

OCF “Dubai” – Healthcare Data Models – Data Model WG CR 2866

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1.1 Activity Tracker Atomic Measurement Representation

1.1.1 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").

1.1.2 Example URI

/ActivityTrackerAMResURI

1.1.3 Resource type

The Resource Type is defined as: "oic.r.activitytracker-am, oic.wk.atomicmeasurement".

1.1.4 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-b"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myActivity",
                "rep": {
                  "activity": ["sleep"],
                  "steps_day": 1000,
                  "steps_reset": 500,
                  "ccal_day": 3000.0,
                  "ccal_reset": 1500.0
                }
              }
            ],
            "href": "/myHeartRate",
            "rep": {
```

```

        "heartrate": 80
      }
    },
    {
      "href": "/myUserId",
      "rep": {
        "userid": "USER1"
      }
    },
    {
      "href": "/myTimeStamp",
      "rep": {
        "timestamp": "2018-11-09T12:15:00+08:00"
      }
    }
  ],
  "schema": {
    "$ref": "#/definitions/batch-retrieve"
  }
},
},
},
},
"/ActivityTrackerAMResURI?if=oic.if.ll": {
  "get": {
    "description": "This Resource describes the Properties associated with Activity Tracker.\n The Resource is an Atomic Measurement of activity (\`oic.r.activity\`), heart rate (\`oic.r.heartrate\`), observed time (\`oic.r.time.stamp\`), and user ID (\`oic.r.userid\`).",
    "parameters": [
      {
        "$ref": "#/parameters/interface-11"
      }
    ],
    "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-baseline"
      }
    ],
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": [
            "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": {
    "$ref": "#/definitions/baseline"
}
}
}
},
"parameters": {
    "interface-ll": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [
            "oic.if.ll"
        ]
    },
    "interface-b": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [
            "oic.if.b"
        ]
    },
    "interface-baseline": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [
            "oic.if.baseline"
        ]
    }
},
"definitions": {
    "batch-retrieve": {
        "title": "Collection Batch Retrieve Format",
        "minItems": 1,
        "items": {
            "additionalProperties": true,
            "properties": {
                "href": {
                    "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
                },
                "rep": {
                    "type": "object",
                    "anyOf": [
                        {
                            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/Activity.swagger.json#/definitions/Activity"
                        }
                    ]
                }
            }
        }
    }
}
}

```

```

                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/HeartRate.swagger.json#/definitions/HeartRate"
            },
            {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/UserID"
            },
            {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/TimeStamp"
            }
        ]
    },
    "required": [
        "href",
        "rep"
    ],
    "type": "object"
},
"type": "array"
},
"links": {
    "type": "array",
    "items": {
        "$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.",
            "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": {
        "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"
}
}
}

```

1.1.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.activitytracker-am, oic.wk.atomicmeasurement" Resource Type.

Table 1 – The Property definitions of the Resource with type "rt" = "oic.r.activitytracker-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
type	multiple types: see schema	No	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	
href	multiple types: see schema	Yes	Read Write	
rel	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	The Resource Type.
eps	multiple types: see schema	No	Read Write	
anchor	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
di	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.
links	multiple types: see schema	No	Read Write	
id	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.
rt	array: see schema	No	Read Only	
rep	object: see schema	Yes	Read Write	
href	multiple types: see schema	Yes	Read Write	

1.1.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.activitytracker-am, oic.wk.atomicmeasurement" Resource Type.

Table 2 – The CRUDN operations of the Resource with type "rt" = "oic.r.activitytracker-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

1.2 Alarm

1.2.1 Introduction

This Resource describes the Properties associated with alarm status.

1.2.2 Example URI

/AlarmResURI

1.2.3 Resource type

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

1.2.4 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/L
ICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/AlarmResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with alarm status.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [ "oic.r.alarm" ],
              "if": [ "oic.if.rw", "oic.if.baseline"],
              "status": false,
              "duration": 0.0,
              "time": "2018-06-20T14:30Z",
              "alarmtype": "General"
            },
            "schema": {
              "$ref": "#/definitions/Alarm"
            }
          }
        }
      }
    }
  }
}
```

```

    },
    "post": {
      "description": "This Resource describes the Properties associated with alarm status.",
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        },
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/Alarm" },
          "x-example": {
            "status": true,
            "duration": 30.0,
            "time": "2019-01-31T14:30Z"
          }
        }
      ]
    },
    "responses": {
      "200": {
        "description": "",
        "x-example": {
          "rt": [
            "oic.r.alarm"
          ],
          "status": true,
          "duration": 30.0,
          "time": "2019-01-31T14:30Z",
          "alarmtype": "General"
        },
        "schema": {
          "$ref": "#/definitions/Alarm"
        }
      }
    }
  },
  "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": {
    "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"
  ]
}

```

}

1.2.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.alarm" Resource Type.

Table 3 – The Property definitions of the Resource with type "rt" = "oic.r.alarm".

Property name	Value type	Mandatory	Access mode	Description
step	multiple types: see schema	No	Read Write	
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).
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
status	boolean	Yes	Read Write	This Property describes the status of the alarm: true - on, false - off.
alarmtype	string	No	Read Only	The Alarm Type.
id	multiple types: see schema	No	Read Write	
duration	number	No	Read Write	This Property describes the alarm duration (seconds).
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

1.2.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.alarm" Resource Type.

Table 4 – The CRUDN operations of the Resource with type "rt" = "oic.r.alarm".

Create	Read	Update	Delete	Notify
	get	post		observe

1.3 Continuous Glucose Meter (CGM) Atomic Measurement Representation

1.3.1 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").

