OCF Resource Type Specification

VERSION 1.0.0_Korean | June 2017

CONTACT admin@openconnectivity.org

법적 고지 사항

본 문서에 기재된 내용 중 그 어느 것도 명시적 또는 암시적으로 기재 내용에 있어서 어떠한 형태의 사용 허가를 부여하거나 본 문서의 작성자 또는 개발자 중 어느 누구가 소유 또는 관할하는 어떠한 지식재산에 대해 어떠한 형태의 사용 허가도 부여하는 것을 의미하지 않습니다. 여기에 포함된 정보는 "있는 그대로" 제공되며, 적용 가능한 법에 의해 허용되는 최대 한도까지 본 스펙의 작성자 및 개발자는 특정한 목적을 위한 판매 적격성 또는 적합성의 암시적 보증을 포함하지만 이에 한정되지 않는 명시적 또는 암시적인 성문법 또는 불문법 상의 기타 모든 보증 및 조건에 대해 일절 책임을 지지 않습니다. OPEN CONNECTIVITY FOUNDATION, INC.는 비침해, 정확성, 또는 바이러스 비 감염에 대한 모든 보증에 대해서도 일절 책임을 지지 않습니다.

OCF 로고는 미국 및 다른 국가에서 Open Connectivity Foundation, Inc 의 상표입니다. *그 밖의 명칭 및 상표는 해당하는 소유자의 자산일 수 있습니다.

For Translation to Local Language

이들 저작물의 복사 또는 기타 형태의 복제 및/또는 배포는 엄격하게 금지되어 있습니다.

· 본 OCF 스펙 번역 버전은 OCF 기반의 제품 개발을 장려하고 이에 도움이 되도록 규범적인 영문 원본 버전으로부터 작성되었습니다. 영문 스펙의 정확한 번역을 위한 모든 노력을 기울이기는 하였지만 본 번역 버전을 규범적으로 간주해서는 안됩니다. OCF 인증 프로그램은 명백하게 영문 스펙을 기준으로 개발되어야 하며, 어떠한 면제 또는 면책 요구도 영문 스펙의 문구를 기준으로 평가되어야 합니다.

· 최신 영문 버전 스펙의 공개로부터 번역 버전의 공개까지는 소정의 지연이 있을 수 있습니다.

· OCF 스펙의 최신 영문 버전 및 해당 번역 버전에 관해서는 https://openconnectivity.org/developer/specifications 를 참조하여 주십시오.

목 차

Figures

Tables

1 적용 범위

OCF Resource Type 스펙은 OCF Device 에서 노출 가능한 OCF 정의 Resource 를 규정한다.

Application profile device 스펙(예: 스마트홈 또는 헬스케어 용으로 생성된)은 각 profile 에 적합한 device type 을 규정한다; 이러한 스펙은 본 문서의 Resource Type 정의를 사용한다.

본 스펙은 OCF Core 스펙의 상위에 구성된다. OCF Core 스펙은 IoT 사용 및 생태계를 위한 profile 의 구현을 가능하게 하는 OCF Framework 를 규정한다. OCF Core Framework 는 단순한 device(저사양 device)에서 고성능 device(스마트 device)까지 지원하도록 확장 가능하다.

2 인용 표준

다음의 문헌은, 일부 또는 전부가 본 문서에서 표준적으로 인용되며 어플리케이션에 있어서 필수적이다. 날짜가 표기된 문헌의 경우에는 인용된 판만 적용된다. 날짜가 표기되지 않은 문헌의 경우에는 참조된 문헌의 최신판(보정 내용 포함)이 적용된다.

OCF Core Specification, *Open Connectivity Foundation Core Specification*, Version 1.0.0.

JSON SCHEMA, *JSON Schema: Core Definitions and Terminology*, Version 4.0, http://json-schema.org/latest/json-schema-core.html.

RAML, *Restful API modelling language*, Version 0.8.

https://github.com/raml-org/raml-spec/blob/master/versions/raml-08/raml-08.md

ISO 8601:2004, *Data elements and interchange formats – information interchange – Representation of dates and times*.

CIE CIE159:2004, *A colour appearance model for colour management systems: CIECAM02*, January 19, 2004.

http://www.cie.co.at/index.php/Publications/index.php?i_ca_id=435

Swagger2.0, *Swagger RESTful API Documentation Specification*, Version 2.0

http://swagger.io/specification/

3 용어, 정의, 기호 및 약어

3.1 용어 및 정의

3.1.1

Actuator

UPDATE 동작의 지원을 받는 Resource.

3.1.2

복합 Resource Type

다른 Resource Type 의 OCF Collection 으로 정의된 Resource Type.

3.1.3

Sensor

UPDATE 동작의 지원을 받지 않는 Resource.

3.2 기호 및 약어

3.2.1

CRUDN

Create(생성), Retrieve(검색), Update(갱신), Delete(삭제), Notify(통보)의 약어.

Resource 에 대해 가능한 동작을 나타낸다.

3.2.2

CSV

Comma Separated Value 목록.

콤마를 사용해서 하나의 스트링 내에 더 많은 fields 를 포함하기 위한 구성.

값에 콤마가 포함되어 있을 때 그 앞에 "\"를 추가하면 콤마를 뺄 수 있다.

3.2.3

OCF

Open Connectivity Foundation

본 스펙을 제작하고 소유하는 표준 기구.

3.2.4

RAML

RESTful API modelling language

RESTful APIs 를 기술하는 간단명료한 방식. 자세한 사항은 RAML 참조.

3.2.5

REST

Representational State Transfer

네트워크에 연결된 애플리케이션을 설계하기 위한 아키텍처 스타일로, stateless, client-serve, cacheable communications protocol 에 의존한다.

3.2.6

TBD

추후결정.

3.3 협약

본 스펙에서, 다수의 용어, 조건, 메커니즘, 시퀀스, 파라미터, 이벤트, 상태, 또는 유사한 용어는 각 단어의 첫 번째 문자를 대문자로 표기하고 나머지는 소문자로 표기한다 (예: Resource Type). 이러한 단어가 소문자로 표기되었을 때는 일반적인 기술적 영어의 의미를 갖는다.

4 문서 규약 및 구성

본 문서는 OCF 에 의해 현재 규정된 모든 Resource Type 을 나열한다. Resource 는 application profile device 정의에 의해 사용된다. 본 문서에서 언급된 Resource Type 은 임의의 OCF Collection 또는 device 표현 내의 임의의 OCF 적합 device 에 의해 사용될 수 있다.

본 문서를 위해 OCF Core 스펙 내의 용어 및 정의가 적용된다.

4.1 표기법

본 스펙에서 기능은 다음과 같이 필수(Required), 권고(Recommended), 허가(Allowed), 또는 사용 금지(DEPRECATED)로 분류된다.

필수 (강제 또는 의무적)

> 이러한 기본 기능은 OCF Resource Type 스펙을 준수하도록 구현되어야 한다. "하지 말아야 한다"나 "금지한다" 등의 구절은 금지되는, 즉, 수행하는 경우 구현이 스펙을 준수하지 않음을 의미하는 행위를 나타낸다.

권고 (또는 제안)

이러한 기능은 OCF Resource Type 스펙에 의해 지원되는 기능을 부가하며 구현되어야 한다. 권고 기능은, 통상적으로 중대한 복잡성의 증가 없이 OCF Resource Type 스펙의 기능을 이용한다. 규정 준수 테스트를 위해 권고 기능이 구현된다면 이 가이드라인에 따르는 특정 요건을 만족해야 한다. 일부 권고 기능은 추후에 필수 요건이 될 수 있다. "하지 않는 것이 좋다"라는 표현은 허용되지만 권고하지 않는 행위를 나타낸다.

허가 (또는 허용)

이러한 기능은 OCF Resource Type 스펙에 의해 필수적이지도 않을 뿐더러 권고되지도 않지만 기능이 구현된다면 이 가이드라인에 따르는 특정 요건을 만족해야 한다.

사용 금지

이에 해당하는 기능은 본 스펙에서 설명은 하고 있지만 역 호환성을 제외하고는 구현되어서는 안된다. 현재 스펙에 따르는 동작 동안 사용 금지된 기능의 발생은 구현 동작에 어떤 영향도 끼치지 않으며 어떠한 에러 상태도 생성하지 않는다. 역 호환성은 기능이 구현되고 특정된 대로 기능할 것을 요구하지만 본 스펙에 따르는 구현에 의해 사용되어서는 안된다.

조건부 허용 (CA)

정의 또는 행위는 조건에 의존한다. 특정 조건이 만족되면 정의 또는 행위가 허용되고 그렇지 않으면 허용되지 않는다.

조건부 필수 (CR)

정의 또는 행위는 조건에 의존한다. 특정 조건이 만족되면 정의 또는 행위가 필수로 된다. 그렇지 않으면 특별한 기재가 없는 한 default 로 허용된다.

문자 그대로 해석되는 스트링은 "인용부호"를 사용한다.

강조하는 단어는 *이탤릭체*로 표기한다.

4.2 Data type

본 스펙은 OCF Core 스펙에 정의된 type 을 채택하고 본 섹션에서는 이에 대한 예외를 기술한다.

JSON 숫자 type 으로 정의된 본 스펙 내의 모든 Property 는 정수 값이 아닌 부동 소수점 값으로 인코딩 되어 송신된다. JSON 숫자 type 으로 정의된 Property 의 수신은 OCF Core 스펙에서 정의된 대로 이루어져야 한다. 자세한 사항은 OCF Core 스펙 섹션 12.3 을 참조하기 바란다.

5 Baseline Model 구성

5.1 URI

본 문서에서 언급된 URI 는 단순 정보로 제조사가가 정의한 것일 수 있다.

Resource 의 Instance 는 URI 에 의해 표시된다. 동일한 Resource Type 의 하나 이상의 instance 가 OCF Device 에서 사용될 때, 다른 Resource instance 에 대해서는 다른 URI 를 사용해야 한다.

구현은 URI 의 개체군에 대한 OCF Core 스펙에서 정의된 요건을 따라야 한다. 자세한 사항은 OCF Core 스펙 섹션 6.2 및 6.3 을 참조하기 바란다.

5.2 Interface

OCF Core 스펙은 모든 Resource Type 이 최소한 하나 이상의 Interface 와 연관되어야 함을 규정한다; 이러한 Interface 는 Resource discovery 중에 Advertise 된다. 또한 OCF Core 스펙은 Resource Type 별 instance 에 적용 가능한 Interface 수를 규약하도록 한다.

본 스펙에서 정의된 모든 Resource Type 과 관련된 Default Interface 는 Resource Type 에 정의된 적용 가능한 interface 목록에서 첫 번째로 나열된 항목이어야 한다 (섹션 6 Resource Type 정의 참조). 단, Resource Type 의 정의가 Sensor 또는 Actuator Interface 를 Default Interface 로 갖는 경우는 예외이고, 이 경우의 구현은 이들 중 하나를 default 로 선택해야 한다. 따라서 그러한 Resource Type 을 호스트하는 Server 는 필수 사항인 baseline interface ("oic.if.baseline")에 더불어 "/ oic/res"를 통해 노출되는 Interface 인 oic.if.s (Sensor 의 경우) 또는 oic.if.a (Actuator 의 경우)를 설정해야 한다. Server 는 default 로 규정된 Interface 이외에 다른 Interface 를 지원할 수도 있다.

Device 에 노출된 임의의 Resource 의 instance 와 관련된 기능 또는 가시성이 로컬 (국가 또는 입법 지역별) 규제 요건 또는 다른 제한 사항(예: 일부 지역에서는 Binary Switch 와 관련하여 연결된 device 에 원격으로 전원을 공급하는 기능이 제한되고, 잠금 상태가 상황에 따라 읽기 전용으로 될

수 있다)에 따라 제한 될 수 있다. 이 경우 Device 는 Resource("oic.if.a")에 대해 Actuator Interface 를 노출시키지 않아야 하고, Device 는 "/ oic / res" 에 리소스와 임의의 필수 Interface 들과 Default Interface 로서 Sensor Interface ("oic.if.s")정보를 노출시켜야 한다.

5.3 RAML 정의

본 문서에서 사용된 RAML 정의는 표준적이다. 확장 형태로 모든 정의된 JSON payload 는 명시된 JSON schema 를 준수해야 한다. 정의된 schema 들은 모든 OCF Core 스펙이 정의한 (그리고 필수적인) Property 들을 포함하는 확장을 갖는다.

RAML 정의는 규정된 Resource Type 에 대한 CRUDN 동작에 대한 payload 를 기술하는데 사용된다. CRUDN 동작은 OCF Core 스펙에 정의된다. 또한 OCF Core 스펙은 CRUDN 동작에 대한 payload 내의 추가 Property 들을 규정한다. 본 문서의 RAML 정의는 자체만으로 구현을 생성하는데 충분하지 않고, Core 스펙에 정의된 추가 Property 들은 호환되는 구현을 생성하기 위하여 추가할 필요가 있다. 본 스펙은 RAML 에 의해 지원되는 response 의 서브셋을 사용하고, 이러한 응답에서 표 5-4 RAML 에 Return codes 행위 정의내역을 사용한다. 성공 및 오류 조건의 실제 값은 OCF Core 스펙에 정의되어 있다.

RAML 정의는 RAML 에 대한 OCF CRUDN 행위를 표 5-1 에 정의된 바와 같이 RAML 에 맵핑 한다.

표 5-1 OCF CRUDN 및 RAML 정의 [1] 간의 변환

Resource	Create	Retrieve	Update	Delete	Notify
/example	put 또는 post	get	put 또는 post	delete	

Notify 는 RAML 정의의 부분이 아니지만, Core 스펙에서 정의된다. Notify 의 의미는 CRUDN Read 값과 동일하다. 본 스펙에 정의된 모든 Resource Type 은 OCF Core 스펙 섹션 11.4.2 에 정의된 바와 같이 Observe 사용을 통한 통지를 지원한다.

5.4 Property 정의

5.4.1 Common Properties

OCF Core 스펙은 OCF Resource 에 대해 정의 가능한 다수의 Property 를 규정한다. Common Property "if" 및 "rt"는 본 스펙에서 정의된 모든 Resource Type 에 대해 규정되어야 한다. 이

Property 들은 OCF Server 와 사용 가능한 Resource 가 발견될 때 사용되는 /oic/res/ Resource Type 내에 노출된다. 공통 Property "p" 및 "n"은 본 스펙에 정의된 모든 Resource Type 에 대해 규정될 수 있다.

OCF Client 가 이들 Property 를 RETRIEVE 동작에 대한 response 로 제공되는 Resource 표현에 포함할 것을 요구한다면, Client 는 query parameter 에서 이것을 규정할 때 OCF Core 스펙이 정의한 baseline Interface (oic.if.baseline)를 선택해야 한다.

표 5-2 OCF Resource 에 대한 Common Property

Property Name	Property Title	Property Value	Value Type	액세스 모드	설명
if	Interface	OCF Core 스펙 섹션 7.6.2 참조	스트링의 배열	Readonly	Core 정의. Resource 에서 지원되는 Interface.
rt	Resource Type	OCF Core 스펙 섹션 7.4 참조	스트링의 배열	Readonly	Core 정의. Resource Type 은 본 문서에서 정의. 섹션 6 참조.
n	Name	OCF Core 스펙 섹션 7.3.2.5 참조	스트링	Readonly	Core 정의. Resource 에 대해 사람이 인식 가능한 명칭.
id	Resource Identity	OCF Core 스펙 섹션 7.3.2.6 참조	스트링	Readonly	Core 정의. Resource 의 고유한 식별자 (OCF device 내의 모든 Resource 에 대해).

5.4.2 Resource Properties

CRUDN 동작이 규정되는 Property 들은 JSON schemas 에 정의된다 (JSON SCHEMA 참조).

기본 resource Type 은 물리적 property 를 나타내는 단일 값으로 구성된다.

이러한 Resource Type 은 표 5-3 과 같이 Property 들의 정의로 규정된다. 표 내에서 필수는 Property 가 전체 Resource Type schema 의 부분으로서 규정되어야 함을 의미하고, 실제로 Property 가 반환되거나 생성된 payload 에 포함되는지는 호출되는 동작에 적용되는 schema 에 의존한다.

표 5-3 JSON schema 내의 Resource Type 의 Property 정의

Property Name	Friendly Alias Name	Property Value	Value Type	Value Rules	액세스 모드	필수	설명
<value>, name 은 Resource 에 따라 변할 수 있다	<value>, name 은 Resource 에 따라 변할 수 있다	Resource 에 의존	Resource 에 의존	Resource 에 의존	Resource 에 의존	예	Resource 의 현재 value
range	range	[Min,Max]	배열	Linear range	read-only	아니오	2-요소 배열로 규정된 입력 값의 range
step	step	Resource 에 의존	정수 또는 숫자	Resource 에 의존	read-only	아니오	정의된 범위에 걸친 증분 값
precision	Precision	Resource 에 의존	숫자	Resource 에 의존	read-only	아니오	노출된 값의 정확도

특성상 복수의 물리적 파라미터를 갖는 Resource 의 경우, value Property 는 상이한 물리적 파라미터를 규정하는 복수의 Property 로 대체할 수 있다. 값의 type 은 Resource Type 의 RAML 정의에 표시되어야 하고, 전달된 값에 적합해야 한다. 본 스펙에서 정의된 모든 Property 명칭과 Property 값은 대소문자를 구분해야 한다.

5.4.3 Basic Resource Schema

여기에 정의된 모든 Resource Type 은 JSON schema 에 의해 이전에 표시된 바와 같이 표현된다. Resource Type 의 RAML 정의는 Resource Type 특정 schema element 를 삽입한다.

5.4.4 CRUDN Operation Response Code

Resource 는 Resource Type 정의 및 허용된 CRUDN 동작에 따라 생성 또는 갱신될 수 있다. 동작은 상이한 의미를 갖는 상이한 response 코드를 가질 수 있다. 이것은 표 5-4 에서 설명된다.

표 5-4 RAML 내의 Return 코드 작용

response 코드	의미
200	response 의 payload 는 변경을 확정한다. RAML 정의는 payload 를 정의하기 위한 schema 를 포함한다.
201	payload 는 생성(CREATE) 동작의 결과로서 Server 에 의해 생성된 Resource 의 URL 이다. RAML 정의는 payload 를 정의하기 위한 schema 를 포함한다.
204	OK, 모든 것이 수월하고 어떠한 payload 도 제공되지 않는다. RAML 정의는 schema 를 포함하지 않는다. RAML 정의는 204 코드 값을 OCF Server 의 default 동작으로 간주되기 때문에 이 값을 생략할 수도 있다.
403	개체 1: Resource 에 대한 검색(RETRIEVE)시 특정 Property 값을 지정하는 query parameter 를 사용하는 경우. Server 가 제공된 값을 지원하지 않는다면, 이 response 는 반환 되어야 한다. response payload 는 query parameter 에 대해 허용된 값들을 포함해야 한다. 개체 2: Server 가 제공된 payload 에 대한 문제가 있어 Resource 를 CREATE 또는 UPDATE 할 수 없다. UPDATE 의 경우, Resource Type 정의에서 달리 명시되지 않는 한, response payload 는 200 에 대해 정의된 동일한 schema 를 포함해야 한다. 현재의 Resource Property 값을 나타낸다.

5.5 Resource 정의 예

표 5-5 액츄에이터를 나타내는 Resource 의 RAML 예

```
#%RAML 0.8
title: OCFExampleActuator
version: v1.0

/ActuatorExample:
  description: |
    ResourceActuatorExample description.
    If the ActuatorExample is implemented as the example in the RAML the next values apply:
    The name of the Resource is "ResourceExample Name"
    The Resource Type is "oic.r.actuatorexample"
    The Interface (if) is denoting an Actuator by having the value oic.if.a.
    The unique identification is "actuator_example_id"
    The value of the ActuatorExample is modeled as integer
    The range of the value of ActuatorExample is between 0 and 100
  get:
    description: |
      retrieves the example Resource.
    responses:
      200:
        body:
          application/json:
            schema: |
              {
               "id": "http://openinterconnect.org/schemas/oic.r.actuatorexample.json",
               "$schema": "http://json-schema.org/draft-04/schema#",
               "title": "AcutatorExample",
               "definitions": {
                 "oic.r.actuatorexample: {
                   "type": "object",
                   "properties": {
                     "value": { "type": "string" },
                     "range": {
                       "type": "array",
                       "items": {
                          "type": "integer"
                       }
                     }
                   }
                 }
```



```
            },
            "type": "object",
            "allOf": [
              {"$ref": "oic.core.json#/definitions/oic.core"},
              {"$ref": oic.baseResource.json#/definitions/oic.r.baseresource"},
              {"$ref": "#/definitions/oic.r.actuatorexample"}
            ],
            "required": ["value"]
          }
        example: |
          {
            "n":      "ActuatorExample Name",
            "id":     "actuator_example_id",
            "rt":     ["oic.r.actuatorexample"],
            "value": "0",
            "range": ["0,100"]
          }
post:
  description: |
    sets the Actuator value
    example only updates the value of the Resource
    it does not change the Resource name, although it is allowed to do so.
  body:
    applicaton/json:
      schema: |
        {
          "id": "http://openinterconnect.org/schemas/oic.r.actuatorexample.json",
          "$schema": "http://json-schema.org/draft-04/schema#",
          "title": "AcutatorExample",
          "definitions": {
            "oic.r.actuatorexample": {
              "type": "object",
              "properties": {
                "value": { "type": "string" },
                "range": {
                  "type": "array",
                  "items": {
                    "type": "integer"
                  }
                }
              }
            }
          },
          "type": "object",
```



```
            "allOf": [
              {"$ref": "oic.core.json#/definitions/oic.core"},
              {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
              {"$ref": "#/definitions/oic.r.actuatorexample"}
            ],
            "required": ["value"]
          }
    example: |
        {
          "id":     "actuator_example_id",
          "value" : 5
        }
  responses:
    200:
      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/schemas/oic.r.actuatorexample.json",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "title": "AcutatorExample",
              "definitions": {
                "oic.r.actuatorexample": {
                  "type": "object",
                  "properties": {
                    "value": { "type": "string" },
                    "range": {
                      "type": "array",
                      "items": {
                          "type": "integer"
                      }
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.core.json#/definitions/oic.core"},
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.actuatorexample"}
              ],
              "required": ["value"]
            }
```



```
          example: |
            {
              "id":    "actuator_example_id",
              "value": 5
            }


      204:
```

표 5-6 센서를 규정하는 Resource 의 RAML 예

```
#%RAML 0.8
title: OCFExampleSensor
version: v1.0



/SensorExample:
  description: |
    SensorExample description.
    If the SensorExample is implemented as the example in the RAML the next values apply:
    The name of the Resource is "ResourceExample_Name"
    The Resource Type is "oic.r.sensorexample"
    The Interface (if) is denoting a Sensor by having the value oic.if.s.
    The unique identification is "sensor_example_id"
    The value of the ResourceSensorExample is modeled as integer
  get:
    description: |
      retrieves the example Resource.
    responses:
      200:
        body:
          application/json:
            schema: |
              {
               "id": "http://openinterconnect.org/schemas/oic.r.sensorexample.json",
               "$schema": "http://json-schema.org/draft-04/schema#",
               "title": "SensorExample",
               "definitions": {
                 "oic.r.sensorexample": {
                   "type": "object",
```



```
            "properties": {
              "value": { "type": "string" },
              "range": {
                "type": "array",
                "items": {
                  "type": "integer"
                }
              }
            }
          }
        },
        "type": "object",
        "allOf": [
          {"$ref": "oic.core.json#/definitions/oic.core"},
          {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
          {"$ref": "#/definitions/oic.r.sensorexample"},
        ],
        "required": ["value"]
      }
      example: |
        {
          "n":      "SensorExample_Name",
          "rt":     ["oic.r.sensorexample"],
          "id":     "sensor_example_id",
          "value": "3"
        }
```

5.6 Observable Resource Type

OCF Core 스펙은 Resource 가 OCF Client 에 " Observable" 한 것으로 자신을 Advertise 할 수 있게 하는 메커니즘을 정의한다. 본 스펙에서 정의된 모든 Resource Type 이 Observe 될 수 있다. Resource Type 이 Policy Link parameter 의 사용을 통해 Observable 하게 되는지 여부는 전적으로 구현에 의존한다.

5.6.1 조건부 통지

모든 Observable Resource 는 Observe 행위로 인해 초래되는 Notification 의 생성에 조건을 적용할 수 있고, 이들 조건은 시간 기반, 값 기반, 또는 시간 및 값 기반 일 수 있다. 이것은 Observable Resource 의 개체를 통해 Conditional Notification (oic.r.value.conditional) Resource Type 을 구성함으로써 달성될 수 있다; 즉 Server 에 의해 노출된 Resource 는 "["oic.r.<resource>", "oic.r.value.conditional"]"의 "rt"를 갖는다.

5.6.1.1 Conditional Notification Property 요약

표 5-7 Conditional Notification Property 는 조건부 Notification Resource Type 에 의해 제공된 Property 를 요약한다. 표로부터 적어도 하나의 Property 는 Resource Type 의 개체에 존재하여야 한다.

표 5-7 Conditional Notification Property

Name	Type	R/W	필수	설명
threshold	숫자	RW	아니오	Notification 생성 전 Observe 값에 대한 변경 량
minnotifyperiod	정수	RW	아니오	통지 전송 전의 최소 경과 시간 (ms)
maxnotifyperiod	정수	RW	아니오	통지 전송 전의 최대 경과 시간 (ms)

모든 Property 는 노출되면 초기 값으로 설정되어야 한다. 모든 Property 는 "0"의 값을 갖고 노출될 수 있다; 이것은 Property 와 관련된 기능이 활성이 아님을 나타낸다. 임의의 Client 는 ACL 제한 사항을 조건으로 하는 노출된 값을 갱신할 수 있고; 그러한 변경은 전역적이고, 모든 Observer 에게 송신되는 모든 Notification 에 적용된다. 통지자는 Property 값에 대한 갱신을 거부할 수 있다; 그러한 경우 diagnostic payload 가 Property 의 유효 범위를 나타내는 rejection response 에 포함되어야 한다.

5.6.1.2 Property 정의: threshold

두 통지 간의 최소 값 변경. 마지막 통지 이후의 변경이 이 값보다 크거나 같을 때 통지가 ("minnotifyperiod"의 제약 내에서) 전송되어야 한다. 값의 측정은 전송된 마지막 통지 내의 값을 기준으로 이루어진다. 따라서 (존재할 수 있는 임의의 "maxnotifyperiod" 제약 내의) 모든 통지는 각각 적어도 "threshold"만큼의 다른 값을 갖는다. "0"의 "threshold" 값은 어떠한 "threshold"도 적용되지 않음을 의미한다.

5.6.1.3 Property 정의: minnotifyperiod

통지와 통지 사이의 최소 시간 (ms). 만료 전에 값 변경 조건이 충족되면("threshold" 이상의 값 또는 threshold 가 없는 경우 값의 변경이 있다면), 통지는 기간이 만료될 때까지 송신되지 않아야 한다. Property 가 존재하고 "0"으로 설정되면, 어떠한 최소 통지 기간 타이머도 실행되지 않는다. Property 가 존재하고 "0"보다 큰 값을 가지면, 최소 통지 기간 타이머는 그 값과 동일하게 실행된다. Property 값 자체는 초기에 통지자에 의해 채워진다. Property 가 없는 경우, 최소 통지 기간은 통지자에 좌우된다. 타이머는 통지가 전송될 때마다 재설정된다.

5.6.1.4 Property 정의: maxnotifyperiod

통지자가 통지 간에 초과하지 않아야 하는 최대 시간 (ms). 타이머가 만료될 때 통지가 송신되어야 한다. 존재하고, "0"으로 설정되면, 어떠한 최대 통지 기간 타이머도 실행되지 않는다; 이 값이 존재하고, 0 보다 큰 값을 가지면, 최대 통지 기간 타이머는 그 값과 동일하게 실행되어야 한다. Property 값 자체는 처음에 통지자에 의해 채워져야 한다. "minnotifyperiod"와 "maxnotifyperiod"가 모두 존재하고, 둘 다 0 이 아닌 경우, "maxnotifyperiod" 값은 "minnotifyperiod" 값보다 커야 한다. 존재하지 않은 경우, 값은 통지자에 의해 설정되어야 한다. 타이머는 통지가 송신될 때마다 재설정된다.

5.6.1.5 Governing State Machine

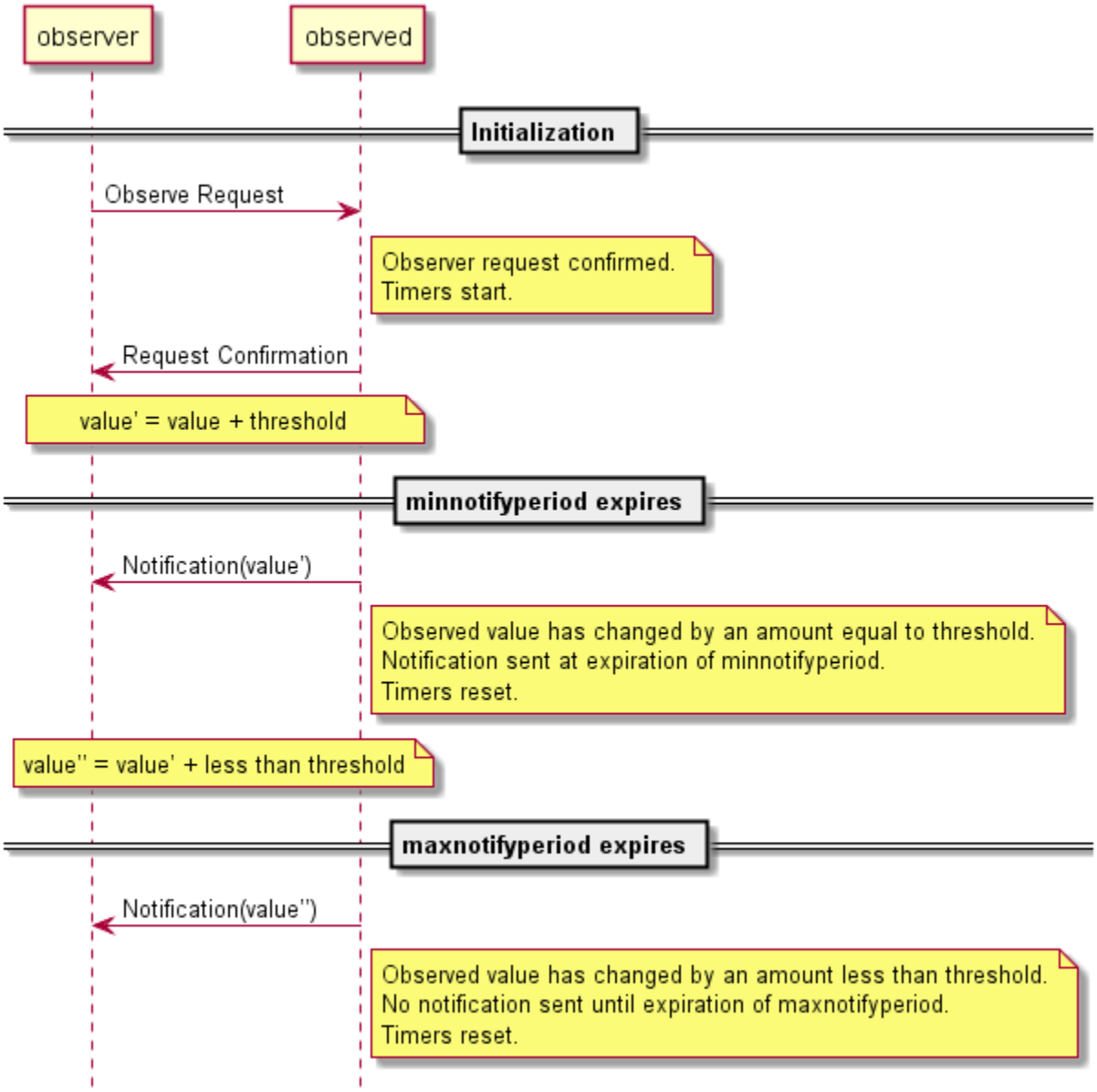
"minnotifyperiod"와 "maxnotifyperiod" 타이머는 통지가 송신될 때마다 다시 시작된다 (Observe 에 대한 response). 둘 다 존재할 경우 값 변경 조건(threshold)과 "minnotifyperiod"가 모두 충족될 때, 통지가 송신된다. Observe Property 값이 "minnotifyperiod"의 만료 전에 threshold 이하로 내려가면, 통지자는 아무런 조치도 취하지 않거나, 또는 통지가 현재 Observe Property 값(notification 시)을 포함하는 "minnotofyperiod"의 만료 시에 송신될 수 있다. 타이머 제약 조건이 없다면 통지는 Observe Property 값이 "threshold" 이상의 양만큼 변할 때마다 송신된다.

전반적인 로직은 도 1: 전반적인 조건부 통지 로직에 정의된다. 도 2: 조건부 통지의 흐름 예는 예시적인 시퀀스를 제공한다.

```
If minnotifyperiod expired:

  If observed value changed:

     If change amount >= threshold:

        Send notification with current value

        Reset minnotifyperiod , maxnotifyperiod

If maxnotifyperiod expired:

   Get current value

   Send notification with current value
```


Reset minnotifyperiod , maxnotifyperiod

도 1: 전반적인 조건부 통지 로직



도 2: 조건부 통지 흐름의 예

5.7 복합 Resource Type

복합 Resource Type 은 하나 이상의 단일 또는 다른 복합 Resource Type 으로 구성된 Resource 이고; 그 예은 표 5-8 복합 Resource Type 의 RAML 예에 도시된다. 복합 Resource Type 은 새로운 단일 Resource Type 으로 볼 수 있다. 복합 Resource Type 의 메커니즘은 새로운 단일 Resource Type 을 규정하지 않고 Resource 에 더 많은 컨텍스트를 표현하기 위하여 기존의 Resource Type 을 새로운 조합으로 사용하기 때문에 강력한 개념이다.

복합 Resource Type 은 참조된 기존 Resource 값을 Collection 에 링크함으로써 정의된다.

Linking 은 Link 의 배열을 사용하여 이루어진다; 자세한 사항은 OCF Core 스펙 섹션 7.7.2 를 참조하기 바란다. 아래에 나열된 예는 오로지 설명의 목적을 위해 본 정의의 부분적인 schema 를 포함한다. 배열의 Property 명칭은 "links"이다. 관계 유형은 복합이 복합 Resource Type 을 구성하는 다른 Resource Type 을 포함하는 것을 나타내는 "contain"이 된다.

나열된 Resource 에 대한 액세스는 OCF Core 스펙에서 정의한 oic.if.ll Interface 를 사용하여 단일 동작으로 얻을 수 있다.

표 5-8 복합 Resource 의 RAML 예

```
#%RAML 0.8
title: OCFExampleCompositeResource
version: v1.0



/CompositeExample:
  description: |
    CompositeExample description.
    If the CompositeExample is implemented as per the example RAML the following values apply:
    The name of the Resource is "CompositeExample Name"
    The Resource Type is "oic.r.compositeexample"
    The Interface (if) can denote Sensor or Actuator
    The value of the ActuatorExample is modeled as 2 references to other implemented Resources
    In the example oic.r.SensorExample and oic.r.ActuatorExample are used.
  get:
    description: |
      retrieves the composite example Resource.
```



```
responses:
  200:
    body:
      application/json:
        schema: |
          {
            "id": "http://openinterconnect.org/schemas/oic.r.baseResource#",
            "$schema": "http://json-schema.org/schema#",
            "title": "SensorExample",
            "definitions": {
              "oic.r.compositeexample": {
                "type": "object",
                "properties": {
                  "links": {
                    "type": "array",
                    "items": {
                      "$ref": "oic.oic-link-schema.json#"                    }
                  }
                }
              }
            },
            "type": "object",
            "allOf": [
              {"$ref": "oic.core.json#/definitions/oic.core"},
              {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
              {"$ref": "#/definitions/oic.r.compositeexample"}
            ],
            "required": ["n","id","links"]
          }
        example: |
          {
            "n":      "CompositeExample Name",
            "id":     "composite_example_id",
            "links": [
                {
                  "href": "/my_1st_reference",
                  "rel":  "contains",
                  "rt":   ["oic.r.actuatorexample"],
                  "if":   ["oic.if.a"]
                },
                {
                  "href": "/my_2nd_reference",
                  "rel":  "contains",
```



```
            "rt":   ["oic.r.sensorexample"],
            "if":   ["oic.if.s"]
          }
        ]
    }
```

5.8 스펙 버전

본 버전의 스펙에 따르는 Device 는 스트링 "ocf.res.1.0.0" 을 oic.wk.d 내의 dmv Property 에 대입하여야 한다.

6 Resource Type 정의

본 섹션은 모든 Resource Type 에 대한 정의를 포함한다; 완전한 집합은 표 6-1 Resource Type 의 알파벳순 목록에 나열된다. Annex A.1 은 basic underlying schema 정의를 제공하고, 이에 대해 모든 다른 Resource Type 이 구성된다. Annex A.1 은 또한 모든 Resource Type 이 지원해야 하는 "oic.if.baseline" interface 의 사용 예를 제공한다. 모든 다른 섹션은 그러한 특정 Resource Type 에 적용되는 default interface 의 적용을 따르는 Resource Type 의 예시적인 표현을 제공한다.

Annex B 는 RAML 대신에 Swagger2.0 을 사용하는 모든 Resource Type 에 대한 정의를 제공한다.

모든 Resource Type 은 OCF Core 스펙 섹션 7.2 에 따라 생성되어야 한다. Resource Type 에 대한 모든 비교는 대소문자를 구별하지 않는다.

본 문서 내의 모든 Resource Type 에는 접두사로 "oic.r" 가 붙고, 이는 OCF 가 정의한 Resource Type 임을 나타낸다.

