OCF 2.3 – New Resources for OneM2M Equivalency – DMWG

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1.1 Impact Sensor

1.1.1 Introduction

This resource provides a status and properties of an impact sensor. Included is the current status (boolean), horizontal and vertical direction (in degrees) and impact level (g force).

1.1.2 Example URI

/ImpactSensorResURI

1.1.3 Resource type

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

1.1.4 Swagger 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Impact Sensor",
    "version": "v1.1.0-2018",
    "license": {
      "name": "copyright 2018 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
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ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ImpactSensorResURI" : {
      "get": {
        "description": "This resource provides a status and properties of an impact sensor.
Included is the current status (boolean), horizontal and vertical direction (in degrees) and impact
level (g force).\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Success path response for the Resource",
              "x-example":
                {
                  "rt":     ["oic.r.impactsensor"],
                  "id":     "unique_example_id",
                  "impactstatus":  true,
                  "impactlevel":   2.25,
                  "impactdirectionhorizontal": 120.0,
                  "impactdirectionvertical":   240.0
                },
```

```
              "schema": { "$ref": "#/definitions/ImpactSensor" }
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.r.baseline"]
    }
  },
  "definitions": {
    "ImpactSensor": {
      "properties": {
        "rt" :  {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.impactsensor"]
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "n" :  {
          "description": "Friendly name of the resource",
          "maxLength": 64,
          "readOnly": true,
          "type": "string"
        },
        "id" :  {
          "description": "Instance ID of this specific resource",
          "maxLength": 64,
          "readOnly": true,
          "type": "string"
        },
        "impactstatus": {
          "type": "boolean",
          "readOnly": true,
          "description": "The impactStatus indicates as follows: (True) A physical impact is
detected / (False) Normal status, an impact is not detected."
        },
        "impactlevel": {
          "type": "number",
          "readOnly": true,
          "description": "The impactlevel provides the level of impact which unit is \"G\" (G-
force)."
        },
        "impactdirectionhorizontal": {
          "type": "number",
          "readOnly": true,
          "description": "The impactdirectionhorizontal shows a horizontal direction where the
impact comes from. The value is 0Â° to 360Â°. 0 is the front of the sensor and clockwise
increment.",
          "minimum": 0,
          "maximum": 360
        },
        "impactdirectionvertical": {
          "type": "number",
          "readOnly": true,
          "description": "The impactdirectionvertical shows a vertical direction where the impact
```

```
comes from. The value is 0Â° to 360Â°. 0 is the front of the sensor and upward increment.",
          "minimum": 0,
          "maximum": 360
        },
        "if" :  {
          "description": "The interface set supported by this resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": [ "impactstatus" ]
    }
  }
}
```

1.1.5 Property definition

Table 1The properties definitions of the resource with type 'rt' = ImpactSensorResURI

Property name	Value type	Mandatory	Access mode	Description
impactdirectionhorizontal	number	No	Read Only	The impactdirectionhorizontal shows a horizontal direction where the impact comes from. The value is 0Â° to 360Â°. 0 is the front of the sensor and clockwise increment.
rt	array: see schema	No	Read Only	Resource Type
if	array: see schema	No	Read Only	The interface set supported by this resource
n	string	No	Read Only	Friendly name of the resource
impactlevel	number	No	Read Only	The impactlevel provides the level of impact which unit is "G" (G-force).
id	string	No	Read Only	Instance ID of this specific resource

impactstatus	boolean	Yes	Read Only	The impactStatus indicates as follows: (True) A physical impact is detected / (False) Normal status, an impact is not detected.
impactdirectionvertical	number	No	Read Only	The impactdirectionvertical shows a vertical direction where the impact comes from. The value is 0Â° to 360Â°. 0 is the front of the sensor and upward increment.

1.1.6 CRUDN behaviour

Table 2The CRUDN operations of the resource with type 'rt' = ImpactSensorResURI

Resource	Create	Read	Update	Delete	Notify
/ImpactSensorResURI		get			observe

1.2 Keypad Char

1.2.1 Introduction

This resource describes a char (0-9,*,#) which is selected on a number keypad.

1.2.2 Example URI

/KeyPadCharResURI

1.2.3 Resource type

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

1.2.4 Swagger 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "KeyPadChar",
    "version": "v1.1.0-2018",
    "license": {
      "name": "copyright 2018 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
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```

```
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/KeyPadCharResURI" : {
      "get": {
        "description": "This resource describes a char (0-9,*,#) which is selected on a number
keypad.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Success path response for the Resource",
              "x-example":
                {
                  "rt":     ["oic.r.keypadchar"],
                  "id":     "unique_example_id",
                  "keyvalue":  "7"
                },
              "schema": { "$ref": "#/definitions/KeyPadChar" }
            }
        }
      },
      "post": {
        "description": "This resource describes a char (0-9, *, #) which is selected on a number
keypad.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/KeyPadChar" },
            "x-example":
              {
                "keyvalue": "4"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "keyvalue": "4"
                }
                ,
              "schema": { "$ref": "#/definitions/KeyPadChar" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
    }
  },
```