1.3.2 Example URI

/ContinuousGlucoseMeterAMResURI

1.3.3 Resource type

The Resource Type is defined as: "oic.r.cgm-am, oic.wk.atomicmeasurement".

1.3.4 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/L
ICENSE.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-b"
          }
        ],
        "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": {
    "$ref": "#/definitions/batch-retrieve"
  }
},
}
},
"/ContinuousGlucoseMeterAMResURI?if=oic.if.ll": {
  "get": {
    "description": "This Resource describes the Properties associated with Continuous Glucose
Meter.\n The Resource is an Atomic Measurement of glucose (\\"oic.r.glucose\\"), sensor
(\\"oic.r.cgm.sensor\\"), observed time (\\"oic.r.time.stamp\\"), and user ID (\\"oic.r.userid\\").",
    "parameters": [
      {
        "$ref": "#/parameters/interface-ll"
      }
    ],
    "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-baseline"
      }
    ],
    "responses": {
      "200": {
        "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": {
      "$ref": "#/definitions/baseline"
    }
  }
},
"parameters": {
  "interface-1l": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.1l"
    ]
  },
  "interface-b": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b"
    ]
  },
  "interface-baseline": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "batch-retrieve": {
    "title": "Collection Batch Retrieve Format",
    "minItems": 1,
    "items": {
      "properties": {
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-schema.json#/definitions/href"
        },
        "rep": {
          "type": "object",
          "anyOf": [
            {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseResURI.swagger.json#/definitions/Glucose"
            },
            {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/ContinuousGlucoseMeterSensor.swagger.json#/definitions/ContinuousGlucoseMeterSensor"
            }
          ]
        }
      }
    }
  }
}

```

```

        {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/
UserID"
        },
        {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitio
ns/TimeStamp"
        }
      ]
    },
    "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": {
      "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
    },
    "rts": {
      "description": "This Property contains all possible Resource Types for this Atomic
Measurement.",
      "items": {
        "enum": [
          "oic.r.glucose",
          "oic.r.cgm.sensor",
          "oic.r.time.stamp",
          "oic.r.userid"
        ]
      },
      "minItems": 1,
      "type": "array",
      "uniqueItems": true
    },
    "id": {
      "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
    },
    "rts-m": {
      "description": "This Property contains all mandatory Resource Types for this Atomic

```

```

Measurement.",
  "items": {
    "enum": [
      "oic.r.glucose"
    ]
  },
  "maxItems": 1,
  "minItems": 1,
  "type": "array",
  "readOnly": true,
  "uniqueItems": true
},
"if": {
  "description": "The OCF Interface set supported by this Resource.",
  "items": {
    "enum": [
      "oic.if.baseline",
      "oic.if.ll",
      "oic.if.b"
    ],
    "type": "string"
  },
  "minItems": 1,
  "uniqueItems": true,
  "readOnly": true,
  "type": "array"
}
},
"type": "object",
"required": [
  "rts-m"
]
},
"oic.oic-link": {
  "properties": {
    "anchor": {
      "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
    },
    "di": {
      "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
    },
    "eps": {
      "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
    },
    "href": {
      "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
    },
    "if": {
      "description": "The OCF Interface set supported by this Resource.",
      "items": {
        "enum": [
          "oic.if.baseline",
          "oic.if.s",
          "oic.if.r"
        ],
        "type": "string"
      },
      "minItems": 1,
      "uniqueItems": true,
      "type": "array"
    },
    "ins": {
      "$ref":

```

```

"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
  },
  "p": {
    "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
  },
  "rel": {
    "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
  },
  "rt": {
    "description": "The Resource Type.",
    "items": {
      "enum": [
        "oic.r.glucose",
        "oic.r.cgm.sensor",
        "oic.r.time.stamp",
        "oic.r.userid"
      ],
      "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"
}
}
}

```

1.3.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.cgm-am, oic.wk.atomicmeasurement" Resource Type.

Table 5 – The Property definitions of the Resource with type "rt" = "oic.r.cgm-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
rts-m	array: see schema	Yes	Read Only	This Property contains all mandatory Resource Types for this Atomic Measurement.
id	multiple types: see schema	No	Read Write	

n	multiple types: see schema	No	Read Write	
rt	array: see schema	No	Read Only	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
rts	array: see schema	No	Read Write	This Property contains all possible Resource Types for this Atomic Measurement.
links	multiple types: see schema	No	Read Write	
ins	multiple types: see schema	No	Read Write	
anchor	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
if	array: see schema	Yes	Read Write	The OCF Interface set supported by this Resource.
rel	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	The Resource Type.
di	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
title	multiple types: see schema	No	Read Write	
rep	object: see schema	Yes	Read Write	
href	multiple types: see schema	Yes	Read Write	

1.3.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.cgm-am, oic.wk.atomicmeasurement" Resource Type.

Table 6 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

1.4 Calibrate for Continuous Glucose Meter (CGM)

1.4.1 Introduction

This Resource describes the Properties associated with Calibrate for Continuous Glucose Meter (CGM).

1.4.2 Example URI

/ContinuousGlucoseMeterCalibrateResURI

1.4.3 Resource type

The Resource Type is defined as: "oic.r.cgm.calibrate".

1.4.4 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/L
ICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ContinuousGlucoseMeterCalibrateResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Calibrate for
Continuous Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.calibrate"
              ],
              "Cvalue": 128.0,
              "Cstatus": true
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterCalibrate"
            }
          }
        }
      },
      "post": {
        "description": "This Resource describes the Properties associated with Calibrate for
Continuous Glucose Meter (CGM).",
        "parameters": [
          {