표 6-1 Resource Type 의 알파벳순 목록

Friendly Name (단순 정보)	Resource Type (rt)	섹션
Acceleration Sensor	oic.r.sensor.acceleration	6.55
Activity Count	oic.r.sensor.activity.count	6.23
Air Quality	oic.r.airquality	6.65

Air Quality Collection	oic.r.airqualitycollection	6.66
Altimeter	oic.r.altimeter	6.60
Atmospheric Pressure	oic.r.sensor.atmosphericpressure	6.24
Air Flow	oic.r.airflow	6.1
Air Flow Control	oic.r.airflowcontrol	6.2
Audio Controls	oic.r.audio	6.25
Auto Focus	oic.r.autofocus	6.26
Automatic Document Feeder	oic.r.automaticdocumentfeeder	6.27
Auto White Balance	oic.r.colour.autowhitebalance	6.31
Basic Resource Schema	Not Applicable	Annex A.1
Battery	oic.r.energy.battery	6.3
Binary switch	oic.r.switch.binary	6.4
Brightness	oic.r.light.brightness	6.5
Button Switch	oic.r.button	6.28
Carbon Dioxide Sensor	oic.r.sensor.carbondioxide	6.29
Carbon Monoxide Sensor	oic.r.sensor.carbonmonoxide	6.30
Clock	oic.r.clock	6.61
Colour Chroma	oic.r.colour.chroma	6.6
Colour RGB	oic.r.colour.rgb	6.7

Colour Saturation	oic.r.colour.saturation	6.32
Consumable	oic.r.consumable	6.67
Consumable Collection	oic.r.consumablecollection	6.68
Contact Sensor	oic.r.sensor.contact	6.33
Delay Defrost	oic.r.delaydefrost	6.69
Demand Response Load Control (DRLC)	oic.r.energy.drlc	6.34
Dimming	oic.r.light.dimming	6.8
Door	oic.r.door	6.9
Ecomode	oic.r.ecomode	6.70
Energy Consumption	oic.r.energy.consumption	6.10
Energy Overload/Circuit Breaker	oic.r.energy.overload	6.35
Energy Usage	oic.r.energy.usage	6.11
Generic Sensor	oic.r.sensor	6.36
Geolocation Sensor	oic.r.sensor.geolocation	6.62
Glass Break Sensor	oic.r.sensor.glassbreak	6.37
Heart Rate Zone Sensor	oic.r.sensor.heart.zone	6.38
Heating Zone	oic.r.heatingzone	6.71
Heating Zone Collection	oic.r.heatingzonecollection	6.72

Height	oic.r.height	6.63
Humidity	oic.r.humidity	6.12
Icemaker	oic.r.icemaker	6.13
Illuminance Sensor	oic.r.sensor.illuminance	6.39
Lock	oic.r.lock.status	6.14
Lock Code	oic.r.lock.code	6.15
Magnetic Field Direction	oic.r.sensor.magneticfielddirection	6.40
Media	oic.r.media	6.41
Media Source	oic.r.mediasource	6.42
Media Source List	oic.r.mediasourcelist	6.43
Media Source Input	oic.r.media.input	6.44
Media Source Output	oic.r.media.output	6.45
Mode	oic.r.mode	6.16
Movement	oic.r.movement.linear	6.53
Motion Sensor	oic.r.sensor.motion	6.46
Night Mode	oic.r.nightmode	6.47
Open Level	oic.r.openlevel	6.17
Operational State	oic.r.operational.state	6.18
Pan Tilt Zoom Movement	oic.r.ptz	6.49

Presence Sensor	oic.r.sensor.presence	6.48
Ramp Time	oic.r.light.ramptime	6.19
Refrigeration	oic.r.refrigeration	6.20
Selectable Levels	oic.r.selectablelevels	6.73
Signal Strength	oic.r.signalstrength	6.50
Sleep Sensor	oic.r.sensor.sleep	6.57
Smoke Sensor	oic.r.sensor.smoke	6.58
Speech Synthesis	oic.r.speech.tts	6.51
Temperature	oic.r.temperature	6.21
Three Axis Sensor	oic.r.sensor.threeaxis	6.59
Time Period	oic.r.time.period	6.22
Touch Sensor	oic.r.sensor.touch	6.52
UV Radiation	oic.r.sensor.radiation.uv	6.53
Value Conditional	oic.r.value.conditional	6.74
Water Sensor	oic.r.sensor.water	6.54
Weight	oic.r.weight	6.64

6.1 송풍

6.1.1 개요

이 resource 는 공기 흐름과 관련된 property 를 기술한다. Supporteddirections 는 이 resource type 의 특별한 개체에 대한 direction property 를 위한 유효 값의 집합이다. direction 은 적용 가능한 경우 공기 흐름의 방향성이고, supporteddirections 가 존재한다면, 그러한 집합으로부터의 값이어야 한다. Direction 값은 장치의 성능에 의존한다. Speed 는 장치에 대한 현재의 속도 레벨을 표현하는 정수이다. 범위 (oic.r.baseresource 로부터)는 속도 레벨에 대한 min,max 값의 배열이다. 존재하지 않는다면, 범위는 default 로 [0,100]이 된다. automode 는 자동 모드 기능의 상태이고 Off 는 자동 모드가 설정되지 않았음을 의미한다. On 은 자동 모드가 설정되고 speed 가 장치에 의해 자동으로 제어됨을 의미한다.

6.1.2 URI 예

/AirFlowResURI

6.1.3 Resource Type

resource type (rt)는 oic.r.airflow 로 정의된다.

6.1.4 RAML 정의

```
#%RAML 0.8
title: OICAirFlow
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]

/AirFlowResURI:
  description: |
    This resource describes the properties associated with air flow.
    The supporteddirections is the set of valid values for the direction property for a particular
instance of this resource type.
    The direction is the directionality of the air flow if applicable, if supporteddirections is
also present it must be a value from that set.
    Direction values are dependent on the capabilities of the unit.
    The speed is an integer representing the current speed level for the unit.
    The range (from oic.r.baseresource) is an array of the min,max values for the speed level
    If not present the range defaults to [0,100].
    automode is the status of the automode feature; Off means automode is not enabled, On means
automode is active and the speed is automatically controlled by the device.

  is : ['interface']
  get:
    description: |
      Retrieves the current air flow values.

    responses :
      200:
```



```
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.airFlow.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Air Flow",
                "definitions": {
                  "oic.r.airflow": {
                    "type": "object",
                    "properties": {
                      "supporteddirections": {
                          "type": "array",
                          "description": "Array of possible direction settings for this instance of
the Resource Type",
                          "readOnly": true,
                          "items": {
                              "type": "string",
                              "minItems": 1,
                              "uniqueItems": true
                          }
                      },
                      "direction": {
                        "type": "string",
                        "description": "Directionality of the air flow"
                      },
                      "speed": {
                        "type": "integer",
                        "description": "Current speed level"
                      },
                      "automode": {
                        "enum": ["On", "Off"],
                        "description": "Status of the automode feature, if on speed is set by the
device"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.airflow"}
                ],
                "required": ["speed"]
              }

            example: |
              {
                "rt":         ["oic.r.airflow"],
                "id":         "unique_example_id",
                "supporteddirections": ["left","right","centre"],
                "direction":  "left",
                "speed":      5,
                "range":      [1,7],
                "automode":   "Off"
              }

    post:
      description: |
        Sets the current air flow values.
        Only direction and speed may be set by an update operation.

      body:
        application/json:
          schema: |
```

```
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.airFlow.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Air Flow",
              "definitions": {
                "oic.r.airflow": {
                  "type": "object",
                  "properties": {
                    "supporteddirections": {
                        "type": "array",
                        "description": "Array of possible direction settings for this instance of the
Resource Type",
                        "readOnly": true,
                        "items": {
                            "type": "string",
                            "minItems": 1,
                            "uniqueItems": true
                        }
                    },
                    "direction": {
                      "type": "string",
                      "description": "Directionality of the air flow"
                    },
                    "speed": {
                      "type": "integer",
                      "description": "Current speed level"
                    },
                    "automode": {
                      "enum": ["On", "Off"],
                      "description": "Status of the automode feature, if on speed is set by the
device"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.airflow"}
              ],
              "required": ["speed"]
            }

          example: |
            {
              "id":         "unique_example_id",
              "direction":  "right",
              "speed":      3
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.airFlow.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Air Flow",
                  "definitions": {
                    "oic.r.airflow": {
                      "type": "object",
                      "properties": {
```

```
                        "supporteddirections": {
                            "type": "array",
                            "description": "Array of possible direction settings for this instance of
the Resource Type",
                            "readOnly": true,
                            "items": {
                                "type": "string",
                                "minItems": 1,
                                "uniqueItems": true
                            }
                        },
                        "direction": {
                          "type": "string",
                          "description": "Directionality of the air flow"
                        },
                        "speed": {
                          "type": "integer",
                          "description": "Current speed level"
                        },
                        "automode": {
                          "enum": ["On", "Off"],
                          "description": "Status of the automode feature, if on speed is set by the
device"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.airflow"}
                  ],
                  "required": ["speed"]
                }

              example: |
                {
                  "id":         "unique_example_id",
                  "direction":  "right",
                  "speed":      3
                }

        403:
          description: |
            This response is generated by the OCF Server when the client sends:
              An update with an invalid property value for direction.
              An update with an out of range property value for speed.
            The server may respond with the current resource representation.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.airFlow.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Air Flow",
                  "definitions": {
                    "oic.r.airflow": {
                      "type": "object",
                      "properties": {
                        "supporteddirections": {
                            "type": "array",
                            "description": "Array of possible direction settings for this instance of
the Resource Type",
                            "readOnly": true,
```

```
                            "items": {
                                "type": "string",
                                "minItems": 1,
                                "uniqueItems": true
                            }
                        },
                        "direction": {
                          "type": "string",
                          "description": "Directionality of the air flow"
                        },
                        "speed": {
                          "type": "integer",
                          "description": "Current speed level"
                        },
                        "automode": {
                          "enum": ["On", "Off"],
                          "description": "Status of the automode feature, if on speed is set by the
device"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.airflow"}
                  ],
                  "required": ["speed"]
                }

              example: |
                {
                  "id":         "unique_example_id",
                  "supporteddirections": ["left","right","centre"],
                  "direction":  "right",
                  "speed":      3
                }
```

6.1.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
automode	복수 타입: schema 참조			자동 모드 기능의 상태, on 이면, 속도는 장치에 의해 설정된다
direction	스트링			공기 흐름의 방향성
supporteddirections	배열: schema 참조		Read Only	Resource Type 의 이러한 개체에 대해 가능한 방향 설정의 배열
speed	정수	예		현재의 속도 레벨

6.1.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AirFlowResURI		get	post		

6.2 송풍 제어

6.2.1 개요

이 resource 는 공기 흐름의 제어와 관련된, 예를 들어, Thermostat (fan), Room A/C 또는 다른 device 에 의해 모델링 되는 속성을 기술한다. 이러한 resource 는 AirFlow Resource, BinarySwitch Resource 의 collection 으로 구성되는 복합 resource 이다.

6.2.2 URI 예

/AirFlowControlResURI

6.2.3 Resource Type

resource type (rt)는 oic.r.airflowcontrol 로 정의된다.

6.2.4 RAML 정의

```
#%RAML 0.8
title: OICAirFlowControl
version: v1.1.0-20160519
traits:
 - interface-b :
     queryParameters:
       if:
         enum: ["oic.if.b"]
 - interface-all :
     queryParameters:
       if:
         enum: ["oic.if.ll", "oic.if.b", "oic.if.baseline"]

/AirFlowControlResURI:
  description: |
    This resource describes the attributes associated with control of air flow,
    for example as modelled by a Thermostat (fan), Room A/C or other device.
    The resource is a composite resource being made up as a collection of:
      AirFlow Resource
      BinarySwitch Resource

  get:
    description: |
      Retrieves the current air flow control values.

    is : ['interface-all']
    responses :
      200:
        body:
          application/json:
            schema: |
```



```
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.airFlowControl.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Air Flow Control",
                  "definitions": {
                    "oic.r.airflowcontrol": {
                      "type": "object",
                      "properties": {
                        "airFlowControl": {
                          "type": "array",
                          "minItems": 2,
                          "maxItems": 2,
                          "items": {
                            "$ref": "oic.oic-link-schema.json#/definitions/oic.oic-link"
                          }
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.airflowcontrol"}
                  ],
                  "required": ["airFlowControl"]
                }

              example: |
                {
                  "rt": ["oic.r.airflowcontrol"],
                  "id": "unique_example_id",
                  "airFlowControl": [
                    {
                      "href": "/BinarySwitchResURI",
                      "rel":  "contains",
                      "rt":   ["oic.r.switch.binary"],
                      "if":   ["oic.if.a"],
                      "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
                    },
                    {
                      "href": "/AirFlowResURI",
                      "rel":  "contains",
                      "rt":   ["oic.r.airflow"],
                      "if":   ["oic.if.a"],
                      "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
                    }
                  ]
                }

  post:
    description: |
      Sets the current air flow control values using the batch interface

    is : ['interface-b']
    body:
      application/json:
        schema: |
          {
            "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.airFlowControl-
Batch.json#",
            "$schema": "http://json-schema.org/draft-04/schema#",
            "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
            "title": "Air Flow Control",
```

```
              "definitions": {
                "oic.r.airflowcontrol": {
                  "type": "object",
                  "properties": {
                    "airFlowControl": {
                      "type": "array",
                      "items": {
                        "anyOf": [
                          {"$ref": "oic.r.switch.binary.json#/definitions/oic.r.switch.binary"},
                          {"$ref": "oic.r.airFlow.json#/definitions/oic.r.airflow"}
                        ]
                      }
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.airflowcontrol"}
              ],
              "required": ["airFlowControl"]
            }

          example: |
            {
              "id":     "unique_example_id",
              "airFlowControl": [
                {
                  "id":    "unique_example_id",
                  "value": true
                },
                {
                  "id":         "unique_example_id",
                  "direction":  "right",
                  "speed":      3
                }
              ]
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.airFlowControl-
Batch.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Air Flow Control",
                  "definitions": {
                    "oic.r.airflowcontrol": {
                      "type": "object",
                      "properties": {
                        "airFlowControl": {
                          "type": "array",
                          "items": {
                            "anyOf": [
                              {"$ref": "oic.r.switch.binary.json#/definitions/oic.r.switch.binary"},
                              {"$ref": "oic.r.airFlow.json#/definitions/oic.r.airflow"}
                            ]
                          }
                        }
                      }
                    }
```

```
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.airflowcontrol"}
                  ],
                  "required": ["airFlowControl"]
                }

              example: |
                {
                  "id":     "unique_example_id",
                  "airFlowControl": [
                    {
                      "id":    "unique_example_id",
                      "value": true
                    },
                    {
                      "id":        "unique_example_id",
                      "direction": "right",
                      "speed":     3
                    }
                  ]
                }

        403:
          description: |
            This response is generated by the OIC Server when the client sends:
              An update with an invalid property value for direction.
              An update with an out of range property value for speed.
            The server responds with the current resource representation.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.airFlowControl-
Batch.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Air Flow Control",
                  "definitions": {
                    "oic.r.airflowcontrol": {
                      "type": "object",
                      "properties": {
                        "airFlowControl": {
                          "type": "array",
                          "items": {
                            "anyOf": [
                              {"$ref": "oic.r.switch.binary.json#/definitions/oic.r.switch.binary"},
                              {"$ref": "oic.r.airFlow.json#/definitions/oic.r.airflow"}
                            ]
                          }
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.airflowcontrol"}
                  ],
                  "required": ["airFlowControl"]
                }

              example: |
```

```
                {
                  "id":     "unique_example_id",
                  "airFlowControl": [
                    {
                      "id":    "unique_example_id",
                      "value": true
                    },
                    {
                      "id":         "unique_example_id",
                      "direction":  "right",
                      "speed":      3
                    }
                  ]
                }
```

6.2.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
airFlowControl	배열: schema 참조	예		

6.2.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AirFlowControlResURI		get	post		

6.3 배터리

6.3.1 개요

이 resource 는 배터리의 충전 상태를 표현한다. charge 는 현재의 배터리 충전 레벨을 보여주는 정수이다. charge 는 0-100 범위의 백분율이다. 0 의 값은 완전히 방전된 것을 의미한다. 100 의값은 완전히 충전된 것을 의미한다.

6.3.2 URI 예

/BatteryResURI

6.3.3 Resource Type

resource type (rt)는 oic.r.energy.battery 로 정의된다.

6.3.4 RAML 정의

```
#%RAML 0.8
title: OICBattery
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

/BatteryResURI:
  description: |
```

```
      This resource represents the charge state of a battery.
      The charge is an integer showing the current battery charge level.
      The charge is a percentage in the range 0-100.
      A value of 0 means fully discharged.
      A value of 100 means fully charged.

    is : ['interface']
    get:
      description: |
        Retrieves the state of the battery.

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.energy.battery.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Battery",
                  "definitions": {
                    "oic.r.energy.battery": {
                      "type": "object",
                      "properties": {
                        "charge" : {
                          "type": "integer",
                          "description": "The current charge percentage.",
                          "readOnly": true,
                          "minimum": 0,
                          "maximum": 100
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.energy.battery"}
                  ],
                  "required": [ "charge" ]
                }

              example: |
                {
                  "rt":     ["oic.r.energy.battery"],
                  "id":     "unique_example_id",
                  "charge": 50
                }
```

6.3.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
charge	정수	예	Read Only	현재 충전 백분율

6.3.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify

/BatteryResURI		get			

6.4 바이너리 스위치

6.4.1 개요

이 resource 는 바이너리 (on/off) 스위치를 기술한다. 값은 Boolean 형이다. 'true' 값은 스위치가 on 인 것을 의미한다. 'false' 값은 스위치가 off 인 것을 의미한다.

6.4.2 URI 예

/BinarySwitchResURI

6.4.3 Resource Type

resource type (rt)는 oic.r.switch.binary 로 정의된다.

6.4.4 RAML 정의

```
#%RAML 0.8
title: OICBinarySwitch
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


/BinarySwitchResURI:
  description: |
    This resource describes a binary switch (on/off).
    The value is a boolean.
    A value of 'true' means that the switch is on.
    A value of 'false' means that the switch is off.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":  "http://openinterconnect.org/iotdatamodels/schemas/oic.r.switch.binary.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Binary Switch",
                "definitions": {
                  "oic.r.switch.binary": {
                    "type": "object",
                    "properties": {
                      "value": {
                        "type": "boolean",
                        "description": "Status of the switch"
                      }
                    }
                  }
                },
```

```
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.switch.binary"}
                  ],
                  "required": [ "value" ]
                }

              example: |
                {
                  "rt":     ["oic.r.switch.binary"],
                  "id":     "unique_example_id",
                  "value":  false
                }

    post:
      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.switch.binary.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Binary Switch",
              "definitions": {
                "oic.r.switch.binary": {
                  "type": "object",
                  "properties": {
                    "value": {
                      "type": "boolean",
                      "description": "Status of the switch"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.switch.binary"}
              ],
              "required": [ "value" ]
            }

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

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id":  "http://openinterconnect.org/iotdatamodels/schemas/oic.r.switch.binary.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Binary Switch",
                  "definitions": {
                    "oic.r.switch.binary": {
                      "type": "object",
```

```
                    "properties": {
                      "value": {
                        "type": "boolean",
                        "description": "Status of the switch"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.switch.binary"}
                ],
                "required": [ "value" ]
              }

            example: |
              {
                "id":    "unique_example_id",
                "value": true
              }
```

6.4.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예		스위치의 상태

6.4.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/BinarySwitchResURI		get	post		

6.5 밝기

6.5.1 개요

이 resource 는 조명 또는 램프의 밝기를 기술한다. 밝기는 현재의 밝기 레벨을 0-100 범위의 양자화된 표현으로 나타내는 정수이다. 0 의 밝기는 resource 에 대한 최소값이다. 100 의 밝기는 resource 에 대한 최대값이다.

6.5.2 URI 예

/BrightnessResURI

6.5.3 Resource Type

resource type (rt)는 oic.r.light.brightness 로 정의된다.

6.5.4 RAML 정의

```
#%RAML 0.8
title: OICBrightness
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]
```

```
/BrightnessResURI:
  description: |
    This resource describes the brightness of a light or lamp.
    brightness is an integer showing the current brightness level as a quantized representation in
the range 0-100.
    A brightness of 0 is the minimum for the resource.
    A brightness of 100 is the maximum for the resource.

  is : ['interface']
  get:
    description: |
      Retrieves the current brightness level.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.light.brightness.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Brightness",
                "definitions": {
                  "oic.r.light.brightness": {
                    "type": "object",
                    "properties": {
                      "brightness": {
                        "type": "integer",
                        "description": "Quantized representation in the range 0-100 of the current
sensed or set value for Brightness",
                        "minimum": 0,
                        "maximum": 100
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.light.brightness"}
                ],
                "required": [ "brightness" ]
              }

            example: |
              {
                "rt":         ["oic.r.light.brightness"],
                "id":         "unique_example_id",
                "brightness": 50
              }

  post:
    description: |
      Sets the desired brightness level.

    body:
      application/json:
        schema: |
```

```
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.light.brightness.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Brightness",
              "definitions": {
                "oic.r.light.brightness": {
                  "type": "object",
                  "properties": {
                    "brightness": {
                      "type": "integer",
                      "description": "Quantized representation in the range 0-100 of the current
sensed or set value for Brightness",
                      "minimum": 0,
                      "maximum": 100
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.light.brightness"}
              ],
              "required": [ "brightness" ]
            }

          example: |
            {
              "id":         "unique_example_id",
              "brightness": 10
            }

      responses :
        200:
          description: |
            Indicates that the brightness was changed.
            The new brightness level is provided in the response.

          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.light.brightness.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Brightness",
                  "definitions": {
                    "oic.r.light.brightness": {
                      "type": "object",
                      "properties": {
                        "brightness": {
                          "type": "integer",
                          "description": "Quantized representation in the range 0-100 of the current
sensed or set value for Brightness",
                          "minimum": 0,
                          "maximum": 100
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
```

```
                {"$ref": "#/definitions/oic.r.light.brightness"}
              ],
              "required": [ "brightness" ]
            }

          example: |
            {
              "id":         "unique_example_id",
              "brightness": 10
            }
```

6.5.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
brightness	정수	예		밝기에 대해 현재 감지되거나 설정된 값의 0-100 범위의 양자화된 표현

6.5.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/BrightnessResURI		get	post		

6.6 색채

6.6.1 개요

이 resource 는 색채 규약을 사용하여 색을 기술한다. Property 는 hue, saturation, csc, 및 ct 이다. Hue 및 saturation 은 CIECAM02 모델 정의 ([CIE CIE159:2004] 참조)에 의해 정의된 정수 값이다. csc 는 CIE 색 공간 내의 색 공간 좌표이다. 배열 내의 제 1 항목은 X 좌표이다. 배열 내의 제 2 항목은 Y 좌표이다. ct 는 미레드(Mired) 색 온도이다.

6.6.2 URI 예

/ColourChromaResURI

6.6.3 Resource Type

resource type (rt)는 oic.r.colour.chroma 로 정의된다.

6.6.4 RAML 정의

```
#%RAML 0.8
title: OICColourChroma
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]
```

```
/ColourChromaResURI:
  description: |
    This resource describes the colour using chroma conventions.
    Properties are hue, saturation, csc, and ct.
    Hue and saturation are integer values as defined by the CIECAM02 model definition (see
reference [CIE CIE159:2004]).
    csc is the colour space coordinates in CIE colour space.
      The first item in the array is the X coordinate.
      The second item in the array is the Y coordinate.
    ct is the Mired colour temperature.

  is : ['interface']
  get:
    description: |
      Provides the colour using chroma conventions.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":  "http://openinterconnect.org/iotdatamodels/schemas/oic.r.colour.chroma.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Colour Chroma",
                "definitions": {
                  "oic.r.colour.chroma": {
                    "type": "object",
                    "properties": {
                      "hue":             {
                        "type": "integer",
                        "description": "Hue as defined by the CIECAM02 model definition"
                      },
                      "saturation":      {
                        "type": "integer",
                        "description": "Saturation as defined by the CIECAM02 model definition"
                      },
                      "csc": {
                        "type": "array",
                        "description": "X and Y coordinates of the colour in CIE colour space",
                        "minItems": 2,
                        "maxItems": 2,
                        "items": {
                          "type": "number",
                          "minimum": 0,
                          "maximum": 1
                        }
                      },
                      "ct": {
                        "type": "integer",
                        "description": "Mired colour temperature"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.colour.chroma"}
                ],
                "required": [ "hue", "saturation", "csc" ]
```

```
                }

              example: |
                {
                  "rt":         ["oic.r.colour.chroma"],
                  "id":         "unique_example_id",
                  "hue":        13088,
                  "saturation": 212,
                  "csc":        [0.41,0.51],
                  "ct":         457
                }

    post:
      description: |
        Sets current colour chroma values

      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.colour.chroma.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Colour Chroma",
              "definitions": {
                "oic.r.colour.chroma": {
                  "type": "object",
                  "properties": {
                    "hue":             {
                      "type": "integer",
                      "description": "Hue as defined by the CIECAM02 model definition"
                    },
                    "saturation":      {
                      "type": "integer",
                      "description": "Saturation as defined by the CIECAM02 model definition"
                    },
                    "csc": {
                      "type": "array",
                      "description": "X and Y coordinates of the colour in CIE colour space",
                      "minItems": 2,
                      "maxItems": 2,
                      "items": {
                        "type": "number",
                        "minimum": 0,
                        "maximum": 1
                      }
                    },
                    "ct": {
                      "type": "integer",
                      "description": "Mired colour temperature"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.colour.chroma"}
              ],
              "required": [ "hue", "saturation", "csc" ]

            }

          example: |
```

```
            {
              "id":          "unique_example_id",
              "hue":         13088,
              "saturation": 212,
              "csc":         [0.41,0.51],
              "ct":          457
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id":  "http://openinterconnect.org/iotdatamodels/schemas/oic.r.colour.chroma.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Colour Chroma",
                  "definitions": {
                    "oic.r.colour.chroma": {
                      "type": "object",
                      "properties": {
                        "hue":             {
                          "type": "integer",
                          "description": "Hue as defined by the CIECAM02 model definition"
                        },
                        "saturation":      {
                          "type": "integer",
                          "description": "Saturation as defined by the CIECAM02 model definition"
                        },
                        "csc": {
                          "type": "array",
                          "description": "X and Y coordinates of the colour in CIE colour space",
                          "minItems": 2,
                          "maxItems": 2,
                          "items": {
                            "type": "number",
                            "minimum": 0,
                            "maximum": 1
                          }
                        },
                        "ct": {
                          "type": "integer",
                          "description": "Mired colour temperature"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.colour.chroma"}
                  ],
                  "required": [ "hue", "saturation", "csc" ]

                }

              example: |
                {
                  "id":          "unique_example_id",
                  "hue":         13088,
                  "saturation":  212,
                  "csc":         [0.41,0.51],
                  "ct":          467
                }
```

6.6.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
hue	정수	예		CIECAM02 모델 정의에 의해 정의된 색조
saturation	정수	예		CIECAM02 모델 정의에 의해 정의된 채도
csc	배열: schema 참조	예		CIE 색 공간 내의 X 및 Y 좌표
ct	정수			미레드 색 온도

6.6.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ColourChromaResURI		get	post		

6.7 컬러 RGB

6.7.1 개요

이 resource 는 정수의 배열로 표현된 RGB 공간 내의 실제 컬러를 규정한다. 각 컬러 값은 Red, Green, Blue 성분으로 기술된다. 이들 컬러 값은 정수 값의 배열 ([R,G,B])로 인코딩된이다다. 성분마다의 최소 및 최대 컬러 값은 (oic.r.baseresource 로부터) 범위에 의해 기술될 수 있다. (oic.r.baseresource 로부터) 범위가 생략되면 범위는 [0,255]이다.

6.7.2 URI 예

/ColourRGBResURI

6.7.3 Resource Type

resource type (rt)는 oic.r.colour.rgb 로 정의된다.

6.7.4 RAML 정의

```
#%RAML 0.8
title: OICColourRGB
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]

/ColourRGBResURI:
  description: |
```

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

    is : ['interface']
    get:
      description: |
        Retrieves the current colour in RGB.
        Value is an array of integer values in the order R,G,B.

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.colour.rgb.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Colour RGB",
                  "definitions": {
                    "oic.r.colour.rgb": {
                      "type": "object",
                      "properties": {
                        "rgbValue": {
                          "type": "array",
                          "description": "RGB value; the first item is the R, second the G, third the
B.",
                          "minItems": 3,
                          "maxItems": 3,
                          "items": {
                            "type": "integer"
                          }
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.colour.rgb"}
                  ],
                  "required": ["rgbValue"]
                }

              example: |
                {
                  "rt":       ["oic.r.colour.rgb"],
                  "id":       "unique_example_id",
                  "rgbValue": [255,255,255],
                  "range":    [0,255]
                }

    post:
      description: |
        Sets the current colourRGB value

      body:
        application/json:
```

```
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.colour.rgb.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Colour RGB",
              "definitions": {
                "oic.r.colour.rgb": {
                  "type": "object",
                  "properties": {
                    "rgbValue": {
                      "type": "array",
                      "description": "RGB value; the first item is the R, second the G, third the B.",
                      "minItems": 3,
                      "maxItems": 3,
                      "items": {
                        "type": "integer"
                      }
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.colour.rgb"}
              ],
              "required": ["rgbValue"]
            }

          example: |
            {
              "id":       "unique_example_id",
              "rgbValue": [255,0,0]
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.colour.rgb.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Colour RGB",
                  "definitions": {
                    "oic.r.colour.rgb": {
                      "type": "object",
                      "properties": {
                        "rgbValue": {
                          "type": "array",
                          "description": "RGB value; the first item is the R, second the G, third the
B.",
                          "minItems": 3,
                          "maxItems": 3,
                          "items": {
                            "type": "integer"
                          }
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
```

```
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.colour.rgb"}
              ],
              "required": ["rgbValue"]
            }

          example: |
            {
              "id":       "unique_example_id",
              "rgbValue": [255,0,0]
            }
```

6.7.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
rgbValue	배열: schema 참조	예		RGB 값. 제 1 항목은 R, 제 2 항목은 G, 제 3 항목은 B 이다.

6.7.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ColourRGBResURI		get	post		

6.8 조광

6.8.1 개요

이 resource 는 조광 기능을 기술한다. 값은 현재의 조광 레벨을 나타내는 정수이다. (oic.r.baseresource 로부터) 증분이 존재하면, 조광 값 간의 증가를 나타낸다. (oic.r.baseresource 로부터) 범위가 생략되면 범위는 [0,100]이다. 0 의값은 완전히 어두운 것을 의미하고 100 의 값은 조광을 적용하지 않는 상태를 나타낸다.

6.8.2 URI 예

/DimmingResURI

6.8.3 Resource Type

resource type (rt)는 oic.r.light.dimming 으로 정의된다.

6.8.4 RAML 정의

```
#%RAML 0.8
title: OICDimming
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]
```

```
/DimmingResURI:
  description: |
    This resource describes a dimming function.
    The value is an integer showing the current dimming level.
    If step (from oic.r.baseresource) is present then it represents the increment between dimmer values.
    When range (from oic.r.baseresource) is omitted, then the range is [0,100].
    A value of 0 means total dimming; a value of 100 means no dimming.

  is : ['interface']
  get:
    description: |
      Retrieves the current dimming level.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":  "http://openinterconnect.org/iotdatamodels/schemas/oic.r.light.dimming.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights reserved.",
                "title": "Dimming",
                "definitions": {
                  "oic.r.light.dimming": {
                    "type": "object",
                    "properties": {
                      "dimmingSetting":  {
                        "type": "integer",
                        "description": "Current dimming value"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.light.dimming"}
                ],
                "required": ["dimmingSetting"]
              }

            example: |
              {
                "rt":             ["oic.r.light.dimming"],
                "id":             "unique_example_id",
                "dimmingSetting": 30,
                "step":           5,
                "range":          [0,100]
              }

  post:
    description: |
      Sets the desired dimming level.

    body:
      application/json:
        schema: |
          {
            "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.light.dimming.json#",
```

```
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Dimming",
              "definitions": {
                "oic.r.light.dimming": {
                  "type": "object",
                  "properties": {
                    "dimmingSetting":  {
                      "type": "integer",
                      "description": "Current dimming value"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.light.dimming"}
              ],
              "required": ["dimmingSetting"]
            }

          example: |
            {
              "id":             "unique_example_id",
              "dimmingSetting": 40
            }

      responses :
        200:
          description: |
            Indicates that the dimming was changed.
            The new dimming level is provided in the response.

          body:
            application/json:
              schema: |
                {
                  "id":  "http://openinterconnect.org/iotdatamodels/schemas/oic.r.light.dimming.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Dimming",
                  "definitions": {
                    "oic.r.light.dimming": {
                      "type": "object",
                      "properties": {
                        "dimmingSetting":  {
                          "type": "integer",
                          "description": "Current dimming value"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.light.dimming"}
                  ],
                  "required": ["dimmingSetting"]
                }

              example: |
```

```
                {
                  "id":             "unique_example_id",
                  "dimmingSetting": 40
                }

        403:
          description: |
            This response is generated by the OIC Server when the client sends:
              An update with an out of range property value for dimmingSetting.
            The server responds with the current resource representation.

          body:
            application/json:
              schema: |
                {
                  "id":  "http://openinterconnect.org/iotdatamodels/schemas/oic.r.light.dimming.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Dimming",
                  "definitions": {
                    "oic.r.light.dimming": {
                      "type": "object",
                      "properties": {
                        "dimmingSetting":  {
                          "type": "integer",
                          "description": "Current dimming value"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.light.dimming"}
                  ],
                  "required": ["dimmingSetting"]
                }

              example: |
                {
                  "id":             "unique_example_id",
                  "dimmingSetting": 40
                }
```

6.8.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
dimmingSetting	정수	예		현재의 조광 값

6.8.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/DimmingResURI		get	post		

6.9 도어

6.9.1 개요

이 resource 는 도어의 개방 상태를 기술한다. 도어는 openState (Open/Closed), openDuration (ISO 8601 Time), 및 openAlarm (boolean)에 의해 모델링 된다. 개방 상태에 대해, 값 'Open'은 도어가 개방된 것을 나타낸다. 값 'Closed'는 도어가 닫힌 것을 나타낸다. openDuration 의 type 은 ISO 8601 Time 인코딩된 스트링이다. openAlarm 값 'true' 는 개방 알람이 설정되어 있음을 나타낸다. openAlarm 값 'false'는 개방 알람이 해제되어 있음을 나타낸다.

6.9.2 URI 예

/DoorResURI

6.9.3 Resource Type

resource type (rt)는 oic.r.door 로 정의된다.

6.9.4 RAML 정의

```
#%RAML 0.8
title: OICDoor
version: v1.1.0-20160519
traits:
 - interface-actuator :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]
 - interface-all :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.s", "oic.if.baseline"]

/DoorResURI:
  description: |
    This resource describes the open state of the door.
    A door is modelled by means of openState (Open/Closed), openDuration (ISO 8601 Time), and
openAlarm (boolean).
    For openState, the value 'Open' indicates the door is open.
    The value 'Closed' indicates the door is closed.
    The type of openDuration is an ISO 8601 Time encoded string.
    The openAlarm value 'true' indicates that the open alarm is active.
    The openAlarm value 'false' indicates that open alarm is not active.

  get:
    description: |
      retrieves the state of the Door.

    is : ['interface-all']
    responses :
      200:
        body:
          application/json:
            schema: |
```



```
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.door.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Door",
                  "definitions": {
                    "oic.r.door": {
                      "type": "object",
                      "properties": {
                        "openState" : {
                          "enum": ["Open","Closed"],
                          "readOnly": true,
                          "description": "The state of the door (open or closed)"
                        },
                        "openDuration": {
                          "type": "string",
                          "readOnly": true,
                          "description": "The time duration the door has been open"
                        },
                        "openAlarm": {
                          "type": "boolean",
                          "description": "The state of the door open alarm"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.door"}
                  ],
                  "required": ["openState"]
                }

              example: |
                {
                  "rt" :          ["oic.r.door"],
                  "id":           "unique_example_id",
                  "openState":    "Open",
                  "openDuration": "P0Y0M0DT2H25M5S",
                  "openAlarm":    true
                }

    post:
      description: |
        Sets the current Door properties.
        The only property that can be set as part of an update operation is
          the openAlarm.
        This can be made active (true) or inactive (false)

      is : ['interface-actuator']
      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.door-Update.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
rights reserved.",
              "title": "Door",
              "definitions": {
                "oic.r.door": {
                  "type": "object",
                  "properties": {
                    "openAlarm": {
                      "type": "boolean",
```

```
                    "description": "The state of the door open alarm"
                  }
                }
              }
            },
            "type": "object",
            "allOf": [
              {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
              {"$ref": "#/definitions/oic.r.door"}
            ]
          }

        example: |
          {
            "id":         "unique_example_id",
            "openAlarm":  false
          }

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.door-Update.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Door",
                "definitions": {
                  "oic.r.door": {
                    "type": "object",
                    "properties": {
                      "openAlarm": {
                        "type": "boolean",
                        "description": "The state of the door open alarm"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.door"}
                ]
              }

            example: |
              {
                "id":         "unique_example_id",
                "openAlarm":  false
              }
```

6.9.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
openDuration	스트링		Read Only	도어가 개방된 지속 시간
openAlarm	boolean			도어개방 알람의 상태

openState	복수 타입: schema 참조	예	Read Only	도어의 상태 (open 또는 closed)

6.9.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/DoorResURI		get	post		

6.10 에너지 소비

6.10.1 개요

이 resource 는 전원이 투입된 이후 device 에 의해 소비된 에너지 (에너지 값의 단위는 Watt Hours [Wh]) 및 resource 가 조회되었을 때 device 의 순간적인 전력 인출 (전력 값의 단위는 Watts [W])를 기술한다. 전력 값의 단위는 Watts [W]이다. 에너지 값의 단위는 Watt Hours [Wh]이다.

6.10.2 URI 예

/EnergyConsumptionResURI

6.10.3 Resource Type

resource type (rt)는 oic.r.energy.consumption 으로 정의된다.

6.10.4 RAML 정의

```
#%RAML 0.8
title: OICEnergyConsumption
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


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

  is : ['interface']
  get:
    description: |
      Provides the current power draw and cumulative energy usage.

    responses :
      200:
        body:
          application/json:
```

```
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.energy.consumption.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Energy Consumption",
                "definitions": {
                  "oic.r.energy.consumption": {
                    "type": "object",
                    "properties": {
                      "power":    {
                        "type": "number",
                        "readOnly": true,
                        "description": "Instantaneous Power"
                      },
                      "energy":   {
                        "type": "number",
                        "readOnly": true,
                        "description": "Energy consumed"}
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.energy.consumption"}
                ],
                "required": ["power", "energy"]
              }

            example: |
              {
                "rt":     ["oic.r.energy.consumption"],
                "id":     "unique_example_id",
                "power":  2000.1,
                "energy": 3500.4
              }
```

6.10.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
energy	숫자	예	Read Only	소비된 에너지
power	숫자	예	Read Only	순간 전력

6.10.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/EnergyConsumptionResURI		get			

6.11 에너지 사용

6.11.1 개요

이 resource 는 누적되는 시간 기반 에너지 사용의 조회를 기술한다. 이 resource 는 TimePeriod Resource 및 EnergyConsumption Resource 의 collection 으로 구성되는 복합 resource 이다.

6.11.2 URI 예

/EnergyUsageResURI

6.11.3 Resource Type

resource type (rt)는 oic.r.energy.usage.로 정의된다.

6.11.4 RAML 정의

```
#%RAML 0.8
title: OICEnergyUsage
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.ll", "oic.if.b", "oic.if.baseline"]


/EnergyUsageResURI:
  description: |
    This resource describes a cumulative time-based energy usage query..
    The resource is a composite resource being made up as a collection of:
      TimePeriod Resource
      EnergyConsumption Resource

  is : ['interface']
  get:
    description: |
      Retrieves the energy usage information as a composite of consumption over time.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.energy.usage.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Energy Usage",
                "definitions": {
                  "oic.r.energy.usage": {
                    "type": "object",
                    "properties": {
                      "resources": {
                        "type": "array",
                        "minItems": 2,
                        "maxItems": 2,
                        "items": {
                          "$ref": "oic.oic-link-schema.json#/definitions/oic.oic-link"
                        }
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.energy.usage"}
```

