviour

Table 276 defines the CRUDN operations that are supported on the "oic.r.heartrate" Resource Type.

Table 276 – The CRUDN operations of the Resource with type "rt" = "oic.r.heartrate"

Create	Read	Update	Delete	Notify
	get			observe

6.137 Heart Rate Monitor Atomic Measurement Representation

6.137.1 Introduction

This Resource describes the Properties associated with Heart Rate Monitor.
The Resource is an Atomic Measurement of heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").

6.137.2 Example URI

/HeartRateMonitorAMResURI

6.137.3 Resource type

The Resource Type is defined as: "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement".

6.137.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Heart Rate Monitor Atomic Measurement Representation",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
```

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```
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/HeartRateMonitorAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with Heart Rate Monitor.\n
The Resource is an Atomic Measurement of heart rate (\"oic.r.heartrate\"), observed time
(\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myHeartrate",
                "rep": {
                  "heartrate": 80
                }
              },
              {
                "href": "/myUserId",
                "rep": {
                  "userid": "USER1"
                }
              },
              {
                "href": "/myTimeStamp",
                "rep": {
                  "timestamp": "2018-11-09T12:15:00+08:00"
                }
              }
            ],
            "schema": {
              "$ref": "#/definitions/batch-retrieve"
            }
          }
        }
      }
    },
    "/HeartRateMonitorAMResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes the Properties associated with Heart Rate Monitor.\n
The Resource is an Atomic Measurement of heart rate (\"oic.r.heartrate\"), observed time
(\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myHeartrate",
                "rt": [
                  "oic.r.heartrate"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
```


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```
                "rt": [
                  "oic.r.userid"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myTimeStamp",
                "rt": [
                  "oic.r.time.stamp"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              }
            ],
            "schema": {
              "$ref": "#/definitions/links"
            }
          }
        }
      }
    },
    "/HeartRateMonitorAMResURI?if=oic.if.baseline": {
      "get": {
        "description": "This Resource describes the Properties associated with Heart Rate Monitor.\n
The Resource is an Atomic Measurement of heart rate (\"oic.r.heartrate\"), observed time
(\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
        "parameters": [
          {
              "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example":
              {
                "rt": [
                  "oic.r.heartratemonitor-am",
                  "oic.wk.atomicmeasurement"
                ],
                "if": [
                  "oic.if.b",
                  "oic.if.ll",
                  "oic.if.baseline"
                ],
                "rts-m": [
                  "oic.r.heartrate"
                ],
                "rts": [
                  "oic.r.heartrate",
                  "oic.r.userid",
                  "oic.r.time.stamp"
                ],
                "links": [
                  {
                    "href": "/myHeartRateMonitor",
                    "rt": [
                      "oic.r.heartrate"
                    ],
                    "if": [
                      "oic.if.s",
                      "oic.if.baseline"
                    ]
                  },
                  {
                    "href": "/myUserId",
                    "rt": [
                      "oic.r.userid"
                    ],
                    "if": [
                      "oic.if.r",
                      "oic.if.baseline"
```


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```
                  ]
                },
                {
                  "href": "/myTimeStamp",
                  "rt": [
                    "oic.r.time.stamp"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                }
              ]
            }
            ,
            "schema": {
              "$ref": "#/definitions/baseline"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.b",
        "oic.if.ll",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "batch-retrieve": {
      "title": "Collection Batch Retrieve Format",
      "minItems": 1,
      "items": {
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/HeartRate.swagger.json#/definitions/HeartRa
te"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/User
ID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/T
imeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "links": {
      "type": "array",
```