```

```

    "$ref": "#/parameters/interface"
  },
  {
    "name": "body",
    "in": "body",
    "required": true,
    "schema": { "$ref": "#/definitions/ContinuousGlucoseMeterCalibrate" },
    "x-example": {
      "Cvalue": 130.0
    }
  }
],
"responses": {
  "200": {
    "description": "",
    "x-example": {
      "rt": [
        "oic.r.cgm.calibrate"
      ],
      "Cvalue": 130.0
    },
    "schema": {
      "$ref": "#/definitions/ContinuousGlucoseMeterCalibrate"
    }
  }
}
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.rw",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "ContinuousGlucoseMeterCalibrate": {
    "properties": {
      "Cvalue": {
        "description": "This Property describes the Sensor Calibration Value in mg/dL units. This blood glucose measurement using other external glucose meter.",
        "type": "number",
        "minimum": 0,
        "readOnly": false
      },
      "Cstatus": {
        "description": "Sensor calibration required flag",
        "type": "boolean",
        "readOnly": true
      },
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": [
            "oic.r.cgm.calibrate"
          ],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "n": {
        "$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"
  ]
}
}
}
}
}

```

1.4.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.cgm.calibrate" Resource Type.

Table 7 – The Property definitions of the Resource with "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.
precision	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	

if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
rt	array: see schema	No	Read Only	The Resource Type.
range	multiple types: see schema	No	Read Write	
Cstatus	boolean	Yes	Read Only	Sensor calibration required flag

1.4.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.cgm.calibrate" Resource Type.

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

Create	Read	Update	Delete	Notify
	get	post		observe

1.5 Sampling Interval for Continuous Glucose Meter (CGM)

1.5.1 Introduction

This Resource describes the Properties associated with Sampling Interval for Continuous Glucose Meter (CGM).

1.5.2 Example URI

/ContinuousGlucoseMeterSamplingIntervalResURI

1.5.3 Resource type

The Resource Type is defined as: "oic.r.cgm.samplinginterval".

1.5.4 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"
  ],
  "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",

```

```

    "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"
  ]
}
}
}

```

1.5.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.cgm.samplinginterval" Resource Type.

Table 9 – 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.
step	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
rt	array: see schema	No	Read Only	The Resource Type.
if	array: see schema	No	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	
precision	multiple types: see schema	No	Read Write	

1.5.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.cgm.samplinginterval" Resource Type.

Table 10 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.samplinginterval".

Create	Read	Update	Delete	Notify
	get	post		observe

1.6 Sensor for Continuous Glucose Meter (CGM)

1.6.1 Introduction

This Resource describes the Properties associated with Sensor for Continuous Glucose Meter (CGM).

1.6.2 Example URI

/ContinuousGlucoseMeterSensorResURI

1.6.3 Resource type

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

1.6.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sensor 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": {
  "/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"
    ],
    "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"
]
}
}
}

```

1.6.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.cgm.sensor" Resource Type.

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

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
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)
range	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
precision	multiple types: see schema	No	Read Write	
runtime	number	Yes	Read Only	This Property describes the recommended runtime days using CGM
n	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	

1.6.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.cgm.sensor" Resource Type.

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

Create	Read	Update	Delete	Notify
	get			observe

1.7 Status for Continuous Glucose Meter (CGM)

1.7.1 Introduction

This Resource describes the Properties associated with Status for Continuous Glucose Meter (CGM).

1.7.2 Example URI

/ContinuousGlucoseMeterStatusResURI

1.7.3 Resource type

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

1.7.4 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/L
ICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ]
}
```

```

    ],
    "consumes": [
      "application/json"
    ],
    "produces": [
      "application/json"
    ],
    "paths": {
      "/ContinuousGlucoseMeterStatusResURI": {
        "get": {
          "description": "This Resource describes the Properties associated with Status for
Continuous Glucose Meter (CGM).",
          "parameters": [
            {
              "$ref": "#/parameters/interface"
            }
          ],
          "responses": {
            "200": {
              "description": "",
              "x-example": {
                "rt": [
                  "oic.r.cgm.status"
                ],
                "cgmttype": ["Interstitial Fluid"],
                "cgmstatus": "working",
                "gtrend": 100.0,
                "malfunction": false
              },
              "schema": {
                "$ref": "#/definitions/ContinuousGlucoseMeterStatus"
              }
            }
          }
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      }
    },
    "definitions": {
      "ContinuousGlucoseMeterStatus": {
        "properties": {
          "cgmttype": {
            "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": {
      "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"
  ]
}
}
}

```

1.7.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.cgm.status" Resource Type.

Table 13 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.status".

Property name	Value type	Mandatory	Access mode	Description
step	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
rt	array: see schema	No	Read Only	The Resource 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.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
gtrend	number	Yes	Read Only	This Property describes the rate of change in glucose measurements at a time instant.
n	multiple types: see schema	No	Read Write	
malfunction	boolean	Yes	Read Only	This Property describes the sensor malfunction detection check.
precision	multiple types: see schema	No	Read Write	
cgmtype	string	Yes	Read Only	This Property describes the CGM measurement type.

1.7.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.cgm.status" Resource Type.

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

Create	Read	Update	Delete	Notify
	get			observe

1.8 Threshold for Continuous Glucose Meter (CGM)

1.8.1 Introduction

This Resource describes the Properties associated with Threshold for Continuous Glucose Meter (CGM).

1.8.2 Example URI

/ContinuousGlucoseMeterThresholdResURI

1.8.3 Resource type

The Resource Type is defined as: "oic.r.cgm.threshold".

1.8.4 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/LICENCE.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": { "$ref": "#/definitions/ContinuousGlucoseMeterThreshold" },
            "x-example": {
                "plow": 70.0,
                "phigh": 150.0,
                "dhypo": 60.0,
                "dhyper": 90.0,
                "gir": 3.0,
                "gdr": 3.0
            }
        }
    ],
    "responses": {
        "200": {
            "description": "",
            "x-example": {
                "rt": [
                    "oic.r.cgm.threshold"
                ],
                "plow": 70.0,
                "phigh": 150.0,
                "dhypo": 60.0,
                "dhyper": 90.0,
                "gir": 3.0,
                "gdr": 3.0
            },
            "schema": {
                "$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 Decrease rate of change threshold
(%)",
    "type": "number",
    "minimum": 0.0,
    "readOnly": false
  },
  "rt": {
    "description": "The Resource Type.",
    "items": {
      "enum": [
        "oic.r.cgm.threshold"
      ],
      "type": "string"
    },
    "minItems": 1,
    "uniqueItems": true,
    "readOnly": true,
    "type": "array"
  },
  "n": {
    "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
  },
  "if": {
    "description": "The OCF Interface set supported by this Resource.",
    "items": {
      "enum": [
        "oic.if.rw",
        "oic.if.baseline"
      ],
      "type": "string"
    },
    "minItems": 1,
    "uniqueItems": true,
    "readOnly": true,
    "type": "array"
  },
  "range": {
    "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
  },
  "step": {
    "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
  }