```
                ],
                "required": ["resources"]
              }

            example: |
              {
                "rt": ["oic.r.energy.usage"],
                "id": "unique_example_id",
                "resources": [
                  {
                    "href": "/TimeIntervalResURI",
                    "rel":  "contains",
                    "rt":   ["oic.r.time.period"],
                    "if":   ["oic.if.a"],
                    "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
                  },
                  {
                    "href": "/EnergyConsumptionResURI",
                    "rel":  "contains",
                    "rt":   ["oic.r.energy.consumption"],
                    "if":   ["oic.if.s"],
                    "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
                  }
                ]
              }
```

6.11.5 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/EnergyUsageResURI		get			

6.12 습도

6.12.1 개요

이 resource 는 감지되거나 요구되는 습도를 기술한다. 값 humidity 는 측정된 상대 습도의 백분율을 기술하는 정수이다. 값 desiredHumidity 는 요구되는 상대 습도를 나타내는 정수 이다.

6.12.2 URI 예

/HumidityResURI

6.12.3 Resource Type

resource type (rt)는 oic.r.humidity 로 정의된다.

6.12.4 RAML 정의

```
#%RAML 0.8
title: OICHumidity
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.s", "oic.if.baseline"]

/HumidityResURI:
```

```
  description: |
    This resource describes a sensed or desired humidity.
    The value humidity is an integer describing the percentage measured relative humidity.
    The value desiredHumidity is an integer showing the desired target relative humidity.

  is : ['interface']
  get:
    description: |
      Retrieves the current (relative) humidity level.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.humidity.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Humidity",
                "definitions": {
                  "oic.r.humidity": {
                    "type": "object",
                    "properties": {
                      "humidity":    {
                        "type": "integer",
                        "readOnly": true,
                        "description": "Current sensed value for Humidity"
                      },
                      "desiredHumidity":  {
                        "type": "integer",
                        "description": "Desired value for Humidity"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.humidity"}
                ],
                "required": ["humidity"]
              }

            example: |
              {
                "rt":               ["oic.r.humidity"],
                "id":               "unique_example_id",
                "humidity":         40,
                "desiredHumidity":  40
              }

  post:
    description: |
      Sets the desired relative humidity level.

    body:
      application/json:
        schema: |
          {
            "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.humidity-Update.json#",
            "$schema": "http://json-schema.org/draft-04/schema#",
```

```
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Humidity",
              "definitions": {
                "oic.r.humidity": {
                  "type": "object",
                  "properties": {
                    "desiredHumidity":  {
                      "type": "integer",
                      "description": "Desired value for Humidity"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.humidity"}
              ]
            }

          example: |
            {
              "id":               "unique_example_id",
              "desiredHumidity" : 45
            }

      responses :
        200:
          description: |
            Indicates that the relative humidity level was changed.
            The new relative humidity level is provided in the response.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.humidity-
Update.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Humidity",
                  "definitions": {
                    "oic.r.humidity": {
                      "type": "object",
                      "properties": {
                        "desiredHumidity":  {
                          "type": "integer",
                          "description": "Desired value for Humidity"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.humidity"}
                  ]
                }

              example: |
                {
                  "id":               "unique_example_id",
                  "desiredHumidity": 45
```

```
}
```

6.12.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
desiredHumidity	정수			습도에 대해 요구되는 값
humidity	정수	예	Read Only	습도에 대해 현재 감지된 값

6.12.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/HumidityResURI		get	post		

6.13 제빙기

6.13.1 개요

이 resource 는 제빙기의 동작 상태를 기술한다. Status 는 가능한 제빙기 상태의 집합으로부터 하나의 값을 포함하는 하나의 스트링이다. 가능한 상태는 열거형 [on, off, full]에 의해 정의된다. 'on' 상태는 제빙기가 동작중인 것을 나타낸다. 'off' 상태는 제빙기가 동작하지 않음을 나타낸다. 'full' 상태는 얼음 통이 채워져 있음 (제빙기가 동작 중)을 나타낸다.

6.13.2 URI 예

/IceMakerResURI

6.13.3 Resource Type

resource type (rt)는 oic.r.icemaker 로 정의된다.

6.13.4 RAML 정의

```
#%RAML 0.8
title: OICIceMaker
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


/IceMakerResURI:
  description: |
    This resource describes an the operational state of an Ice Maker.
    The status is a string containing a value from the set of possible ice maker statuses.
    The possible statuses are defined by the enumeration [on, off, full]
    A status of 'on' means that the Ice Maker is operating.
    A status of 'off' means that the Ice Maker is not operating.
    A status of 'full' means that the ice collection bin is full (Ice Maker is operating).
```



```
  is : ['interface']
  get:
    description: |
      Retrieves the current Ice Maker status.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.iceMaker.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Ice Maker",
                "definitions": {
                  "oic.r.iceMaker": {
                    "type": "object",
                    "properties": {
                      "status": {
                        "enum": ["on","off","full"],
                        "description": "Status of the Ice Maker"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.iceMaker"}
                ],
                "required": ["status"]
              }

            example: |
              {
                "rt":     ["oic.r.icemaker"],
                "id":     "unique_example_id",
                "status": "on"
              }

  post:
    description: |
      Sets the desired Ice Maker status.
      Only valid settings for status in a Post shall be [on,off].

    body:
      application/json:
        schema: |
          {
            "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.iceMaker-Update.json#",
            "$schema": "http://json-schema.org/draft-04/schema#",
            "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
            "title": "Ice Maker",
            "definitions": {
              "oic.r.icemaker": {
                "type": "object",
                "properties": {
                  "status": {
                    "enum": ["on","off"],
                    "description": "Set the status of the Ice Maker"
```

```
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.icemaker"}
              ],
              "required": ["status"]
            }

          example: |
            {
              "id":     "unique_example_id",
              "status": "off"
            }

      responses :
        200:
          description: |
            Indicates that the Ice Maker status was changed.
            The new status  is provided in the response.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.iceMaker-
Update.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Ice Maker",
                  "definitions": {
                    "oic.r.icemaker": {
                      "type": "object",
                      "properties": {
                        "status": {
                          "enum": ["on","off"],
                          "description": "Set the status of the Ice Maker"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.icemaker"}
                  ],
                  "required": ["status"]
                }

              example: |
                {
                  "id":     "unique_example_id",
                  "status": "off"
                }

        403:
          description: |
            This response is generated by the OIC Server when the client sends:
              An update with an invalid property value for status.
```

```
            The server responds with the current resource representation.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.iceMaker-
Update.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Ice Maker",
                  "definitions": {
                    "oic.r.icemaker": {
                      "type": "object",
                      "properties": {
                        "status": {
                          "enum": ["on","off"],
                          "description": "Set the status of the Ice Maker"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.icemaker"}
                  ],
                  "required": ["status"]
                }

              example: |
                {
                  "id":     "unique_example_id",
                  "status": "off"
                }
```

6.13.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
status	복수 타입: schema 참조	예		제빙기의 상태

6.13.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/IceMakerResURI		get	post		

6.14 잠금

6.14.1 개요

잠금을 기술하는 Resource. lockState 의 type 에 대해 값 'Locked'는 도어가 잠겨 있는 상태를 나타낸다. 값 'Unlocked' 는 도어가 잠겨 있지 않은 상태를 나타낸다.

6.14.2 URI 예

/LockStatusResURI

6.14.3 Resource Type

resource type (rt)는 oic.r.lock.status 로 정의된다.

6.14.4 RAML 정의

```
#%RAML 0.8
title: OICLock
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]

/LockStatusResURI:
  description: |
    Resource describing a lock.
    For the type of lockState, the value 'Locked' indicates that the door is Locked.
    The value 'Unlocked' indicates that the door is Unlocked.

  is : ['interface']
  get:
    description: |
      Retrieves the state of the lock.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.lock.status.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Lock",
                "definitions": {
                  "oic.r.lock.status": {
                    "type": "object",
                    "properties": {
                      "lockState" : {
                        "type": "string",
                        "enum": ["Locked", "Unlocked"],
                        "description": "State of the lock."
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.lock.status"}
                ],
                "required": ["lockState"]
              }

            example: |
              {
                "rt":         ["oic.r.lock.status"],
                "id":         "unique_example_id",
```

```
                  "lockState":  "Locked"
                }

  post:
    description: |
      Sets the current lock state.

    body:
      application/json:
        schema: |
          {
            "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.lock.status.json#",
            "$schema": "http://json-schema.org/draft-04/schema#",
            "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
            "title": "Lock",
            "definitions": {
              "oic.r.lock.status": {
                "type": "object",
                "properties": {
                  "lockState" : {
                    "type": "string",
                    "enum": ["Locked", "Unlocked"],
                    "description": "State of the lock."
                  }
                }
              }
            },
            "type": "object",
            "allOf": [
              {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
              {"$ref": "#/definitions/oic.r.lock.status"}
            ],
            "required": ["lockState"]
          }

        example: |
          {
            "id":         "unique_example_id",
            "lockState":  "Unlocked"
          }

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.lock.status.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Lock",
                "definitions": {
                  "oic.r.lock.status": {
                    "type": "object",
                    "properties": {
                      "lockState" : {
                        "type": "string",
                        "enum": ["Locked", "Unlocked"],
                        "description": "State of the lock."
                      }
                    }
                  }
```

```
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.lock.status"}
                  ],
                  "required": ["lockState"]
                }

              example: |
                {
                  "id":         "unique_example_id",
                  "lockState":  "Unlocked"
                }

        403:
          description: |
            This response is generated by the OIC Server when the client sends:
              An update with an invalid property value for lockState.
            The server responds with the current resource representation.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.lock.status.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Lock",
                  "definitions": {
                    "oic.r.lock.status": {
                      "type": "object",
                      "properties": {
                        "lockState" : {
                          "type": "string",
                          "enum": ["Locked", "Unlocked"],
                          "description": "State of the lock."
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.lock.status"}
                  ],
                  "required": ["lockState"]
                }

              example: |
                {
                  "lockState": "Unlocked"
                }
```

6.14.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
lockState	스트링	예	.	잠금 상태

6.14.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/LockStatusResURI		get	post		

6.15 잠금 코드

6.15.1 개요

잠금 코드를 기술하는 Resource. lockCodeList 는 잠금 관련 가능 코드의 배열이다. 이들은 모두 스트링으로 제공된다.

6.15.2 URI 예

/LockCodeResURI

6.15.3 Resource Type

resource type (rt)는 oic.r.lock.code 로 정의된다.

6.15.4 RAML 정의

```
#%RAML 0.8
title: OICLockCode
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


/LockCodeResURI:
  description: |
    Resource describing a lock code.
    The lockCodeList is an array of possible codes that may be associated with a lock.
    These are all presented as strings.

  is : ['interface']
  get:
    description: |
      Retrieves the current lock code values.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.lock.code.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Lock Code",
                "definitions": {
                  "oic.r.lock.code": {
                    "type": "object",
```

```
                      "properties": {
                        "lockCodeList" : {
                          "type": "array",
                          "items": {
                            "type": "string",
                            "description": "Value for the lock code"
                          }
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.lock.code"}
                  ],
                  "required": ["lockCodeList"]
                }

              example: |
                {
                  "rt":           ["oic.r.lock.code"],
                  "id":           "unique_example_id",
                  "lockCodeList": ["012345","112233"]
                }

    post:
      description: |
        Updates the current lock code values.

      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.lock.code.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Lock Code",
              "definitions": {
                "oic.r.lock.code": {
                  "type": "object",
                  "properties": {
                    "lockCodeList" : {
                      "type": "array",
                      "items": {
                        "type": "string",
                        "description": "Value for the lock code"
                      }
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.lock.code"}
              ],
              "required": ["lockCodeList"]
            }

          example: |
            {
              "id":           "unique_example_id",
              "lockCodeList": ["543210","332211"]
```

```
            }

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.lock.code.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Lock Code",
                "definitions": {
                  "oic.r.lock.code": {
                    "type": "object",
                    "properties": {
                      "lockCodeList" : {
                        "type": "array",
                        "items": {
                          "type": "string",
                          "description": "Value for the lock code"
                        }
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.lock.code"}
                ],
                "required": ["lockCodeList"]
              }

            example: |
              {
                "id":           "unique_example_id",
                "lockCodeList": ["543210","332211"]
              }
```

6.15.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
lockCodeList	배열: schema 참조	예		

6.15.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/LockCodeResURI		get	post		

6.16 모드

6.16.1 개요

이 resource 는 하나의 device 가 제공할 수 있는 동작 모드를 기술한다. 모드는 판독 또는 설정될 수 있다. supportedMode 는 device 가 지원 가능한 모드의 배열이다. modes 는 현재 활성인 모드의 배열이다.

6.16.2 URI 예

/ModeResURI

6.16.3 Resource Type

resource type (rt)는 oic.r.mode 로 정의된다.

6.16.4 RAML 정의

```
#%RAML 0.8
title: OICMode
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]

/ModeResURI:
  description: |
    This resource describes the modes of operation that a device can provide.
    The mode can be read or set.
    The supportedModes is an array of possible modes the device supports.
    The modes are an array of the currently active mode(s).

  is : ['interface']
  get:
    description: |
      Retrieves the current mode.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.mode.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Mode",
                "definitions": {
                  "oic.r.mode": {
                    "type": "object",
                    "properties": {
                      "supportedModes": {
                        "type": "array",
                        "readOnly": true,
                        "description": "Array of possible modes the device supports.",
```

```
                          "items": {
                            "type": "string"
                          }
                        },
                        "modes":          {
                          "type": "array",
                          "description": "Array of the currently active mode(s)",
                          "items": {
                            "type": "string"
                          }
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.mode"}
                  ],
                  "required": ["supportedModes", "modes"]
                }

              example: |
                {
                  "rt":             ["oic.r.mode"],
                  "id":             "unique_example_id",
                  "supportedModes": ["active","armedAway","armedStay","armedInstant"],
                  "modes":          ["active"]
                }

    post:
      description: |
        Sets the desired mode.

      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.mode-Update.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Mode",
              "definitions": {
                "oic.r.mode": {
                  "type": "object",
                  "properties": {
                    "modes":          {
                      "type": "array",
                      "description": "Desired mode",
                      "items": {
                        "type": "string"
                      }
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.mode"}
              ],
              "required": ["modes"]
            }

          example: |
```

```
            {
              "id":    "unique_example_id",
              "modes": ["armedAway"]
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.mode-Update.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Mode",
                  "definitions": {
                    "oic.r.mode": {
                      "type": "object",
                      "properties": {
                        "modes":          {
                          "type": "array",
                          "description": "Desired mode",
                          "items": {
                            "type": "string"
                          }
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.mode"}
                  ],
                  "required": ["modes"]
                }

              example: |
                {
                  "id":    "unique_example_id",
                  "modes": ["armedAway"]
                }

        403:
          description: |
            This response is generated by the OIC Server when the client sends:
              An update with an value for mode that is not found in supportedModes.
            The server responds with the current resource representation.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.mode.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Mode",
                  "definitions": {
                    "oic.r.mode": {
                      "type": "object",
                      "properties": {
                        "supportedModes": {
```

```
                        "type": "array",
                        "readOnly": true,
                        "description": "Array of possible modes the device supports.",
                        "items": {
                          "type": "string"
                        }
                      },
                      "modes":          {
                        "type": "array",
                        "description": "Array of the currently active mode(s)",
                        "items": {
                          "type": "string"
                        }
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.mode"}
                ],
                "required": ["supportedModes", "modes"]
              }

            example: |
              {
                "id":             "unique_example_id",
                "supportedModes": ["active","armedAway","armedStay","armedInstant"],
                "modes":          ["active"]
              }
```

6.16.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
supportedMode	배열: schema 참조	예	Read Only	device 가 지원 가능한 모드의 배열
modes	배열: schema 참조	예		현재 활성인 모드의 배열

6.16.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ModeResURI		get	post		

6.17 개방도

6.17.1 개요

이 resource 는 창, 도어, 블라인드, 또는 셔터와 같은 개체가 얼마나 개방되어 있는지를 기술한다. openLevel 은 판독될 수 있다 (센서로 작용). openLevel 은 또한 설정될 수 있다 (액츄에이터로 작용). openLevel 은 제공된 범위에 걸쳐 device 에 의존한다. (oic.r.baseresource 로 부터의) 범위가 생략되면 0 내지 100 이 가정되고, 여기에서 0 은 폐쇄를 의미하고, 100 은 완전 개방을 의미한다.

하나의 범위가 제공되면, 하한=폐쇄이고, 상한=개방이다. (oic.r.baseresource 로부터의) 증분이 제공되면 가능한 값 사이의 증가를 표현하고 제공되지 않는다면, 1 이 가정된다.

6.17.2 URI 예

/OpenLevelResURI

6.17.3 Resource Type

resource type (rt)는 oic.r.openlevel 로 정의된다.

6.17.4 RAML 정의

```
#%RAML 0.8
title: OICOpenLevel
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]

/OpenLevelResURI:
  description: |
    This resource describes how open or ajar an entity such as a window, door, blind or shutter is.
    The openLevel can be read (acting as a sensor).
    The openLevel can also be set (acting as an actuator).
    The openLevel is device dependent across the range provided.
    When range (from oic.r.baseresource) is omitted then 0 to 100 is assumed where 0 means closed,
100 means fully open.
    If a range is provided then the lower bound=closed, upper bound=open.
    If step (from oic.r.baseresource) is present then it represents the increment between possible
values; if not provided 1 is assumed.

  is : ['interface']
  get:
    description: |
      Retrieves the current openLevel.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.openLevel.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Open Level",
                "definitions": {
                  "oic.r.openlevel": {
                    "type": "object",
                    "properties": {
                      "openLevel":      {
                        "type": "integer",
                        "description": "How open or ajar the entity is"
```

```
                        },
                        "increment":  {
                          "type": "integer",
                          "description": "Deprecated, use 'step' instead.",
                          "readOnly": true
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.openlevel"}
                  ],
                  "required": ["openLevel"]
                }

              example: |
                {
                  "rt":         ["oic.r.openlevel"],
                  "id":         "unique_example_id",
                  "openLevel":  50,
                  "step":       2,
                  "range":      [0,100]
                }

    post:
      description: |
        Sets the desired openLevel.

      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.openLevel.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Open Level",
              "definitions": {
                "oic.r.openlevel": {
                  "type": "object",
                  "properties": {
                    "openLevel":      {
                      "type": "integer",
                      "description": "How open or ajar the entity is"
                    },
                    "increment":  {
                      "type": "integer",
                      "description": "Deprecated, use 'step' instead.",
                      "readOnly": true
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.openlevel"}
              ],
              "required": ["openLevel"]
            }

          example: |
            {
              "id":         "unique_example_id",
```

```
              "openLevel":  0
            }

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.openLevel.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Open Level",
                "definitions": {
                  "oic.r.openlevel": {
                    "type": "object",
                    "properties": {
                      "openLevel":      {
                        "type": "integer",
                        "description": "How open or ajar the entity is"
                      },
                      "increment":  {
                        "type": "integer",
                        "description": "Deprecated, use 'step' instead.",
                        "readOnly": true
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.openlevel"}
                ],
                "required": ["openLevel"]
              }

            example: |
              {
                "id":         "unique_example_id",
                "openLevel":  0
              }

      403:
        description: |
          This response is generated by the OIC Server when the client sends:
            An update with an out of range property value for openLevel.
          The server responds with the current resource representation.

        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.openLevel.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Open Level",
                "definitions": {
                  "oic.r.openlevel": {
                    "type": "object",
                    "properties": {
                      "openLevel":      {
```

```
                        "type": "integer",
                        "description": "How open or ajar the entity is"
                      },
                      "increment":  {
                        "type": "integer",
                        "description": "Deprecated, use 'step' instead.",
                        "readOnly": true
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.openlevel"}
                ],
                "required": ["openLevel"]
              }

            example: |
              {
                "id":         "unique_example_id",
                "openLevel":  50,
                "step":       2,
                "range":      [0,100]
              }
```

6.17.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
openLevel	정수	예		개체가 얼마나 개방되어 있는지
increment	정수		Read Only	Deprecated, 대신에 'step'을 사용

6.17.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/OpenLevelResURI		get	post		

6.18 동작 상태

6.18.1 개요

이 resource 는 device 에 대한 동작 및 작업 상태를 기술한다. states 는 판독 또는 설정될 수 있고, setting 은 요구되는 상태를 나타낸다. Device 는 불리한 동작 특성을 초래할 수 있는 상태로의 설정 시도를 거부할 수 있다. machineStates 는 가능한 동작 상태의 배열이다. currentMachineState 는 device 동작의 현재의 상태이다. jobStates 는 가능한 작업 상태의 배열이다. currentJobState 는 현재 활성인 job 상태이다. runningTime 은 현재의 동작상태내에서 ISO8601 인코딩된 경과 시간이다. remainingTime 은 현재의 동작상태의 완료까지 ISO8601 인코딩된 시간이다. progressPercentage 는 현재 jobState 의 완료도를 백분율로 표시한다.

6.18.2 URI 예

/OperationalStateResURI

6.18.3 Resource Type

resource type (rt)는 oic.r.operational.state 로 정의된다.

6.18.4 RAML 정의

```
#%RAML 0.8
title: OICOperation
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]

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

  is : ['interface']
  get:
    description: |
      Retrieves the current operational and job states.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.operational.state.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Operational State",
                "definitions": {
                  "oic.r.operational.state": {
                    "type": "object",
                    "properties": {
                      "machineStates":        {
                        "type": "array",
                        "readOnly": true,
                        "description": "array of the possible operational states.",
                        "items": {
                          "type": "string"
                        }
```

```
                        },
                        "currentMachineState":  {
                          "type": "string",
                          "description": "Current state of operation of the device."
                        },
                        "jobStates":            {
                          "type": "array",
                          "readOnly": true,
                          "description": "array of the possible job states.",
                          "items": {
                            "type": "string"
                          }
                        },
                        "currentJobState":      {
                          "type": "string",
                          "description": "Currently active jobState"
                        },
                        "runningTime":          {
                          "type": "string",
                          "readOnly": true,
                          "description": "Elapsed time in the current operational state"
                        },
                        "remainingTime":        {
                          "type": "string",
                          "readOnly": true,
                          "description": "Time till completion of the current operational state"
                        },
                        "progressPercentage":   {
                          "type": "integer",
                          "readOnly": true,
                          "description": "Percentage completeness of the current jobState"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.operational.state"}
                  ],
                  "required": ["machineStates", "currentMachineState"]
                }

              example: |
                {
                  "rt":                   ["oic.r.operational.state"],
                  "id":                   "unique_example_id",
                  "machineStates":        ["pause", "stopped", "idle", "active"],
                  "currentMachineState":  "active",
                  "jobStates":            ["preWash", "wash", "rinse", "spin", "dry", "airDry",
"wrinklePrevent"],
                  "currentJobState":      "rinse",
                  "runningTime":          "PT15M20S",
                  "remainingTime":        "PT10M40S",
                  "progressPercentage":    75
                }

  post:
    description: |
      Sets the desired operational or job state.

    body:
      application/json:
        schema: |
          {
            "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.operational.state-
Update.json#",
```

```
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Operational State",
              "definitions": {
                "oic.r.operational.state": {
                  "type": "object",
                  "properties": {
                    "currentMachineState":  {
                      "type": "string",
                      "description": "Current state of operation of the device."
                    },
                    "currentJobState":      {
                      "type": "string",
                      "description": "Currently active jobState"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.operational.state"}
              ]
            }

          example: |
            {
              "id":                    "unique_example_id",
              "currentMachineState":  "pause",
              "currentJobState":      "wash"
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.operational.state-
Update.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Operational State",
                  "definitions": {
                    "oic.r.operational.state": {
                      "type": "object",
                      "properties": {
                        "currentMachineState":  {
                          "type": "string",
                          "description": "Current state of operation of the device."
                        },
                        "currentJobState":      {
                          "type": "string",
                          "description": "Currently active jobState"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.operational.state"}
                  ]
                }
```

```
              example: |
                {
                  "id":                    "unique_example_id",
                  "currentMachineState":  "pause",
                  "currentJobState":      "wash"
                }

        403:
          description: |
            This response is generated by the OIC Server when the client sends:
              An update with an value for currentMachineState that is not found in machineStates.
              An update with an value for currentJobState that is not found in jobStates.
            The server responds with the current resource representation.

          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.operational.state.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Operational State",
                  "definitions": {
                    "oic.r.operational.state": {
                      "type": "object",
                      "properties": {
                        "machineStates":        {
                          "type": "array",
                          "readOnly": true,
                          "description": "array of the possible operational states.",
                          "items": {
                            "type": "string"
                          }
                        },
                        "currentMachineState":  {
                          "type": "string",
                          "description": "Current state of operation of the device."
                        },
                        "jobStates":            {
                          "type": "array",
                          "readOnly": true,
                          "description": "array of the possible job states.",
                          "items": {
                            "type": "string"
                          }
                        },
                        "currentJobState":      {
                          "type": "string",
                          "description": "Currently active jobState"
                        },
                        "runningTime":          {
                          "type": "string",
                          "readOnly": true,
                          "description": "Elapsed time in the current operational state"
                        },
                        "remainingTime":        {
                          "type": "string",
                          "readOnly": true,
                          "description": "Time till completion of the current operational state"
                        },
                        "progressPercentage":   {
                          "type": "integer",
                          "readOnly": true,
                          "description": "Percentage completeness of the current jobState"
                        }
                      }
```

```
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.operational.state"}
                  ],
                  "required": ["machineStates", "currentMachineState"]
                }

              example: |
                {
                  "id":                    "unique_example_id",
                  "machineStates":         ["pause", "stopped", "idle", "active"],
                  "currentMachineState":   "active",
                  "jobStates":             ["preWash", "wash", "rinse", "spin", "dry", "airDry",
"wrinkleprevent"],
                  "currentJobState":       "rinse",
                  "runningTime":           "PT15M20S",
                  "remainingTime":         "PT10M40S",
                  "progressPercentage":    75
                }
```

6.18.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
currentMachineState	스트링	예		Device 동작의 현재 상태
currentJobState	스트링			현재 활성인 작업 상태
machineStates	배열: schema 참조	예	Read Only	가능한 동작 상태의 배열.
runningTime	스트링		Read Only	현재 동작 상태의 경과된 시간
remainingTime	스트링		Read Only	현재 동작 상태의 완료까지의 시간
progressPercentage	정수		Read Only	현재 작업 상태의 완료도의 백분율
jobStates	배열: schema 참조		Read Only	가능한 작업 상태의 배열

6.18.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/OperationalStateResURI		get	post		

6.19 램프 타임

6.19.1 개요

이 resource 는 조광 기능의 램프 타임을 기술한다. 이것은 2 개의 조광 값 간의 변화의 실제 속도를 규정한다. Time 은 밀리초[ms]로 규정된다. (oic.r.baseresource 로부터의) 범위가 생략되면 최대값은 100 ms 이다. 0 ms 의 RampTime 은 구현을 통해 가능한 최소 지연을 나타낸다.

6.19.2 URI 예

/RampTimeResURI

6.19.3 Resource Type

resource type (rt)는 oic.r.light.ramptime 으로 정의된다.

6.19.4 RAML 정의

```
#%RAML 0.8
title: OICRampTime
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


/RampTimeResURI:
  description: |
    This resource that describes the Ramp Time of a dimming function.
    This specifies the actual speed of changing between 2 dimming values.
    Time is specified in milliseconds [ms].
    When range (from oic.r.baseresource) is omitted the maximum value is 100 ms.
    The RampTime of 0ms indicates the minimal delay possible by the implementation.

  is : ['interface']
  get:
    description: |
      Retrieves the current RampTime.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.light.rampTime.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Ramp Time",
                "definitions": {
                  "oic.r.light.ramptime": {
                    "type": "object",
                    "properties": {
```

```
                        "rampTime": {
                          "type": "integer",
                          "description": "Actual speed of changing between 2 dimming values"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.light.ramptime"}
                  ],
                  "required": ["rampTime"]
                }

              example: |
                {
                  "rt":       ["oic.r.light.ramptime"],
                  "id":       "unique_example_id",
                  "rampTime": 0,
                  "range":    [0,100]
                }

    post:
      description: |
        Sets the current RampTime.

      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.light.rampTime.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Ramp Time",
              "definitions": {
                "oic.r.light.ramptime": {
                  "type": "object",
                  "properties": {
                    "rampTime": {
                      "type": "integer",
                      "description": "Actual speed of changing between 2 dimming values"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.light.ramptime"}
              ],
              "required": ["rampTime"]
            }

          example: |
            {
              "id":       "unique_example_id",
              "rampTime": 50
            }

      responses :
        200:
          body:
```

```
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.light.rampTime.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Ramp Time",
                  "definitions": {
                    "oic.r.light.ramptime": {
                      "type": "object",
                      "properties": {
                        "rampTime": {
                          "type": "integer",
                          "description": "Actual speed of changing between 2 dimming values"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.light.ramptime"}
                  ],
                  "required": ["rampTime"]
                }

              example: |
                {
                  "id":       "unique_example_id",
                  "rampTime": 50
                }

        403:
          description: |
            This response is generated by the OIC Server when the client sends:
              An update with an out of range property value for rampTime.
            The server responds with the current resource representation.

          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.light.rampTime.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Ramp Time",
                  "definitions": {
                    "oic.r.light.ramptime": {
                      "type": "object",
                      "properties": {
                        "rampTime": {
                          "type": "integer",
                          "description": "Actual speed of changing between 2 dimming values"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.light.ramptime"}
                  ],
```

```
                "required": ["rampTime"]
              }

            example: |
              {
                "id":       "unique_example_id",
                "rampTime": 40
              }
```

6.19.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
rampTime	정수	예		2 개의 조광 값 간의 변화의 실제 속도

6.19.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/RampTimeResURI		get	post		

6.20 냉장

6.20.1 개요

이 resource 는 냉장 기능을 기술한다. filter 상태는 여과기의 나머지 수명의 백분율을 제공하는 읽기 전용 값이다. RapidFreeze 는 존재한다면 신속 동결 성능을 제어하는 boolean 형이다. RapidCool 은 존재한다면 신속 냉각 성능을 제어하는 boolean 형이다. Defrost 는 존재한다면 제상 주기를 제어하는 boolean 형이다. 열거된 Property 중 적어도 하나는 Resource instance 에 존재해야 한다.

6.20.2 URI 예

/RefrigerationResURI

6.20.3 Resource Type

resource type (rt)는 oic.r.refrigeration 으로 정의된다.

6.20.4 RAML 정의

```
#%RAML 0.8
title: OICRefrigeration
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]

/RefrigerationResURI:
  description: |
```

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

  is : ['interface']
  get:
    description: |
      Retrieves the current Refrigeration function status; all Properties supported by the Device
are returned.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":  "http://openinterconnect.org/iotdatamodels/schemas/oic.r.refrigeration.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Refrigeration",
                "definitions": {
                  "oic.r.refrigeration": {
                    "type": "object",
                    "anyOf": [
                      {"required": ["filter"]},
                      {"required": ["rapidFreeze"]},
                      {"required": ["rapidCool"]},
                      {"required": ["defrost"]}
                    ],
                    "properties": {
                      "filter":       {
                        "type": "integer",
                        "readOnly": true,
                        "description": "Percentage life time remaining for the water filter"
                      },
                      "rapidFreeze":  {
                        "type": "boolean",
                        "description": "Indicates whether the unit has a rapid freeze capability
active."
                      },
                      "rapidCool":    {
                        "type": "boolean",
                        "description": "Indicates whether the unit has a rapid cool capability
active"
                      },
                      "defrost":      {
                        "type": "boolean",
                        "description": "Indicates whether a defrost cycle is currently active"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.refrigeration"}
                ]
              }

            example: |
```

```
                {
                  "rt":           ["oic.r.refrigeration"],
                  "id":           "unique_example_id",
                  "filter":       75,
                  "rapidFreeze":  false,
                  "rapidCool":    false,
                  "defrost":      true
                }

    post:

      description: |
        Activates the desired Refrigeration functions.
        Suported values are rapidFreeze, rapidCool and defrost.
        At least on of the supported values shall be provided.

      body:
        application/json:

          schema: |

            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.refrigeration-
Update.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Refrigeration",
              "definitions": {
                "oic.r.refrigeration": {
                  "type": "object",
                  "anyOf": [
                    {"required": ["rapidFreeze"]},
                    {"required": ["rapidCool"]},
                    {"required": ["defrost"]}
                  ],
                  "properties": {
                    "rapidFreeze":  {
                      "type": "boolean",
                      "description": "Indicates whether the unit has a rapid freeze capability
active."
                    },
                    "rapidCool":    {
                      "type": "boolean",
                      "description": "Indicates whether the unit has a rapid cool capability active"
                    },
                    "defrost":      {
                      "type": "boolean",
                      "description": "Indicates whether a defrost cycle is currently active"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.refrigeration"}
              ]
            }

          example: |

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

      responses :

        200:
```

```
        description: |
          Indicates that the Refrigeration function was changed.
          The new status can be provided in the response.

        body:
          application/json:

            schema: |

              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.refrigeration-
Update.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Refrigeration",
                "definitions": {
                  "oic.r.refrigeration": {
                    "type": "object",
                    "anyOf": [
                      {"required": ["rapidFreeze"]},
                      {"required": ["rapidCool"]},
                      {"required": ["defrost"]}
                    ],
                    "properties": {
                      "rapidFreeze":  {
                        "type": "boolean",
                        "description": "Indicates whether the unit has a rapid freeze capability
active."
                      },
                      "rapidCool":    {
                        "type": "boolean",
                        "description": "Indicates whether the unit has a rapid cool capability
active"
                      },
                      "defrost":      {
                        "type": "boolean",
                        "description": "Indicates whether a defrost cycle is currently active"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.refrigeration"}
                ]
              }

            example: |

              {
                "id":           "unique_example_id",
                "rapidFreeze":  true
              }
```

6.20.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
filter	정수	예	Read Only	여과기에 대해 남아 있는 수명의 백분율
rapidFreeze	boolean	예		장치가 신속 동결 성능을 활성으로

				하는지를 나타낸다.
defrost	boolean	예		제상 주기가 현재 활성인지를 나타낸다
rapidCool	boolean	예		장치가 신속 냉장 성능을 활성으로 하는지를 나타낸다

6.20.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/RefrigerationResURI		get	post		

6.21 온도

6.21.1 개요

이 resource 는 감지되거나 작동된 온도 값을 기술한다. temperature 는 측정된 현재의 값을 기술한다. units 는 C, F 또는 K 중 하나인 단일 값이다. 이는 온도 값에 대한 측정 단위를 제공한다. 이것은 server 가 제공하는 읽기 전용 값이다. units Property 가 없으면 default 는 섭씨[C]이다. (oic.r.baseresource 로부터의) 범위가 생략되면 default 는 +/- MAXINT 이다.

6.21.2 URI 예

/TemperatureResURI

6.21.3 Resource Type

resource type (rt)는 oic.r.temperature 로 정의된다.

6.21.4 RAML 정의

```
#%RAML 0.8
title: OICTemperature
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.s", "oic.if.baseline"]


/TemperatureResURI:
  description: |
    This resource describes a sensed or actuated Temperature value.
    The temperature describes the current value measured.
    The units is a single value that is one of C, F or K.
    It provides the unit of measurement for the temperature value.
```



```
      It is a read-only value that is provided by the server.
      If the units Property is missing the default is Celsius [C].
      When range (from oic.r.baseresource) is omitted the default is +/- MAXINT.

    is : ['interface']
    get:
      description: |
        Retrieves the current temperature value.
        A client can specify the units for the requested temperature by use of a query parameter.
        If no query parameter is provided the server provides its default measure or set value.

      queryParameters:
        units:
          enum: CFK
      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.temperature.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Temperature",
                  "definitions": {
                    "oic.r.temperature": {
                      "type": "object",
                      "properties": {
                        "temperature":  {
                          "type": "number",
                          "description": "Current temperature setting or measurement"
                        },
                        "units":  {
                          "enum": ["C","F","K"],
                          "description": "Units for the temperature value",
                          "readOnly": true
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.temperature"}
                  ],
                  "required": ["temperature"]
                }

              example: |
                {
                  "rt":           ["oic.r.temperature"],
                  "id":           "unique_example_id",
                  "temperature":  20.0,
                  "units":        "C",
                  "range":        [0.0,100.0]
                }

        403:
          description: |
            This response is generated by the OIC Server when the client sends:
              A retrieve with q queryParameter indicating a unit that the server does not support.
            The server responds with the current resource representation including the
```

```
            units property illustrating the supported units and the error.

          body:
            application/json:

              schema: |

                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.temperature.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Temperature",
                  "definitions": {
                    "oic.r.temperature": {
                      "type": "object",
                      "properties": {
                        "temperature":  {
                          "type": "number",
                          "description": "Current temperature setting or measurement"
                        },
                        "units":  {
                          "enum": ["C","F","K"],
                          "description": "Units for the temperature value",
                          "readOnly": true
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.temperature"}
                  ],
                  "required": ["temperature"]
                }

              example: |

                {
                  "id":           "unique_example_id",
                  "temperature":  20.0,
                  "units":        "C"
                }

    post:

      description: |
        Sets the desired temperature value.
        If a unit is included and the server does not support the unit indicated the request will
fail.
        If the units are omitted value is taken to be in C.

      body:
        application/json:

          schema: |

            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.temperature.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Temperature",
              "definitions": {
                "oic.r.temperature": {
                  "type": "object",
                  "properties": {
                    "temperature":  {
                      "type": "number",
                      "description": "Current temperature setting or measurement"
```

```
                    },
                    "units":  {
                      "enum": ["C","F","K"],
                      "description": "Units for the temperature value",
                      "readOnly": true
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.temperature"}
              ],
              "required": ["temperature"]
            }

          example: |
            {
              "id":           "unique_example_id",
              "temperature":  18.0
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.temperature.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Temperature",
                  "definitions": {
                    "oic.r.temperature": {
                      "type": "object",
                      "properties": {
                        "temperature":  {
                          "type": "number",
                          "description": "Current temperature setting or measurement"
                        },
                        "units":  {
                          "enum": ["C","F","K"],
                          "description": "Units for the temperature value",
                          "readOnly": true
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.temperature"}
                  ],
                  "required": ["temperature"]
                }

              example: |
                {
                  "id":          "unique_example_id",
                  "temperature": 18.0
                }

        403:
```

```
        description: |
          This response is generated by the OIC Server when the client sends:
            An update with an out of range property value for temperature.
            An update with an unsupported unit for this server.
          The server responds with the current resource representation including
          the range property illustrating the supported range and the error.

        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.temperature.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Temperature",
                "definitions": {
                  "oic.r.temperature": {
                    "type": "object",
                    "properties": {
                      "temperature":  {
                        "type": "number",
                        "description": "Current temperature setting or measurement"
                      },
                      "units":  {
                        "enum": ["C","F","K"],
                        "description": "Units for the temperature value",
                        "readOnly": true
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.temperature"}
                ],
                "required": ["temperature"]
              }

            example: |
              {
                "id":           "unique_example_id",
                "temperature":  20.0,
                "units":        "C",
                "range":        [0.0,100.0]
              }
```

6.21.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
units	복수 타입: schema 참조		Read Only	온도 값에 대한 단위
temperature	숫자	예		현재온도의 설정 또는 측정치

6.21.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/TemperatureResURI		get	post		

6.22 기간

6.22.1 개요

이 resource 는 임의의 추가적으로 제공된 정보가 도출되거나 제한되는 기간을 기술한다. startTime 및 stopTime 은 ISO8601 인코딩된 스트링이다. startTime 은 반드시 있어야 한다. interval 은 분 단위의 간격이고, 존재한다면, 이 값은 1 분 이상이어야 한다. stoptime 및 interval 은 상호 배타적이고; 두 Property 가 하나의 Resource instance 에 함께 존재할 수 없다.