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```
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      }
    },
    "baseline": {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.heartratemonitor-am",
              "oic.wk.atomicmeasurement"
            ]
          },
          "minItems": 2,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        },
        "links": {
          "$ref": "#/definitions/links"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "rts": {
          "description": "This Property contains all possible Resource Types for this Atomic
Measurement.",
          "items": {
            "enum": [
              "oic.r.heartrate",
              "oic.r.userid",
              "oic.r.time.stamp"
            ]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        },
        "rts-m": {
          "description": "This Property contains all mandatory Resource Types for this Atomic
Measurement.",
          "items": {
            "enum": [
              "oic.r.heartrate"
            ]
          },
          "maxItems": 1,
          "minItems": 1,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "rts-m"
      ]
    },
    "oic.oic-link": {
```


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```
      "properties": {
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s",
              "oic.if.r"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.heartrate",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```


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6.137.5 Property definition

Table 277 defines the Properties that are part of the "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement" Resource Type.

Table 277 – The Property definitions of the Resource with type "rt" = "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement"

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	No	Read Only	
links	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
rts	array: see schema	No	Read Only	This Property contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This Property contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interface set supported by this Resource.
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	The Resource Type.
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

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6.137.6 CRUDN behaviour

Table 278 defines the CRUDN operations that are supported on the "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement" Resource Type.

Table 278 – The CRUDN operations of the Resource with type "rt" = "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement"

Create	Read	Update	Delete	Notify
	get			observe

6.138 Pulsatile Characteristic for Pulse Oximeter

6.138.1 Introduction

This Resource describes the Properties associated with a pulsatile characteristic of the pulsative wave of a Pulse Oximeter.
The characteristic Property is a read-only value that is provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

6.138.2 Example URI

/PulsatileCharacteristicResURI

6.138.3 Resource type

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

6.138.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Pulsatile Characteristic for Pulse Oximeter",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/PulsatileCharacteristicResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a pulsatile
characteristic of the pulsative wave of a Pulse Oximeter.\n The characteristic Property is a read-only
value that is provided by the server.\n When range (from \"oic.r.baseresource\") is omitted the default
is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
```

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```
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.pulsatilecharacteristic"
              ],
              "characteristic": 1
            },
            "schema": {
              "$ref": "#/definitions/pulsatilecharacteristic"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "pulsatilecharacteristic": {
      "properties": {
        "characteristic": {
          "description": "This Property describes the current pulsatile characteristic measurement. The
value is an integer bit mapped value. The following describes what each integer means. 0 - Quality of
the detected pulse is nominal, in that there are no recognized abnormalities in the detected pulse. 1 -
Perfusion or quality of the detected pulse is marginal. 2 - Perfusion or quality of the detected pulse
is minimal. 3 - Perfusion or quality of the detected pulse is unacceptable.",
          "type": "integer",
          "minimum": 0,
          "maximum": 3,
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.pulsatilecharacteristic"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
```


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```
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        }
      },
      "type": "object",
      "required": [
        "characteristic"
      ]
    }
  }
}
```

6.138.5 Property definition

Table 279 defines the Properties that are part of the "oic.r.pulsatilecharacteristic" Resource Type.

Table 279 – The Property definitions of the Resource with type "rt" = "oic.r.pulsatilecharacteristic"

Property name	Value type	Mandatory	Access mode	Description
characteristic	integer	Yes	Read Only	This Property describes the current pulsatile characteristic measurement. The value is an integer bit mapped value. The following describes what each integer means. 0 - Quality of the detected pulse is nominal, in that there are no recognized abnormalities in the detected pulse. 1 - Perfusion or quality of the detected pulse is marginal. 2 - Perfusion or quality of the detected pulse is minimal. 3 - Perfusion or quality of the detected pulse is unacceptable.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	

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6.138.6 CRUDN behaviour

Table 280 defines the CRUDN operations that are supported on the "oic.r.pulsatilecharacteristic" Resource Type.

Table 280 – The CRUDN operations of the Resource with type "rt" = "oic.r.pulsatilecharacteristic"

Create	Read	Update	Delete	Notify
	get			observe

6.139 Pulsatile Occurrence for Pulse Oximeter

6.139.1 Introduction

This Resource describes the Properties associated with a Pulsatile Occurrence detected by a Pulse Oximeter.
The occurrence Property is a read-only value that is provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

6.139.2 Example URI

/PulsatileOccurrenceResURI

6.139.3 Resource type

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

6.139.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Pulsatile Occurrence for Pulse Oximeter",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/PulsatileOccurrenceResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a Pulsatile Occurrence
detected by a Pulse Oximeter.\n The occurrence Property is a read-only value that is provided by the
server.\n When range (from \"oic.r.baseresource\") is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
```

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```
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.pulsatileoccurrence"
              ],
              "occurrence": "BEAT"
            },
            "schema": {
              "$ref": "#/definitions/pulsatileoccurrence"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "pulsatileoccurrence": {
      "properties": {
        "occurrence": {
          "type": "string",
          "readOnly": true,
          "enum": [
            "BEAT",
            "BEAT_MAX_INRUSH",
            "NOS"
          ],
          "description": "This Property describes the Pulsatile Occurrence detected by a Pulse
Oximeter. BEAT - Pulsatile occurrence has occurred. BEAT_MAX_INRUSH - Maximal inrush of the pulsatile
wave has occurred. NOS - No pulsatile event occurred.",
          "default": "NOS"
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.pulsatileoccurrence"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
```