```

```

    },
    "precision": {
      "$ref":
        "https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
        schema.json#/definitions/precision"
    }
  },
  "type": "object",
  "required": [
    "plow",
    "phigh",
    "dhypo",
    "dhyper",
    "gir",
    "gdr"
  ]
}
}
}

```

1.8.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.cgm.threshold" Resource Type.

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

Property name	Value type	Mandatory	Access mode	Description
phigh	number	Yes	Read Write	This Property describes the Patient high threshold (mg/dL)
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
rt	array: see schema	No	Read Only	The Resource Type.
gdr	number	Yes	Read Write	This Property describes the Glucose Decrease rate of change threshold (%)
precision	multiple types: see schema	No	Read Write	
dhyper	number	Yes	Read Write	This Property describes the Device hyperglycemia threshold (mg/dL)
n	multiple types: see schema	No	Read Write	
dhypo	number	Yes	Read Write	This Property describes the Device hypoglycemia threshold (mg/dL)

gir	number	Yes	Read Write	This Property describes the Glucose Increase rate of change threshold (%)
range	multiple types: see schema	No	Read Write	
plow	number	Yes	Read Write	This Property describes the Patient low threshold (mg/dL)
step	multiple types: see schema	No	Read Write	

1.8.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.cgm.threshold" Resource Type.

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

Create	Read	Update	Delete	Notify
	get	post		observe

1.9 Heart Rate

1.9.1 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.

1.9.2 Example URI

/HeartRateResURI

1.9.3 Resource type

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

1.9.4 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"
    ]
  }
},
"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": {

```


1.10 Heart Rate Monitor Atomic Measurement Representation

1.10.1 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").

1.10.2 Example URI

/HeartRateMonitorAMResURI

1.10.3 Resource type

The Resource Type is defined as: "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement".

1.10.4 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/L
ICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/HeartRateMonitorAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with Heart Rate
Monitor.\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-b"
          }
        ],
        "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-ll"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": [
            {
              "href": "/myHeartrate",
              "rt": [
                "oic.r.heartrate"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myUserId",
              "rt": [
                "oic.r.userid"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myTimeStamp",
              "rt": [
                "oic.r.time.stamp"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            }
          ],
          "schema": {
            "$ref": "#/definitions/links"
          }
        }
      }
    }
  },
  "/HeartRateMonitorAMResURI?if=oic.if.baseline": {
    "get": {
      "description": "This Resource describes the Properties associated with Heart Rate Monitor.\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": [

```

```

    {
      "$ref": "#/parameters/interface-baseline"
    }
  ],
  "responses": {
    "200": {
      "description": "",
      "x-example": {
        "rt": [
          "oic.r.heartratemonitor-am",
          "oic.wk.atomicmeasurement"
        ],
        "if": [
          "oic.if.b",
          "oic.if.ll",
          "oic.if.baseline"
        ],
        "rts-m": [
          "oic.r.heartrate"
        ],
        "rts": [
          "oic.r.heartrate",
          "oic.r.userid",
          "oic.r.time.stamp"
        ],
        "links": [
          {
            "href": "/myHeartRateMonitor",
            "rt": [
              "oic.r.heartrate"
            ],
            "if": [
              "oic.if.s",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myUserId",
            "rt": [
              "oic.r.userid"
            ],
            "if": [
              "oic.if.r",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myTimeStamp",
            "rt": [
              "oic.r.time.stamp"
            ],
            "if": [
              "oic.if.r",
              "oic.if.baseline"
            ]
          }
        ]
      }
    }
  },
  "schema": {
    "$ref": "#/definitions/baseline"
  }
}
}
}
},
"parameters": {
  "interface-ll": {
    "in": "query",
    "name": "if",

```

```

    "type": "string",
    "enum": [
      "oic.if.ll"
    ]
  },
  "interface-b": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b"
    ]
  },
  "interface-baseline": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.baseline"
    ]
  }
},
"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/HeartRate"
            },
            {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/UserID"
            },
            {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/TimeStamp"
            }
          ]
        }
      }
    },
    "required": [
      "href",
      "rep"
    ],
    "type": "object"
  },
  "type": "array"
},
"links": {
  "type": "array",
  "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": {
  "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"
}
}
}

```

1.10.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement" Resource Type.