6.22.2 URI 예

/TimePeriodResURI

6.22.3 Resource Type

resource type (rt)는 oic.r.time.period 로 정의된다.

6.22.4 RAML 정의

```
#%RAML 0.8
title: OICTimePeriod
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]

/TimePeriodResURI:
  description: |
    This resource describes the time period over which any additionally provided
    information is derived or bounded.
    The startTime and stopTime are ISO8601 encoded strings
     startTime must be present.
    The interval is the interval of the time period in minutes, if present this value must be no
less than 1 minute.
    stoptime and interval are mutually exclusive; both Properties cannot be present in a Resource
instance.

  is : ['interface']
  get:
    description: |
      Defines a time period for information retrieval, action or other behaviour.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.time.period.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Time Period",
```

```
                  "definitions": {
                    "oic.r.time.period": {
                      "type": "object",
                      "properties": {
                        "startTime":{
                          "type": "string",
                          "description": "Start time for the time period"
                        },
                        "stopTime": {
                          "type": "string",
                          "description": "Stop time for the time period, if present interval cannot
be present"
                        },
                        "interval": {
                          "type": "integer",
                          "description": "Time interval in minutes after the startTime, if present
stopTime cannot be present"
                        }
                      },
                      "required": ["startTime"]
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.time.period"}
                  ]
                }

              example: |
                {
                  "rt":       ["oic.r.time.period"],
                  "id":       "unique_example_id",
                  "startTime":"2015-01-09T14:30Z",
                  "stopTime": "2015-01-09T14:45Z"
                }

    post:
      description: |
        Sets or updates a time period for information retrieval, action or other behavior.

      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.time.period.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Time Period",
              "definitions": {
                "oic.r.time.period": {
                  "type": "object",
                  "properties": {
                    "startTime":{
                      "type": "string",
                      "description": "Start time for the time period"
                    },
                    "stopTime": {
                      "type": "string",
                      "description": "Stop time for the time period, if present interval cannot be
present"
                    },
                    "interval": {
                      "type": "integer",
                      "description": "Time interval in minutes after the startTime, if present
stopTime cannot be present"
```

```
                    }
                  },
                  "required": ["startTime"]
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.time.period"}
              ]
            }

          example: |
            {
              "id":       "unique_example_id",
              "startTime":"2015-01-09T14:30Z",
              "stopTime": "2015-01-09T14:45Z"
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.time.period.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Time Period",
                  "definitions": {
                    "oic.r.time.period": {
                      "type": "object",
                      "properties": {
                        "startTime":{
                          "type": "string",
                          "description": "Start time for the time period"
                        },
                        "stopTime": {
                          "type": "string",
                          "description": "Stop time for the time period, if present interval cannot
be present"
                        },
                        "interval": {
                          "type": "integer",
                          "description": "Time interval in minutes after the startTime, if present
stopTime cannot be present"
                        }
                      },
                      "required": ["startTime"]
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.time.period"}
                  ]
                }

              example: |
                {
                  "id":       "unique_example_id",
                  "startTime":"2015-01-09T14:30Z",
                  "stopTime": "2015-01-09T14:45Z"
                }
```

6.22.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
stopTime	스트링			기간의 종료 시간. 이 property 가 있으면 interval 이 있을 수 없다.
startTime	스트링	예		기간의 시작 시간
interval	정수			startTime 이후 분 단위의 시간 간격. 이 property 가 있으면 stopTime 이 있을 수 없다.

6.22.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/TimePeriodResURI		get	post		

6.23 동작 카운트

6.23.1 개요

이 resource 는 동작 카운트를 기술한다. 이 resource 는 readonly(oic.if.s interface)가 될 수 있고, 이 경우 count 값을 제공한다. 본 resource 는 readwrite (oic.if.a interface)가 될 수 있고, 이 경우 count 에 대한 목표를 제공한다. count property 는 현재의 카운트 또는 목표 값을 표현하는 정수이다.

6.23.2 URI 예

/ActivityCountResURI

6.23.3 Resource Type

resource type (rt)는 oic.r.sensor.activity.count 로 정의된다.

6.23.4 RAML 정의

```
#%RAML 0.8
title: OICActivityCount
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
```

```
        if:
          enum: ["oic.if.s", "oic.if.a", "oic.if.baseline"]

/ActivityCountResURI:
  description: |
    This resource specifies an activity count.
    The resource can be readonly (oic.if.s interface) in which instance it represents a count.
    The resource can be readwrite (oic.if.a interface) in which instance it represents a goal or
target for a count.
    The count property is an integer representing either the current count or goal value.

  is : ['interface']
  get:
    description: |
      Retrieves the current activity count.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.activity.count.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Activity Count Sensor",
                "definitions": {
                  "oic.r.sensor.activity.count": {
                    "properties": {
                      "count": {
                        "type": "integer",
                        "description": "Current or Target count."
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.activity.count"}
                ],
                "required": ["count"]
              }

            example: |
              {
                "rt":     ["oic.r.sensor.activity.count"],
                "id":     "unique_example_id",
                "count":  2500
              }

  post:
    description: |
      Sets the count target

    body:
      application/json:
        schema: |
```

```
            {
              "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.activity.count.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Activity Count Sensor",
              "definitions": {
                "oic.r.sensor.activity.count": {
                  "properties": {
                    "count": {
                      "type": "integer",
                      "description": "Current or Target count."
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.sensor.activity.count"}
              ],
              "required": ["count"]
            }

          example: |
            {
              "id":     "unique_example_id",
              "count":  5000
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.activity.count.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Activity Count Sensor",
                  "definitions": {
                    "oic.r.sensor.activity.count": {
                      "properties": {
                        "count": {
                          "type": "integer",
                          "description": "Current or Target count."
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.sensor.activity.count"}
                  ],
                  "required": ["count"]
                }

              example: |
                {
                  "id":     "unique_example_id",
                  "count":  5000
```

```
                }
```

6.23.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
count	정수	예		현재 또는 목표 카운트.

6.23.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ActivityCountResURI		get	post		

6.24 대기압 센서

6.24.1 개요

이 resource 는 측정점에서 겪는 평균 해수면 압력의 밀리바 단위의 측정치를 제공한다. 값은 hPa (hectoPascals) 단위로 대기압을 기술하는 부동 소수점 형이다. hPa 와 일반적으로 또한 사용되는 단위인 밀리바 (mbar)는 수치적으로 동등하다.

6.24.2 URI 예

/AtmosphericPressureResURI

6.24.3 Resource Type

resource type (rt)는 oic.r.sensor.atmosphericpressure 로 정의된다.

6.24.4 RAML 정의

```
#%RAML 0.8
title: OICAtmosphericPressureSensor
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


/AtmosphericPressureResURI:
  description: |
    This resource provides a measurement of Mean Sea Level Pressure experienced at the measuring
point expressed in millibars.
    The value is float which describes the atmospheric pressure in hPa (hectoPascals).
    Note that hPa and the also commonly used unit of millibars (mbar) are numerically equivalent.

  is : ['interface']
  get:
    responses :
      200:
        body:
```



```
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.atmosphericPressure.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Atmospheric Pressure Sensor",
                  "definitions": {
                    "oic.r.sensor.atmosphericpressure": {
                      "properties": {
                        "atmosphericPressure": {
                          "type": "number",
                          "readOnly": true,
                          "description": "Current atmospheric pressure in hPa."
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.sensor.atmosphericpressure"}
                  ],
                  "required": ["atmosphericPressure"]
                }

              example: |
                {
                  "rt":                    ["oic.r.sensor.atmosphericpressure"],
                  "id":                    "unique_example_id",
                  "atmosphericPressure":  1000.4
                }
```

6.24.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
atmosphericPressure	숫자	예	Read Only	hPa 단위의 현재 대기압

6.24.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AtmosphericPressureResURI		get			

6.25 오디오 제어

6.25.1 개요

이 resource 는 기본적인 오디오 제어 기능을 정의한다. Volume 은 백분율 [0,100]을 나타내는 정수이다. 0 의 volume 은 사운드가 생성되지 않음을 의미한다. 100 의 volume 은 최대 음량을 의미한다. mute 제어는 Boolean 형으로 구현된다. true 의 mute 값은 device 가 무음 상태임을 의미한다. false 의 mute 값은 device 가 무음 상태가 아님을 의미한다.

6.25.2 URI 예

/AudioResURI

6.25.3 Resource Type

resource type (rt)는 oic.r.audio 로 정의된다.

6.25.4 RAML 정의

```
#%RAML 0.8
title: OICAudio
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]

/AudioResURI:
  description: |
    This resource defines basic audio control functions.
    The volume is an integer containing a percentage [0,100].
    A volume of 0 (zero) means no sound produced.
    A volume of 100 means maximum sound production.
    The mute control is implemented as a boolean.
    A mute value of true means that the device is muted (no audio).
    A mute value of false means that the device is not muted (audio).

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.audio.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "definitions": {
                  "oic.r.audio": {
                    "type": "object",
                    "properties": {
                      "volume":   {
                        "type": "integer",
                        "description": "Volume setting of an audio rendering device.",
                        "minimum": 0,
                        "maximum": 100
                      },
                      "mute":    {
                        "type": "boolean",
                        "description": "Mute setting of an audio rendering device"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.audio"}
```

```
                  ],
                  "required": ["volume","mute"]
                }

              example: |
                {
                  "rt":     ["oic.r.audio"],
                  "id":     "unique_example_id",
                  "volume": 50,
                  "mute":   false
                }

    post:
      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.audio.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "definitions": {
                "oic.r.audio": {
                  "type": "object",
                  "properties": {
                    "volume":   {
                      "type": "integer",
                      "description": "Volume setting of an audio rendering device.",
                      "minimum": 0,
                      "maximum": 100
                    },
                    "mute":    {
                      "type": "boolean",
                      "description": "Mute setting of an audio rendering device"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.audio"}
              ],
              "required": ["volume","mute"]
            }

          example: |
            {
              "id":     "unique_example_id",
              "volume": 75,
              "mute":   false
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.audio.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "definitions": {
```

```
                "oic.r.audio": {
                  "type": "object",
                  "properties": {
                    "volume":   {
                      "type": "integer",
                      "description": "Volume setting of an audio rendering device.",
                      "minimum": 0,
                      "maximum": 100
                    },
                    "mute":    {
                      "type": "boolean",
                      "description": "Mute setting of an audio rendering device"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.audio"}
              ],
              "required": ["volume","mute"]
            }

          example: |
            {
              "id":     "unique_example_id",
              "volume": 75,
              "mute":   false
            }
```

6.25.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
volume	정수	예		오디오 출력 장치의 음량 설정.
mute	boolean	예		오디오 출력 장치의 무음 설정

6.25.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AudioResURI		get	post		

6.26 자동 초점

6.26.1 개요

이 resource 는 자동 초점의 on/off 기능을 기술한다. 값은 Boolean 형이다. 'true'의 AutoFocus 값은 스위치가 on 되었음을 의미한다. 'false'의 AutoFocus 값은 스위치가 off 되었음을 의미한다. 회전 경사 줌 ('Pan Tilt Zoom' Resource 정의 참조)이 사용될 때, autofocus 는 선택된 영역에만 작용된다.

6.26.2 URI 예

/AutoFocusResURI

6.26.3 Resource Type

resource type (rt)는 oic.r.autofocus 로 정의된다.

6.26.4 RAML 정의

```
#%RAML 0.8
title: OICAutoFocus
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


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

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.autofocus.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Auto Focus",
                "definitions": {
                  "oic.r.autofocus": {
                    "type": "object",
                    "properties": {
                      "autoFocus": {
                        "type": "boolean",
                        "description": "Status of the Auto Focus"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.autofocus"}
                ],
                "required": [ "autoFocus" ]
              }

            example: |
```

```
                {
                  "rt":         ["oic.r.autofocus"],
                  "id":         "unique_example_id",
                  "autoFocus":  false
                }

    post:
      body:
        application/json:

          schema: |

            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.autofocus.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Auto Focus",
              "definitions": {
                "oic.r.autofocus": {
                  "type": "object",
                  "properties": {
                    "autoFocus": {
                      "type": "boolean",
                      "description": "Status of the Auto Focus"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.autofocus"}
              ],
              "required": [ "autoFocus" ]
            }

          example: |

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

      responses :

        200:

          body:
            application/json:

              schema: |

                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.autofocus.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Auto Focus",
                  "definitions": {
                    "oic.r.autofocus": {
                      "type": "object",
                      "properties": {
                        "autoFocus": {
                          "type": "boolean",
                          "description": "Status of the Auto Focus"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
```

```
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.autofocus"}
              ],
              "required": [ "autoFocus" ]
            }

          example: |
            {
              "id":         "unique_example_id",
              "autoFocus":  true
            }
```

6.26.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
autoFocus	boolean	예		자동 초점 상태

6.26.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AutoFocusResURI		get	post		

6.27 자동 급지 장치

6.27.1 개요

이 resource 는 일반적으로 스캐너와 함께 사용되는 자동 급지 장치의 상태를 기술한다. 상태는 읽기 전용이다. adfStates 는 가능한 동작 상태의 배열이다. adfProcessing 는 OK 상태이고, 다른 상태 는 에러이거나, '사용자의 관심'을 요구한다. currentAdfState 는 device 에 대한 ADF 상태의 현재의 값이다.

6.27.2 URI 예

/AutomaticDocumentFeederResURI

6.27.3 Resource Type

resource type (rt)는 oic.r.automaticdocumentfeeder 로 정의된다.

6.27.4 RAML 정의

```
#%RAML 0.8
title: OICAutomaticDocumentFeeder
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


/AutomaticDocumentFeederResURI:
  description: |
    This resource describes the state of an automatic document feeder, typically used with a
scanner.
    The states are read only.
```

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

    is : ['interface']

    get:

      description: |
        Retrieves the current automatic document feeder state.

      responses :

        200:

          body:
            application/json:

              schema: |

                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.automaticDocumentFeeder.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Automatic Document Feeder",
                  "definitions": {
                    "oic.r.automaticdocumentfeeder": {
                      "type": "object",
                      "properties": {
                        "adfStates": {
                          "type": "array",
                          "readOnly": true,
                          "description": "array of the possible adf states.",
                          "items": {
                            "type": "string"
                          }
                        },
                        "currentAdfState": {
                          "type": "string",
                          "readOnly": true,
                          "description": "Current adf state."
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.automaticdocumentfeeder"}
                  ],
                  "required": ["adfStates", "currentAdfState"]
                }

              example: |

                {
                  "rt":               ["oic.r.automaticdocumentfeeder"],
                  "id":               "unique_example_id",
                  "adfStates":        ["adfProcessing", "adfEmpty", "adfJam", "adfLoaded",
"adfMispick", "adfHatchOpen", "adfDuplexPageTooShort", "adfDuplexPageTooLong",
"adfMultipickDetected", "adfInputTrayFailed", "adfInputTrayOverloaded"],
                  "currentAdfState":  "adfProcessing"
                }
```

6.27.5 Property 정의

Property name	Value type	필수	액세스 모드	설명

adfStates	배열: schema 참조	예	Read Only	가능한 adf 상태의 배열.
currentAdfState	스트링	예	Read Only	현재의 adf 상태.

6.27.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AutomaticDocumentFeederResURI		get			

6.28 버튼 스위치

6.28.1 개요

이 resource 는 버튼 타입 스위치의 동작을 기술한다. 값은 Boolean 형이다. 'true' 값은 버튼이 눌려진 것을 의미한다. 'false' 값은 버튼이 눌려지지 않은 것을 의미한다.

6.28.2 URI 예

/ButtonResURI

6.28.3 Resource Type

resource type (rt)는 oic.r.button 으로 정의된다.

6.28.4 RAML 정의

```
#%RAML 0.8
title: OICButton
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


/ButtonResURI:
  description: |
    This resource describes the operation of a button style switch.
    The value is a boolean.
    A value of 'true' means that the button is being pushed/pressed.
    A value of 'false' means that the button is not being pushed/pressed.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.button.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
```

```
rights reserved.",
                "title": "Button Switch",
                "definitions": {
                  "oic.r.button": {
                    "properties": {
                      "value": {
                        "type": "boolean",
                        "readOnly": true,
                        "description": "Status of the button"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.button"}
                ],
                "required": ["value"]
              }

            example: |
              {
                "rt":     ["oic.r.button"],
                "id":     "unique_example_id",
                "value":  true
              }
```

6.28.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	버튼 의 상태

6.28.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ButtonResURI		get			

6.29 이산화탄소 센서

6.29.1 개요

이 resource 는 이산화탄소가 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 이산화탄소가 검출되었음을 의미한다. 'false' 값은 이산화탄소가 검출되지 않았음을 의미한다.

6.29.2 URI 예

/CarbonDioxideResURI

6.29.3 Resource Type

resource type (rt)는 oic.r.sensor.carbondioxide 로 정의된다.

6.29.4 RAML 정의

```
#%RAML 0.8
title: OICCarbonDioxideSensor
version: v1.1.0-20160519
```

```
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

/CarbonDioxideResURI:
  description: |
    This resource describes whether carbon dioxide has been sensed or not.
    The value is a boolean.
    A value of 'true' means that carbon dioxide has been detected.
    A value of 'false' means that carbon dioxide has not been detected.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.carbonDioxide.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Carbon Dioxide Sensor",
                "definitions": {
                  "oic.r.sensor.carbondioxide": {
                    "allOf": [
                      {"$ref": "oic.r.sensor.json#/definitions/oic.r.sensor"}
                    ]
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.carbondioxide"}
                ],
                "required": ["value"]
              }

            example: |
              {
                "rt":    ["oic.r.sensor.carbondioxide"],
                "id":    "unique_example_id",
                "value": true
              }
```

6.29.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	True = 검출 False = 미 검출

6.29.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify

/CarbonDioxideResURI		get			

6.30 일산화탄소 센서

6.30.1 개요

이 resource 는 일산화탄소가 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 일산화탄소가 검출되었음을 의미한다. 'false' 값은 일산화탄소가 검출되지 않았음을 의미한다.

6.30.2 URI 예

/CarbonMonoxideResURI

6.30.3 Resource Type

resource type (rt)는 oic.r.sensor.carbonmonoxide 로 정의된다.

6.30.4 RAML 정의

```
#%RAML 0.8
title: OICCarbonMonoxideSensor
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

/CarbonMonoxideResURI:
  description: |
    This resource describes whether carbon monoxide has been sensed or not.
    The value is a boolean.
    A value of 'true' means that carbon monoxide has been detected.
    A value of 'false' means that carbon monoxide has not been detected.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.carbonMonoxide.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Carbon Monoxide Sensor",
                "definitions": {
                  "oic.r.sensor.carbonmonoxide": {
                    "allOf": [
                      {"$ref": "oic.r.sensor.json#/definitions/oic.r.sensor"}
                    ]
                  }
                },
                "type": "object",
```

```
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.carbonmonoxide"}
                ],
                "required": ["value"]
              }

            example: |
              {
                "rt":     ["oic.r.sensor.carbonmonoxide"],
                "id":     "unique_example_id",
                "value":  true
              }
```

6.30.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	True = 검출 False = 미 검출

6.30.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/CarbonMonoxideResURI		get			

6.31 자동 화이트 밸런스

6.31.1 개요

이 resource 는 자동 화이트 밸런스의 on/off 기능을 기술한다. 값은 boolean 형이다. 'true'의 AutoWhiteBalance 값은 스위치가 on 인 것을 의미한다. 'false'의 AutoWhiteBalance 값은 스위치가 off 인 것을 의미한다.

6.31.2 URI 예

/AutoWhiteBalanceResURI

6.31.3 Resource Type

resource type (rt)는 oic.r.colour.autowhitebalance 로 정의된다.

6.31.4 RAML 정의

```
#%RAML 0.8
title: OICAutoWhiteBalance
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]

/AutoWhiteBalanceResURI:
  description: |
```

```
      This resource describes an auto balance on/off feature.
      The value is a boolean.
      An AutoWhiteBalance value of 'true' means that the switch is on.
      An AutoWhiteBalance value of 'false' means that the switch is off.

    is : ['interface']
    get:
      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.colour.autowhitebalance.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Auto White Balance",
                  "definitions": {
                    "oic.r.colour.autowhitebalance": {
                      "type": "object",
                      "properties": {
                        "autoWhiteBalance": {
                          "type": "boolean",
                          "description": "Status of the Auto White balance"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.colour.autowhitebalance"}
                  ],
                  "required": [ "autoWhiteBalance" ]
                }

              example: |
                {
                  "rt":               ["oic.r.colour.autowhitebalance"],
                  "id":               "unique_example_id",
                  "autoWhiteBalance": false
                }

    post:
      body:
        application/json:
          schema: |
            {
              "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.colour.autowhitebalance.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Auto White Balance",
              "definitions": {
                "oic.r.colour.autowhitebalance": {
                  "type": "object",
                  "properties": {
                    "autoWhiteBalance": {
                      "type": "boolean",
                      "description": "Status of the Auto White balance"
                    }
                  }
```

```
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.colour.autowhitebalance"}
              ],
              "required": [ "autoWhiteBalance" ]
            }

          example: |
            {
              "id":                "unique_example_id",
              "autoWhiteBalance": true
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.colour.autowhitebalance.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Auto White Balance",
                  "definitions": {
                    "oic.r.colour.autowhitebalance": {
                      "type": "object",
                      "properties": {
                        "autoWhiteBalance": {
                          "type": "boolean",
                          "description": "Status of the Auto White balance"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.colour.autowhitebalance"}
                  ],
                  "required": [ "autoWhiteBalance" ]
                }

              example: |
                {
                  "id":                "unique_example_id",
                  "autoWhiteBalance": true
                }
```

6.31.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
autoWhiteBalance	boolean	예		자동 화이트 밸런스의 상태

6.31.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AutoWhiteBalanceResURI		get	post		

6.32 채도

6.32.1 개요

이 resource 는 채도 값을 기술한다. 값은 정수이다. coloursaturation 은 [0,100]의 범위를 갖는다. 0 의 coloursaturation 값은 흑백 이미지의 생성을 의미한다. 50 의 coloursaturation 값은 device 고유의 정상적인 컬러 이미지의 생성을 의미한다. 100 의 coloursaturation 값은 device 의 풀 컬러 이미지의 생성을 의미한다.

6.32.2 URI 예

/ColourSaturationResURI

6.32.3 Resource Type

resource type (rt)는 oic.r.colour.saturation 으로 정의된다.

6.32.4 RAML 정의

```
#%RAML 0.8
title: OICColourSaturation
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


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

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.colour.saturation.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Colour Saturation",
```

```
                  "definitions": {
                    "oic.r.colour.saturation": {
                      "type": "object",
                      "properties": {
                        "colourSaturation": {
                          "type": "integer",
                          "description": "The colour saturation value",
                          "minimum": 0,
                          "maximum": 100
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.core.json#/definitions/oic.core"},
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.colour.saturation"}
                  ],
                  "required": [ "colourSaturation" ]
                }

              example: |
                {
                  "rt":               ["oic.r.colour.saturation"],
                  "id":               "unique_example_id",
                  "colourSaturation": 50
                }

    post:
      body:
        application/json:
          schema: |
            {
              "id":  "http://openinterconnect.org/iotdatamodels/schemas/oic.r.colour.saturation.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Colour Saturation",
              "definitions": {
                "oic.r.colour.saturation": {
                  "type": "object",
                  "properties": {
                    "colourSaturation": {
                      "type": "integer",
                      "description": "The colour saturation value",
                      "minimum": 0,
                      "maximum": 100
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.core.json#/definitions/oic.core"},
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.colour.saturation"}
              ],
              "required": [ "colourSaturation" ]
            }

          example: |
            {
              "id":               "unique_example_id",
              "colourSaturation": 60
            }
```

```
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.colour.saturation.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Colour Saturation",
                "definitions": {
                  "oic.r.colour.saturation": {
                    "type": "object",
                    "properties": {
                      "colourSaturation": {
                        "type": "integer",
                        "description": "The colour saturation value",
                        "minimum": 0,
                        "maximum": 100
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.core.json#/definitions/oic.core"},
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.colour.saturation"}
                ],
                "required": [ "colourSaturation" ]
              }

            example: |
              {
                "id":                "unique_example_id",
                "colourSaturation": 60
              }
```

6.32.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
colourSaturation	정수	예		채도 값

6.32.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ColourSaturationResURI		get	post		

6.33 접촉 센서

6.33.1 개요

이 resource 는 접촉 센서가 개방 또는 단락 되었는지를 기술한다. 전형적인 사용은 창 또는 도어가 개방된 것을 검출하는 보안 시스템의 경우이다. 값은 Boolean 형이다. 'true' 값은 접촉이 끊어졌음(개방)을 의미한다. 'false' 값은 접촉이 이루어졌음(폐쇄)을 의미한다.

6.33.2 URI 예

/ContactResURI

6.33.3 Resource Type

resource type (rt)는 oic.r.sensor.contact 로 정의된다.

6.33.4 RAML 정의

```
#%RAML 0.8
title: OICContactSensor
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

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

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.contact.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Contact Sensor",
                "definitions": {
                  "oic.r.sensor.contact": {
                    "allOf": [
                      {"$ref": "oic.r.sensor.json#/definitions/oic.r.sensor"}
                    ]
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.contact"}
                ],
                "required": ["value"]
              }

            example: |
              {
                "rt":     ["oic.r.sensor.contact"],
                "id":     "unique_example_id",
                "value":  true
```

```
}
```

6.33.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	True = 개방 False = 단락

6.33.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ContactResURI		get			

6.34 Demand Response Load Control (DRLC).

6.34.1 개요

이 resource 는 적용될 임의의 또는 현재 적용되는 DRLC 신호를 기술한다. DRType 은 Zigbee/HA Smart Energy Profile 2.0 에서 정의된 ApplianceLoadReductionType 이다. Start 는 ISO8601 인코딩된 start time 을 포함하는 스트링이다. Duration 값은 분 단위이다. Override 는 소비자가 request 를 무시하였는지(true) 또는 무시하지 않았는지(false)를 나타낸다.

6.34.2 URI 예

/DRLCResURI

6.34.3 Resource Type

resource type (rt)는 oic.r.energy.drlc 로 정의된다.

6.34.4 RAML 정의

```
#%RAML 0.8
title: OICDRLC
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.b", "oic.if.baseline"]


/DRLCResURI:
  description: |
    This resource describes any to be applied or currently being applied DRLC signal.
    The DRType is the ApplianceLoadReductionType defined in Zigbee/HA Smart Energy Profile 2.0.
    Start is a string containing an ISO8601 encoded start time.
    The duration value is in minutes.
    Override indicates whether the consumer has overridden the request (true) or not (false).

  is : ['interface']
  get:
    description: |
      Provides the current DRLC action that is being applied.

```



```
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.energy.drlc.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "definitions": {
                  "oic.r.energy.drlc": {
                    "type": "object",
                    "properties": {
                      "DRType":   {
                        "type": "integer",
                        "description": "The to be applied demand-response type"
                      },
                      "start":    {
                        "type": "string",
                        "description": "The start time for the application of DR"
                      },
                      "duration": {
                        "type": "integer",
                        "description": "The duration of the to be applied DR type"
                      },
                      "override": {
                        "type": "boolean",
                        "description": "Whether the consumer has overriden the application of DR"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.energy.drlc"}
                ],
                "required": ["DRType"]
              }

            example: |
              {
                "rt":       ["oic.r.energy.drlc"],
                "id":       "unique_example_id",
                "DRType":   1,
                "start":    "2015-01-09T16:45Z",
                "duration": 10,
                "override": false
              }

  put:
    description: |
      Provides the DRLC action to be applied to the device or updates an existing action.

    body:
      application/json:
        schema: |
          {
            "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.energy.drlc.json#",
            "$schema": "http://json-schema.org/draft-04/schema#",
            "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
            "definitions": {
              "oic.r.energy.drlc": {
```

```
                  "type": "object",
                  "properties": {
                    "DRType":   {
                      "type": "integer",
                      "description": "The to be applied demand-response type"
                    },
                    "start":    {
                      "type": "string",
                      "description": "The start time for the application of DR"
                    },
                    "duration": {
                      "type": "integer",
                      "description": "The duration of the to be applied DR type"
                    },
                    "override": {
                      "type": "boolean",
                      "description": "Whether the consumer has overriden the application of DR"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.energy.drlc"}
              ],
              "required": ["DRType"]
            }

          example: |
            {
              "rt":       ["oic.r.energy.drlc"],
              "id":       "unique_example_id",
              "DRType":   1,
              "start":    "2015-01-09T16:45Z",
              "duration": 10
            }

      responses :
        200:
          description: |
            Indicates that the target DRLC resource was changed.
            The new resource attributes are provided in the response.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.energy.drlc.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "definitions": {
                    "oic.r.energy.drlc": {
                      "type": "object",
                      "properties": {
                        "DRType":   {
                          "type": "integer",
                          "description": "The to be applied demand-response type"
                        },
                        "start":    {
                          "type": "string",
                          "description": "The start time for the application of DR"
                        },
                        "duration": {
                          "type": "integer",
                          "description": "The duration of the to be applied DR type"
```

```
                        },
                        "override": {
                          "type": "boolean",
                          "description": "Whether the consumer has overriden the application of DR"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.energy.drlc"}
                  ],
                  "required": ["DRType"]
                }

              example: |
                {
                  "DRType":   1,
                  "id":       "unique_example_id",
                  "start":    "2015-01-09T17:00Z",
                  "duration": 15,
                  "override": false
                }

        201:
          description: |
            Indicates successful creation of the DRLC resource with the attributes provided.
            The response includes the URI of the created resource.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/chemas/oic.create.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016 Open Connectivity Foundation, Inc. All rights
reserved.",
                  "definitions": {
                    "oic.create": {
                      "type": "object",
                      "properties": {
                        "ResURI": { "type": "string"}
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                     {"$ref": "#/definitions/oic.create"}
                   ]
                }

              example: |
                {
                  "ResURI":   "/MyDevice/MyDRLCURI"
                }
```

6.34.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
DRType	정수	예		적용될 DR type
start	스트링			DR 의 적용 시작

				시간
duration	정수			적용될 DR type 의 지속 시간
override	boolean			DR 의 적용을 소비자가 무시하였는지 여부

6.34.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/DRLCResURI	put	get			

6.35 에너지 과부하/회로 차단기

6.35.1 개요

이 resource 는 에너지 과부하 검출기/회로 차단기가 현재 개방 또는 단락 되었는지를 기술한다. 값은 Boolean 형이다. 'true' 값은 에너지 과부하가 검출 되었음을 의미한다. 'false' 값은 에너지 과부하가 검출되지 않았음을 의미한다.

6.35.2 URI 예

/EnergyOverloadResURI

6.35.3 Resource Type

resource type (rt)는 oic.r.energy.overload 로 정의된다.

6.35.4 RAML 정의

```
#%RAML 0.8
title: OICEnergyOverload
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


/EnergyOverloadResURI:
  description: |
    This resource describes whether an energy overload detector/circuit breaker
      is currently tripped.
    The value is a boolean.
    A value of 'true' means that energy overload has been tripped.
    A value of 'false' means that energy overload has not been tripped.

  is : ['interface']
  get:
    responses :
```

```
        200:
          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.energy.overload.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Energy Overload Sensor",
                  "definitions": {
                    "oic.r.energy.overload": {
                      "allOf": [
                        {"$ref": "oic.r.sensor.json#/definitions/oic.r.sensor"}
                      ]
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.energy.overload"}
                  ],
                  "required": ["value"]
                }

              example: |
                {
                  "rt":    ["oic.r.energy.overload"],
                  "id":    "unique_example_id",
                  "value": true
                }
```

6.35.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	True = 검출 False = 미 검출

6.35.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/EnergyOverloadResURI		get			

6.36 일반 센서

6.36.1 개요

이 resource 는 일부 값, property 또는개체가 감지되었는지 여부를 기술한다. 값은 boolean 형이다. 'true' 값은 목표가 감지되었음을 의미한다. 'false' 값은 목표가 감지되지 않았음을 의미한다.

6.36.2 URI 예

/GenericSensorResURI

6.36.3 Resource Type

resource type (rt)는 oic.r.sensor 로 정의된다.

6.36.4 RAML 정의

```
#%RAML 0.8
title: OICGenericSensor
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

/GenericSensorResURI:
  description: |
    This resource describes whether some value or property or entity has been sensed or not.
    The value is a boolean.
    A value of 'true' means that the target has been sensed.
    A value of 'false' means that the target has not been sensed.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Generic Sensor",
                "definitions": {
                  "oic.r.sensor": {
                    "type": "object",
                    "properties": {
                      "value": {
                        "type": "boolean",
                        "readOnly": true,
                        "description": "true = sensed, false = not sensed."
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor"}
                ]
              }

            example: |
              {
                "rt":    ["oic.r.sensor"],
                "id":    "unique_example_id",
                "value": true
              }
```

6.36.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean		Read Only	true = 감지 false = 미 감지

6.36.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/GenericSensorResURI		get			

6.37 유리 파손 센서

6.37.1 개요

이 resource 는 유리 파손 센서를 기술한다. 값은 boolean 형이다. 'true' 값은 유리 파손이 감지되었음을 의미한다. 'false' 의 값은 유리 파손이 감지되지 않았음을 의미한다.

6.37.2 URI 예

/GlassBreakResURI

6.37.3 Resource Type

resource type (rt)는 oic.r.sensor.glassbreak 로 정의된다.

6.37.4 RAML 정의

```
#%RAML 0.8
title: OICGlassBreakSensor
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

/GlassBreakResURI:
  description: |
    This resource describes a glass break sensor.
    The value is a boolean.
    A value of 'true' means that glass break has been sensed.
    A value of 'false' means that glass break not been sensed.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.glassBreak.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
```

```
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Glass Break Sensor",
                "definitions": {
                  "oic.r.sensor.glassbreak": {
                    "allOf": [
                      {"$ref": "oic.r.sensor.json#/definitions/oic.r.sensor"}
                    ]
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.glassbreak"}
                ],
                "required": ["value"]
              }

            example: |
              {
                "rt":     ["oic.r.sensor.glassbreak"],
                "id":     "unique_example_id",
                "value":  true
              }
```

6.37.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	True = 감지 False = 미 감지

6.37.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/GlassBreakResURI		get			

6.38 심박수 존

6.38.1 개요

이 resource 는 Zoladz 방법을 사용하여 현재 Zone 에 의해 측정된 심장 박동수를 기술한다. Zoladz 방법은 최대 심장 박동수에 기초하여 Zone 을 정의한다; Zone 1 은 가장 낮고, Zone 5 는 가장 높다. heartRateZone 은: "Zone1", "Zone2", "Zone3", "Zone4", 및 "Zone5" 중 하나를 포함하는 열거형이다.

6.38.2 URI 예

/HeartRateZoneResURI

6.38.3 Resource Type

resource type (rt)는 oic.r.sensor.heart.zone 으로 정의된다.

6.38.4 RAML 정의

```
#%RAML 0.8
title: OICHeartRateZone
```

```
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


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

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.heart.zone.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Heart Rate Zone",
                "definitions": {
                  "oic.r.sensor.heart.zone": {
                    "properties": {
                      "heartRateZone": {
                          "enum": ["Zone1","Zone2","Zone3", "Zone4", "Zone5"],
                          "readOnly": true,
                          "description": "Current heart rate zone based on the Zoladz system."
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.heart.zone"}
                ],
                "required": ["heartRateZone"]
              }

            example: |
              {
                "rt":             ["oic.r.sensor.heart.zone"],
                "id":             "unique_example_id",
                "heartRateZone":  "Zone3"
              }
```

6.38.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
heartRateZone	복수 타입: schema 참조	예	Read Only	Zoladz 시스템에 기초한 현재의

				심장 박동수 존

6.38.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/HeartRateZoneResURI		get			

6.39 조도 센서

6.39.1 개요

이 resource 는 조도 센서를 기술한다. 조도는 부동 소수점 형이고, 단위 면적당 감지된 광속을 lux 단위로 표현한다.

6.39.2 URI 예

/IlluminanceSensorResURI

6.39.3 Resource Type

resource type (rt)는 oic.r.sensor.illuminance 로 정의된다.

6.39.4 RAML 정의

```
#%RAML 0.8
title: OICIlluminanceSensor
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


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

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.illuminance.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Illuminance Sensor",
                "definitions": {
                  "oic.r.sensor.illuminance": {
                    "properties": {
                      "illuminance": {
                        "type": "number",
```

```
                        "readOnly": true,
                        "description": "Sensed luminous flux per unit area in lux."
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.illuminance"}
                ],
                "required": ["illuminance"]
              }

            example: |
              {
                "rt":           ["oic.r.sensor.illuminance"],
                "id":           "unique_example_id",
                "illuminance":  450.0
              }
```

6.39.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
illuminance	숫자	예	Read Only	단위 면적당 lux 단위로 감지된 광속.

6.39.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/IlluminanceSensorResURI		get			

6.40 자계 방향 센서

6.40.1 개요

이 resource 는 공간 내에서 Observer 의 현재 지점에서 지구 자계의 방향을 기술한다. 일반적인 사용의 경우는 개인용 device 상에서 나침반 판독 값의 측정을 포함한다. 값은 각각이 부동 소수점 형인 Hx, Hy, 및 Hz (이 순서대로)를 포함하는 배열이다. Hx, Hy, 및 Hz 의 각각은 A/m 로 표현된다.

6.40.2 URI 예

/MagneticFieldDirectionResURI

6.40.3 Resource Type

resource type (rt)는 oic.r.sensor.magneticfielddirection 으로 정의된다.

6.40.4 RAML 정의

```
#%RAML 0.8
title: OICMagneticFieldDirection
version: v1.1.0-20160519
traits:
```

```
  - interface :
      queryParameters:
        if:
          enum: ["oic.if.s", "oic.if.baseline"]

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

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.magneticFieldDirection.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Magnetic Field Direction Sensor",
                "definitions": {
                  "oic.r.sensor.magneticfielddirection": {
                    "properties": {
                      "value": {
                        "type": "array",
                        "readOnly": true,
                        "description": "Array containing Hx, Hy, Hz.",
                        "minItems": 3,
                        "maxItems": 3,
                        "items": {
                          "type": "number"
                        }
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.magneticfielddirection"}
                ],
                "required": ["value"]
              }

            example: |
              {
                "rt":     ["oic.r.sensor.magneticfielddirection"],
                "id":     "unique_example_id",
                "value":  [100.0,15.0,90.0]
              }
```

6.40.5 Property 정의

Property name	Value type	필수	액세스 모드	설명

value	배열: schema 참조	예	Read Only	Hx, Hy, 및 Hz 를 포함하는 배열.

6.40.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/MagneticFieldDirectionResURI		get			

6.41 Media

6.41.1 개요

이 resource 는 OCF Serve 가 지원하는 Media 유형을 규정한다. Resource 는 Media 요소의 배열이다. 각 요소는 다음을 포함한다: 규정된 Media 유형이 액세스될 수 있는 URL. SDP 를 사용하는 Media 의 정의를 포함하는 스트링 배열. sdp 배열 내의 각 항목은 SDP 라인이다. 각 라인은 SDP 스펙에서 정의된 SDP 구문을 따라야 한다. SDP 스펙은 http://tools.ietf.org/html/rfc4566 에서 찾을 수 있다.

6.41.2 URI 예

/MediaResURI

6.41.3 Resource Type

resource type (rt)는 oic.r.media 로 정의된다.

6.41.4 RAML 정의

```
#%RAML 0.8
title: OICMedia
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