```
  "definitions": {
    "KeyPadChar" : {
      "properties": {
        "rt" :  {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.keypadchar"]
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "n" :  {
          "description": "Friendly name of the resource",
          "maxLength": 64,
          "readOnly": true,
          "type": "string"
        },
        "id" :  {
          "description": "Instance ID of this specific resource",
          "maxLength": 64,
          "readOnly": true,
          "type": "string"
        },
        "keyvalue":  {
          "type" : "string",
          "enum": [
             "0",
             "1",
             "2",
             "3",
             "4",
             "5",
             "6",
             "7",
             "8",
             "9",
             "*",
             "#"
           ],
          "description": "The value of the key pad char."
        },
        "if" :  {
          "description": "The interface set supported by this resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.rw"
            ],
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["keyvalue"]
    }
  }
}
```

1.2.5 Property definition

Table 3The properties definitions of the resource with type 'rt' = KeyPadCharResURI

Property name	Value type	Mandatory	Access mode	Description
if	array: see schema	No	Read Only	The interface set supported by this resource
keyvalue	string	Yes	Read Write	The value of the key pad char.
rt	array: see schema	No	Read Only	Resource Type
n	string	No	Read Only	Friendly name of the resource
id	string	No	Read Only	Instance ID of this specific resource

1.2.6 CRUDN behaviour

Table 4The CRUDN operations of the resource with type 'rt' = KeyPadCharResURI

Resource	Create	Read	Update	Delete	Notify
/KeyPadCharResURI		get	post		observe

1.3 Opaque Data

1.3.1 Introduction

This resource defines opaque data that can be transferred between endpoints where the data itself is not interpretable by the OCF endpoints.
The stringdata is a string of ASCII characters.

1.3.2 Example URI

/OpaqueDataResURI

1.3.3 Resource type

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

1.3.4 Swagger 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Opaque Data",
    "version": "v1.1.0-20181205",
    "license": {
      "name": "copyright 2018 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
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OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/OpaqueDataResURI" : {
      "get": {
        "description": "This resource defines opaque data that can be transfered between endpoints
where the data itself is not interpretable by the OCF endpoints.\nThe stringdata is a string of
ASCII characters.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":          ["oic.r.opaquedata"],
                  "id":          "unique_example_id",
                  "payload":     "asdf0123",
                  "payloadtype": "switch-get",
                  "encoding":    "base64",
                  "size":        8,
                  "hash":        "A1A1",
                  "system":      "foreign system"
                },
              "schema": { "$ref": "#/definitions/OpaqueData" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/OpaqueData" },
            "x-example":
              {
                "payload":     "asdf0123",
                "payloadtype": "switch-get",
                "encoding":    "base64",
                "size":        8,
                "hash":        "A1A1",
                "system":      "foreign system"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
```

```
                {
                  "payload":     "asdf0123",
                  "payloadtype": "switch-get",
                  "encoding":    "base64",
                  "size":        8,
                  "hash":        "A1A1",
                  "system":      "foreign system"
                }
                ,
              "schema": { "$ref": "#/definitions/OpaqueData" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "OpaqueData" : {
      "properties": {
        "rt" : {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "n" :
                {
          "description": "Friendly name of the resource",
          "maxLength": 64,
          "readOnly": true,
          "type": "string"
        },
        "id" :  {
          "description": "Instance ID of this specific resource",
          "maxLength": 64,
          "readOnly": true,
          "type": "string"
        },
        "payload": {
          "type": "string",
          "description": "This property contains the opaque data."
        },
        "encoding": {
          "type": "string",
          "description": "This property describes the encoding of the payload, e.g. binary as
base64, json, xml, utf-8"
        },
        "payloadtype": {
          "type": "string",
          "description": "This property describes the identification of the payload, e.g. what the
payload is representing ."
        },
        "size": {
          "type": "integer",
```

```
          "description": "The size in bytes of the decoded binary object."
        },
        "hash": {
          "type": "string",
          "description": "The hash code of the blob. If present, it is used to check the decoded
content of the object data point for integrity. The algorithm used for generating the hash value is
SHA-2 [15]. The data point contains the hash as a hex encoded value."
        },
        "system": {
          "type": "string",
          "description": "The eco system that is using the payload."
        },
        "if" : {
          "description": "The interface set supported by this resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.rw"
            ],
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": [ "payload", "encoding", "system" ]
    }
  }
}
```

1.3.5 Property definition

Table 5The properties definitions of the resource with type 'rt' = OpaqueDataResURI

Property name	Value type	Mandatory	Access mode	Description
system	string	Yes	Read Write	The eco system that is using the payload.
id	string	No	Read Only	Instance ID of this specific resource
payloadtype	string	No	Read Write	This property describes the identification of the payload, e.g. what the payload is representing .
rt	array: see schema	No	Read Only	Resource Type
n	string	No	Read Only	Friendly name of the resource
hash	string	No	Read Write	

				The hash code of the blob. If present, it is used to check the decoded content of the object data point for integrity. The algorithm used for generating the hash value is SHA-2 [15]. The data point contains the hash as a hex encoded value.
if	array: see schema	No	Read Only	The interface set supported by this resource
payload	string	Yes	Read Write	This property contains the opaque data.
encoding	string	Yes	Read Write	This property describes the encoding of the payload, e.g. binary as base64, json, xml, utf-8
size	integer	No	Read Write	The size in bytes of the decoded binary object.