Table 19 – The Property definitions of the Resource with type "rt" = "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
rep	object: see schema	Yes	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
rel	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
anchor	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	The Resource Type.
eps	multiple types: see schema	No	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interface set supported by this Resource.
rts-m	array: see schema	Yes	Read Only	This Property contains all mandatory Resource Types for this Atomic Measurement.

links	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.
rt	array: see schema	No	Read Only	
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

1.10.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement" Resource Type.

Table 20 – The CRUDN operations of the Resource with type "rt" = "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

1.11 Pulsatile Characteristic for Pulse Oximeter

1.11.1 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.

1.11.2 Example URI

/PulsatileCharacteristicResURI

1.11.3 Resource type

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

1.11.4 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": [
        {
          "$ref": "#/parameters/interface"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": [
              "oic.r.pulsatilecharacteristic"
            ],
            "characteristic": 1
          },
          "schema": {
            "$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,

```


					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.
if	array: schema	see	No	Read Only	The OCF Interface set supported by this Resource.

1.11.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.pulsatilecharacteristic" Resource Type.

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

Create	Read	Update	Delete	Notify
	get			observe

1.12 Pulsatile Occurrence for Pulse Oximeter

1.12.1 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.

1.12.2 Example URI

/PulsatileOccurrenceResURI

1.12.3 Resource type

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

1.12.4 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": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.pulsatileoccurrence"
              ],
              "occurrence": "BEAT"
            },
            "schema": {
              "$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"
  }
},
"type": "object",
"required": [
  "occurrence"
]
}
}
}

```

1.12.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.pulsatileoccurrence" Resource Type.

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

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

1.12.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.pulsatileoccurrence" Resource Type.

Table 24 – The CRUDN operations of the Resource with type "rt" = "oic.r.pulsatileoccurrence".

Create	Read	Update	Delete	Notify
	get			observe

1.13 Pulse Oximeter Atomic Measurement Representation

1.13.1 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").

1.13.2 Example URI

/PulseOximeterAMResURI

1.13.3 Resource type

The Resource Type is defined as: "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement".

1.13.4 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": [
        {
          "$ref": "#/parameters/interface-b"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": [
            {
              "href": "/mySpO2",
              "rep": {
                "spo2": 99.0,
                "perfusion": 20.0
              }
            },
            {
              "href": "/myPulseRate",
              "rep": {
                "pulserate": 80
              }
            },
            {
              "href": "/myPulsatileOccurrence",
              "rep": {
                "occurrence": "BEAT"
              }
            },
            {
              "href": "/myPulsatileCharacteristic",
              "rep": {
                "characteristic": 1
              }
            },
            {
              "href": "/myUserId",
              "rep": {
                "userid": "USER1"
              }
            },
            {
              "href": "/myTimeStamp",
              "rep": {
                "timestamp": "2018-11-09T12:15:00+08:00"
              }
            }
          ],
          "schema": {
            "$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": [
        {

```



```

    "$ref": "#/parameters/interface-11"
  }
],
"responses": {
  "200": {
    "description": "",
    "x-example": [
      {
        "href": "/mySpO2",
        "rt": [
          "oic.r.spo2"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myPulseRate",
        "rt": [
          "oic.r.pulserate"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myPulsatileOccurrence",
        "rt": [
          "oic.r.pulsatileoccurrence"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myPulsatileCharacteristic",
        "rt": [
          "oic.r.pulsatilecharacteristic"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myUserId",
        "rt": [
          "oic.r.userid"
        ],
        "if": [
          "oic.if.r",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myTimeStamp",
        "rt": [
          "oic.r.time.stamp"
        ],
        "if": [
          "oic.if.r",
          "oic.if.baseline"
        ]
      }
    ],
    "schema": {
      "$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-baseline"
      }
    ],
    "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"
              ]
            },
            {
              "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-11": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.11"
    ]
  },
  "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": {
  "batch-retrieve": {
    "title": "Collection Batch Retrieve Format",

```

```

    "minItems": 1,
    "items": {
      "additionalProperties": true,
      "properties": {
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "rep": {
          "type": "object",
          "anyOf": [
            {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/SpO2.swagger.json#/definitions/SpO2"
            },
            {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PulseRateResURI.swagger.json#/definitio
ns/PulseRate"
            },
            {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PulsatileCharacteristic.swagger.json#/d
efinitions/pulsatilecharacteristic"
            },
            {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PulsatileOccurrence.swagger.json#/defin
itions/pulsatileoccurrence"
            },
            {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/
UserID"
            },
            {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitio
ns/TimeStamp"
            }
          ]
        }
      },
      "required": [
        "href",
        "rep"
      ],
      "type": "object"
    },
    "type": "array"
  },
  "links": {
    "type": "array",
    "items": {
      "$ref": "#/definitions/oic.oic-link"
    }
  },
  "baseline": {
    "properties": {
      "rt": {
        "items": {
          "enum": [
            "oic.r.pulseoximeter-am",
            "oic.wk.atomicmeasurement"
          ]
        },
        "minItems": 2,
        "type": "array",
        "uniqueItems": true,
        "readOnly": true
      }
    }
  }
}

```