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```
      "type": "object",
      "required": [
        "occurrence"
      ]
    }
  }
}
```

6.139.5 Property definition

Table 281 defines the Properties that are part of the "oic.r.pulsatileoccurrence" Resource Type.

Table 281 – The Property definitions of the Resource with type "rt" = "oic.r.pulsatileoccurrence"

Property name	Value type	Mandatory	Access mode	Description
occurrence	string	Yes	Read Only	This Property describes the Pulsatile Occurrence detected by a Pulse Oximeter. BEAT - Pulsatile occurrence has occurred. BEAT_MAX_INRUSH - Maximal inrush of the pulsatile wave has occurred. NOS - No pulsatile event occurred.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

6.139.6 CRUDN behaviour

Table 282 defines the CRUDN operations that are supported on the "oic.r.pulsatileoccurrence" Resource Type.

Table 282 – The CRUDN operations of the Resource with type "rt" = "oic.r.pulsatileoccurrence"

Create	Read	Update	Delete	Notify
	get			observe

6.140 Pulse Oximeter Atomic Measurement Representation

6.140.1 Introduction

This Resource describes the Properties associated with Pulse Oximeter.
The Resource is an Atomic Measurement of SpO2 ("oic.r.spo2"), pulse rate ("oic.r.pulserate"), pulsatile characteristic ("oic.r.pulsatilecharacteristic"), pulsatileoccurrence ("oic.r.pulsatileoccurrence"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").

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6.140.2 Example URI

/PulseOximeterAMResURI

6.140.3 Resource type

The Resource Type is defined as: "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement".

6.140.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Pulse Oximeter Atomic Measurement Representation",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/
LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/PulseOximeterAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with Pulse Oximeter.\n The
Resource is an Atomic Measurement of SpO2 (\"oic.r.spo2\"), pulse rate (\"oic.r.pulserate\"), pulsatile
characteristic (\"oic.r.pulsatilecharacteristic\"), pulsatileoccurrence
(\"oic.r.pulsatileoccurrence\"), observed time (\"oic.r.time.stamp\"), and user ID
(\"oic.r.userid\").",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/mySpO2",
                "rep": {
                  "spo2": 99.0,
                  "perfusion": 20.0
                }
              },
              {
                "href": "/myPulseRate",
                "rep": {
                  "pulserate": 80
                }
              },
              {
                "href": "/myPulsatileOccurrence",
                "rep": {
                  "occurrence": "BEAT"
                }
              },
              {
                "href": "/myPulsatileCharacteristic",
                "rep": {
                  "characteristic": 1
```


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```
                }
              },
              {
                "href": "/myUserId",
                "rep": {
                  "userid": "USER1"
                }
              },
              {
                "href": "/myTimeStamp",
                "rep": {
                  "timestamp": "2018-11-09T12:15:00+08:00"
                }
              }
            ],
            "schema": {
              "$ref": "#/definitions/batch-retrieve"
            }
          }
        }
      }
    },
    "/PulseOximeterAMResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes the Properties associated with Pulse Oximeter.\n The
Resource is an Atomic Measurement of SpO2 (\"oic.r.spo2\"), pulse rate (\"oic.r.pulserate\"), pulsatile
characteristic (\"oic.r.pulsatilecharacteristic\"), pulsatileoccurrence
(\"oic.r.pulsatileoccurrence\"), observed time (\"oic.r.time.stamp\"), and user ID
(\"oic.r.userid\").",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/mySpO2",
                "rt": [
                  "oic.r.spo2"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myPulseRate",
                "rt": [
                  "oic.r.pulserate"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myPulsatileOccurrence",
                "rt": [
                  "oic.r.pulsatileoccurrence"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myPulsatileCharacteristic",
                "rt": [
                  "oic.r.pulsatilecharacteristic"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
```


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```
            },
            {
              "href": "/myUserId",
              "rt": [
                "oic.r.userid"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myTimeStamp",
              "rt": [
                "oic.r.time.stamp"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            }
          ],
          "schema": {
            "$ref": "#/definitions/links"
          }
        }
      }
    }
  },
  "/PulseOximeterAMResURI?if=oic.if.baseline": {
    "get": {
      "description": "This Resource describes the Properties associated with Pulse Oximeter.\n The
Resource is an Atomic Measurement of SpO2 (\"oic.r.spo2\"), pulse rate (\"oic.r.pulserate\"), pulsatile
characteristic (\"oic.r.pulsatilecharacteristic\"), pulsatileoccurrence
(\"oic.r.pulsatileoccurrence\"), observed time (\"oic.r.time.stamp\"), and user ID
(\"oic.r.userid\").",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example":
            {
              "rt": [
                "oic.r.pulseoximeter-am",
                "oic.wk.atomicmeasurement"
              ],
              "if": [
                "oic.if.b",
                "oic.if.ll",
                "oic.if.baseline"
              ],
              "rts-m": [
                "oic.r.spo2",
                "oic.r.pulserate"
              ],
              "rts": [
                "oic.r.spo2",
                "oic.r.pulserate",
                "oic.r.pulsatileoccurrence",
                "oic.r.pulsatilecharacteristic",
                "oic.r.userid",
                "oic.r.time.stamp"
              ],
              "links": [
                {
                  "href": "/mySpO2",
                  "rt": [
                    "oic.r.spo2"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
```