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

  is : ['interface']
  get:
    description: |
      Retrieves the current media resource.

    responses :
```

```
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.media.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Media",
                  "definitions": {
                    "oic.r.media": {
                      "properties": {
                        "media": {
                          "type": "array",
                          "items": {
                            "type": "object",
                            "properties": {
                              "url": {
                                "type": "string",
                                "description": "url for the media instance"
                              },
                              "sdp": {
                                "type": "array",
                                "description": "Array of strings, one per SDP line",
                                "items": {
                                  "type": "string",
                                  "description": "SDP media or attribute line"
                                }
                              }
                            }
                          }
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.media"}
                  ],
                  "required": ["media"]
                }

              example: |
                {
                  "rt": ["oic.r.media"],
                  "id": "unique_example_id",
                  "media": [
                    {
                      "url": "some example url",
                      "sdp": [
                        "m=video 1 RTP/AVP 96",
                        "a=rtpmap:96 H264/9000",
                        "a=fmtp:96 profile-level-id=42A028;packetization-mode=1"
                      ]
                    },
                    {
                      "url": "some other example1 url",
                      "sdp": [
                        "m=audio 2 RTP/AVP 97",
                        "a=rtpmap:97 MP4A-LATM/90000"
                      ]
                    },
                    {
                      "url": "some other example2 url",
                      "sdp": [
                        "m=video 3 RTP/AVP 98",
```

```
                    "a=rtpmap:98 jpeg/90000",
                    "a=fmtp:98 sampling=YCbCr-4:2:0;width=256;height=256"
                  ]
                }
              ]
            }
```

6.41.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
media	배열: schema 참조	예		
url (media)	스트링			Media 개체에 대한 url
sdp (media)	배열: schema 참조			스트링의 배열, SDP 라인당 하나

6.41.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/MediaResURI		get			

6.42 Media Source

6.42.1 개요

이 resource 는 device 상에 존재하는 Media Source 를 정의한다. sources 는 입력 Source 또는 출력 소스가 될 수 있고, 이 resource 는 이에 관계 없이 기능한다. sourceName 은 미리-정의된 Media 입력 또는 출력 (예: "HDMI", "DVI")을 규정한다. sourceNumber 는 개체(예: "PC", 1)를 규정하기 위한 숫자형 식별자이다. sourceType 은 소스가 오디오, 비디오 또는 둘 다인지를 정의하기 위한 열거형이다. Status 는 특정 Source 개체가 선택되었는지 여부를 결정하기 위한 Boolean 형이다. true 의 status 는 Source 개체가 선택되었음을 의미한다. false 의 status 는 Source 개체가 선택되지 않았음을 의미한다.

6.42.2 URI 예

/mediaSourceResURI

6.42.3 Resource Type

resource type (rt)는 oic.r.mediasource 로 정의된다.

6.42.4 RAML 정의

```
#%RAML 0.8
title: OIC Media Source
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
```

```
          enum: ["oic.if.a", "oic.if.baseline"]

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

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSource.json#",
                "title": "Media Source",
                "definitions": {
                  "oic.r.mediasource": {
                    "properties": {
                      "sourceName": {
                        "type": "string",
                        "description": "Specifies a pre-defined media input or output"
                      },
                      "sourceNumber": {
                        "type": [ "integer", "string" ],
                        "readOnly": true,
                        "description": "Numeric identifier to specify the instance"
                      },
                      "sourceType": {
                        "enum": [ "audioOnly", "videoOnly", "audioPlusVideo" ],
                        "readOnly": true,
                        "description": "Specifies the type of the source"
                      },
                      "status": {
                        "type": "boolean",
                        "description": "Specifies if the specific source instance is selected or
not"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.mediasource"}
                ],
                "required": ["sourceName","status"]
              }

            example: |
              {
                "rt":           ["oic.r.mediasource"],
                "id":           "unique_example_id",
                "sourceName":   "HDMI-CEC",
```

```
                  "sourceNumber": "1",
                  "sourceType":   "audioPlusVideo",
                  "status":       true
                }

  post:
    description: |
      Changes the status of the source.
      Allows changes of the sourceName and the status.

    body:
      application/json:
        schema: |
          {
            "$schema": "http://json-schema.org/draft-04/schema#",
            "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
            "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSource.json#",
            "title": "Media Source",
            "definitions": {
              "oic.r.mediasource": {
                "properties": {
                  "sourceName": {
                    "type": "string",
                    "description": "Specifies a pre-defined media input or output"
                  },
                  "sourceNumber": {
                    "type": [ "integer", "string" ],
                    "readOnly": true,
                    "description": "Numeric identifier to specify the instance"
                  },
                  "sourceType": {
                    "enum": [ "audioOnly", "videoOnly", "audioPlusVideo" ],
                    "readOnly": true,
                    "description": "Specifies the type of the source"
                  },
                  "status": {
                    "type": "boolean",
                    "description": "Specifies if the specific source instance is selected or not"
                  }
                }
              }
            },
            "type": "object",
            "allOf": [
              {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
              {"$ref": "#/definitions/oic.r.mediasource"}
            ],
            "required": ["sourceName","status"]
          }

        example: |
          {
            "id":           "unique_example_id",
            "sourceName":   "my new name",
            "sourceNumber": "1",
            "status":       true
          }

    responses :
      200:
        body:
          application/json:
            schema: |
```

```
                {
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSource.json#",
                  "title": "Media Source",
                  "definitions": {
                    "oic.r.mediasource": {
                      "properties": {
                        "sourceName": {
                          "type": "string",
                          "description": "Specifies a pre-defined media input or output"
                        },
                        "sourceNumber": {
                          "type": [ "integer", "string" ],
                          "readOnly": true,
                          "description": "Numeric identifier to specify the instance"
                        },
                        "sourceType": {
                          "enum": [ "audioOnly", "videoOnly", "audioPlusVideo" ],
                          "readOnly": true,
                          "description": "Specifies the type of the source"
                        },
                        "status": {
                          "type": "boolean",
                          "description": "Specifies if the specific source instance is selected or
not"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.mediasource"}
                  ],
                  "required": ["sourceName","status"]
                }

              example: |
                {
                  "id":           "unique_example_id",
                  "sourceName":   "my new name",
                  "sourceNumber": "1",
                  "status":       true
                }
```

6.42.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
sourceName	스트링	예		미리 정의된 Media 입력 또는 출력을 규정
status	boolean	예		특정 Source 개체가 선택되었는지 여부를 규정
sourceNumber	[u'정수', u'스트링']		Read Only	개체를 규정하기 위한

				숫자형 식별자
sourceType	복수 타입: schema 참조		Read Only	Source 의 유형을 규정

6.42.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/mediaSourceResURI		get	post		

6.43 Media Source 목록

6.43.1 개요

이 resource 는 device 상에서 사용 가능한 Media Source 의 목록을 제공한다. Sources 는 개별적으로 정의된 mediaSource 의 배열이다. 기본적인 resource type oic.r.mediaSourceList 는 Source 가 입력 또는 출력인지의 어떠한 표시도 제공하지 않는다. 따라서, 이 resource 의 2 가지 사양이 존재한다. Device 가 입력 Source 를 노출할 때 oic.r.media.input 의 resource type 을 갖는 이 resource 의 개체가 노출된다. Device 가 출력 Source 를 노출할 때, oic.r.media.output 의 resource type 을 갖는 이 resource 의 개체가 노출된다. Device 가 입력 및 출력 Source 를 둘 다 노출할 때 이 resource 의 2 가지 개체, 즉, 하나의 resource type oic.r.media.input 을 갖는 개체와 oic.r.media.output 의 resource type 을 갖는 개체를 노출시킨다.

6.43.2 URI 예

/mediaSourceListResURI

6.43.3 Resource Type

resource type (rt)는 oic.r.mediasourcelist 로 정의된다.

6.43.4 RAML 정의

```
#%RAML 0.8
title: OICMediaSourceList
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


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



```
oic.r.media.output is exposed.
    A device that exposes both input and output media sources then exposes two instances of this
resource,
    one with a resource type or oic.r.media.input and one with a resource type of
oic.r.media.output

  is : ['interface']

  get:
    responses :

      200:

        body:
          application/json:

            schema: |

              {
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSourceList.json#",
                "title": "Media Source List",
                "definitions": {
                  "oic.r.mediasourcelist": {
                    "properties": {
                      "sources": {
                        "type": "array",
                        "items": {
                          "oneOf": [
                            { "$ref": "oic.r.mediaSource.json#/definitions/oic.r.mediasource" }
                          ]
                        }
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  { "$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  { "$ref": "#/definitions/oic.r.mediasourcelist"}
                ],
                "required": ["sources"]
              }

            example: |

              {
                "rt": ["oic.r.mediasourcelist"],
                "id": "unique_example_id",
                "sources": [
                  {
                    "sourceName": "HDMI-CEC",
                    "sourceNumber": "1",
                    "sourceType": "audioPlusVideo",
                    "status": true
                  },
                  {
                    "sourceName": "dualRCA",
                    "sourceNumber": "1",
                    "sourceType": "audioOnly",
                    "status": false
                  }
                ]
              }

  post:

    description: |
```

```
      Changes the status of the source(s).
      Allows changes of the sourceName and the status.

    body:
      application/json:
        schema: |
          {
            "$schema": "http://json-schema.org/draft-04/schema#",
            "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
            "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSourceList.json#",
            "title": "Media Source List",
            "definitions": {
              "oic.r.mediasourcelist": {
                "properties": {
                  "sources": {
                    "type": "array",
                    "items": {
                      "oneOf": [
                        { "$ref": "oic.r.mediaSource.json#/definitions/oic.r.mediasource" }
                      ]
                    }
                  }
                }
              }
            },
            "type": "object",
            "allOf": [
              { "$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
              { "$ref": "#/definitions/oic.r.mediasourcelist"}
            ],
            "required": ["sources"]
          }

        example: |
          {
            "id":     "unique_example_id",
            "sources": [
              {
               "sourceName":    "my new name",
               "sourceNumber":  "1",
               "status":        true
              }
            ]
          }

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSourceList.json#",
                "title": "Media Source List",
                "definitions": {
                  "oic.r.mediasourcelist": {
                    "properties": {
                      "sources": {
                        "type": "array",
                        "items": {
                          "oneOf": [
```

```
                          { "$ref": "oic.r.mediaSource.json#/definitions/oic.r.mediasource" }
                        ]
                      }
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                { "$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                { "$ref": "#/definitions/oic.r.mediasourcelist"}
              ],
              "required": ["sources"]
            }

          example: |
            {
              "id":     "unique_example_id",
              "sources": [
                {
                  "sourceName":   "my new name",
                  "sourceNumber": "1",
                  "status":       true
                }
              ]
            }
```

6.43.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
sources	배열: schema 참조	예		
sourceName	스트링	예		미리 정의된 Media 입력 또는 출력을 규정
status	boolean	예		특정 Source 개체가 선택되었는지 여부를 규정
sourceNumber	[u'정수', u'스트링']		Read Only	개체를 규정하기 위한 숫자형 식별자
sourceType	복수 타입: schema 참조		Read Only	Source 의 유형을 규정

6.43.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/mediaSourceListResURI		get	post		

6.43.7 Referenced JSON schemas

6.43.7.1 oic.r.mediaSource.json

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSource.json#",
  "title": "Media Source",
  "definitions": {
    "oic.r.mediasource": {
      "properties": {
        "sourceName": {
          "type": "string",
          "description": "Specifies a pre-defined media input or output"
        },
        "sourceNumber": {
          "type": [ "integer", "string" ],
          "readOnly": true,
          "description": "Numeric identifier to specify the instance"
        },
        "sourceType": {
          "enum": [ "audioOnly", "videoOnly", "audioPlusVideo" ],
          "readOnly": true,
          "description": "Specifies the type of the source"
        },
        "status": {
          "type": "boolean",
          "description": "Specifies if the specific source instance is selected or not"
        }
      }
    }
  },
  "type": "object",
  "allOf": [
    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
    {"$ref": "#/definitions/oic.r.mediasource"}
  ],
  "required": ["sourceName","status"]
}
```

6.44 Media Source 입력

6.44.1 개요

이 resource 는 device 상에서 사용 가능한 입력 Media Source 의 목록을 제공한다. Sources 는 개별적으로 정의된 mediaSource 의 배열이다.

6.44.2 URI 예

/mediaSourceInputResURI

6.44.3 Resource Type

resource type (rt)는 oic.r.media.input 으로 정의된다.

6.44.4 RAML 정의

```
#%RAML 0.8
title: OICMediaSourceInput
version: v1.1.0-20160519
traits:
 - interface :
```

```
      queryParameters:
        if:
          enum: ["oic.if.a", "oic.if.baseline"]

/mediaSourceInputResURI:
  description: |
    This resource provides the list of input media sources available on the device.
    The sources are an array of mediaSource(s) as separately defined.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSourceList.json#",
                "title": "Media Source List",
                "definitions": {
                  "oic.r.mediasourcelist": {
                    "properties": {
                      "sources": {
                        "type": "array",
                        "items": {
                          "oneOf": [
                            { "$ref": "oic.r.mediaSource.json#/definitions/oic.r.mediasource" }
                          ]
                        }
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  { "$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  { "$ref": "#/definitions/oic.r.mediasourcelist"}
                ],
                "required": ["sources"]
              }

            example: |
              {
                "rt": ["oic.r.media.input"],
                "id": "unique_example_id",
                "sources": [
                  {
                    "sourceName": "HDMI-CEC",
                    "sourceNumber": "1",
                    "sourceType": "audioPlusVideo",
                    "status": true
                  },
                  {
                    "sourceName": "dualRCA",
                    "sourceNumber": "1",
                    "sourceType": "audioOnly",
                    "status": false
                  }
                ]
```

```
                }

  post:
    description: |
      Changes the status of the source(s).
      Allows changes of the sourceName and the status.

    body:
      application/json:
        schema: |
          {
            "$schema": "http://json-schema.org/draft-04/schema#",
            "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
            "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSourceList.json#",
            "title": "Media Source List",
            "definitions": {
              "oic.r.mediasourcelist": {
                "properties": {
                  "sources": {
                    "type": "array",
                    "items": {
                      "oneOf": [
                        { "$ref": "oic.r.mediaSource.json#/definitions/oic.r.mediasource" }
                      ]
                    }
                  }
                }
              }
            },
            "type": "object",
            "allOf": [
              { "$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
              { "$ref": "#/definitions/oic.r.mediasourcelist"}
            ],
            "required": ["sources"]
          }

        example: |
          {
            "id":     "unique_example_id",
            "sources": [
              {
               "sourceName":    "my new name",
               "sourceNumber":  "1",
               "status":        true
              }
            ]
          }

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSourceList.json#",
                "title": "Media Source List",
                "definitions": {
                  "oic.r.mediasourcelist": {
```

```
                "properties": {
                  "sources": {
                    "type": "array",
                    "items": {
                      "oneOf": [
                        { "$ref": "oic.r.mediaSource.json#/definitions/oic.r.mediasource" }
                      ]
                    }
                  }
                }
              }
            },
            "type": "object",
            "allOf": [
              { "$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
              { "$ref": "#/definitions/oic.r.mediasourcelist"}
            ],
            "required": ["sources"]
          }

        example: |
          {
            "id":     "unique_example_id",
            "sources": [
              {
                "sourceName":   "my new name",
                "sourceNumber": "1",
                "status":       true
              }
            ]
          }
```

6.44.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
sources	배열: schema 참조	예		

6.44.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/mediaSourceInputResURI		get	post		

6.45 Media Source 출력

6.45.1 개요

이 resource 는 device 상에서 사용 가능한 출력 Media Source 의 목록을 제공한다. Sources 는 개별적으로 정의된 mediaSource 의 배열이다.

6.45.2 URI 예

/mediaSourceOutputResURI

6.45.3 Resource Type

resource type (rt)는 oic.r.media.output 으로 정의된다.

6.45.4 RAML 정의

```
#%RAML 0.8
title: OICMediaSourceOutput
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


/mediaSourceOutputResURI:
  description: |
    This resource provides the list of output media sources available on the device.
    The sources are an array of mediaSource(s) as separately defined.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSourceList.json#",
                "title": "Media Source List",
                "definitions": {
                  "oic.r.mediasourcelist": {
                    "properties": {
                      "sources": {
                        "type": "array",
                        "items": {
                          "oneOf": [
                            { "$ref": "oic.r.mediaSource.json#/definitions/oic.r.mediasource" }
                          ]
                        }
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  { "$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  { "$ref": "#/definitions/oic.r.mediasourcelist"}
                ],
                "required": ["sources"]
              }

            example: |
              {
                "rt": ["oic.r.media.output"],
                "id": "unique_example_id",
                "sources": [
                  {
                    "sourceName": "HDMI-CEC",
                    "sourceNumber": "1",
                    "sourceType": "audioPlusVideo",
                    "status": true
                  },
```

```
                    {
                      "sourceName": "dualRCA",
                      "sourceNumber": "1",
                      "sourceType": "audioOnly",
                      "status": false
                    }
                  ]
                }

  post:

    description: |
      Changes the status of the source(s).
      Allows changes of the sourceName and the status.

    body:
      application/json:

        schema: |

          {
            "$schema": "http://json-schema.org/draft-04/schema#",
            "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
            "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSourceList.json#",
            "title": "Media Source List",
            "definitions": {
              "oic.r.mediasourcelist": {
                "properties": {
                  "sources": {
                    "type": "array",
                    "items": {
                      "oneOf": [
                        { "$ref": "oic.r.mediaSource.json#/definitions/oic.r.mediasource" }
                      ]
                    }
                  }
                }
              }
            },
            "type": "object",
            "allOf": [
              { "$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
              { "$ref": "#/definitions/oic.r.mediasourcelist"}
            ],
            "required": ["sources"]
          }

        example: |

          {
            "id":     "unique_example_id",
            "sources": [
              {
               "sourceName":    "my new name",
               "sourceNumber":  "1",
               "status":        true
              }
            ]
          }

    responses :

      200:

        body:
          application/json:

            schema: |

              {
                "$schema": "http://json-schema.org/draft-04/schema#",
```

```
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.mediaSourceList.json#",
                  "title": "Media Source List",
                  "definitions": {
                    "oic.r.mediasourcelist": {
                      "properties": {
                        "sources": {
                          "type": "array",
                          "items": {
                            "oneOf": [
                              { "$ref": "oic.r.mediaSource.json#/definitions/oic.r.mediasource" }
                            ]
                          }
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    { "$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    { "$ref": "#/definitions/oic.r.mediasourcelist"}
                  ],
                  "required": ["sources"]
                }

              example: |
                {
                  "id":     "unique_example_id",
                  "sources": [
                    {
                      "sourceName":   "my new name",
                      "sourceNumber": "1",
                      "status":       true
                    }
                  ]
                }
```

6.45.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
sources	배열: schema 참조	예		

6.45.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/mediaSourceOutputResURI		get	post		

6.46 모션 센서

6.46.1 개요

이 resource 는 움직임이 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 움직임이 감지되었음을 의미한다. 'false' 값은 움직임이 감지되지 않았음을 의미한다.

6.46.2 URI 예

/MotionResURI

6.46.3 Resource Type

resource type (rt)는 oic.r.sensor.motion 으로 정의된다.

6.46.4 RAML 정의

```
#%RAML 0.8
title: OICMotionSensor
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


/MotionResURI:
  description: |
    This resource describes whether motion has been sensed or not.
    The value is a boolean.
    A value of 'true' means that motion has been sensed.
    A value of 'false' means that motion not been sensed.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":  "http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.motion.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Motion Sensor",
                "definitions": {
                  "oic.r.sensor.motion": {
                    "allOf": [
                      {"$ref": "oic.r.sensor.json#/definitions/oic.r.sensor"}
                    ]
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.motion"}
                ],
                "required": ["value"]
              }

            example: |
              {
                "rt":    ["oic.r.sensor.motion"],
                "id":    "unique_example_id",
                "value": true
              }
```

6.46.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	True = 감지 False = 미 감지

6.46.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/MotionResURI		get			

6.47 야간 모드

6.47.1 개요

이 resource 는 야간 모드 on/off 기능을 기술한다. 'true'의 nightMode 값은 기능이 on 임을 의미한다. 'false' 의 nightMode 값은 기능이 off 임을 의미한다.

6.47.2 URI 예

/NightModeResURI

6.47.3 Resource Type

resource type (rt)는 oic.r.nightmode 로 정의된다.

6.47.4 RAML 정의

```
#%RAML 0.8
title: OICNightMode
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


/NightModeResURI:
  description: |
    This resource describes a night mode on/off feature.
    A nightMode value of 'true' means that the feature is on.
    A nightMode value of 'false' means that the feature is off.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.nightMode.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
```

```
                  "title": "Night Mode",
                  "definitions": {
                    "oic.r.nightmode": {
                      "type": "object",
                      "properties": {
                        "nightMode": {
                          "type": "boolean",
                          "description": "Status of the Night Mode"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.nightmode"}
                  ],
                  "required": [ "nightMode" ]
                }

              example: |
                {
                  "rt":         ["oic.r.nightmode"],
                  "id":         "unique_example_id",
                  "nightMode":  false
                }

    post:
      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.nightMode.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Night Mode",
              "definitions": {
                "oic.r.nightmode": {
                  "type": "object",
                  "properties": {
                    "nightMode": {
                      "type": "boolean",
                      "description": "Status of the Night Mode"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.nightmode"}
              ],
              "required": [ "nightMode" ]
            }

          example: |
            {
              "id":         "unique_example_id",
              "nightMode":  true
            }

      responses :
        200:
          body:
```

```
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.nightMode.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Night Mode",
                "definitions": {
                  "oic.r.nightmode": {
                    "type": "object",
                    "properties": {
                      "nightMode": {
                        "type": "boolean",
                        "description": "Status of the Night Mode"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.nightmode"}
                ],
                "required": [ "nightMode" ]
              }

            example: |
              {
                "id":         "unique_example_id",
                "nightMode":  true
              }
```

6.47.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
nightMode	boolean	예		야간 모드의 상태

6.47.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/NightModeResURI		get	post		

6.48 존재 센서

6.48.1 개요

이 resource 는 존재가 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. ‘true’ 값은 존재가 감지되었음을 의미한다. ‘false’ 값은 존재가 감지되지 않았음을 의미한다.

6.48.2 URI 예

/PresenceResURI

6.48.3 Resource Type

resource type (rt)는 oic.r.sensor.presence 로 정의된다.

6.48.4 RAML 정의

```
#%RAML 0.8
title: OICPresenceSensor
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


/PresenceResURI:
  description: |
    This resource describes whether presence has been sensed or not.
    The value is a boolean.
    A value of 'true' means that presence has been sensed.
    A value of 'false' means that presence not been sensed.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.presence.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Presence Sensor",
                "definitions": {
                  "oic.r.sensor.presence": {
                    "allOf": [
                      {"$ref": "oic.r.sensor.json#/definitions/oic.r.sensor"}
                    ]
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.presence"}
                ],
                "required": ["value"]
              }

            example: |
              {
                "rt":    ["oic.r.sensor.presence"],
                "id":    "unique_example_id",
                "value": true
              }
```

6.48.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	True = 감지 False = 미 감지

6.48.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/PresenceResURI		get			

6.49 팬 틸트 줌 동작

6.49.1 개요

이 resource 는 device 의 회전 경사 및 줌 기능을 규정한다. resource rt 는 동적이고, 값이 device 의 물리적인 움직임에 적용되지는 또는 이미지에 대한 디지털/버츄얼 향상에 적용되는지를 반영한다. 물리적인 움직임에 대해, rt 는 'oic.r.movement.ptz'이다. 디지털/버츄얼 이미지 향상에 대해, rt 는 'oic.r.image.ptz'이다. 회전 및 경사는 도(°)로 규정된다. 줌 인자는 선형 (광학) 줌에 대해 1-100 범위의 값이다. 디지털 줌에 대해 줌 인자는 [1x, 2x, 4x, 8x, 16x, 32x] 범위의 값이다. 설정할 줌 값이 없다면, 줌 인자는 '1x'가 된다. 0 도의 값은 중간을 의미하고, 이것은 제조사가 정의한 설정이다. 이 resource 가 물리적인 움직임에 대한 옵셋을 생성하기 위해 사용될 수도 있다. 이러한 경우, rt 값은 oic.r.movement.offset.ptz 이다. 이 resource 가 이미지 움직임에 대한 옵셋을 생성하기 위해 사용될 수도 있다. 이러한 경우, rt 값은 oic.r.image.offset.ptz 이다. pan_range 값이 생략되면 범위는 [-180.0,180.0]이다. Pan 이 지원되지 않는다면, 범위는 [0.0,0.0]이다. tilt_range 값이 생략되면 범위는 [- 180.0,180.0]이다. tilt 가 지원되지 않는다면, 범위는 [0.0,0.0]이다.

6.49.2 URI 예

/PanTiltZoomResURI

6.49.3 Resource Type

resource type (rt)는 oic.r.ptz 로 정의된다.

6.49.4 RAML 정의

```
#%RAML 0.8
title: OICPanTiltZoom
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


/PanTiltZoomResURI:
  description: |
    This resource specifies the pan tilt and zoom capabilities of a device.
    The resource rt is dynamic and reflects whether the values apply to
      physical movement of the device or digital/virtual enhancements to the image.
    For physical movement the rt is 'oic.r.movement.ptz'.
    For digital/virtual image enhancements the rt is 'oic.r.image.ptz'.
    The Pan and Tilt are specified in degrees.
    The Zoom Factor is a value in the range 1-100 for linear (optical) zoom.
```



```
      The Zoom Factor is a value in the range [1x, 2x, 4x, 8x, 16x, 32x] for digital zoom.
      If there is no zoom value to set the Zoom Factor shall be '1x'.
      The value 0 degrees means neutral, this is the vendor defined setting.
      Note that this resource also can be used to create an offset for physical movement.
      When that is the case, the rt value is: oic.r.movement.offset.ptz
      Note that this resource also can be used to create an offset for image movement.
      When that is the case, the rt value is: oic.r.image.offset.ptz
      When the pan_range value is omitted, then the range is [-180.0,180.0].
      If pan is not supported then the range shall be [0.0,0.0]
      When the tilt_range value is omitted, then the range is [-180.0,180.0].
      If tilt is not supported then the range shall be [0.0,0.0]

    is : ['interface']

    get:

      description: |
        Retrieves the current pan, tilt and zoom setting.

      responses :

        200:

          body:
            application/json:

              schema: |

                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.ptz.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Pan Tilt Zoom",
                  "definitions": {
                    "oic.r.ptz": {
                      "type": "object",
                      "properties": {
                        "pan":  {
                          "type": "number",
                          "description": "horizontal pan in degrees"
                        },
                        "tilt":   {
                          "type": "number",
                          "description": "vertical tilt in degrees"
                        },
                        "pan_range":  {
                          "type": "array",
                          "readOnly": true,
                          "description": "Min and Max values for the pan setting",
                          "minItems": 2,
                          "maxItems": 2,
                          "items": {
                            "type": "number"
                          }
                        },
                        "tilt_range":  {
                          "type": "array",
                          "readOnly": true,
                          "description": "Min and Max values for the tilt setting",
                          "minItems": 2,
                          "maxItems": 2,
                          "items": {
                            "type": "number"
                          }
                        },
                        "zoomFactor": {
                          "type": "string",
                          "description": "The Zoomfactor value"
                        },
                        "zoomFactorRange": {
                          "type": "string",
                          "enum": ["linear", "1x", "2x", "4x", "8x", "16x", "32x"],
```

```
                          "readOnly": true,
                          "description": "allowed Zoom Factor values. Linear equates to a 1-100
min/max."
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.ptz"}
                  ],
                  "required": ["pan","tilt","zoomFactor"]
                }

              example: |
                {
                  "rt":         ["oic.r.ptz"],
                  "id":         "unique_example_id",
                  "pan":        0.0,
                  "tilt":       0.0,
                  "zoomFactor": "2x"
                }

    post:
      description: |
        Sets the current pan, tilt and zoom value

      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.ptz.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Pan Tilt Zoom",
              "definitions": {
                "oic.r.ptz": {
                  "type": "object",
                  "properties": {
                    "pan":  {
                      "type": "number",
                      "description": "horizontal pan in degrees"
                    },
                    "tilt":   {
                      "type": "number",
                      "description": "vertical tilt in degrees"
                    },
                    "pan_range":  {
                      "type": "array",
                      "readOnly": true,
                      "description": "Min and Max values for the pan setting",
                      "minItems": 2,
                      "maxItems": 2,
                      "items": {
                        "type": "number"
                      }
                    },
                    "tilt_range":  {
                      "type": "array",
                      "readOnly": true,
                      "description": "Min and Max values for the tilt setting",
                      "minItems": 2,
                      "maxItems": 2,
                      "items": {
                        "type": "number"
```

```
                      }
                    },
                    "zoomFactor": {
                      "type": "string",
                      "description": "The Zoomfactor value"
                    },
                    "zoomFactorRange": {
                      "type": "string",
                      "enum": ["linear", "1x", "2x", "4x", "8x", "16x", "32x"],
                      "readOnly": true,
                      "description": "allowed Zoom Factor values. Linear equates to a 1-100 min/max."
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.ptz"}
              ],
              "required": ["pan","tilt","zoomFactor"]
            }

          example: |
            {
              "id":         "unique_example_id",
              "pan":        10.0,
              "tilt":       -10.0,
              "zoomFactor": "4x"
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.ptz.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Pan Tilt Zoom",
                  "definitions": {
                    "oic.r.ptz": {
                      "type": "object",
                      "properties": {
                        "pan":  {
                          "type": "number",
                          "description": "horizontal pan in degrees"
                        },
                        "tilt":   {
                          "type": "number",
                          "description": "vertical tilt in degrees"
                        },
                        "pan_range":  {
                          "type": "array",
                          "readOnly": true,
                          "description": "Min and Max values for the pan setting",
                          "minItems": 2,
                          "maxItems": 2,
                          "items": {
                            "type": "number"
                          }
                        },
                        "tilt_range":  {
                          "type": "array",
                          "readOnly": true,
```

```
                          "description": "Min and Max values for the tilt setting",
                          "minItems": 2,
                          "maxItems": 2,
                          "items": {
                            "type": "number"
                          }
                        },
                        "zoomFactor": {
                          "type": "string",
                          "description": "The Zoomfactor value"
                        },
                        "zoomFactorRange": {
                          "type": "string",
                          "enum": ["linear", "1x", "2x", "4x", "8x", "16x", "32x"],
                          "readOnly": true,
                          "description": "allowed Zoom Factor values. Linear equates to a 1-100
min/max."
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.ptz"}
                  ],
                  "required": ["pan","tilt","zoomFactor"]
                }

              example: |
                {
                  "id":         "unique_example_id",
                  "pan":        10.0,
                  "tilt":       -10.0,
                  "zoomFactor": "4x"
                }
```

6.49.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
tilt_range	배열: schema 참조		Read Only	경사 설정에 대한 최소 및 최대 값
zoomFactor	스트링	예		줌 인자 값
tilt	숫자	예		도(°) 단위의 수직 경사
pan_range	배열: schema 참조		Read Only	회전 설정에 대한 최소 및 최대 값
zoomFactorRange	스트링		Read Only	허용된 줌 인자 값. 선형은 1-100 min/max 와 같다.
pan	숫자	예		도(°) 단위의 수평 회전

6.49.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/PanTiltZoomResURI		get	post		

6.50 신호 강도

6.50.1 개요

이 resource 는 lqi 및 rssi 에 의해 신호의 강도를 기술한다. lqi 는 Link Quality 표시자를 나타내는 부동 소수점 숫자이다. rssi 는 수신된 신호 강도 표시자를 나타내는 부동 소수점 숫자이다.

6.50.2 URI 예

/SignalStrengthResURI

6.50.3 Resource Type

resource type (rt) 는 oic.r.signalstrength 로 정의된다.

6.50.4 RAML 정의

```
#%RAML 0.8
title: OICSignalStrength
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

/SignalStrengthResURI:
  description: |
    This resource describes the strength of a signal by means of lqi and rssi.
    The lqi is a floating point number that represents Link Quality Indicator.
    The rssi is a floating point number that represents the received signal strength indicator.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.signalStrength.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Signal Strength",
                "definitions": {
                  "oic.r.signalstrength": {
                    "type": "object",
                    "properties": {
                      "lqi": {
```

```
                        "type": "number",
                        "readOnly": true,
                        "description": "current value of Link Quality Indicator"
                      },
                      "rssi": {
                        "type": "number",
                        "readOnly": true,
                        "description": "current value of Received Signal Strength Indicator"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.signalstrength"}
                ],
                "required": ["lqi","rssi"]
              }

            example: |
              {
                "rt":   ["oic.r.signalstrength"],
                "id":   "unique_example_id",
                "lqi":  10.0,
                "rssi": 55.0
              }
```

6.50.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
rssi	숫자	예	Read Only	수신된 신호 강도 표시자의 현재 값
lqi	숫자	예	Read Only	Link Quality 표시자의 현재 값

6.50.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/SignalStrengthResURI		get			

6.51 음성 합성 TTS

6.51.1 개요

이 resource 는, OCF Client 에 의해 음성을 렌더링할 수 있고 client 가 SSML 문서에 렌더링할 텍스트를 제공하는 것을 허용하는 OIC Server 상에서 생성될 수 있거나, 또는 일부 상주 애플리케이션에 의해 OCF Server 상에서 생성될 수 있다. 렌더링 된 음성은 Server 에 국소적인 본 단계에 존재한다 (즉, 스트리밍 되지 않는다). 발성은 SSML 문서이다. supportedLanguages 는 지원되는 RFC 5646 정의 언어 태그의 배열이다. supportedVoices 는 지원되는 음성을 나타내는 SSML 문서의 단편이다.

6.51.2 URI 예

/SpeechTTSResURI

6.51.3 Resource Type

resource type (rt) 는 oic.r.speech.tts 로 정의된다.

6.51.4 RAML 정의

```
#%RAML 0.8
title: OICSpeechTTS
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]

/SpeechTTSResURI:
  description: |
    This resource may be created on the OIC Server that is capable of rendering speech by an OIC Client
      and allows the client to provide an SSML document with text to render
      or may be created on the OIC Server by some resident application.
    The audio rendered is at this stage local to the Server (i.e
    not streamed).
    The utterance is an SSML document.
    The supportedLanguages is an array of the RFC 5646 defined language tags that are supported.
    The supportedVoices is an SSML document fragment indicating the voices that are supported.

  is : ['interface']
  get:
    description: |
      Utterance in the example shall be a properly escaped (JSON rules) SSML document
      An example is given below:
        "<?xml version=\"1.0\" encoding=\"ISO-8859-1\"?>\n\r
        <speak version=\"1.1\" xmlns=\"http:\/\/www.w3.org\/2001\/10\/synthesis\"\n\r
        \txmlns:xsi=\"http:\/\/www.w3.org\/2001\/XMLSchema-instance\"\n\r
        \txsi:schemaLocation=\"http:\/\/www.w3.org\/2001\/10\/synthesis\n\r
        \thttp:\/\/www.w3.org\/TR\/speech-synthesis11\/synthesis.xsd\"\n\r
        \txml:lang=\"en-US\">\n\r
        \n\r
        \tThe title of the movie is:\n\r
        \t\"Monty Pythons The Meaning of Life\"\n\r
        \twhich is directed by Terry Jones.\n\r
        <\/speak"

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.speech.tts.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights reserved.",
                "title": "Speech Synthesis-TTS",
                "definitions": {
                  "oic.r.speech.tts": {
                    "type": "object",
                    "properties": {
                      "utterance": {
                        "type": "string",
                        "description": "SSML document including the speech body"
```

```
                        },
                        "supportedLanguages": {
                          "type": "array",
                          "readOnly": true,
                          "description": "array of supported language tags",
                          "items": {
                            "type": "string"
                          }
                        },
                        "supportedVoices": {
                          "type": "string",
                          "readOnly": true,
                          "description": "SSML document fragment indicating supported voices"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.speech.tts"}
                  ],
                  "required": ["utterance"]
                }

              example: |
                {
                  "rt":                 ["oic.r.speech.tts"],
                  "id":                 "unique_example_id",
                  "utterance":          "SSML Document",
                  "supportedLanguages": ["en-US", "en-GB", "fr-CA"],
                  "supportedVoices":    "<voice gender=\"female\" variant=\"2\"><\/voice>\n\r<voice
name=\"Mike\"><\/voice>"
                }

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

      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.speech.tts.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Speech Synthesis-TTS",
              "definitions": {
                "oic.r.speech.tts": {
                  "type": "object",
                  "properties": {
                    "utterance": {
                      "type": "string",
                      "description": "SSML document including the speech body"
                    },
                    "supportedLanguages": {
                      "type": "array",
                      "readOnly": true,
                      "description": "array of supported language tags",
                      "items": {
                        "type": "string"
                      }
                    },
                    "supportedVoices": {
                      "type": "string",
```

```
                      "readOnly": true,
                      "description": "SSML document fragment indicating supported voices"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.speech.tts"}
              ],
              "required": ["utterance"]
            }

          example: |
            {
              "rt":         ["oic.r.speech.tts"],
              "id":         "unique_example_id",
              "utterance":  "SSML Document"
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.speech.tts.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Speech Synthesis-TTS",
                  "definitions": {
                    "oic.r.speech.tts": {
                      "type": "object",
                      "properties": {
                        "utterance": {
                          "type": "string",
                          "description": "SSML document including the speech body"
                        },
                        "supportedLanguages": {
                          "type": "array",
                          "readOnly": true,
                          "description": "array of supported language tags",
                          "items": {
                            "type": "string"
                          }
                        },
                        "supportedVoices": {
                          "type": "string",
                          "readOnly": true,
                          "description": "SSML document fragment indicating supported voices"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.speech.tts"}
                  ],
                  "required": ["utterance"]
                }

              example: |
```

```
                {
                  "rt":         ["oic.r.speech.tts"],
                  "id":         "unique_example_id",
                  "utterance":  "SSML Document"
                }
```

6.51.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
supportedVoices	스트링		Read Only	지원되는 음성을 나타내는 SSML 문서의 단편
utterance	스트링	예		음성 본문을 포함하는 SSML 문서
supportedLanguages	배열: schema 참조		Read Only	지원되는 언어 태그의 배열

6.51.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/SpeechTTSResURI		get	post		

6.52 터치 센서

6.52.1 개요

이 resource 는 터치가 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 터치가 감지되었음을 의미한다. 'false' 값은 터치가 감지되지 않았음을 의미한다.

6.52.2 URI 예

/TouchResURI

6.52.3 Resource Type

resource type (rt) 는 oic.r.sensor.touch 로 정의된다.

6.52.4 RAML 정의

```
#%RAML 0.8
title: OICTouchSensor
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

/TouchResURI:
  description: |
```

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

    is : ['interface']
    get:
      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.touch.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Touch Sensor",
                  "definitions": {
                    "oic.r.sensor.touch": {
                      "allOf": [
                        {"$ref": "oic.r.sensor.json#/definitions/oic.r.sensor"}
                      ]
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.sensor.touch"}
                  ],
                  "required": ["value"]
                }

              example: |
                {
                  "rt":    ["oic.r.sensor.touch"],
                  "id":    "unique_example_id",
                  "value": true
                }
```

6.52.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	True = 감지 False = 미 감지

6.52.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/TouchResURI		get			

6.53 UV 방출

6.53.1 개요

이 resource 는 UV 방출 측정을 규정한다. 측정은 현재 측정된 UV 인덱스이다.