```

    },
    "links": {
      "$ref": "#/definitions/links"
    },
    "n": {
      "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
    },
    "rts": {
      "description": "This Property contains all possible Resource Types for this Atomic
Measurement.",
      "items": {
        "enum": [
          "oic.r.spo2",
          "oic.r.pulserate",
          "oic.r.pulsatilecharacteristic",
          "oic.r.pulsatileoccurrence",
          "oic.r.time.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": [
        "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"
}
}
}

```

1.13.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement" Resource Type.

Table 25 – 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	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
rt	array: see schema	No	Read Only	
n	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.
links	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.
if	array: see schema	Yes	Read Write	The interface set supported by this resource
anchor	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
ins	multiple types: see schema	No	Read Write	

rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
rt	array: see schema	Yes	Read Only	The Resource Type.

1.13.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement" Resource Type.

Table 26 – The CRUDN operations of the Resource with type "rt" = "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

1.14 Sleep

1.14.1 Introduction

This Resource describes the Properties associated with Sleep. Sleep shows the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep score indicating the quality of sleep.

1.14.2 Example URI

/SleepResURI

1.14.3 Resource type

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

1.14.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sleep",
    "version": "2018-07-12",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbc8bdc4ba/L
ICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/SleepResURI": {
      "get": {
```


"description": "This Resource describes the Properties associated with Sleep.\nSleep shows the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep score indicating the quality of sleep.",

```
"parameters": [
  {
    "$ref": "#/parameters/interface"
  }
],
"responses": {
  "200": {
    "description": "Retrieves the sleep information.",
    "x-example": {
      "rt": [
        "oic.r.sleep"
      ],
      "if": [
        "oic.if.s",
        "oic.if.baseline"
      ],
      "awake": 1440,
      "nrem1": 1440,
      "nrem2": 14400,
      "nrem3": 1440,
      "nrem4": 4320,
      "rem": 5760,
      "lightsleep": 15840,
      "deepsleep": 5760,
      "sleepscore": 70.0
    },
    "schema": {
      "$ref": "#/definitions/Sleep"
    }
  }
}
}
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "Sleep": {
    "properties": {
      "awake": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Awake stage (in seconds)"
      },
      "nrem1": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Non Rapid Eye Movement stage 1 (in seconds)"
      },
      "nrem2": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Non Rapid Eye Movement stage 2 (in seconds)"
      },
      "nrem3": {
        "type": "integer",

```

```

    "minimum": 0,
    "readOnly": true,
    "description": "Time spent in Non Rapid Eye Movement stage 3 (in seconds)"
  },
  "nrem4": {
    "type": "integer",
    "minimum": 0,
    "readOnly": true,
    "description": "Time spent in Non Rapid Eye Movement stage 4 (in seconds)"
  },
  "rem": {
    "type": "integer",
    "minimum": 0,
    "readOnly": true,
    "description": "Time spent in Rapid Eye Movement (in seconds)"
  },
  "lightsleep": {
    "type": "integer",
    "minimum": 0,
    "readOnly": true,
    "description": "Time spent in Light Sleep stage, consisting in NREM stages 1 and 2 (in
seconds)"
  },
  "deepsleep": {
    "type": "integer",
    "minimum": 0,
    "readOnly": true,
    "description": "Time spent in Deep Sleep stage, consisting in NREM stages 3 and 4 (in
seconds)"
  },
  "sleepscore": {
    "type": "number",
    "minimum": 0,
    "readOnly": true,
    "description": "Score computed from the time spent in each sleep stage, indicative of the
quality of sleep"
  },
  "if": {
    "description": "The Interface set supported by this Resource",
    "type": "array",
    "minItems": 1,
    "uniqueItems": true,
    "readOnly": true,
    "items": {
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "rt": {
    "description": "Resource Type",
    "type": "array",
    "minItems": 1,
    "uniqueItems": true,
    "readOnly": true,
    "items": {
      "type": "string",
      "enum": [
        "oic.r.sleep"
      ]
    }
  },
  "n": {
    "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
  },
  "range_phases": {
    "$ref":

```


rt	array: see schema	No	Read Only	Resource Type
deepsleep	integer	No	Read Only	Time spent in Deep Sleep stage, consisting in NREM stages 3 and 4 (in seconds)
rem	integer	Yes	Read Only	Time spent in Rapid Eye Movement (in seconds)
nrem3	integer	Yes	Read Only	Time spent in Non Rapid Eye Movement stage 3 (in seconds)
range_phases	multiple types: see schema	No	Read Write	
step_score	multiple types: see schema	No	Read Write	
nrem2	integer	Yes	Read Only	Time spent in Non Rapid Eye Movement stage 2 (in seconds)
precision	multiple types: see schema	No	Read Write	
lightsleep	integer	No	Read Only	Time spent in Light Sleep stage, consisting in NREM stages 1 and 2 (in seconds)
step_phases	multiple types: see schema	No	Read Write	
nrem1	integer	Yes	Read Only	Time spent in Non Rapid Eye Movement stage 1 (in seconds)

1.14.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.sleep" Resource Type.

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

Create	Read	Update	Delete	Notify
	get			observe

1.15 Sleep Monitor Atomic Measurement Batch Representation

1.15.1 Introduction

This Resource describes the Properties associated with Sleep Monitor. The Resource is an Atomic Measurement of sleep (oic.r.sleep).

Sleep shows the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep score indicating the quality of sleep.

1.15.2 Example URI

/SleepMonitorAMResURI

1.15.3 Resource type

The Resource Type is defined as: "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement".