1.3.6 CRUDN behaviour

Table 6The CRUDN operations of the resource with type 'rt' = OpaqueDataResURI

Resource	Create	Read	Update	Delete	Notify
/OpaqueDataResURI		get	post		observe

1.4 User Info for Application Layer

1.4.1 Introduction

This resource defines credentials for user to application layer login. This does not relate to OCF device to device or device to cloud authentication. The username, password and token are strings

1.4.2 Example URI

/UserInfoResURI

1.4.3 Resource type

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

1.4.4 Swagger 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "User Info for Application Layer",
    "version": "v1.1.0-2018",
    "license": {
      "name": "copyright 2018 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
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ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/UserInfoResURI" : {
      "get": {
        "description": "This resource defines credentials for user to application layer login. This
does not relate to OCF device to device or device to cloud authentication. The username, password
and token are strings\n",
        "parameters": [
          {"$ref": "#/parameters/interface-retrieve"}
        ],
        "responses": {
            "200": {
              "description" : "Success path response for the Resource",
              "x-example":
                {
                  "rt":     ["oic.r.userinfo"],
                  "id":     "unique_example_id"
                },
              "schema": { "$ref": "#/definitions/UserInfo-retrieve" }
            }
        }
      },
      "post": {
        "description": "This resource defines credentials for user to application layer login. This
does not relate to OCF device to device or device to cloud authentication. The username, password
and token are strings.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-update"},
          {
            "name": "body",
```

```
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/UserInfo-update" },
            "x-example":
              {
                "username": "username",
                "password": "password",
                "token":    "A1A1"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Success path response for the Resource",
              "x-example":
                {
                  "rt":     ["oic.r.userinfo"],
                  "id":     "unique_example_id",
                  "username": "username"
                },
              "schema": { "$ref": "#/definitions/UserInfo-update" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.r", "oic.if.baseline"]
    },
    "interface-retrieve" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.r", "oic.if.baseline"]
    },
    "interface-update" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "UserInfo-retrieve": {
      "properties": {
        "rt" :  {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.userinfo"]
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "n" :  {
          "description": "Friendly name of the resource",
          "maxLength": 64,
          "readOnly": true,
          "type": "string"
```

```
      },
      "id" :  {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "if" :  {
        "description": "The interface set supported by this resource",
        "items": {
          "enum": [
            "oic.if.baseline",
            "oic.if.r"
          ],
          "type": "string"
        },
        "minItems": 2,
        "readOnly": true,
        "type": "array"
      }
    },
    "type" : "object"
  },
  "UserInfo-update": {
    "properties": {
      "rt" :  {
        "description": "Resource Type",
        "items": {
          "maxLength": 64,
          "type": "string",
          "enum": ["oic.r.userinfo"]
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "n" :  {
        "description": "Friendly name of the resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "id" :  {
        "description": "Instance ID of this specific resource",
        "maxLength": 64,
        "readOnly": true,
        "type": "string"
      },
      "username": {
        "type": "string",
        "description": "Login name."
      },
      "password": {
        "type": "string",
        "description": "Login password."
      },
      "token": {
        "type": "string",
        "description": "Authentication token."
      },
      "if" :  {
        "description": "The interface set supported by this resource",
        "items": {
          "enum": [
            "oic.if.baseline",
```

```
              "oic.if.rw"
            ],
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object"
    }
  }
}
```

1.4.5 Property definition

Table 7The properties definitions of the resource with type 'rt' = UserInfoResURI

Property name	Value type	Mandatory	Access mode	Description
n	string		Read Only	Friendly name of the resource
if	array: see schema		Read Only	The interface set supported by this resource
token	string		Read Write	Authentication token.
password	string		Read Write	Login password.
id	string		Read Only	Instance ID of this specific resource
username	string		Read Write	Login name.
rt	array: see schema		Read Only	Resource Type
id	string		Read Only	Instance ID of this specific resource
n	string		Read Only	Friendly name of the resource
if	array: see schema		Read Only	The interface set supported by this resource
rt	array: see schema		Read Only	Resource Type

1.4.6 CRUDN behaviour

Table 8The CRUDN operations of the resource with type 'rt' = UserInfoResURI

Resource	Create	Read	Update	Delete	Notify
/UserInfoResURI		get	post		observe