6.53.2 URI 예

/UVRadiationResURI

6.53.3 Resource Type

resource type (rt)는 oic.r.sensor.radiation.uv 로 정의된다.

6.53.4 RAML 정의

```
#%RAML 0.8
title: OICUVRadiation
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

/UVRadiationResURI:
  description: |
    This resource specifies UV radiation measurement.
    The measurement is the current measured UV Index

  is : ['interface']
  get:
    description: |
      Retrieves the current UV Radiation value

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.radiation.uv.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "UV Radiation",
                "definitions": {
                  "oic.r.sensor.radiation.uv": {
                    "type": "object",
                    "properties": {
                      "measurement":   {
                        "type": "number",
                        "readOnly": true,
                        "description": "The measured UV Index"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.radiation.uv"}
                ],
                "required": ["measurement"]
              }
```

```
            example: |
              {
                "rt":           ["oic.r.sensor.radiation.uv"],
                "id":           "unique_example_id",
                "measurement":  3.5
              }
```

6.53.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
measurement	숫자	예	Read Only	측정된 UV 인덱스

6.53.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/UVRadiationResURI		get			

6.54 수분 센서

6.54.1 개요

이 resource 는 수분이 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 수분이 감지되었음을 의미한다. 'false' 값은 수분이 감지되지 않았음을 의미한다.

6.54.2 URI 예

/WaterResURI

6.54.3 Resource Type

resource type (rt)는 oic.r.sensor.water 로 정의된다.

6.54.4 RAML 정의

```
#%RAML 0.8
title: OICWaterSensor
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

/WaterResURI:
  description: |
    This resource describes whether water has been sensed or not.
    The value is a boolean.
    A value of 'true' means that water has been sensed.
    A value of 'false' means that water not been sensed.

  is : ['interface']
  get:
    responses :
      200:
```

```
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.water.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Water Sensor",
                "definitions": {
                  "oic.r.sensor.water": {
                    "allOf": [
                      {"$ref": "oic.r.sensor.json#/definitions/oic.r.sensor"}
                    ]
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.water"}
                ],
                "required": ["value"]
              }

            example: |
              {
                "rt":    ["oic.r.sensor.water"],
                "id":    "unique_example_id",
                "value": true
              }
```

6.54.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	True = 감지 False = 미 감지

6.54.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/WaterResURI		get			

6.55 가속도 센서

6.55.1 개요

이 resource 는 좌표 가속도(좌표계와 Observer 에 의존하는)에 대조되는 적절한 가속도(g force)의 측정치를 제공한다. 값은 물체가 겪는 가속도를 단위 "g"로 기술하는 부동 소수점 형이다.

6.55.2 URI 예

/AccelerationResURI

6.55.3 Resource Type

resource type (rt)는 oic.r.sensor.acceleration 으로 정의된다.

6.55.4 RAML 정의

```
#%RAML 0.8
title: OICAcceleration
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


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

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.acceleration.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Acceleration Sensor",
                "definitions": {
                  "oic.r.sensor.acceleration": {
                    "properties": {
                      "acceleration": {
                          "type": "number",
                          "readOnly": true,
                          "description": "sensed acceleration experienced in 'g'."
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.acceleration"}
                ],
                "required": ["acceleration"]
              }

            example: |
              {
                "rt":            ["oic.r.sensor.acceleration"],
                "id":            "unique_example_id",
                "acceleration":  0.5
              }
```

6.55.5 Property 정의

Property name	Value type	필수	액세스 모드	설명

Acceleration	숫자	예	Read Only	감지된 단위 'g' 의 가속도

6.55.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AccelerationResURI		get			

6.56 이동

6.56.1 개요

이 resource 는 선형 이동을 규정한다. movementSettings 는 가능한 이동 값(예: 회전, 정지, 좌측, 우측)을 포함하는 스트링의 배열이다. Movement 는 현재 선택된 이동 값이다. movementModifier 는 이동 값에 대한 변경자 (예: "회전", "90")이다.

6.56.2 URI 예

/MovementResURI

6.56.3 Resource Type

resource type (rt)는 oic.r.movement.linear 로 정의된다.

6.56.4 RAML 정의

```
#%RAML 0.8
title: OICAcceleration
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


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

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.movement.linear.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
```

```
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Linear Movement",
                  "definitions": {
                    "oic.r.movement.linear": {
                      "type": "object",
                      "properties": {
                        "movementSettings":  {
                          "type": "array",
                          "readOnly": true,
                          "description": "array of possible movement values",
                          "items": {
                            "type": "string"
                          }
                        },
                        "movement":   {
                          "type": "string",
                          "description": "Current movement value"
                        },
                        "movementModifier":  {
                          "type": "string",
                          "description": "Modifier to the movement value (e.g. spin-90, left-20),
units are device dependent"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.movement.linear"}
                  ],
                  "required": ["movementSettings", "movement"]
                }

              example: |
                {
                  "rt":               ["oic.r.movement.linear"],
                  "id":               "unique_example_id",
                  "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
                  "movement":         "rotate",
                  "movementModifier": "90"
                }

    post:
      description: |
        Sets the current device movement

      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.movement.linear.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Linear Movement",
              "definitions": {
                "oic.r.movement.linear": {
                  "type": "object",
                  "properties": {
                    "movementSettings":  {
                      "type": "array",
                      "readOnly": true,
                      "description": "array of possible movement values",
                      "items": {
                        "type": "string"
```

```
                      }
                    },
                    "movement":   {
                      "type": "string",
                      "description": "Current movement value"
                    },
                    "movementModifier":  {
                      "type": "string",
                      "description": "Modifier to the movement value (e.g. spin-90, left-20), units
are device dependent"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.movement.linear"}
              ],
              "required": ["movementSettings", "movement"]
            }

          example: |
            {
              "id":       "unique_example_id",
              "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
              "movement": "stop"
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.movement.linear.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Linear Movement",
                  "definitions": {
                    "oic.r.movement.linear": {
                      "type": "object",
                      "properties": {
                        "movementSettings":  {
                          "type": "array",
                          "readOnly": true,
                          "description": "array of possible movement values",
                          "items": {
                            "type": "string"
                          }
                        },
                        "movement":   {
                          "type": "string",
                          "description": "Current movement value"
                        },
                        "movementModifier":  {
                          "type": "string",
                          "description": "Modifier to the movement value (e.g. spin-90, left-20),
units are device dependent"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
```

```
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.movement.linear"}
              ],
              "required": ["movementSettings", "movement"]
            }

          example: |
            {
              "id":       "unique_example_id",
              "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
              "movement": "stop"
            }
```

6.56.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
movementSettings	배열: schema 참조	예	Read Only	가능한 이동 값의 배열.
movementModifier	스트링			이동 값에 대한 변경자(예: 회전 90, 좌측 20). 단위는 device 에 의존한다.
movement	스트링	예		현재의 이동 값.

6.56.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/MovementResURI		get	post		

6.57 취침 센서

6.57.1 개요

이 resource 는 사람의 수면이 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 수면이 감지되었음을 의미한다. 'false' 값은 수면이 감지되지 않았음을 의미한다.

6.57.2 URI 예

/SleepSensorResURI

6.57.3 Resource Type

resource type (rt)는 oic.r.sensor.sleep 으로 정의된다.

6.57.4 RAML 정의

```
#%RAML 0.8
title: OICSleepSensor
version: v1.1.0-20160519
traits:
```

```
  - interface :
      queryParameters:
        if:
          enum: ["oic.if.s", "oic.if.baseline"]

/SleepSensorResURI:
  description: |
    This resource describes whether human sleep has been sensed or not.
    The value is a boolean.
    A value of 'true' means that sleep has been sensed.
    A value of 'false' means that sleep not been sensed.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.sleep.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Sleep Sensor",
                "definitions": {
                  "oic.r.sensor.sleep": {
                    "allOf": [
                      {"$ref": "oic.r.sensor.json#/definitions/oic.r.sensor"}
                    ]
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.sleep"}
                ],
                "required": ["value"]
              }

            example: |
              {
                "rt":     ["oic.r.sensor.sleep"],
                "id":     "unique_example_id",
                "value":  true
              }
```

6.57.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	True = 감지 False = 미 감지

6.57.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/SleepSensorResURI		get			

6.58 연기 센서

6.58.1 개요

이 resource 는 연기가 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 연기가 감지되었음을 의미한다. 'false' 값은 연기가 감지되지 않았음을 의미한다.

6.58.2 URI 예

/SmokeSensorResURI

6.58.3 Resource Type

resource type (rt)는 oic.r.sensor.smoke 로 정의된다.

6.58.4 RAML 정의

```
#%RAML 0.8
title: OICSmokeSensor
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

/SmokeSensorResURI:
  description: |
    This resource describes whether smoke has been sensed or not.
    The value is a boolean.
    A value of 'true' means that smoke has been sensed.
    A value of 'false' means that smoke not been sensed.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.smoke.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Smoke Sensor",
                "definitions": {
                  "oic.r.sensor.smoke": {
                    "allOf": [
                      {"$ref": "oic.r.sensor.json#/definitions/oic.r.sensor"}
                    ]
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.smoke"}
                ],
```

```
                "required": ["value"]
              }

            example: |
              {
                "rt":     ["oic.r.sensor.smoke"],
                "id":     "unique_example_id",
                "value":  true
              }
```

6.58.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	True = 감지 False = 미 감지

6.58.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/SmokeSensorResURI		get			

6.59 3 축 센서

6.59.1 개요

이 resource 는 3 축 센서로부터 측정 표현을 제공한다. orientation 은 x-평면, y-평면 및 z-평면 값을 표현하는 숫자의 배열이다. 각 평면에 대한 측정의 단위는 'g'이다.

6.59.2 URI 예

/ThreeAxisResURI

6.59.3 Resource Type

resource type (rt)는 oic.r.sensor.threeaxis 로 정의된다.

6.59.4 RAML 정의

```
#%RAML 0.8
title: OICThreeAxis
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


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

  is : ['interface']
```

```
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.sensor.threeaxis.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Three Axis Sensor",
                "definitions": {
                  "oic.r.sensor.threeaxis": {
                    "properties": {
                      "orientation": {
                          "type": "array",
                          "readOnly": true,
                          "description": "Array containing x-plane, y-plane and z-plane orientation
in 'g'.",
                          "minItems": 3,
                          "maxItems": 3,
                          "items": {
                            "type": "number"
                          }
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.sensor.threeaxis"}
                ],
                "required": ["orientation"]
              }

            example: |
              {
                "rt":           ["oic.r.sensor.threeaxis"],
                "id":           "unique_example_id",
                "orientation":  [0.7, 1.1, -0.2]
              }
```

6.59.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
orientation	배열: schema 참조	예	Read Only	x-평면, y-평면 및 z-평면의 'g' 단위의 방위를 포함하는 배열

6.59.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ThreeAxisResURI		get			

6.60 고도계

6.60.1 개요

이 resource 는 고도계와 관련된 property 를 기술한다. 고도는 위치의 높이(미터)이다.

6.60.2 URI 예

/AltimeterResURI

6.60.3 Resource Type

resource type (rt)는 oic.r.altimeter 로 정의된다.

6.60.4 RAML 정의

```
#%RAML 0.8
title: OICAltimeter
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


/AltimeterResURI:
  description: |
    This resource describes the properties associated with altimeter.
    Altimeter is a height of the position (metres).

  is : ['interface']
  get:
    description: |
      Retrieves the current the height of the position (metres).

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/schemas/oic.r.altimeter#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description": "Copyright (c) 2016, 2017 Open Interconnect Consortium, Inc. All
rights reserved.",
                "title": "Altimeter",
                "definitions": {
                  "oic.r.altimeter": {
                    "type": "object",
                    "properties": {
                      "alt": {
                        "type": "number",
                        "minimum": 0,
                        "readOnly": true,
                        "description": "The current height of the position (metres)"
                      }
                    }
```

```
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.altimeter"}
              ],
              "required": ["alt"]
            }

          example: |
            {
              "rt":  ["oic.r.altimeter"],
              "id":  "unique_example_id",
              "alt": 1500.0
            }
```

6.60.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
alt	숫자	예	Read Only	위치의 현재 높이 (미터)

6.60.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AltimeterResURI		get			

6.61 시계

6.61.1 개요

이 resource 는 시계 및 시간과 관련된 property 를 기술한다. Clock 은 시간 정보이다. Datetime 은 ISO 8601 datetime 형식 (예: "2007-04-05T14:30Z") (Time+Date+Timezone)을 사용한다. Countdown 은 카운트다운 동안 요구되는 초 단위의 총 시간이다.

6.61.2 URI 예

/ClockResURI

6.61.3 Resource Type

resource type (rt)는 oic.r.clock 으로 정의된다.

6.61.4 RAML 정의

```
#%RAML 0.8

title: OICClock
version: v1.1.0-20160519

traits:
 - interface :
     queryParameters:

       if:
         enum: ["oic.if.a", "oic.if.baseline"]


/ClockResURI:
```

```
  description: |
    This resource describes the properties associated with clock and time.
    Clock is a time information.
    Datetime is using ISO 8601 datetime format (e.g: "2007-04-05T14:30Z") (Time+Date+Timezone)
    Countdown is the desired total seconds for countdown.

  is : ['interface']

  get:

    description: |
      Retrieves the current datetime data.

    responses :

      200:

        body:
          application/json:

            schema: |

              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.clock.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description": "(c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
                "title": "Clock",
                "definitions": {
                  "oic.r.clock": {
                    "type": "object",
                    "properties": {
                      "datetime": {
                        "type": "string",
                        "description": "Using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z,
2007-04-05T14:30+09:00)"
                      },
                      "countdown": {
                        "type": "number",
                        "minimum": 0,
                        "description": "Desired total seconds for countdown"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.clock"}
                ],
                "required": ["datetime"]
              }

            example: |

              {
                "rt":         ["oic.r.clock"],
                "id":         "unique_example_id",
                "datetime":  "2015-11-05T14:30Z",
                "countdown": 0.0
              }

  post:

    description: |
      Sets the desired datetime.

    body:
      application/json:

        schema: |
```

```
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.clock.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description": "(c) 2016, 2017 Open Connectivity Foundation, Inc. All rights reserved.",
              "title": "Clock",
              "definitions": {
                "oic.r.clock": {
                  "type": "object",
                  "properties": {
                    "datetime": {
                      "type": "string",
                      "description": "Using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z, 2007-
04-05T14:30+09:00)"
                    },
                    "countdown": {
                      "type": "number",
                      "minimum": 0,
                      "description": "Desired total seconds for countdown"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.clock"}
              ],
              "required": ["datetime"]
            }

          example: |
            {
              "id":     "unique_example_id",
              "datetime":  "2015-11-05T14:30Z",
              "countdown": 0.0
            }

      responses :
        200:
          description: |
            Indicates that the datetime value was successfully changed.
            The new datetime value is provided in the response.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.clock.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description": "(c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
                  "title": "Clock",
                  "definitions": {
                    "oic.r.clock": {
                      "type": "object",
                      "properties": {
                        "datetime": {
                          "type": "string",
                          "description": "Using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z,
2007-04-05T14:30+09:00)"
                        },
                        "countdown": {
                          "type": "number",
                          "minimum": 0,
                          "description": "Desired total seconds for countdown"
                        }
                      }
```

```
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.clock"}
                  ],
                  "required": ["datetime"]
                }

              example: |
                {
                  "id":     "unique_example_id",
                  "datetime":  "2015-11-05T14:30Z",
                  "countdown": 0.0
                }

        403:
          description: |
            Indicates that OIC client sent an invalid property value to the server.
            The server responds with the required input representation.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.clock.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description": "(c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
                  "title": "Clock",
                  "definitions": {
                    "oic.r.clock": {
                      "type": "object",
                      "properties": {
                        "datetime": {
                          "type": "string",
                          "description": "Using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z,
2007-04-05T14:30+09:00)"
                        },
                        "countdown": {
                          "type": "number",
                          "minimum": 0,
                          "description": "Desired total seconds for countdown"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.clock"}
                  ],
                  "required": ["datetime"]
                }

              example: |
                {
                  "id":     "unique_example_id",
                  "datetime":  "2015-11-05T14:30Z",
                  "countdown": 0.0
                }
```

6.61.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
countdown	숫자			카운트다운 동안 요구되는 초 단위의 총 시간
datetime	스트링	예		ISO 8601datetime 형식 (예: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00)을 사용

6.61.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ClockResURI		get	post		

6.62 지리 위치

6.62.1 개요

이 resource 는 현재의 지리 위치 좌표와 관련된 property 를 기술한다. 지리 위치는 지리 위치 좌표 데이터이다. Latitude 는 device 의 현재의 위도 좌표(도)(°)이다. Longitude 는 device 의 현재의 경도 좌표(도)(°)이다. Altitude 는 device 의 현재의 고도 위치(미터)이다. Accuracy 는 위도 및 경도 좌표(미터)의 정확도를 나타낸다. altitudeAccuracy 는 고도 좌표(미터)의 정확도를 나타낸다. Heading 은 device 의 이동 방향(도)(°)을 나타낸다. Speed 는 device 의 현재 속도(초당 미터)를 나타낸다.

6.62.2 URI 예

/GeolocationResURI

6.62.3 Resource Type

resource type (rt)는 oic.r.sensor.geolocation 으로 정의된다.

6.62.4 RAML 정의

```
#%RAML 0.8
title: OICGeolocation
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]
```

```
/GeolocationResURI:
  description: |
    This resource describes the properties associated with the current geolocation coordinate.
    Geolocation is a geolocation coordinate data.
    Latitude is a device's current Latitude coordinate (degrees).
    Longitude is a device's current Longitude coordinate (degrees).
    Altitude is a device's current Altitude position (metres).
    Accuracy is the accuracy level of the latitude and longitude coordinates (metres).
    altitudeAccuracy is the accuracy level of the altitude coordinates (metres).
    heading is a direction of travel of device (degree).
    speed is a device's current velocity (metres per second).

  is : ['interface']
  get:
    description: |
      Retrieves the current geolocation coordinates.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/schemas/oic.r.sensor.geolocation#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description": "Copyright (c) 2016, 2017 Open Interconnect Consortium, Inc. All
rights reserved.",
                "title": "Geolocation",
                "definitions": {
                  "oic.r.sensor.geolocation": {
                    "type": "object",
                    "allOf": [
                      {"$ref": "oic.r.altimeter.json#/definitions/oic.r.altimeter"},
                      {"properties": {
                         "latitude": {
                           "type": "number",
                           "readOnly": true,
                           "description": "Device's Current Latitude coordinate (degrees)"
                         },
                         "longitude": {
                           "type": "number",
                           "readOnly": true,
                           "description": "Device's Current Longitude coordinate (degrees)"
                         },
                         "accuracy": {
                           "type": "number",
                           "minimum": 0,
                           "readOnly": true,
                           "description": "The accuracy level of the latitude and longitude
coordinates (metres)"
                         },
                         "altitudeAccuracy": {
                           "type": "number",
                           "minimum": 0,
                           "readOnly": true,
                           "description": "The accuracy level of the altitude coordinates (metres)"
                         },
                         "heading": {
                           "type": "number",
                           "minimum": 0,
                           "maximum": 360,
                           "readOnly": true,
                           "description": "Direction of travel of device (degree)"
                         },
```

```
                        "speed": {
                          "type": "number",
                          "minimum": 0,
                          "readOnly": true,
                          "description": "Device's current velocity (metres per second)"
                        }
                      }
                    }
                  ]
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.sensor.geolocation"}
              ],
              "required": ["latitude", "longitude", "alt"]
            }

          example: |
            {
              "rt":         ["oic.r.sensor.geolocation"],
              "id":         "unique_example_id",
              "latitude":  55.070859,
              "longitude": -3.60512,
              "alt": 12.07,
              "accuracy": 65.0,
              "altitudeAccuracy": 0.0,
              "heading": 90.0,
              "speed": 0.0
            }
```

6.62.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
longitude	숫자	예	Read Only	Device 의 현재 경도 좌표(도)(°)
latitude	숫자	예	Read Only	Device 의 현재 위도 좌표(도)(°)
altitudeAccuracy	숫자		Read Only	고도 좌표(미터)의 정확도
speed	숫자		Read Only	Device 의 현재 속도 (초당 미터)
heading	숫자		Read Only	device 의 이동 방향 (도)(°)
accuracy	숫자		Read Only	위도 및 경도 좌표(미터)의 정확도

6.62.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/GeolocationResURI		get			

6.63 높이

6.63.1 개요

이 resource 는 물체의 물리적 크기의 높이와 관련된 property 를 기술한다. Height(height)는 물체의 높이이다.

6.63.2 URI 예

/HeightResURI

6.63.3 Resource Type

resource type (rt)는 oic.r.height 로 정의된다.

6.63.4 RAML 정의

```
#%RAML 0.8
title: OICHeight
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


/HeightResURI:
  description: |
    This resource describes the properties associated with height of an object's physical size.
    Height (height) is height of an object.

  is : ['interface']
  get:
    description: |
      Retrieves height of an object.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/schemas/oic.r.height.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description": "Copyright (c) 2016, 2017 Open Interconnect Consortium, Inc. All
rights reserved.",
                "title": "Height",
                "definitions": {
                  "oic.r.height": {
                    "type": "object",
                    "properties": {
```

```
                        "height": {
                          "type": "number",
                          "minimum": 0,
                          "description": "Height of an object"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.height"}
                  ],
                  "required": ["height"]
                }

              example: |
                {
                  "rt":     ["oic.r.height"],
                  "id":     "unique_example_id",
                  "height": 100.0
                }

    post:
      description: |
        Sets the Height.

      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/schemas/oic.r.height.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description": "Copyright (c) 2016, 2017 Open Interconnect Consortium, Inc. All rights
reserved.",
              "title": "Height",
              "definitions": {
                "oic.r.height": {
                  "type": "object",
                  "properties": {
                    "height": {
                      "type": "number",
                      "minimum": 0,
                      "description": "Height of an object"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.height"}
              ],
              "required": ["height"]
            }

          example: |
            {
              "id":     "unique_example_id",
              "height": 200.0
            }

      responses :
        200:
```

```
          description: |
            Indicates that the height was successfully changed.
            The new height is provided in the response.

          body:
            application/json:

              schema: |

                {
                  "id": "http://openinterconnect.org/schemas/oic.r.height.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description": "Copyright (c) 2016, 2017 Open Interconnect Consortium, Inc. All
rights reserved.",
                  "title": "Height",
                  "definitions": {
                    "oic.r.height": {
                      "type": "object",
                      "properties": {
                        "height": {
                          "type": "number",
                          "minimum": 0,
                          "description": "Height of an object"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.height"}
                  ],
                  "required": ["height"]
                }

              example: |

                {
                  "id":     "unique_example_id",
                  "height": 200.0
                }

        403:

          description: |
            Indicates that OIC client sent an invalid property value to the server.
            The server responds with the current resource representation.

          body:
            application/json:

              schema: |

                {
                  "id": "http://openinterconnect.org/schemas/oic.r.height.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description": "Copyright (c) 2016, 2017 Open Interconnect Consortium, Inc. All
rights reserved.",
                  "title": "Height",
                  "definitions": {
                    "oic.r.height": {
                      "type": "object",
                      "properties": {
                        "height": {
                          "type": "number",
                          "minimum": 0,
                          "description": "Height of an object"
                        }
                      }
                    }
                  },
```

```
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.height"}
                ],
                "required": ["height"]
              }

            example: |
              {
                "id":     "unique_example_id",
                "height": 200.0
              }
```

6.63.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
Height	숫자	예		물체의 높이

6.63.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/HeightResURI		get	post		

6.64 무게

6.64.1 개요

이 resource 는 물체의 무게와 관련된 property 를 기술한다. Weight (weight)는 물체의 무게이다.

6.64.2 URI 예

/WeightResURI

6.64.3 Resource Type

resource type (rt)는 oic.r.weight 로 정의된다.

6.64.4 RAML 정의

```
#%RAML 0.8
title: OICWeight
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]


/WeightResURI:
  description: |
    This resource describes the properties associated with weight of an object.
    Weight (weight) is weight of an object.

  is : ['interface']
```

```
  get:
    description: |
      Retrieves weight of an object.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/schemas/oic.r.weight.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description": "Copyright (c) 2016, 2017 Open Interconnect Consortium, Inc. All
rights reserved.",
                "title": "Weight",
                "definitions": {
                  "oic.r.weight": {
                    "type": "object",
                    "properties": {
                      "weight": {
                        "type": "number",
                        "minimum": 0,
                        "readOnly": true,
                        "description": "Weight of an object"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.weight"}
                ],
                "required": ["weight"]
              }

            example: |
              {
                "rt":     ["oic.r.weight"],
                "id":     "unique_example_id",
                "weight": 200.0
              }
```

6.64.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
Weight	숫자	예	Read Only	물체의 무게

6.64.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/WeightResURI		get			

6.65 청정도

6.65.1 개요

이 resource 는 공기의 품질을 추정하기 위하여 사용될 수 있는 정성적 또는 측정된 오염물질을 기술한다. 측정된 것은 아래에 기술된 바와 같이 오염물질 유형마다 단위를 갖는 실제 감지된

값이다. 정성적인 것은, 특정 오염물질에 대해 최소값이 최소 오염물질이고, 최대값이 최대 오염물질인, 제공된 범위 내에서의 대표 값이다. valueType 은 contaminantvalue Property 내에서 정성적 또는 측정된 판독 값을 나타낸다. Contaminant 값은 실제 측정된 또는 정성적 레벨을 포함한다. range 는 (oic.r.baseresource 로부터) 보고되는 값에 대해 허용된 범위를 포함한다. valueType 이 'Measured'라면, 오염물질 type 에 대한 단위는 다음과 같다: Methanal (Formaldehyde 로도 알려진): CH_2O (μg/m^3), 이산화탄소: CO_2 (ppm), 일산화탄소: CO (ppm), 분진 물질 (직경이 2.5 미크론 미만): PM2.5 (μg/m^3), 분진 물질 (직경이 10 microns 미만): PM10 (μg/m^3), 휘발성 유기 화합물: VOC (μg/m^3).

6.65.2 URI 예

/AirQualityResURI

6.65.3 Resource Type

resource type (rt)는 oic.r.airquality 로 정의된다.

6.65.4 RAML 정의

```
#%RAML 0.8
title: OICAirQuality
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

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

  is : ['interface']
  get:
    description: |
      Retrieves the current air quality.

    responses :
```

```
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.airquality.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
                "title": "Air Quality",
                "definitions": {
                  "oic.r.airquality": {
                    "type": "object",
                    "properties": {
                      "contaminantvalue": {
                        "type": "integer",
                        "readOnly": true,
                        "description": "The measured or qualitative value for the contaminant."
                      },
                      "contaminanttype": {
                        "enum":
["CH2O","CO2","CO","PM2.5","PM10","VOC","Smoke","Odor","AirPollution"],
                        "description": "The contaminant being measured.",
                        "readOnly": true
                      },
                      "valuetype": {
                        "enum": ["Qualitative","Measured"],
                        "description": "Indicates whether the provided value is qualitative or
measured.",
                        "readOnly": true
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.core.json#/definitions/oic.core"},
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.airquality"}
                ],
                "required": ["contaminantvalue","contaminanttype","valuetype","range"]
              }

            example: |
              {
                "rt":             ["oic.r.airquality"],
                "id":             "unique_example_id",
                "contaminanttype": "CO",
                "valuetype": "Measured",
                "contaminantvalue": 10,
                "range": [0,500]
              }
```

6.65.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
valuetype	복수 타입: schema 참조	예	Read Only	제공된 값이 정성적인 값인지 또는 측정된 값인지를 나타낸다

contaminantvalue	정수	예	Read Only	오염물질에 대한 정성적 또는 측정된 값
contaminanttype	복수 타입: schema 참조	예	Read Only	측정되는 오염물질

6.65.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AirQualityResURI		get			

6.66 청정도 Collection

6.66.1 개요

이 resource 는 정성적 또는 측정된 공기 품질을 제공하는 센서를 기술한다. 이 resource 는 개별적으로 노출된 오염물질의 측정치를 상술하는 oic.r.airquality 개체의 collection 이다. Device 에 의해 지원되는 오염물질의 유형마다 하나의 collection entry 가 존재한다. device 는 적어도 하나의 측정된 또는 정성적 값을 노출해야만 한다.

6.66.2 URI 예

/AirQualityBaselineResURI

6.66.3 Resource Type

resource type (rt)는 oic.r.airqualitycollection 으로 정의된다.

6.66.4 RAML 정의

```
#%RAML 0.8
title: OICAirQuality
version: v1.1.0-20160519
traits:
 - interface-ll :
     queryParameters:
       if:
         enum: ["oic.if.ll"]
 - interface-baseline :
     queryParameters:
       if:
         enum: ["oic.if.baseline"]


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

  is : ['interface-baseline']
  get:
```



```
      description: |
        Retrieves the current air quality.

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.airqualitycollection.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
                  "title": "Air Quality Collection",
                  "definitions": {
                    "oic.r.airqualitycollection": {
                      "type": "object",
                      "allOf": [
                        {
                          "$ref": "oic.collection-schema.json#/definitions/oic.collection"
                        },
                        {
                          "properties": {
                            "rt": {
                              "type": "array",
                              "minItems": 2,
                              "maxItems": 2,
                              "uniqueItems": true,
                              "items": {
                                "enum": ["oic.r.airqualitycollection","oic.wk.col"]
                              }
                            },
                            "rts": {
                              "type": "array",
                              "minItems": 1,
                              "maxItems": 2,
                              "uniqueItems": true,
                              "items": {
                                "oneOf": [
                                  {
                                    "enum": ["oic.r.airquality","oic.r.value.conditional"]
                                  },
                                  {
                                    "enum": ["oic.r.airquality"]
                                  }
                                ]
                              }
                            }
                          }
                        }
                      ]
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.core.json#/definitions/oic.core"},
                    {"$ref": "#/definitions/oic.r.airqualitycollection"}
                  ]
                }

              example: |
                {
                  "rt":   ["oic.r.airqualitycollection","oic.wk.col"],
                  "if":   ["oic.if.baseline","oic.if.ll"],
                  "id":   "unique_example_id",
                  "links": [
```

```
                    {"href": "/myCOMeasureResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                    {"href": "/myCO2ResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
                  ]
                }
```

6.66.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
rt	배열: schema 참조			
rts	배열: schema 참조			
drel	스트링			규정되는 경우, 이것은, OIC Link 가 *rel* 파라미터와의 명시적 관계를 규정하지 않을 때 사용하기 위한 default 관계이다.
link	복수 타입: schema 참조			
id	복수 타입: schema 참조			사용 컨텍스트 또는 UUIDv4 에 대해 고유한 값이 될 수 있는 collection 에 대한 ID.
rts	복수 타입: schema 참조			Collection 에 포함된 link 내에서 (Target 및 anchor 에 대해) 허용 가능한 resource type 의 목록을 정의한다. 새로운 link 는 본 목록으로부터만

				생성할 수 있다.
di	복수 타입: schema 참조			UUIDv4 스트링인 device ID; /oic/res 의 스펙 A 정의에 대해 역호환성을 위해 사용된다.

6.66.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AirQualityBaselineResURI		get			

6.66.7 Referenced JSON schemas

6.66.7.1 oic.collection-schema.json

```
{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "description" : "Copyright (c) 2016 Open Connectivity Foundation, Inc. All rights reserved.",
    "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.collection-schema.json#",
    "title": "Collection",
    "definitions": {
        "oic.collection.setoflinks": {
            "description": "A set (array) of simple or individual OIC Links. In addition to
properties required for an OIC Link, the identifier for that link in this set is also required",
            "type": "array",
            "items": {
                "$ref": "oic.oic-link-schema.json#/definitions/oic.oic-link"
            }
        },
        "oic.collection.alllinks": {
            "description": "All forms of links in a collection",
            "oneOf": [
                {
                    "$ref": "#/definitions/oic.collection.setoflinks"
                }
            ]
        },
        "oic.collection": {
            "type": "object",
            "description": "A collection is a set (array) of tagged-link or set (array) of simple
links along with additional properties to describe the collection itself",
            "properties": {
                "id": {
                    "anyOf": [
                        {
                            "type": "integer",
                            "description": "A number that is unique to that collection; like an
ordinal number that is not repeated"
                        },
                        {
                            "type": "string",
                            "description": "A unique string that could be a hash or similarly
unique"
                        },
                        {
                            "$ref": "oic.types-schema.json#/definitions/uuid",
                            "description": "A unique string that could be a UUIDv4"
                        }
                    ],
                    "description": "ID for the collection. Can be an value that is unique to the
```

```
use context or a UUIDv4"
                },
                "di": {
                    "$ref": "oic.types-schema.json#/definitions/uuid",
                    "description": "The device ID which is an UUIDv4 string; used for backward
compatibility with Spec A definition of /oic/res"
                },
                "rts": {
                    "$ref": "oic.core-schema.json#/definitions/oic.core/properties/rt",
                    "description": "Defines the list of allowable resource types (for Target and
anchors) in links included in the collection; new links being created can only be from this
list"                 },
                "drel": {
                    "type": "string",
                    "description": "When specified this is the default relationship to use when an
OIC Link does not specify an explicit relationship with *rel* parameter"
                },
                "links": {
                    "$ref": "#/definitions/oic.collection.alllinks"
                }
            }
        }
    },
    "type": "object",
    "allOf": [
        {"$ref": "oic.core-schema.json#/definitions/oic.core"},
        {"$ref": "#/definitions/oic.collection"}
    ]
}
```

6.67 소모품

6.67.1 개요

이 resource 는 필터 재료, 프린터 토너 등과 같은 소모품을 규정한다. Type 은 Smart Home Device 스펙에 의해 정의된 바와 같이 소모품을 정의하는 열거 형이다. Remaining 은 남아있는 수명의 백분율을 나타내는 정수이다. Orderpercentage 는 제조자가 교체 또는 충전을 권하는 백분율 수명을 나타내는 정수이다. url 은 소모품에 대해 미래의 정보를 얻을 수 있는 URL 을 포함하는 스트링이다.

6.67.2 URI 예

/ConsumableResURI

6.67.3 Resource Type

resource type (rt)는 oic.r.consumable 로 정의된다.

6.67.4 RAML 정의

```
#%RAML 0.8
title: OICConsumables
version: OCF-v1.0.0-20160620
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]
```

```
/ConsumableResURI:
  description: |
    This resource specifies a thing that can be consumed such as filter material, printer toner etc
    The type is an enumeration defining the thing being consumed as defined by the Smart Home
Device Specification
    The remaining is an integer capturing the percentatge remaining life
    The orderpercentage is an integer capturing the percentage life at which replacement or
replenishment is recommended by the manufacturer
    The url is a string containing a URL at which further information may be obtained with respect
to the consumable

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.consumable#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
                "title": "Consumable",
                "definitions": {
                  "oic.r.consumable": {
                    "type": "object",
                    "properties": {
                      "typeofconsumable":  {
                        "type": "string",
                        "description": "Thing that is being consumed.",
                        "readOnly": true
                      },
                      "remaining": {
                        "type": "integer",
                        "description": "Percentage remaining lifespan.",
                        "readOnly": true,
                        "minimum": 0,
                        "maximum": 100
                      },
                      "orderpercentage": {
                        "type": "integer",
                        "description": "Percentage at which re-ordering is recommended by the
manufacturer",
                        "readOnly": true
                      },
                      "url": {
                        "type": "string",
                        "format": "uri",
                        "description": "URL at which additional ordering information may be found.",
                        "readOnly": true
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.consumable"}
                ],
                "required": ["typeofconsumable","remaining"]
              }

            example: |
              {
                "rt":               ["oic.r.consumable"],
```

```
                "id":                "unique_example_id",
                "typeofconsumable": "tonerBlack",
                "remaining":         20,
                "orderpercentage":   10,
                "url":               "http://myreorderURL"
              }
```

6.67.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
url	스트링		Read Only	추가적인 주문 정보를 찾을 수 있는 URL.
typeofconsumable	스트링	예	Read Only	소모품.
remaining	정수	예	Read Only	나머지 수명의 백분율.
orderpercentage	정수		Read Only	제조자가 재주문을 권고하는 백분율.

6.67.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ConsumableResURI		get			

6.68 소모품 Collection

6.68.1 개요

이 resource 는 필터 재료, 프린터 토너 등과 같은 소모품을 규정한다. Resource 는 개별적인 소모품을 상술하는 oic.r.consumable 개체의 collection 이다. supportedconsumables 는 Resource 의 본 개체가 지원하는 소모품 유형의 집합이다.

6.68.2 URI 예

/ConsumablesBaselineResURI

6.68.3 Resource Type

resource type (rt)는 oic.r.consumablecollection 으로 정의된다.

6.68.4 RAML 정의

```
#%RAML 0.8
title: OICConsumables
version: OCF-v1.0.0-20160620
traits:
 - interface-ll :
     queryParameters:
       if:
```

```
          enum: ["oic.if.ll"]
 - interface-baseline :
     queryParameters:
       if:
         enum: ["oic.if.baseline"]

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

  is : ['interface-baseline']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.consumablecollection#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
                "title": "Consumables Collection",
                "definitions": {
                  "oic.r.consumablecollection": {
                    "type": "object",
                    "allOf": [
                      {
                        "$ref": "oic.collection-schema.json#/definitions/oic.collection"
                      },
                      {
                        "properties": {
                          "rt": {
                            "type": "array",
                            "minItems": 2,
                            "maxItems": 2,
                            "uniqueItems": true,
                            "items": {
                                "enum": ["oic.r.consumablecollection","oic.wk.col"]
                            }
                          },
                          "rts": {
                            "type": "array",
                            "minItems": 1,
                            "maxItems": 2,
                            "uniqueItems": true,
                            "items": {
                                "anyOf": [
                                    {
                                        "enum": ["oic.r.consumable","oic.r.value.conditional"]
                                    },
                                    {
                                        "enum": ["oic.r.consumable"]
                                    }
                                ]
                            }
                          },
                          "supportedconsumables": {
                            "type": "array",
                            "description": "Array of possible consumables the device measures.",
                            "readOnly": true,
```

```
                              "items": {
                                "type": "string"
                              }
                            }
                          }
                        }
                      ]
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.core.json#/definitions/oic.core"},
                    {"$ref": "#/definitions/oic.r.consumablecollection"}
                  ]
                }

              example: |
                {
                  "rt":                ["oic.r.consumablecollection","oic.wk.col"],
                  "id":                "unique_example_id",
                  "rts":               ["oic.r.consumable","oic.r.value.conditional"],
                  "supportedconsumables": ["tonerBlack","tonerCyan","tonerMagenta","tonerYellow"],
                  "links": [
                    {"href": "/myTonerBlackResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                    {"href": "/myTonerCyanResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                    {"href": "/myTonerMagentaResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                    {"href": "/myTonerYellowResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
                  ]
                }
```

6.68.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
rt	배열: schema 참조			
supportedconsumables	배열: schema 참조		Read Only	device 가 판단 가능한 소모품의 배열
rts	배열: schema 참조			
drel	스트링			규정되는 경우, 이것은, OIC Link 가 *rel* 파라미터와의 명시적 관계를 규정하지 않을 때 사용하기 위한 default 관계이다.

link	복수 타입: schema 참조			
id	복수 타입: schema 참조			collection 에 대한 ID. 사용 컨텍스트 또는 UUIDv4 에 대해 고유한 값이 될 수 있다
rts	복수 타입: schema 참조			Collection 에 포함된 link 내에서 (Target 및 anchor 에 대해) 허용 가능한 resource type 의 목록을 정의한다. 새로운 link 는 본 목록으로부터만 생성할 수 있다.
di	복수 타입: schema 참조			UUIDv4 스트링인 device ID. /oic/res 의 스펙 A 정의에 대해 역 호환성을 위해 사용된다.