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```
                },
                {
                  "href": "/myPulseRate",
                  "rt": [
                    "oic.r.pulserate"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myPulsatileOccurrence",
                  "rt": [
                    "oic.r.pulsatileoccurrence"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myPulsatileCharacteristic",
                  "rt": [
                    "oic.r.pulsatilecharacteristic"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myUserId",
                  "rt": [
                    "oic.r.userid"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myTimeStamp",
                  "rt": [
                    "oic.r.time.stamp"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                }
              ]
            },
            "schema": {
              "$ref": "#/definitions/baseline"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.b",
        "oic.if.ll",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "batch-retrieve": {
      "title": "Collection Batch Retrieve Format",
      "minItems": 1,
```


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```
      "items": {
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/SpO2.swagger.json#/definitions/SpO2"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PulseRateResURI.swagger.json#/definitions/P
ulseRate"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PulsatileCharacteristic.swagger.json#/defin
itions/pulsatilecharacteristic"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PulsatileOccurrence.swagger.json#/definitio
ns/pulsatileoccurrence"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/User
ID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/T
imeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "links": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      }
    },
    "baseline": {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.pulseoximeter-am",
              "oic.wk.atomicmeasurement"
            ]
          },
          "minItems": 2,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        },
        "links": {
          "$ref": "#/definitions/links"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
```


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```
schema.json#/definitions/n"
        },
        "rts": {
          "description": "This Property contains all possible Resource Types for this Atomic
Measurement.",
          "items": {
            "enum": [
              "oic.r.spo2",
              "oic.r.pulserate",
              "oic.r.pulsatilecharacteristic",
              "oic.r.pulsatileoccurrence",
              "oic.r.time.stamp",
              "oic.r.userid"
            ]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true
        },
        "rts-m": {
          "description": "This Property contains all mandatory Resource Types for this Atomic
Measurement.",
          "items": {
            "enum": [
              "oic.r.spo2",
              "oic.r.pulserate"
            ]
          },
          "maxItems": 2,
          "minItems": 2,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "rts-m"
      ]
    },
    "oic.oic-link": {
      "properties": {
        "anchor": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "if": {
          "description": "The interface set supported by this resource",
          "items": {
            "enum": [
```


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```
              "oic.if.baseline",
              "oic.if.s",
              "oic.if.r"
            ],
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "ins": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.spo2",
              "oic.r.pulserate",
              "oic.r.pulsatilecharacteristic",
              "oic.r.pulsatileoccurrence",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "title": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```


6.140.5 Property definition

Table 283 defines the Properties that are part of the "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement" Resource Type.

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Table 283 – The Property definitions of the Resource with type "rt" = "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement"

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	No	Read Only	
links	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
rts	array: see schema	No	Read Write	This Property contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This Property contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Write	The interface set supported by this resource
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	The Resource Type.
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

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6.140.6 CRUDN behaviour

Table 284 defines the CRUDN operations that are supported on the "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement" Resource Type.

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