1.15.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sleep Monitor Atomic Measurement Batch Representation",
    "version": "2018-07-12",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/L
ICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/SleepMonitorAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with Sleep Monitor.\n\nThe
Resource is an Atomic Measurement of sleep (oic.r.sleep).\n\nSleep shows the time spent in each of
the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a
sleep score indicating the quality of sleep.",
        "parameters": [
          {
            "$ref": "#/parameters/interface-b"
          }
        ],
        "responses": {
          "200": {
            "description": "Retrieves the sleep monitor's information.",
            "x-example": [
              {
                "href": "/mySleepMonitor",
                "rep": {
                  "awake": 1440,
                  "nrem1": 1440,
                  "nrem2": 14400,
                  "nrem3": 1440,
                  "nrem4": 4320,
                  "rem": 5760,
                  "lightsleep": 15840,
                  "deepsleep": 5760,
                  "sleepscore": 70.0
                }
              }
            ],
            "x-links": [
              {
                "href": "/myHeartRate",
                "rep": {
                  "heartrate": 70
                }
              }
            ],
            "x-headers": [
              {
                "href": "/myUserId",
```

```

        "rep": {
          "userid": "USER1"
        }
      },
      {
        "href": "/myTimeStamp",
        "rep": {
          "timestamp": "2018-11-08T21:00:00+08:00"
        }
      }
    ],
    "schema": {
      "$ref": "#/definitions/batch-retrieve"
    }
  }
},
"/SleepMonitorAMResURI?if=oic.if.ll": {
  "get": {
    "description": "This Resource describes the Properties associated with Sleep Monitor.\nThe Resource is an Atomic Measurement of sleep (oic.r.sleep).\nSleep shows the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep score indicating the quality of sleep.",
    "parameters": [
      {
        "$ref": "#/parameters/interface-ll"
      }
    ],
    "responses": {
      "200": {
        "description": "Retrieves the sleep monitor's information.",
        "x-example": [
          {
            "href": "/mySleepMonitor",
            "rt": [
              "oic.r.sleep"
            ],
            "if": [
              "oic.if.s",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myHeartRate",
            "rt": [
              "oic.r.heartrate"
            ],
            "if": [
              "oic.if.s",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myUserId",
            "rt": [
              "oic.r.userid"
            ],
            "if": [
              "oic.if.r",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myTimeStamp",
            "rt": [
              "oic.r.time.stamp"
            ],
            "if": [
              "oic.if.r",
              "oic.if.baseline"
            ]
          }
        ]
      }
    }
  }
}

```

```

    ]
  },
  "schema": {
    "$ref": "#/definitions/links"
  }
},
},
},
},
"/SleepMonitorAMResURI?if=oic.if.baseline": {
  "get": {
    "description": "This Resource describes the Properties associated with Sleep Monitor.\nThe Resource is an Atomic Measurement of sleep (oic.r.sleep).\nSleep shows the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep score indicating the quality of sleep.",
    "parameters": [
      {
        "$ref": "#/parameters/interface-baseline"
      }
    ],
    "responses": {
      "200": {
        "description": "Retrieves the sleep monitor's information.",
        "x-example": {
          "rt": [
            "oic.r.sleepmonitor-am",
            "oic.wk.atomicmeasurement"
          ],
          "if": [
            "oic.if.b",
            "oic.if.ll",
            "oic.if.baseline"
          ],
          "rts-m": [
            "oic.r.sleep"
          ],
          "rts": [
            "oic.r.sleep",
            "oic.r.heartrate",
            "oic.r.time.stamp",
            "oic.r.userid"
          ],
          "links": [
            {
              "href": "/mySleepMonitor",
              "rt": [
                "oic.r.sleep"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myHeartRate",
              "rt": [
                "oic.r.heartrate"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myUserId",
              "rt": [
                "oic.r.userid"
              ],
              "if": [

```

```

        "oic.if.r",
        "oic.if.baseline"
    ]
},
{
    "href": "/myTimeStamp",
    "rt": [
        "oic.r.time.stamp"
    ],
    "if": [
        "oic.if.r",
        "oic.if.baseline"
    ]
}
]
},
{
    "schema": {
        "$ref": "#/definitions/baseline"
    }
}
}
},
"parameters": {
    "interface-ll": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [
            "oic.if.ll"
        ]
    },
    "interface-b": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [
            "oic.if.b"
        ]
    },
    "interface-baseline": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [
            "oic.if.baseline"
        ]
    },
    "interface-all": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [
            "oic.if.b",
            "oic.if.ll",
            "oic.if.baseline"
        ]
    }
},
"definitions": {
    "batch-retrieve": {
        "title": "Atomic Measurement Batch Retrieve Format",
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "items": {
            "properties": {
                "href": {
                    "$ref":

```

"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-


```

schema.json#/definitions/href"
    },
    "rep": {
      "description": "The response payload from an Atomic Measurement (batch) resource",
      "type": "object",
      "items": {
        "anyOf": [
          {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/Sleep.swagger.json#/definitions/Sleep"
          },
          {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/HeartRate.swagger.json#/definitions/HeartRate"
          },
          {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/UserID"
          },
          {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definitions/TimeStamp"
          }
        ]
      }
    },
    "required": [
      "href",
      "rep"
    ],
    "type": "object"
  },
  "type": "array"
},
"links": {
  "type": "array",
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  }
},
"baseline": {
  "properties": {
    "rt": {
      "type": "array",
      "readOnly": true,
      "uniqueItems": true,
      "minItems": 2,
      "items": {
        "type": "string",
        "enum": [
          "oic.r.sleepmonitor-am",
          "oic.wk.atomicmeasurement"
        ]
      }
    }
  }
},
"rts": {
  "description": "This contains all possible resource types for this atomic measurement.",
  "type": "array",
  "uniqueItems": true,
  "minItems": 1,
  "readOnly": true,
  "items": {
    "type": "string",
    "enum": [
      "oic.r.sleep",
      "oic.r.heartrate",
      "oic.r.userid",

```