6.68.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ConsumablesBaselineResURI		get			

6.68.7 Referenced JSON schemas

6.68.7.1 oic.collection-schema.json

```
{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "description" : "Copyright (c) 2016 Open Connectivity Foundation, Inc. All rights reserved.",
    "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.collection-schema.json#",
    "title": "Collection",
    "definitions": {
        "oic.collection.setoflinks": {
```

```
            "description": "A set (array) of simple or individual OIC Links. In addition to
properties required for an OIC Link, the identifier for that link in this set is also required",
            "type": "array",
            "items": {
                "$ref": "oic.oic-link-schema.json#/definitions/oic.oic-link"
            }
        },
        "oic.collection.alllinks": {
            "description": "All forms of links in a collection",
            "oneOf": [
                {
                    "$ref": "#/definitions/oic.collection.setoflinks"
                }
            ]
        },
        "oic.collection": {
            "type": "object",
            "description": "A collection is a set (array) of tagged-link or set (array) of simple
links along with additional properties to describe the collection itself",
            "properties": {
                "id": {
                    "anyOf": [
                        {
                            "type": "integer",
                            "description": "A number that is unique to that collection; like an
ordinal number that is not repeated"
                        },
                        {
                            "type": "string",
                            "description": "A unique string that could be a hash or similarly
unique"
                        },
                        {
                            "$ref": "oic.types-schema.json#/definitions/uuid",
                            "description": "A unique string that could be a UUIDv4"
                        }
                    ],
                    "description": "ID for the collection. Can be an value that is unique to the
use context or a UUIDv4"
                },
                "di": {
                    "$ref": "oic.types-schema.json#/definitions/uuid",
                    "description": "The device ID which is an UUIDv4 string; used for backward
compatibility with Spec A definition of /oic/res"
                },
                "rts": {
                    "$ref": "oic.core-schema.json#/definitions/oic.core/properties/rt",
                    "description": "Defines the list of allowable resource types (for Target and
anchors) in links included in the collection; new links being created can only be from this
list"                },
                "drel": {
                    "type": "string",
                    "description": "When specified this is the default relationship to use when an
OIC Link does not specify an explicit relationship with *rel* parameter"
                },
                "links": {
                    "$ref": "#/definitions/oic.collection.alllinks"
                }
            }
        }
    },
    "type": "object",
    "allOf": [
        {"$ref": "oic.core-schema.json#/definitions/oic.core"},
        {"$ref": "#/definitions/oic.collection"}
    ]
}
```


6.69 지연 제상

6.69.1 개요

이 resource 는 US Energy Star 스펙에 의해 정의된 지연 제상 기능을 기술한다. Energy Star Refrigerator Requirements Version 5 섹션 4)G (https://www.energystar.gov/sites/default/files/specs//private/ENERGY%20STAR%20Final%20Version%205.0%20Residential%20Refrigerators%20and%20Freezers%20Program%20Requirements.pdf)를 참조하기 바란다. Status 는 기능이 on 인지를 나타내는 Boolean 형이고, off 이면, Defrost 는 정상 device 동작의 일부로 예정된다. oir.r.time.period (mandatory)로부터의 startTime 은 제상이 발생하지 않아야 하는 간격에 대한 ISO8601 인코딩된 start time 이다. oir.r.time.period 로부터 stopTime 은 제상이 발생하지 않아야 하는 간격에 대한 ISO8601 인코딩된 stop time 이다. 추가적인 범위 제한을 갖는 oir.r.time.period 로부터의 interval 은 startTime 에서 시작하는 기간의 분 단위의 시간이다(만약 존재하지 않는다면, default 는 240 이다). stopTime 과 interval 은 상호 배타적이라 둘 다가 하나의 Resource instance 내에서 존재할 수는 없다.

6.69.2 URI 예

/DelayDefrostResURI

6.69.3 Resource Type

resource type (rt)는 oic.r.delaydefrost 로 정의된다.

6.69.4 RAML 정의

```
#%RAML 0.8
title: OICDelayDefrost
version: OCF_v1.0.0-2016____
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


/DelayDefrostResURI:
  description: |
    This resource describes the delay defrost function as defined by the US Energy Star
Specifications.
    See Energy Star Refrigerator Requirements Version 5 Section 4)G

(https://www.energystar.gov/sites/default/files/specs//private/ENERGY%20STAR%20Final%20Version%205.
0%20Residential%20Refrigerators%20and%20Freezers%20Program%20Requirements.pdf)
    The status is a boolean indicating whether the function is on, if off then defrost is scheduled
as part of normal device operation.
    startTime, from oir.r.time.period (mandatory) is an ISO8601 encoded start time for the interval
in which defrost shall not occur.
    stopTime, from oic.r.time.period is an ISO8601 encoded stop time for the interval in which
defrost shall not occur.
    interval, from oic.r.time.period with additional range restrictions is the time in minutes of
the period that starts at starttime (if not present the default is 240).
    stopTime and interval are mutually exlusive; they cannot both be present in a Resource instance

  is : ['interface']
```

```
  get:
    description: |
      Retrieves the current Delay Defrost function status

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.delaydefrost.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Delay Defrost",
                "definitions": {
                  "oic.r.delaydefrost": {
                    "type": "object",
                    "allOf": [
                      {
                        "$ref": "oic.r.time.period.json#/definitions/oic.r.time.period"
                      },
                      {
                        "properties": {
                          "interval": {
                            "type": "integer",
                            "description": "Defrost interval as defined by Energy Star",
                            "minimum": 1,
                            "maximum": 1440,
                            "default": 240
                          },
                          "status": {
                            "type": "boolean",
                            "description": "Indicates whether any supported delay defrost function
is active"
                          }
                        },
                        "required": ["status"]
                      }
                    ]
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.delaydefrost"}
                ]
              }

            example: |
              {
                "rt":     ["oic.r.delaydefrost"],
                "id":     "unique_example_id",
                "startTime":  "06:00Z",
                "status": false
              }

  post:
    description: |
      Activates the desired Delay Defrost functions

    body:
      application/json:
        schema: |
```

```
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.delaydefrost.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Delay Defrost",
              "definitions": {
                "oic.r.delaydefrost": {
                  "type": "object",
                  "allOf": [
                    {
                      "$ref": "oic.r.time.period.json#/definitions/oic.r.time.period"
                    },
                    {
                      "properties": {
                        "interval": {
                          "type": "integer",
                          "description": "Defrost interval as defined by Energy Star",
                          "minimum": 1,
                          "maximum": 1440,
                          "default": 240
                        },
                        "status": {
                          "type": "boolean",
                          "description": "Indicates whether any supported delay defrost function is
active"
                        }
                      },
                      "required": ["status"]
                    }
                  ]
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.delaydefrost"}
              ]
            }

          example: |
            {
              "id":         "unique_example_id",
              "status":     true,
              "startTime":  "06:00Z",
              "interval":   180
            }

      responses :
        200:
          description: |
            Indicates that the DelayDefrost function was changed.
            The new representation may be provided in the response.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.delaydefrost.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Delay Defrost",
                  "definitions": {
                    "oic.r.delaydefrost": {
                      "type": "object",
                      "allOf": [
```

```
                        {
                          "$ref": "oic.r.time.period.json#/definitions/oic.r.time.period"
                        },
                        {
                          "properties": {
                            "interval": {
                              "type": "integer",
                              "description": "Defrost interval as defined by Energy Star",
                              "minimum": 1,
                              "maximum": 1440,
                              "default": 240
                            },
                            "status": {
                              "type": "boolean",
                              "description": "Indicates whether any supported delay defrost function
is active"
                            }
                          },
                          "required": ["status"]
                        }
                      ]
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.delaydefrost"}
                  ]
                }

              example: |
                {
                  "id":         "unique_example_id",
                  "status":     true,
                  "startTime":  "06:00Z",
                  "interval":   180
                }

        403:
          description: |
            Indicates the update to the time properties was rejected.
            Reasons for rejection:
              invalid time entry
            The current unchanged representation may be provided in the response.

          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.delaydefrost.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Delay Defrost",
                  "definitions": {
                    "oic.r.delaydefrost": {
                      "type": "object",
                      "allOf": [
                        {
                          "$ref": "oic.r.time.period.json#/definitions/oic.r.time.period"
                        },
                        {
                          "properties": {
                            "interval": {
                              "type": "integer",
                              "description": "Defrost interval as defined by Energy Star",
                              "minimum": 1,
```

```
                              "maximum": 1440,
                              "default": 240
                            },
                            "status": {
                              "type": "boolean",
                              "description": "Indicates whether any supported delay defrost function
is active"
                            }
                          },
                          "required": ["status"]
                        }
                      ]
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.delaydefrost"}
                  ]
                }

              example: |
                {
                  "id":         "unique_example_id",
                  "status":     true,
                  "startTime":  "06:00Z",
                  "interval":   180
                }
```

6.69.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
status	boolean	예		지원된 임의의 지연 제상 기능이 활성인지를 나타낸다
interval	정수			Energy Star 에 의해 정의된 제상 간격
stopTime	스트링			기간에 대한 정지 시각, stopTime 이 존재하면 interval 은 존재할 수 없다
startTime	스트링	예		기간에 대한 시작 시각.
interval	정수			startTime 이후 분 단위의 시간 간격, interval 이

				존재하면 stopTime 은 존재할 수 없다

6.69.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/DelayDefrostResURI		get	post		

6.69.7 Referenced JSON schemas

6.69.7.1 oic.r.time.period.json

```
{
  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.time.period.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
  "title": "Time Period",
  "definitions": {
    "oic.r.time.period": {
      "type": "object",
      "properties": {
        "startTime":{
          "type": "string",
          "description": "Start time for the time period"
        },
        "stopTime": {
          "type": "string",
          "description": "Stop time for the time period, if present interval cannot be present"
        },
        "interval": {
          "type": "integer",
          "description": "Time interval in minutes after the startTime, if present stopTime cannot
be present"
        }
      },
      "required": ["startTime"]
    }
  },
  "type": "object",
  "allOf": [
    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
    {"$ref": "#/definitions/oic.r.time.period"}
  ]
}
```

6.70 에코 모드

6.70.1 개요

이 resource 는 Device 가 지원하는 현재 활성 상태인 에코 모드를 규정한다. Resource 는 supportedMode 및 Mode Property 의 모집단이 "disabled", "enabled", "notsupported"로 주어진 값의 집합으로 제한된다는 제약을 갖는 Mode (oic.r.mode)에 대한 기존의 schema 를 사용한다. adminforced Property 는 값이 다른 당사자에 의해(예: 일부 분리형 보드 Smart Energy 상호작용을 통해) 설정되었음을 나타낸다.

6.70.2 URI 예

/EcomodeResURI

6.70.3 Resource Type

resource type (rt)는 oic.r.ecomode 로 정의된다.

6.70.4 RAML 정의

```
#%RAML 0.8
title: OICEcomode
version: OCF-v1.0.0-20160620
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]


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

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.ecomode#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                "title": "Eco Mode",
                "definitions": {
                  "oic.r.ecomode": {
                    "type": "object",
                    "allOf": [
                        {
                          "$ref": "oic.r.mode.json#/definitions/oic.r.mode"
                        },
                        {
                          "properties": {
                              "adminforced": {
                                  "type": "boolean",
                                  "readOnly": true,
                                  "description": "Indicator that the current mode of operation has
been forced by admin action."
                              }
                          }
                        }
                      ]
                  }
                },
                "type": "object",
```

```
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.ecomode"}
                  ],
                  "required": ["supportedModes","modes"]
                }

              example: |
                {
                  "rt":                ["oic.r.ecomode"],
                  "id":                "unique_example_id",
                  "supportedModes": ["disabled","enabled"],
                  "modes": ["disabled"],
                  "adminforced": false
                }

    post:
      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.ecomode-Update#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "Eco Mode",
              "definitions": {
                "oic.r.ecomode": {
                  "type": "object",
                  "allOf": [
                      {
                          "$ref":"oic.r.mode-update.json#/definitions/oic.r.mode"
                      }
                    ]
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.ecomode"}
              ],
              "required": ["modes"]
            }

          example: |
            {
              "id":     "unique_example_id",
              "modes": ["enabled"]
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.ecomode-Update#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Eco Mode",
                  "definitions": {
                    "oic.r.ecomode": {
                      "type": "object",
```

```
                    "allOf": [
                        {
                            "$ref":"oic.r.mode-update.json#/definitions/oic.r.mode"
                        }
                      ]
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.ecomode"}
                ],
                "required": ["modes"]
              }

            example: |
              {
                "id":     "unique_example_id",
                "modes": ["enabled"]
              }
```

6.70.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
adminforced	boolean		Read Only	동작의 현재 모드가 Admin 동작에 의해 강제되었음을 나타내는 표시자.
supportedMode	배열: schema 참조	예	Read Only	Device 가 지원 가능한 모드의 배열
Mode	배열: schema 참조	예		현재 활성 상태인 모드의 배열

6.70.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/EcomodeResURI		get	post		

6.70.7 Referenced JSON schemas

6.70.7.1 oic.r.mode.json

```
{
  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.mode.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
  "title": "Mode",
  "definitions": {
    "oic.r.mode": {
```

```
        "type": "object",
        "properties": {
          "supportedModes": {
            "type": "array",
            "readOnly": true,
            "description": "Array of possible modes the device supports.",
            "items": {
              "type": "string"
            }
          },
          "modes":          {
            "type": "array",
            "description": "Array of the currently active mode(s)",
            "items": {
              "type": "string"
            }
          }
        }
      }
    },
    "type": "object",
    "allOf": [
      {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
      {"$ref": "#/definitions/oic.r.mode"}
    ],
    "required": ["supportedModes", "modes"]
  }
```

6.71 가열 존

6.71.1 개요

이 resource 는 레인지 상부의 가열 영역의 상태에 관한 정보를 제공한다. 이는 동적으로 작동 가능한(즉, device 가 냄비를 인식하는) 영역을 갖는 레인지 상부의 경우를 기술한다. maxheatinglevel 은 가열 영역에 대한 최대 레벨을 정의한다. heatinglevel 은 영역의 현재의 가열 레벨을 나타낸다. 각 요소에 대해 값 범위는 0(영역이 미 가열 상태임을 표시)으로부터 maxheatinglevel 까지이다.

6.71.2 URI 예

/HeatingZoneResURI

6.71.3 Resource Type

resource type (rt)는 oic.r.heatingzone 으로 정의된다.

6.71.4 RAML 정의

```
#%RAML 0.8
title: OICHeatingZone
version: OCF1.0-20160722
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.s", "oic.if.baseline"]

/HeatingZoneResURI:
  description: |
```

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

  is : ['interface']
  get:
    description: |
      Retrieves the current heating zone information.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.heatingzone.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
                "title": "Heating Zone",
                "definitions": {
                  "oic.r.heatingzone": {
                    "type": "object",
                    "properties": {
                      "maxheatinglevel": {
                        "type": "integer",
                        "readOnly": true,
                        "description": "Maximum heating level for the zone indicated."
                      },
                      "heatinglevel": {
                        "type": "integer",
                        "readOnly": true,
                        "description": "Current heating level for the zone indicated."
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.heatingzone"}
                ],
                "required": ["maxheatinglevel","heatinglevel"]
              }

            example: |
              {
                "rt":             ["oic.r.heatingzone"],
                "id":             "unique_example_id",
                "maxheatinglevel": 6,
                "heatinglevel":    0
              }
```

6.71.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
heatinglevel	정수	예	Read Only	표시된 영역에 대한

				현재의 가열 레벨.
maxheatinglevel	정수	예	Read Only	표시된 영역에 대한 최대 가열 레벨.

6.71.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/HeatingZoneResURI		get			

6.72 가열 존 Collection

6.72.1 개요

이 resource 는 레인지 상부의 가열 영역의 상태에 관한 정보를 제공한다. 이는 동적으로 작동 가능한(즉, device 가 냄비를 인식하는) 영역을 갖는 레인지 상부의 경우를 기술한다. resource 는 개별적인 레인지 상부 영역을 기술하는 oic.r.heatingzone 의 개체에 대한 collection 이다.

6.72.2 URI 예

/HeatingZoneBaselineResURI

6.72.3 Resource Type

resource type (rt)는 oic.r.heatingzonecollection 으로 정의된다.

6.72.4 RAML 정의

```
#%RAML 0.8
title: OICHeatingZone
version: OCF1.0-20160722
traits:
 - interface-ll :
     queryParameters:
       if:
         enum: ["oic.if.ll"]
 - interface-baseline :
     queryParameters:
       if:
         enum: ["oic.if.baseline"]

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

  is : ['interface-baseline']
  get:
```

```
      description: |
        Retrieves the current heating zone information.

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.heatingzonecollection.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
                  "title": "Heating Zone Collection",
                  "definitions": {
                    "oic.r.heatingzonecollection": {
                      "type": "object",
                      "allOf": [
                        {
                          "$ref": "oic.collection-schema.json#/definitions/oic.collection"
                        },
                        {
                          "properties": {
                            "rt": {
                              "type": "array",
                              "minItems": 2,
                              "maxItems": 2,
                              "uniqueItems": true,
                              "items": {
                                "enum": ["oic.r.heatingzonecollection","oic.wk.col"]
                              }
                            },
                            "rts": {
                              "type": "array",
                              "minItems": 1,
                              "maxItems": 2,
                              "uniqueItems": true,
                              "items": {
                                "anyOf": [
                                  {
                                    "enum": ["oic.r.heatingzone","oic.r.value.conditional"]
                                  },
                                  {
                                    "enum": ["oic.r.heatingzone"]
                                  }
                                ]
                              }
                            }
                          }
                        }
                      ]
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.core.json#/definitions/oic.core"},
                    {"$ref": "#/definitions/oic.r.heatingzonecollection"}
                  ]
                }

              example: |
                {
                  "rt":    ["oic.r.heatingzonecollection","oic.wk.col"],
                  "id":    "unique_example_id",
                  "links": [
                    {"href": "/myZone1ResURI", "rt": ["oic.r.heatingzone"], "if":
```

```
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                    {"href": "/myZone2ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                    {"href": "/myZone3ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                    {"href": "/myZone4ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
                  ]
                }
```

6.72.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
rt	배열: schema 참조			
rts	배열: schema 참조			
drel	스트링			규정되는 경우, 이것은, OIC Link 가 *rel* 파라미터와의 명시적 관계를 규정하지 않을 때 사용하기 위한 default 관계이다.
link	복수 타입: schema 참조			
id	복수 타입: schema 참조			collection 에 대한 ID. 사용 컨텍스트 또는 UUIDv4 에 대해 고유한 값이 될 수 있다
rts	복수 타입: schema 참조			Collection 에 포함된 link 내에서 (Target 및 anchor 에 대해) 허용 가능한 resource type 의 목록을 정의한다. 새로운 link 는 본

				목록으로부터만 생성할 수 있다.
di	복수 타입: schema 참조			UUIDv4 스트링인 device ID; /oic/res 의 스펙 A 정의에 대해 역호환성을 위해 사용된다

6.72.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/HeatingZoneBaselineResURI		get			

6.72.7 Referenced JSON schemas

6.72.7.1 oic.collection-schema.json

```
{
    "$schema": "http://json-schema.org/draft-04/schema#",
    "description" : "Copyright (c) 2016 Open Connectivity Foundation, Inc. All rights reserved.",
    "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.collection-schema.json#",
    "title": "Collection",
    "definitions": {
        "oic.collection.setoflinks": {
            "description": "A set (array) of simple or individual OIC Links. In addition to
properties required for an OIC Link, the identifier for that link in this set is also required",
            "type": "array",
            "items": {
                "$ref": "oic.oic-link-schema.json#/definitions/oic.oic-link"
            }
        },
        "oic.collection.alllinks": {
            "description": "All forms of links in a collection",
            "oneOf": [
                {
                    "$ref": "#/definitions/oic.collection.setoflinks"
                }
            ]
        },
        "oic.collection": {
            "type": "object",
            "description": "A collection is a set (array) of tagged-link or set (array) of simple
links along with additional properties to describe the collection itself",
            "properties": {
                "id": {
                    "anyOf": [
                        {
                            "type": "integer",
                            "description": "A number that is unique to that collection; like an
ordinal number that is not repeated"
                        },
                        {
                            "type": "string",
                            "description": "A unique string that could be a hash or similarly
unique"
                        },
                        {
                            "$ref": "oic.types-schema.json#/definitions/uuid",
                            "description": "A unique string that could be a UUIDv4"
                        }
```

```
                        ],
                        "description": "ID for the collection. Can be an value that is unique to the
use context or a UUIDv4"
                    },
                    "di": {
                        "$ref": "oic.types-schema.json#/definitions/uuid",
                        "description": "The device ID which is an UUIDv4 string; used for backward
compatibility with Spec A definition of /oic/res"
                    },
                    "rts": {
                        "$ref": "oic.core-schema.json#/definitions/oic.core/properties/rt",
                        "description": "Defines the list of allowable resource types (for Target and
anchors) in links included in the collection; new links being created can only be from this
list"                    },
                    "drel": {
                        "type": "string",
                        "description": "When specified this is the default relationship to use when an
OIC Link does not specify an explicit relationship with *rel* parameter"
                    },
                    "links": {
                        "$ref": "#/definitions/oic.collection.alllinks"
                    }
                }
            }
        },
        "type": "object",
        "allOf": [
            {"$ref": "oic.core-schema.json#/definitions/oic.core"},
            {"$ref": "#/definitions/oic.collection"}
        ]
}
```

6.73 선택 가능 레벨

6.73.1 개요

이 resource 는 동작을 위해 선택될 수 있는 device 정의 '레벨'의 집합을 제공한다. 설정될 수 있는 상이한 습도 레벨을 모델링하는 이산 집합을 가습기가 갖는 예를 든다. availablelevels 은 선택될 수 있는 레벨의 배열이고, 이들은 숫자 또는 정수가 될 수 있다. targetlevel 은 현재 선택된 레벨이고, 새로운 레벨을 선택하기 위하여 기록된다. 검색될 때, targetlevel 은 선택된 실제 값을 제공한다.

6.73.2 URI 예

/SelectableLevelsResURI

6.73.3 Resource Type

resource type (rt)는 oic.r.selectablelevels 로 정의된다.

6.73.4 RAML 정의

```
#%RAML 0.8
title: OICSelectableLevels
version: v1.1.0-20160519
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.a", "oic.if.baseline"]
```

```
/SelectableLevelsResURI:
  description: |
    This Resource provides a set of device defined 'levels' that can be selected for an operation.
    For example where a humidifier has a discrete set that model different humidity levels that can be set.
    availablelevels is an array of the levels that can be selected, these can be a number or an integer.
    targetlevel is the level that has currently been selected and is written to in order to select a new level.
    When retrieved the targetlevel provides the actual value that has been selected.

  is : ['interface']
  get:
    description: |
      Retrieves the current selectable levels.

    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.selectablelevels.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights reserved.",
                "title": "SelectableLevels",
                "definitions": {
                  "oic.r.selectablelevels": {
                    "type": "object",
                    "properties": {
                      "availablelevels": {
                        "type": "array",
                        "description": "Set of levels from which one can be selected",
                        "readOnly": true,
                        "items": {
                          "anyOf": [
                              {"type": "integer"},
                              {"type": "number"}
                          ]
                        }
                      },
                      "targetlevel": {
                          "anyOf": [
                              {"type": "integer"},
                              {"type": "number"}
                          ],
                          "description": "The target level from the available selectable set"
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                  {"$ref": "#/definitions/oic.r.selectablelevels"}
                ],
                "required": ["availablelevels","targetlevel"]
              }

            example: |
              {
                "rt":             ["oic.r.selectablelevels"],
                "id":             "unique_example_id",
```

```
                  "availablelevels":[0,2,4,6,8],
                  "targetlevel":    2
                }

    post:
      description: |
        Sets the current level from the set that is selectable

      body:
        application/json:
          schema: |
            {
              "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.r.selectablelevels.json#",
              "$schema": "http://json-schema.org/draft-04/schema#",
              "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
              "title": "SelectableLevels",
              "definitions": {
                "oic.r.selectablelevels": {
                  "type": "object",
                  "properties": {
                    "targetlevel": {
                      "type": ["integer","number"],
                      "description": "The target level from the available selectable set"
                    }
                  }
                }
              },
              "type": "object",
              "allOf": [
                {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                {"$ref": "#/definitions/oic.r.selectablelevels"}
              ],
              "required": ["targetlevel"]
            }

          example: |
            {
              "targetlevel": 4
            }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.selectablelevels.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "SelectableLevels",
                  "definitions": {
                    "oic.r.selectablelevels": {
                      "type": "object",
                      "properties": {
                        "targetlevel": {
                          "type": ["integer","number"],
                          "description": "The target level from the available selectable set"
                        }
                      }
                    }
                  },
```

```
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.selectablelevels"}
                  ],
                  "required": ["targetlevel"]
                }

              example: |
                {
                  "targetlevel": 4
                }

        403:
          description: |
            Generated by a Server when an attempt is made to update to a targetlevel that is not in
the set of availablelevels

          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.selectablelevels.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "SelectableLevels",
                  "definitions": {
                    "oic.r.selectablelevels": {
                      "type": "object",
                      "properties": {
                        "availablelevels": {
                          "type": "array",
                          "description": "Set of levels from which one can be selected",
                          "readOnly": true,
                          "items": {
                            "anyOf": [
                                {"type": "integer"},
                                {"type": "number"}
                            ]
                          }
                        },
                        "targetlevel": {
                            "anyOf": [
                                {"type": "integer"},
                                {"type": "number"}
                            ],
                            "description": "The target level from the available selectable set"
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.baseResource.json#/definitions/oic.r.baseresource"},
                    {"$ref": "#/definitions/oic.r.selectablelevels"}
                  ],
                  "required": ["availablelevels","targetlevel"]
                }

              example: |
                {
                  "id":              "unique_example_id",
                  "availablelevels":[0,2,4,6,8],
                  "targetlevel":    2
```

```
}
```

6.73.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
targetlevel	복수 타입: schema 참조	예		사용 가능하고 선택 가능한 집합으로부터의 목표 레벨
availablelevels	배열: schema 참조	예	Read Only	하나를 선택할 수 있는 레벨의 집합

6.73.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/SelectableLevelsResURI		get	post		

6.74 값 조건문

6.74.1 개요

이 resource 는 임의의 Resource 내에서 Observe 값에 적용될 수 있는 조건을 규정한다. 이들 조건은 Resource 에 대한 요청으로 인해 임의로 생성된 통지에 Resource 를 노출하는 server 에 의해 적용된다. Resource 에 대한 unicast RETRIEVE 는 가장 최근의 값을 수신하고, 이는 가장 최근에 통보된 값이 아닐 수 있다. Server 는 Observe 값을 전달하는 Resource 와 관련하여 이 resource 를 노출시킨다. 이것은, ["oic.r.<thing being observed>", "oic.r.value.conditional"], 예를 들어, ["oic.r.temperature", "oic.r.value.conditional"]의 RT 를 갖는 새로운 Resource 개체에 의해 된다. 자세한 사항은 공개된 OCF Resource Type 스펙의 섹션 5.7.1 을 참조하기 바란다. Threshold 는 통보가 송신되기 전에 Observe 되는 것이 변해야 하는 양이다. Minnotifyperiod 는 통보가 송신되기 전에 경과해야 하는 ms (밀리초) 단위의 최소 시간이다. maxnotifyperiod (ms (밀리초) 단위의 시간)가 경과하면 통보가 송신되어야 한다. maxnotifyperiod 타이머는 통보가 송신될 때마다 리셋 된다. 임의의 threshold, minnotifyperiod, 또는 maxnotifyperiod 에 대한 '0'의 값은 성능이 지원되지만 활성이 아닌 것을 의미한다.

6.74.2 URI 예

/ValueConditionalResURI

6.74.3 Resource Type

resource type (rt)는 oic.r.value.conditional 로 정의된다.

6.74.4 RAML 정의

```
#%RAML 0.8
title: OICValueConditional
version: v1.1.0-20161031
traits:
 - interface :
     queryParameters:
       if:
         enum: ["oic.if.rw", "oic.if.baseline"]


/ValueConditionalResURI:
  description: |
    This resource specifies conditions that can be applied to an observed value in any Resource.
    These conditions are applied by the server exposing the Resource to any generated notifications
because of subscriptions to the Resource.
    A unicast RETRIEVE to the Resource will receive the most recent value; which may not be the
most recent notified value.
    A server exposes this Resource in association with the Resource conveying the observed value.
    This is done by means of a new Resource instance with an RT of ["oic.r.<thing being observed>",
"oic.r.value.conditional"], e.g ["oic.r.temperature", "oic.r.value.conditional"]
     Please see Section 5.7.1 of the published OCF Resource Type Specification for more details.
    The threshold is the amount by which the thing being observed must change before a notification
is sent.
    The minnotifyperiod is the minimum time in ms (milliseconds) that must elapse before a
notification is sent.
    If the maxnotifyperiod (time in ms (milliseconds)) elapses then a notification must be sent.
    The maxnotifyperiod timer resets each time a notification is sent.
    A value of '0' for any of threshold, minnotifyperiod or maxnotifyperiod means that the
capability is supported but not active.

  is : ['interface']
  get:
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.value.conditional.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
                "title": "Value Conditional",
                "definitions": {
                  "oic.r.value.conditional": {
                    "type": "object",
                    "anyOf": [
                      {"required": ["threshold"]},
                      {"required": ["minnotifyperiod"]},
                      {"required": ["maxnotifyperiod"]}
                    ],
                    "properties": {
                      "threshold":  {
                        "type": "number",
                        "minimum": 0,
                        "description": "Amount by which the measured value must change before a
notification is sent."
                      },
                      "minnotifyperiod": {
                        "type": "integer",
                        "minimum": 0,
                        "description": "Minimum elapsed time in ms before a notification is sent."
```

```
                        },
                        "maxnotifyperiod": {
                          "type": "integer",
                          "minimum": 0,
                          "description": "Maximum elapsed time in ms before a notification must be
sent."
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.core.json#/definitions/oic.core"},
                    {"$ref": "#/definitions/oic.r.value.conditional"}
                  ]
                }

              example: |
                {
                  "rt":         ["oic.r.value.conditional"],
                  "id":         "unique_example_id",
                  "threshold":        2,
                  "minnotifyperiod":  2000,
                  "maxnotifyperiod":  5000
                }

    post:
      description: |
        body:
         application/json:
           schema: valueconditional
           example: |
             {
               "threshold":        2,
               "minnotifyperiod":  1500
             }

      responses :
        200:
          body:
            application/json:
              schema: |
                {
                  "id":
"http://openinterconnect.org/iotdatamodels/schemas/oic.r.value.conditional.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
                  "title": "Value Conditional",
                  "definitions": {
                    "oic.r.value.conditional": {
                      "type": "object",
                      "anyOf": [
                        {"required": ["threshold"]},
                        {"required": ["minnotifyperiod"]},
                        {"required": ["maxnotifyperiod"]}
                      ],
                      "properties": {
                        "threshold":  {
                          "type": "number",
                          "minimum": 0,
                          "description": "Amount by which the measured value must change before a
notification is sent."
                        },
                        "minnotifyperiod": {
                          "type": "integer",
```

```
                          "minimum": 0,
                          "description": "Minimum elapsed time in ms before a notification is sent."
                        },
                        "maxnotifyperiod": {
                          "type": "integer",
                          "minimum": 0,
                          "description": "Maximum elapsed time in ms before a notification must be
sent."
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.core.json#/definitions/oic.core"},
                    {"$ref": "#/definitions/oic.r.value.conditional"}
                  ]
                }

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

6.74.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
threshold	숫자	예		통보가 송신되기 전에 측정된 값이 변해야 하는 양.
maxnotifyperiod	정수	예		통보가 송신되기 이전의 최대 경과 시간 (ms).
minnotifyperiod	정수	예		통보가 송신되기 이전의 최소 경과 시간 (ms).

6.74.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ValueConditionalResURI		get	post		

Annex A Base Resource

A.1 Base Resource Schema

A.1.1 개요

이것은 본 스펙에서 정의된 모든 다른 resource 가 구축되는 기본 resource schema 이다. value 는 Resource 의 감지되거나 작동된 값이다. precision 은 값의 정확도를 나타낸다. range 는 값이 유효한 범위이다. Step 은 적용 가능한 경우 정의된 범위에 걸친 증분 기능이다(예: 항상 '2'만큼의 step).

A.1.2 URI 예

/BaseResourceSchemaResURI

A.1.3 Resource Type

resource type (rt)는 oic.baseresource 로 정의된다.

A.1.4 RAML 정의

```
#%RAML 0.8
title: OICBaseResourceSchema
version: v1.1.0-20160519
traits:
 - interface-a :
     queryParameters:
       if:
         enum: ["oic.if.a"]
 - interface-baseline :
     queryParameters:
       if:
         enum: ["oic.if.baseline"]

/BaseResourceSchemaResURI:
  description: |
    This is the base resource schema on which all other resources defined in this specification
build.
    value is the sensed or actuated value of the Resource.
    precision is the accuracy granularity of the value.
    range is the range over which value is valid.
    step is the step function over the defined range if applicable (e.g
    always step by '2').

  get:
    description: |
      retrieves the state of the resource.

    is : ['interface-baseline']
    responses :
      200:
        body:
          application/json:
            schema: |
```

```
                {
                  "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.baseResource.json#",
                  "$schema": "http://json-schema.org/draft-04/schema#",
                  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All
rights reserved.",
                  "title": "Base Resource",
                  "definitions": {
                    "oic.r.baseresource": {
                      "type": "object",
                      "properties": {
                        "value": {
                          "anyOf": [
                            {"type": "array"},
                            {"type": "string"},
                            {"type": "boolean"},
                            {"type": "integer"},
                            {"type": "number"},
                            {"type": "object"}
                          ],
                          "description": "The value sensed or actuated by this Resource"
                        },
                        "precision":  {
                          "type": "number",
                          "readOnly": true,
                          "description": "Accuracy granularity of the exposed value"
                        },
                        "range": {
                          "type": "array",
                          "description": "The valid range for the value Property",
                          "readOnly": true,
                          "minItems": 2,
                          "maxItems": 2,
                          "items": {
                            "anyOf": [
                              {"type": "number"},
                              {"type": "integer"}
                            ]
                          }
                        },
                        "step": {
                          "description": "Step value across the defined range",
                          "readOnly": true,
                          "anyOf": [
                            {"type": "integer"},
                            {"type": "number"}
                          ]
                        }
                      }
                    }
                  },
                  "type": "object",
                  "allOf": [
                    {"$ref": "oic.core.json#/definitions/oic.core"},
                    {"$ref": "#/definitions/oic.r.baseresource"}
                  ]
                }

              example: |
                {
                  "rt" :            ["oic.baseresource"],
                  "if":             ["oic.if.baseline"],
                  "id":             "unique_example_id",
                  "value":          10.5,
                  "precision":      0.5,
                  "range":          [0.0,100.0]
                }

    post:
      description: |
```

```
        sets the read-write resource properties

    is : ['interface-a']

    body:
      application/json:

        schema: |

          {
            "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.baseResource.json#",
            "$schema": "http://json-schema.org/draft-04/schema#",
            "description" : "Copyright (c) 2016 Open Connectivity Foundation, Inc. All rights
reserved.",
            "title": "Base Resource",
            "definitions": {
              "oic.r.baseresource": {
                "type": "object",
                "properties": {
                  "value": {
                    "anyOf": [
                      {"type": "array"},
                      {"type": "string"},
                      {"type": "boolean"},
                      {"type": "integer"},
                      {"type": "number"},
                      {"type": "object"}
                    ],
                    "description": "The value sensed or actuated by this Resource"
                  },
                  "precision":  {
                    "type": "number",
                    "readOnly": true,
                    "description": "Accuracy granularity of the exposed value"
                  },
                  "range": {
                    "type": "array",
                    "description": "The valid range for the value Property",
                    "readOnly": true,
                    "minItems": 2,
                    "maxItems": 2,
                    "items": {
                      "anyOf": [
                        {"type": "number"},
                        {"type": "integer"}
                      ]
                    }
                  },
                  "step": {
                    "description": "Step value across the defined range",
                    "readOnly": true,
                    "anyOf": [
                      {"type": "integer"},
                      {"type": "number"}
                    ]
                  }
                }
              }
            },
            "type": "object",
            "allOf": [
              {"$ref": "oic.core.json#/definitions/oic.core"},
              {"$ref": "#/definitions/oic.r.baseresource"}
            ]
          }

        example: |

          {
            "value":  20.5
          }
```

```
    responses :
      200:
        body:
          application/json:
            schema: |
              {
                "id": "http://openinterconnect.org/iotdatamodels/schemas/oic.baseResource.json#",
                "$schema": "http://json-schema.org/draft-04/schema#",
                "description" : "Copyright (c) 2016 Open Connectivity Foundation, Inc. All rights
reserved.",
                "title": "Base Resource",
                "definitions": {
                  "oic.r.baseresource": {
                    "type": "object",
                    "properties": {
                      "value": {
                        "anyOf": [
                          {"type": "array"},
                          {"type": "string"},
                          {"type": "boolean"},
                          {"type": "integer"},
                          {"type": "number"},
                          {"type": "object"}
                        ],
                        "description": "The value sensed or actuated by this Resource"
                      },
                      "precision":  {
                        "type": "number",
                        "readOnly": true,
                        "description": "Accuracy granularity of the exposed value"
                      },
                      "range": {
                        "type": "array",
                        "description": "The valid range for the value Property",
                        "readOnly": true,
                        "minItems": 2,
                        "maxItems": 2,
                        "items": {
                          "anyOf": [
                            {"type": "number"},
                            {"type": "integer"}
                          ]
                        }
                      },
                      "step": {
                        "description": "Step value across the defined range",
                        "readOnly": true,
                        "anyOf": [
                          {"type": "integer"},
                          {"type": "number"}
                        ]
                      }
                    }
                  }
                },
                "type": "object",
                "allOf": [
                  {"$ref": "oic.core.json#/definitions/oic.core"},
                  {"$ref": "#/definitions/oic.r.baseresource"}
                ]
              }

            example: |
              {
                "value":  20.5
              }
```

A.1.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대해 유효한 범위
precision	숫자		Read Only	노출된 값의 정확도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
rt	배열: schema 참조		Read Only	Resource Type
n	스트링		Read Only	resource 의 친근한 명칭
id	스트링		Read Only	특정 resource 의 개체 ID
if	배열: schema 참조		Read Only	이 resource 에 의해 지원된 인터페이스 집합

A.1.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/BaseResourceSchemaResURI		get	post		

A.1.7 Referenced JSON schemas

A.1.8 oic.core.json

```
{
  "id": "http://www.openconnectivity.org/ocf-apis/core/schemas/oic.core-schema.json#",
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description" : "Copyright (c) 2016, 2017 Open Connectivity Foundation, Inc. All rights
reserved.",
  "title": "Core",
  "definitions": {
    "oic.core": {
      "type": "object",
      "properties": {
        "rt": {
          "type": "array",
          "items" : {
              "type" : "string",
              "maxLength": 64
            },
          "minItems" : 1,
```

```
            "readOnly": true,
            "description": "Resource Type"
          },
          "if": {
            "type": "array",
            "items": {
                "type" : "string",
                "enum" : ["oic.if.baseline", "oic.if.ll", "oic.if.b", "oic.if.lb", "oic.if.rw",
"oic.if.r", "oic.if.a", "oic.if.s" ]
              },
            "minItems": 1,
            "readOnly": true,
            "description": "The interface set supported by this resource"
          },
          "n": {
            "type": "string",
            "maxLength": 64,
            "readOnly": true,
            "description": "Friendly name of the resource"
          },
          "id": {
            "type": "string",
            "maxLength": 64,
            "readOnly": true,
            "description": "Instance ID of this specific resource"
          }
        }
      }
    },
    "type": "object",
    "allOf": [
      { "$ref": "#/definitions/oic.core"}
    ]
  }
```


Annex B Swagger 2.0

B.1 가속도 센서

B.1.1 개요

이 resource 는 좌표 가속도(좌표계와 Observer 에 의존하는)와 대조되는 적절한 가속도의 측정치 (g force)를 제공한다. 값은 물체에 가해지는 가속도를 단위 "g"로 기술하는 부동 소수점 형이다.