```

        "oic.r.time.stamp"
    ]
}
},
"rts-m": {
    "description": "This contains all mandatory resource types for this atomic measurement.",
    "type": "array",
    "uniqueItems": true,
    "minItems": 1,
    "maxItems": 1,
    "readOnly": true,
    "items": {
        "type": "string",
        "enum": [
            "oic.r.sleep"
        ]
    }
},
"if": {
    "description": "The interface set supported by this resource",
    "type": "array",
    "readOnly": true,
    "minItems": 3,
    "uniqueItems": true,
    "items": {
        "type": "string",
        "enum": [
            "oic.if.b",
            "oic.if.ll",
            "oic.if.baseline"
        ]
    }
},
},
"links": {
    "$ref": "#/definitions/links"
},
},
"n": {
    "$ref":
    "https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
    schema.json#/definitions/n"
},
},
"type": "object",
"required": [
    "rt",
    "if",
    "rts-m"
]
},
"oic.oic-link": {
    "properties": {
        "if": {
            "type": "array",
            "readOnly": true,
            "uniqueItems": true,
            "minItems": 1,
            "items": {
                "type": "string",
                "enum": [
                    "oic.if.baseline",
                    "oic.if.s",
                    "oic.if.r"
                ]
            }
        }
    }
},
},
"rt": {
    "type": "array",
    "readOnly": true,
    "uniqueItems": true,
    "minItems": 1,
    "items": {

```

```

        "type": "string",
        "enum": [
            "oic.r.sleep",
            "oic.r.heartrate",
            "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"
}
}
}

```

1.15.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement" Resource Type.

Table 29 – The Property definitions of the Resource with type "rt" = "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
if	array: see schema	Yes	Read Only	
p	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
ins	multiple types: see schema	No	Read Write	
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	
href	multiple types: see schema	Yes	Read Write	
title	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	
links	multiple types: see schema	No	Read Write	
rts	array: see schema	No	Read Only	This contains all possible resource types for this atomic measurement.
if	array: see schema	Yes	Read Only	The interface set supported by this resource
n	multiple types: see schema	No	Read Write	
rts-m	array: see schema	Yes	Read Only	This contains all mandatory resource types for this atomic measurement.
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	The response payload from an Atomic Measurement (batch) resource

1.15.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement" Resource Type.

Table 30 – The CRUDN operations of the Resource with type "rt" = "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

1.16 SpO2 for Pulse Oximeter

1.16.1 Introduction

This Resource describes the Properties associated with a person's blood oxygen saturation level.

The spo2 and perfusion Properties are read-only value that is provided by the server. When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

1.16.2 Example URI

/SpO2ResURI

1.16.3 Resource type

The Resource Type is defined as: "oic.r.spo2".

1.16.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "SpO2 for Pulse Oximeter",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/L
ICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/SpO2ResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's blood
oxygen saturation level.\n The spo2 and perfusion Properties are 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.spo2"
        ],
        "spo2": 99.0,
        "perfusion": 20.0
    },
    "schema": {
        "$ref": "#/definitions/SpO2"
    }
}
}
},
"parameters": {
    "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [
            "oic.if.s",
            "oic.if.baseline"
        ]
    }
},
"definitions": {
    "SpO2": {
        "properties": {
            "spo2": {
                "description": "This Property describes the estimation of the oxygen saturation level in
percentage.",
                "type": "number",
                "minimum": 0.0,
                "maximum": 100.0,
                "readOnly": true
            },
            "perfusion": {
                "description": "This Property describes the ratio of AC over DC of PPG.",
                "type": "number",
                "minimum": 0.0,
                "readOnly": true
            },
            "rt": {
                "description": "The Resource Type.",
                "items": {
                    "enum": [
                        "oic.r.spo2"
                    ],
                    "type": "string"
                },
                "minItems": 1,
                "uniqueItems": true,
                "readOnly": true,
                "type": "array"
            },
            "n": {
                "$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"
    },
    "spo2_range": {
        "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
    },
    "perfusion_range": {
        "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
    },
    "spo2_step": {
        "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
    },
    "perfusion_step": {
        "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
    },
    "spo2_precision": {
        "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
    },
    "perfusion_precision": {
        "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
    }
    },
    "type": "object",
    "required": [
        "spo2"
    ]
}
}
}

```

1.16.5 Property definition

<Table Reference Here> defines the Properties that are part of the "oic.r.spo2" Resource Type.

Table 31 – The Property definitions of the Resource with type "rt" = "oic.r.spo2".

Property name	Value type	Mandatory	Access mode	Description
spo2_range	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
perfusion_range	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
spo2_precision	multiple types: see schema	No	Read Write	
rt	array: see schema	No	Read Only	The Resource Type.
spo2	number	Yes	Read Only	This Property describes the estimation of the

				oxygen saturation level in percentage.
perfusion	number	No	Read Only	This Property describes the ratio of AC over DC of PPG.
perfusion_step	multiple types: see schema	No	Read Write	
spo2_step	multiple types: see schema	No	Read Write	
perfusion_precision	multiple types: see schema	No	Read Write	

1.16.6 CRUDN behaviour

<Table Reference Here> defines the CRUDN operations that are supported on the "oic.r.spo2" Resource Type.

Table 32 – The CRUDN operations of the Resource with type "rt" = "oic.r.spo2".

Create	Read	Update	Delete	Notify
	get			observe