B.1.2 URI 예

/AccelerationResURI

B.1.3 Resource Type

resource type (rt)는 ['oic.r.sensor.acceleration']로 정의된다.

B.1.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Acceleration Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AccelerationResURI" : {
      "get": {
        "description": "This resource provides a measure of proper acceleration (g force) as
opposed to co-ordinate acceleration\n(which is dependent on the co-ordinate system and the
observer).\nThe value is a float which describes the acceleration experienced by the object in
\"g\".\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
```

```
                "x-example":
                  {
                    "rt":            ["oic.r.sensor.acceleration"],
                    "id":            "unique_example_id",
                    "acceleration":  0.5
                  }
                  ,
                "schema": { "$ref": "#/definitions/acceleration" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "acceleration" :
              {
          "properties": {
            "acceleration": {
              "description": "sensed acceleration experienced in 'g'.",
              "readOnly": true,
              "type": "number"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
```

```
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "acceleration"
          ]
        }

    }
  }
```

B.1.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도
Acceleration	숫자	예	Read Only	'g' 단위의 감지된 가속도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	Value Property 에 대한 유효 범위

B.1.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AccelerationResURI		get			

B.2 동작 카운트

B.2.1 개요

이 resource 는 동작 카운트를 규정한다. Resource 는 readonly (oic.if.s interface)일 수 있고, 이 경우 하나의 카운트를 나타낸다. resource 는 readwrite (oic.if.a interface)일 수 있고, 이 경우 하나의 카운트에 대한 목표를 나타낸다. count property 는 현재의 카운트 또는 목표 값을 나타내는 정수이다. 현재의 동작 카운트를 검색한다.

B.2.2 URI 예

/ActivityCountResURI

B.2.3 Resource Type

resource type (rt)는 ['oic.r.sensor.activity.count']로 정의된다.

B.2.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Activity Count",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ActivityCountResURI" : {
      "get": {
        "description": "This resource specifies an activity count.\nThe resource can be readonly
(oic.if.s interface) in which instance it represents a count.\nThe resource can be readwrite
(oic.if.a interface) in which instance it represents a goal or target for a count.\nThe count
property is an integer representing either the current count or goal value.\nRetrieves the current
activity count.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
```

```
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":     ["oic.r.sensor.activity.count"],
                    "id":     "unique_example_id",
                    "count":  2500
                  }
                  ,
                "schema": { "$ref": "#/definitions/Count" }
              }
          }
        },
        "post": {
          "description": "Sets the count target\n",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/Count" },
              "x-example":
                {
                  "id":     "unique_example_id",
                  "count":  5000
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":     "unique_example_id",
                    "count":  5000
                  }
                  ,
                "schema": { "$ref": "#/definitions/Count" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Count" :
              {
          "properties": {
            "count": {
              "description": "Current or Target count.",
              "type": "integer"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
```

```
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "count"
          ]
        }

    }
  }
```

B.2.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도.
count	정수	예		현재 또는 목표 카운트.
range	배열:		Read Only	value Property

	schema 참조			에 대한 유효 범위.
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값.
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값.

B.2.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ActivityCountResURI		get	post		

B.3 송풍

B.3.1 개요

이 resource 는 공기 흐름과 관련된 property 를 기술한다. Supporteddirections 는 이 resource type 의 특정 개체를 위한 direction property 에 대한 유효 값의 집합이다. Direction 값은 적용 가능한 경우 공기 흐름의 방향성이고, supporteddirections 가 존재하면 그 집합으로부터의 값이어야 한다. Direction 값은 장치의 성능에 의존한다. Speed 는 그 장치에 대한 현재의 속도 레벨을 나타내는 정수이다. (oic.r.baseresource 로부터의) range 는 속도 레벨에 대한 최소, 최대 값의 배열이다. 만약 존재하지 않는다면, range default 는 [0,100]이 된다. automode 는 automode 기능의 상태를 나타낸다. Off 는 automode 가 설정되지 않았음을 의미하고, On 은 automode 가 설정되고 속도가 device 에 의해 자동적으로 제어됨을 의미한다. 현재의 공기 흐름 값을 검색한다.

B.3.2 URI 예

/AirFlowResURI

B.3.3 Resource Type

resource type (rt)는 ['oic.r.airflow']로 정의된다.

B.3.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Air Flow",
```

```
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AirFlowResURI" : {
      "get": {
        "description": "This resource describes the properties associated with air flow.\nThe
supporteddirections is the set of valid values for the direction property for a particular instance
of this resource type.\nThe direction is the directionality of the air flow if applicable, if
supporteddirections is also present it must be a value from that set.\nDirection values are
dependent on the capabilities of the unit.\nThe speed is an integer representing the current speed
level for the unit.\nThe range (from oic.r.baseresource) is an array of the min,max values for the
speed level. If not present the range defaults to [0,100].\nautomode is the status of the automode
feature; Off means automode is not enabled, On means automode is active and the speed is
automatically controlled by the device.\nRetrieves the current air flow values.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":         ["oic.r.airflow"],
                  "id":         "unique_example_id",
                  "supporteddirections": ["left","right","centre"],
                  "direction":  "left",
                  "speed":      5,
                  "range":      [1,7],
                  "automode":   "Off"
                }
                ,
              "schema": { "$ref": "#/definitions/AirFlow" }
            }
        }
      },
      "post": {
        "description": "Sets the current air flow values.\nOnly direction and speed may be set by
an update operation.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/AirFlow" },
            "x-example":
              {
                "id":         "unique_example_id",
                "direction":  "right",
                "speed":      3
```

```
                }
            }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "id":         "unique_example_id",
                  "direction":  "right",
                  "speed":      3
                }
                ,
              "schema": { "$ref": "#/definitions/AirFlow" }
            },
            "403": {
              "description" : "This response is generated by the OCF Server when the client
sends:\n  An update with an invalid property value for direction.\n  An update with an out of range
property value for speed.\nThe server may respond with the current resource representation.\n",
              "x-example":
                {
                  "id":         "unique_example_id",
                  "supporteddirections": ["left","right","centre"],
                  "direction":  "right",
                  "speed":      3
                }
                ,
              "schema": { "$ref": "#/definitions/AirFlow" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AirFlow" :
            {
        "properties": {
          "automode": {
            "description": "Status of the automode feature, if on speed is set by the device",
            "enum": [
              "On",
              "Off"
            ]
          },
          "direction": {
            "description": "Directionality of the air flow",
            "type": "string"
          },
          "precision": {
            "description": "Accuracy granularity of the exposed value",
            "readOnly": true,
            "type": "number"
          },
          "range": {
            "description": "The valid range for the value Property",
            "items": {
              "anyOf": [
                {
                  "type": "number"
                },
                {
                  "type": "integer"
                }
```

```
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "speed": {
              "description": "Current speed level",
              "type": "integer"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "supporteddirections": {
              "description": "Array of possible direction settings for this instance of the Resource
Type",
              "items": {
                "minItems": 1,
                "type": "string",
                "uniqueItems": true
              },
              "readOnly": true,
              "type": "array"
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "speed"
          ],
          "type": "object"
        }

    }
  }
```

B.3.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
speed	정수	예		현재의 속도 레벨.
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위.
supporteddirections	배열: schema 참조		Read Only	Resource Type 의 본 개체에 대한 가능한 direction settings 의 배열
precision	숫자		Read Only	노출된 값의 정확도.
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값.
direction	스트링			공기 흐름의 방향성
automode	복수 타입: schema 참조			automode 기능의 상태. on 이면 속도는 device 에 의해 설정된다.
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값.

B.3.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AirFlowResURI		get	post		

B.4 송풍 제어

B.4.1 개요

이 resource 는 공기 흐름의 제어와 관련된, 예를 들어, Thermostat (fan), Room A/C 또는 다른 device 에 의해 모델링 되는 속성을 기술한다. resource 는 AirFlow Resource 및 BinarySwitch Resource 의 collection 으로 구성되는 복합 resource 이다. 현재의 공기 흐름 제어 값을 검색한다.

B.4.2 URI 예

/AirFlowControlResURI

B.4.3 Resource Type

resource type (rt)는 ['oic.r.airflowcontrol']로 정의된다.

B.4.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Air Flow Control",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AirFlowControlResURI" : {
      "get": {
        "description": "This resource describes the attributes associated with control of air
flow,\nfor example as modelled by a Thermostat (fan), Room A/C or other device.\nThe resource is a
composite resource being made up as a collection of:\n  AirFlow Resource\n  BinarySwitch
Resource\nRetrieves the current air flow control values.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.airflowcontrol"],
                  "id": "unique_example_id",
                  "airFlowControl": [
                    {
                      "href": "/BinarySwitchResURI",
                      "rel":  "contains",
                      "rt":   ["oic.r.switch.binary"],
                      "if":   ["oic.if.a"],
                      "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
```

```
                      },
                      {
                        "href": "/AirFlowResURI",
                        "rel":  "contains",
                        "rt":   ["oic.r.airflow"],
                        "if":   ["oic.if.a"],
                        "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]
                      }
                    ]
                  }
                  ,
                "schema": { "$ref": "#/definitions/AirFlowControl" }
              }
            }
          },
          "post": {
            "description": "Sets the current air flow control values using the batch interface\n",
            "parameters": [
              {"$ref": "#/parameters/interface-b"},
              {
                "name": "body",
                "in": "body",
                "required": true,
                "schema": { "$ref": "#/definitions/AirFlowControlBatch" },
                "x-example":
                  {
                    "id":     "unique_example_id",
                    "airFlowControl": [
                      {
                        "id":    "unique_example_id",
                        "value": true
                      },
                      {
                        "id":         "unique_example_id",
                        "direction":  "right",
                        "speed":      3
                      }
                    ]
                  }
              }
            ],
            "responses": {
                "200": {
                  "description" : "",
                  "x-example":
                    {
                      "id":     "unique_example_id",
                      "airFlowControl": [
                        {
                          "id":    "unique_example_id",
                          "value": true
                        },
                        {
                          "id":        "unique_example_id",
                          "direction": "right",
                          "speed":     3
                        }
                      ]
                    }
                    ,
                  "schema": { "$ref": "#/definitions/AirFlowControlBatch" }
                },
                "403": {
                  "description" : "This response is generated by the OIC Server when the client
sends:\n  An update with an invalid property value for direction.\n  An update with an out of range
property value for speed.\nThe server responds with the current resource representation.\n",
                  "x-example":
                    {
                      "id":     "unique_example_id",
                      "airFlowControl": [
                        {
```

```
                        "id":    "unique_example_id",
                        "value": true
                      },
                      {
                        "id":         "unique_example_id",
                        "direction":  "right",
                        "speed":      3
                      }
                    ]
                  }
                  ,
                "schema": { "$ref": "#/definitions/AirFlowControlBatch" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface-b" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.b"]
      },
      "interface-all" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
      }
    },
    "definitions": {
      "AirFlowControl" :
              {
          "properties": {
            "airFlowControl": {
              "items": {
                "properties": {
                  "anchor": {
                    "description": "This is used to override the context URI e.g. override the URI of
the containing collection",
                    "format": "uri",
                    "maxLength": 256,
                    "type": "string"
                  },
                  "di": {
                    "description": "Unique identifier for device (UUID)",
                    "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-
F0-9]{12}$",
                    "type": "string"
                  },
                  "eps": {
                    "description": "the Endpoint information of the target Resource",
                    "items": {
                      "properties": {
                        "ep": {
                          "description": "URI with Transport Protocol Suites + Endpoint Locator as
specified in 10.2.1",
                          "format": "uri",
                          "type": "string"
                        },
                        "pri": {
                          "description": "The priority among multiple Endpoints as specified in
10.2.3",
                          "minimum": 1,
                          "type": "integer"
                        }
                      },
                      "type": "object"
                    },
                    "type": "array"
```

```
                  },
                  "href": {
                    "description": "This is the target URI, it can be specified as a Relative
Reference or fully-qualified URI. Relative Reference should be used along with the di parameter to
make it unique.",
                    "format": "uri",
                    "maxLength": 256,
                    "type": "string"
                  },
                  "if": {
                    "description": "The interface set supported by this resource",
                    "items": {
                      "enum": [
                        "oic.if.baseline",
                        "oic.if.ll",
                        "oic.if.b",
                        "oic.if.rw",
                        "oic.if.r",
                        "oic.if.a",
                        "oic.if.s"
                      ],
                      "type": "string"
                    },
                    "minItems": 1,
                    "type": "array"
                  },
                  "ins": {
                    "description": "The instance identifier for this web link in an array of web
links - used in collections",
                    "oneOf": [
                      {
                        "description": "An ordinal number that is not repeated - must be unique in
the collection context",
                        "type": "integer"
                      },
                      {
                        "description": "Any unique string including a URI",
                        "format": "uri",
                        "maxLength": 256,
                        "type": "string"
                      },
                      {
                        "description": "Unique identifier (UUID)",
                        "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-
fA-F0-9]{12}$",
                        "type": "string"
                      }
                    ]
                  },
                  "p": {
                    "description": "Specifies the framework policies on the Resource referenced by
the target URI",
                    "properties": {
                      "bm": {
                        "description": "Specifies the framework policies on the Resource referenced
by the target URI for e.g. observable and discoverable",
                        "type": "integer"
                      }
                    },
                    "required": [
                      "bm"
                    ],
                    "type": "object"
                  },
                  "rel": {
                    "description": "The relation of the target URI referenced by the link to the
context URI",
                    "oneOf": [
                      {
                        "default": [
                          "hosts"
```

```
                        ],
                        "items": {
                          "maxLength": 64,
                          "type": "string"
                        },
                        "minItems": 1,
                        "type": "array"
                      },
                      {
                        "default": "hosts",
                        "maxLength": 64,
                        "type": "string"
                      }
                    ]
                  },
                  "rt": {
                    "description": "Resource Type",
                    "items": {
                      "maxLength": 64,
                      "type": "string"
                    },
                    "minItems": 1,
                    "type": "array"
                  },
                  "title": {
                    "description": "A title for the link relation. Can be used by the UI to provide a
context",
                    "maxLength": 64,
                    "type": "string"
                  },
                  "type": {
                    "default": "application/cbor",
                    "description": "A hint at the representation of the resource referenced by the
target URI. This represents the media types that are used for both accepting and emitting",
                    "items": {
                      "maxLength": 64,
                      "type": "string"
                    },
                    "minItems": 1,
                    "type": "array"
                  }
                },
                "required": [
                  "href",
                  "rt",
                  "if"
                ],
                "type": "object"
              },
              "maxItems": 2,
              "minItems": 2,
              "type": "array"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
```

```
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "type": "object"
        }

      ,
      "AirFlowControlBatch" :
              {
          "properties": {
            "airFlowControl": {
              "items": {
                "anyOf": [
                  {
                    "properties": {
                      "value": {
                        "description": "Status of the switch",
                        "type": "boolean"
                      }
                    },
                    "type": "object"
                  },
                  {
                    "properties": {
                      "automode": {
                        "description": "Status of the automode feature, if on speed is set by the
device",
                        "enum": [
                          "On",
                          "Off"
                        ]
                      },
                      "direction": {
                        "description": "Directionality of the air flow",
```

```
                        "type": "string"
                      },
                      "speed": {
                        "description": "Current speed level",
                        "type": "integer"
                      },
                      "supporteddirections": {
                        "description": "Array of possible direction settings for this instance of the
Resource Type",
                        "items": {
                          "minItems": 1,
                          "type": "string",
                          "uniqueItems": true
                        },
                        "readOnly": true,
                        "type": "array"
                      }
                    },
                    "type": "object"
                  }
                ]
              },
              "type": "array"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
```

```
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "airFlowControl"
          ],
          "type": "object"
        }

    }
  }
```

B.4.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값.
precision	숫자		Read Only	노출된 값의 정확도
airFlowControl	배열: schema 참조	예		
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도
airFlowControl	배열: schema 참조			
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
step	복수 타입:		Read Only	정의된 범위에

	schema 참조			걸친 증분 값

B.4.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AirFlowControlResURI		get	post		

B.5 청정도

B.5.1 개요

이 resource 는 공기의 품질을 추정하기 위하여 사용될 수 있는 정성적 또는 측정된 오염물질을 기술한다.

측정된 것은 아래에 기술된 바와 같이 오염물질의 유형마다 단위를 갖는 실제 감지된 값이다. 정성적인 것은, 특정 오염물질에 대해 최소값이 최소 오염물질이고, 최대값이 최대 오염물질인, 제공된 범위 내에서의 대표 값이다.

valueType 은 contaminantvalue Property 내에서 정성적 또는 측정된 판독 값을 나타낸다. Contaminant 값은 실제 측정된 또는 정성적 레벨을 포함한다. range 는 (oic.r.baseresource 로부터) 보고되는 값에 대해 허용된 범위를 포함한다.

valueType 이 '측정된' 것이라면, 오염물질의 유형에 대한 단위는 다음과 같다: Methanal (Formaldehyde 로도 알려진): CH_2O (μg/m^3), 이산화탄소: CO_2 (ppm), 일산화탄소: CO (ppm), 분진 물질 (직경이 2.5 microns 미만): PM2.5 (μg/m^3), 분진 물질 (직경이 10 microns 미만): PM10 (μg/m^3), 휘발성 유기 화합물: VOC (μg/m^3). 현재의 공기 품질을 검색한다.

B.5.2 URI 예

/AirQualityResURI

B.5.3 Resource Type

resource type (rt)는 ['oic.r.airquality']로 정의된다.

B.5.4 Swagger2.0 정의

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

```
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AirQualityResURI" : {
      "get": {
        "description": "This resource describes a qualitative or measured contaminant that can be
used to infer Air Quality.\nMeasured is the actual sensed value with units per contaminant type as
described below.\nQualitative is a representative value within the range provided where the minium
value is minimum contamination and maximum value is maximum contamination for the specific
contaminant.\nThe valueType indicates a qualitative or measured reading within the contaminantvalue
Property.\ncontaminantvalue contains the actual measured or qualitative level.\nrange contains the
allowed range for the value that is being reported (from oic.r.baseresource).\nIf valueType is
'Measured' then the units for the contaminant types are as follows:\n Methanal (also known as
Formaldehyde): CH2O (ug/m^3),\n Carbon Dioxide: CO2 (ppm),\n Carbon Monoxide: CO (ppm),\n
Particulate Matter (less than 2.5 microns in diameter): PM2.5 (ug/m^3),\n Particulate Matter (less
than 10 microns in diameter): PM10 (ug/m^3),\n Volatile Organic Compounds: VOC (ug/m^3)\nRetrieves
the current air quality.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":             ["oic.r.airquality"],
                  "id":             "unique_example_id",
                  "contaminanttype": "CO",
                  "valuetype": "Measured",
                  "contaminantvalue": 10,
                  "range": [0,500]
                }
                ,
              "schema": { "$ref": "#/definitions/AirQuality" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AirQuality" :
            {
        "properties": {
          "contaminanttype": {
            "description": "The contaminant being measured.",
            "enum": [
```

```
                "CH2O",
                "CO2",
                "CO",
                "PM2.5",
                "PM10",
                "VOC",
                "Smoke",
                "Odor",
                "AirPollution"
              ],
              "readOnly": true
            },
            "contaminantvalue": {
              "description": "The measured or qualitative value for the contaminant.",
              "readOnly": true,
              "type": "integer"
            },
            "id": {
              "description": "Instance ID of this specific resource",
              "maxLength": 64,
              "readOnly": true,
              "type": "string"
            },
            "if": {
              "description": "The interface set supported by this resource",
              "items": {
                "enum": [
                  "oic.if.baseline",
                  "oic.if.ll",
                  "oic.if.b",
                  "oic.if.lb",
                  "oic.if.rw",
                  "oic.if.r",
                  "oic.if.a",
                  "oic.if.s"
                ],
                "type": "string"
              },
              "minItems": 1,
              "readOnly": true,
              "type": "array"
            },
            "n": {
              "description": "Friendly name of the resource",
              "maxLength": 64,
              "readOnly": true,
              "type": "string"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "rt": {
```

```
              "description": "Resource Type",
              "items": {
                "maxLength": 64,
                "type": "string"
              },
              "minItems": 1,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            },
            "valuetype": {
              "description": "Indicates whether the provided value is qualitative or measured.",
              "enum": [
                "Qualitative",
                "Measured"
              ],
              "readOnly": true
            }
          },
          "required": [
            "contaminantvalue",
            "contaminanttype",
            "valuetype",
            "range"
          ],
          "type": "object"
        }

    }
  }
```

B.5.5 Property 정의

Property name	Value type	필수	액세스 모드	설명

precision	숫자		Read Only	노출된 값의 정확도
valuetype	복수 타입: schema 참조	예	Read Only	제공된 값이 정성적인 값인지 또는 측정된 값인지를 나타낸다
contaminanttype	복수 타입: schema 참조	예	Read Only	측정되는 오염물질
if	배열: schema 참조		Read Only	이 resource 에 의해 지원되는 인터페이스 집합
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
contaminantvalue	정수	예	Read Only	오염물질에 대한 측정된 또는 정성적 값
n	스트링		Read Only	Resource 의 친근한 명칭
id	스트링		Read Only	특정 resource 의 개체 ID
rt	배열: schema 참조		Read Only	Resource Type
range	배열: schema 참조	예	Read Only	value Property 에 대한 유효 범위

B.5.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AirQualityResURI		get			

B.6 청정도 Collection

B.6.1 개요

이 resource 는 정성적 또는 측정된 공기 품질을 제공하는 센서를 기술한다. resource 는 개별적으로 노출된 오염물질 측정치를 상술하는 oic.r.airquality 의 개체의 collection 이다. device 에 의해 지원되는 오염물질의 유형마다 하나의 collection entry 가 존재한다. device 는 적어도 하나의 측정된 또는 정성적 값을 노출하여야만 한다. 현재의 공기 품질을 검색한다.

B.6.2 URI 예

/AirQualityBaselineResURI

B.6.3 Resource Type

resource type (rt)는 ['oic.r.airqualitycollection', 'oic.wk.col']로 정의된다.

B.6.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Air Quality Collection",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AirQualityLLResURI" : {
      "get": {
        "description": "This resource describes a sensor that provides the qualitative or measured
Air Quality.\nThe resource is a collection of instances of oic.r.airquality detailing the
individual exposed contaminant measures\nThere is one collection entry per contaminant type
supported by the device. A device must expose at least one measured or qualitative
value.\nRetrieves the current air quality.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-ll"}
        ],
        "responses": {
```

```
              "200": {
                "description" : "",
                "x-example":
                  [
                      {"href": "/myCOMeasureResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                      {"href": "/myCO2ResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
                  ]
                  ,
                "schema": { "$ref": "#/definitions/AirQuality-ll" }
              }
          }
        }
      },
      "/AirQualityBaselineResURI" : {
        "get": {
          "description": "This resource describes a sensor that provides the qualitative or measured
Air Quality.\nThe resource is a collection of instances of oic.r.airquality detailing the
individual exposed contaminant measures\nThere is one collection entry per contaminant type
supported by the device. A device must expose at least one measured or qualitative
value.\nRetrieves the current air quality.\n",
          "parameters": [
            {"$ref": "#/parameters/interface-baseline"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":   ["oic.r.airqualitycollection","oic.wk.col"],
                    "if":   ["oic.if.baseline","oic.if.ll"],
                    "id":   "unique_example_id",
                    "links": [
                      {"href": "/myCOMeasureResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                      {"href": "/myCO2ResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
                    ]
                  }
                  ,
                "schema": { "$ref": "#/definitions/AirQuality" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface-ll" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.ll"]
      },
      "interface-baseline" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.baseline"]
      }
    },
    "definitions": {
      "AirQuality-ll" :
              {
          "allOf": [
            {
              "description": "All forms of links in a collection",
              "oneOf": [
                {
                  "description": "A set (array) of simple or individual OIC Links. In addition to
properties required for an OIC Link, the identifier for that link in this set is also required",
```

```
                  "items": {
                    "properties": {
                      "anchor": {
                        "description": "This is used to override the context URI e.g. override the
URI of the containing collection",
                        "format": "uri",
                        "maxLength": 256,
                        "type": "string"
                      },
                      "di": {
                        "description": "Unique identifier for device (UUID)",
                        "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-
fA-F0-9]{12}$",
                        "type": "string"
                      },
                      "eps": {
                        "description": "the Endpoint information of the target Resource",
                        "items": {
                          "properties": {
                            "ep": {
                              "description": "URI with Transport Protocol Suites + Endpoint Locator
as specified in 10.2.1",
                              "format": "uri",
                              "type": "string"
                            },
                            "pri": {
                              "description": "The priority among multiple Endpoints as specified in
10.2.3",
                              "minimum": 1,
                              "type": "integer"
                            }
                          },
                          "type": "object"
                        },
                        "type": "array"
                      },
                      "href": {
                        "description": "This is the target URI, it can be specified as a Relative
Reference or fully-qualified URI. Relative Reference should be used along with the di parameter to
make it unique.",
                        "format": "uri",
                        "maxLength": 256,
                        "type": "string"
                      },
                      "if": {
                        "description": "The interface set supported by this resource",
                        "items": {
                          "enum": [
                            "oic.if.baseline",
                            "oic.if.ll",
                            "oic.if.b",
                            "oic.if.rw",
                            "oic.if.r",
                            "oic.if.a",
                            "oic.if.s"
                          ],
                          "type": "string"
                        },
                        "minItems": 1,
                        "type": "array"
                      },
                      "ins": {
                        "description": "The instance identifier for this web link in an array of web
links - used in collections",
                        "oneOf": [
                          {
                            "description": "An ordinal number that is not repeated - must be unique
in the collection context",
                            "type": "integer"
                          },
                          {
```

```
                            "description": "Any unique string including a URI",
                            "format": "uri",
                            "maxLength": 256,
                            "type": "string"
                          },
                          {
                            "description": "Unique identifier (UUID)",
                            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-
[a-fA-F0-9]{12}$",
                            "type": "string"
                          }
                        ]
                      },
                      "p": {
                        "description": "Specifies the framework policies on the Resource referenced
by the target URI",
                        "properties": {
                          "bm": {
                            "description": "Specifies the framework policies on the Resource
referenced by the target URI for e.g. observable and discoverable",
                            "type": "integer"
                          }
                        },
                        "required": [
                          "bm"
                        ],
                        "type": "object"
                      },
                      "rel": {
                        "description": "The relation of the target URI referenced by the link to the
context URI",
                        "oneOf": [
                          {
                            "default": [
                              "hosts"
                            ],
                            "items": {
                              "maxLength": 64,
                              "type": "string"
                            },
                            "minItems": 1,
                            "type": "array"
                          },
                          {
                            "default": "hosts",
                            "maxLength": 64,
                            "type": "string"
                          }
                        ]
                      },
                      "rt": {
                        "description": "Resource Type",
                        "items": {
                          "maxLength": 64,
                          "type": "string"
                        },
                        "minItems": 1,
                        "type": "array"
                      },
                      "title": {
                        "description": "A title for the link relation. Can be used by the UI to
provide a context",
                        "maxLength": 64,
                        "type": "string"
                      },
                      "type": {
                        "default": "application/cbor",
                        "description": "A hint at the representation of the resource referenced by
the target URI. This represents the media types that are used for both accepting and emitting",
                        "items": {
                          "maxLength": 64,
```

```
                          "type": "string"
                        },
                        "minItems": 1,
                        "type": "array"
                      }
                    },
                    "required": [
                      "href",
                      "rt",
                      "if"
                    ],
                    "type": "object"
                  },
                  "type": "array"
                }
              ]
            }
          ]
        }

      ,
      "AirQuality" :
              {
          "allOf": [
            {
              "description": "A collection is a set (array) of tagged-link or set (array) of simple
links along with additional properties to describe the collection itself",
              "properties": {
                "di": {
                  "description": "The device ID which is an UUIDv4 string; used for backward
compatibility with Spec A definition of /oic/res",
                  "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-
9]{12}$",
                  "type": "string"
                },
                "drel": {
                  "description": "When specified this is the default relationship to use when an OIC
Link does not specify an explicit relationship with *rel* parameter",
                  "type": "string"
                },
                "id": {
                  "anyOf": [
                    {
                      "description": "A number that is unique to that collection; like an ordinal
number that is not repeated",
                      "type": "integer"
                    },
                    {
                      "description": "A unique string that could be a hash or similarly unique",
                      "type": "string"
                    },
                    {
                      "description": "A unique string that could be a UUIDv4",
                      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-
F0-9]{12}$",
                      "type": "string"
                    }
                  ],
                  "description": "ID for the collection. Can be an value that is unique to the use
context or a UUIDv4"
                },
                "links": {
                  "description": "All forms of links in a collection",
                  "oneOf": [
                    {
                      "description": "A set (array) of simple or individual OIC Links. In addition to
properties required for an OIC Link, the identifier for that link in this set is also required",
                      "items": {
                        "properties": {
                          "anchor": {
                            "description": "This is used to override the context URI e.g. override
```

```
the URI of the containing collection",
                            "format": "uri",
                            "maxLength": 256,
                            "type": "string"
                          },
                          "di": {
                            "description": "Unique identifier for device (UUID)",
                            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-
[a-fA-F0-9]{12}$",
                            "type": "string"
                          },
                          "eps": {
                            "description": "the Endpoint information of the target Resource",
                            "items": {
                              "properties": {
                                "ep": {
                                  "description": "URI with Transport Protocol Suites + Endpoint
Locator as specified in 10.2.1",
                                  "format": "uri",
                                  "type": "string"
                                },
                                "pri": {
                                  "description": "The priority among multiple Endpoints as specified
in 10.2.3",
                                  "minimum": 1,
                                  "type": "integer"
                                }
                              },
                              "type": "object"
                            },
                            "type": "array"
                          },
                          "href": {
                            "description": "This is the target URI, it can be specified as a Relative
Reference or fully-qualified URI. Relative Reference should be used along with the di parameter to
make it unique.",
                            "format": "uri",
                            "maxLength": 256,
                            "type": "string"
                          },
                          "if": {
                            "description": "The interface set supported by this resource",
                            "items": {
                              "enum": [
                                "oic.if.baseline",
                                "oic.if.ll",
                                "oic.if.b",
                                "oic.if.rw",
                                "oic.if.r",
                                "oic.if.a",
                                "oic.if.s"
                              ],
                              "type": "string"
                            },
                            "minItems": 1,
                            "type": "array"
                          },
                          "ins": {
                            "description": "The instance identifier for this web link in an array of
web links - used in collections",
                            "oneOf": [
                              {
                                "description": "An ordinal number that is not repeated - must be
unique in the collection context",
                                "type": "integer"
                              },
                              {
                                "description": "Any unique string including a URI",
                                "format": "uri",
                                "maxLength": 256,
                                "type": "string"
```

```
                                },
                                {
                                  "description": "Unique identifier (UUID)",
                                  "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-
9]{4}-[a-fA-F0-9]{12}$",
                                  "type": "string"
                                }
                              ]
                            },
                            "p": {
                              "description": "Specifies the framework policies on the Resource
referenced by the target URI",
                              "properties": {
                                "bm": {
                                  "description": "Specifies the framework policies on the Resource
referenced by the target URI for e.g. observable and discoverable",
                                  "type": "integer"
                                }
                              },
                              "required": [
                                "bm"
                              ],
                              "type": "object"
                            },
                            "rel": {
                              "description": "The relation of the target URI referenced by the link to
the context URI",
                              "oneOf": [
                                {
                                  "default": [
                                    "hosts"
                                  ],
                                  "items": {
                                    "maxLength": 64,
                                    "type": "string"
                                  },
                                  "minItems": 1,
                                  "type": "array"
                                },
                                {
                                  "default": "hosts",
                                  "maxLength": 64,
                                  "type": "string"
                                }
                              ]
                            },
                            "rt": {
                              "description": "Resource Type",
                              "items": {
                                "maxLength": 64,
                                "type": "string"
                              },
                              "minItems": 1,
                              "type": "array"
                            },
                            "title": {
                              "description": "A title for the link relation. Can be used by the UI to
provide a context",
                              "maxLength": 64,
                              "type": "string"
                            },
                            "type": {
                              "default": "application/cbor",
                              "description": "A hint at the representation of the resource referenced
by the target URI. This represents the media types that are used for both accepting and emitting",
                              "items": {
                                "maxLength": 64,
                                "type": "string"
                              },
                              "minItems": 1,
                              "type": "array"
```

```
                          }
                        },
                        "required": [
                          "href",
                          "rt",
                          "if"
                        ],
                        "type": "object"
                      },
                      "type": "array"
                    }
                  ]
                },
                "rts": {
                  "description": "Defines the list of allowable resource types (for Target and
anchors) in links included in the collection; new links being created can only be from this list",
                  "items": {
                    "maxLength": 64,
                    "type": "string"
                  },
                  "minItems": 1,
                  "readOnly": true,
                  "type": "array"
                }
              },
              "type": "object"
            },
            {
              "properties": {
                "id": {
                  "description": "Instance ID of this specific resource",
                  "maxLength": 64,
                  "readOnly": true,
                  "type": "string"
                },
                "if": {
                  "description": "The interface set supported by this resource",
                  "items": {
                    "enum": [
                      "oic.if.baseline",
                      "oic.if.ll",
                      "oic.if.b",
                      "oic.if.lb",
                      "oic.if.rw",
                      "oic.if.r",
                      "oic.if.a",
                      "oic.if.s"
                    ],
                    "type": "string"
                  },
                  "minItems": 1,
                  "readOnly": true,
                  "type": "array"
                },
                "n": {
                  "description": "Friendly name of the resource",
                  "maxLength": 64,
                  "readOnly": true,
                  "type": "string"
                },
                "rt": {
                  "items": {
                    "enum": [
                      "oic.r.airqualitycollection",
                      "oic.wk.col"
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "type": "array",
                  "uniqueItems": true
```

```
                },
                "rts": {
                  "items": {
                    "oneOf": [
                      {
                        "enum": [
                          "oic.r.airquality",
                          "oic.r.value.conditional"
                        ]
                      },
                      {
                        "enum": [
                          "oic.r.airquality"
                        ]
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 1,
                  "type": "array",
                  "uniqueItems": true
                }
              }
            }
          ],
          "type": "object"
        }

    }
  }
```

B.6.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
rt	배열: schema 참조	예		Resource Type
eps	배열: schema 참조			타깃 Resource 의 Endpoint 정보
type	배열: schema 참조			target URI 에 의해 참조되는 resource 의 표현에 대한 힌트. 수락 및 방출 모두를 위해 사용되는 Media 유형을 나타낸다.
ins	복수 타입: schema 참조			collection 에서 사용된- web link 배열 내의 web link 에 대한 개체 식별자
rel	복수 타입:			link 에 의해

	schema 참조			참조되는 타깃 URI 의 컨텍스트 URI 에 대한 관계
if	배열: schema 참조	예		이 resource 에 의해 지원되는 인터페이스 집합
di	스트링			Device 에 대한 고유 식별자 (UUID)
anchor	스트링			이것은 컨텍스트 URI 를 무시하기 위하여, 예: collection 을 포함하는 URI 를 무시하기 위해 사용된다.
href	스트링	예		이것은 target URI 이고, 상대 참조 또는 완전한 URI 로 규정될 수 있다. 상대 참조는 고유하게 되도록 di 파라미터와 함께 사용되어야 한다.
title	스트링			link 관계에 대한 제목. 컨텍스트를 제공하기 위하여 UI 에 의해 사용될 수 있다.
p	객체: schema 참조			target URI 에 의해 참조되는 Resource 에 대한 framework 정책을 규정한다.
rt	배열:	예		

	schema 참조			
if	배열: schema 참조	예	Read Only	이 resource 에 의해 지원되는 인터페이스 집합
id	스트링		Read Only	특정 resource 의 개체 ID
rts	배열: schema 참조			
n	스트링		Read Only	resource 의 친근한 명칭

B.6.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AirQualityBaselineResURI		get			

B.7 고도계

B.7.1 개요

이 resource 는 고도와 관련된 property 를 기술한다. 고도는 위치의 높이(미터)이다.
위치의 현재 높이(미터)를 검색한다.

B.7.2 URI 예

/AltimeterResURI

B.7.3 Resource Type

resource type (rt)는 ['oic.r.altimeter']로 정의된다.

B.7.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Altimeter",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
```

```
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AltimeterResURI" : {
      "get": {
        "description": "This resource describes the properties associated with
altimeter.\nAltimeter is a height of the position (metres).\nRetrieves the current the height of
the position (metres).\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":  ["oic.r.altimeter"],
                  "id":  "unique_example_id",
                  "alt": 1500.0
                }
                ,
              "schema": { "$ref": "#/definitions/Altimeter" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Altimeter" :
            {
        "properties": {
          "alt": {
            "description": "The current height of the position (metres)",
            "minimum": 0,
            "readOnly": true,
            "type": "number"
          },
          "precision": {
            "description": "Accuracy granularity of the exposed value",
            "readOnly": true,
            "type": "number"
          },
          "range": {
            "description": "The valid range for the value Property",
            "items": {
              "anyOf": [
                {
                  "type": "number"
                },
                {
                  "type": "integer"
                }
              ]
            },
            "maxItems": 2,
```

```
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "alt"
          ],
          "type": "object"
        }

    }
  }
```

B.7.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
step	복수 타입:		Read Only	정의된 범위에

	schema 참조			걸친 증분 값
alt	숫자	예	Read Only	위치의 현재 높이 (미터)

B.7.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AltimeterResURI		get			

B.8 대기압 센서

B.8.1 개요

이 resource 는 측정점에서 겪는 평균 해수면 압력의 밀리바 단위의 측정치를 제공한다. 값은 hPa (hectoPascals) 단위로 대기압을 기술하는 부동 소수점 형이다. hPa 와 일반적으로 사용되는 단위인 밀리바 (mbar)는 수치적으로 동등하다.

B.8.2 URI 예

/AtmosphericPressureResURI

B.8.3 Resource Type

resource type (rt)는 ['oic.r.sensor.atmosphericpressure']로 정의된다.

B.8.4 Swagger2.0 정의

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

```
        "get": {
          "description": "This resource provides a measurement of Mean Sea Level Pressure experienced
at the measuring point expressed in millibars.\nThe value is float which describes the atmospheric
pressure in hPa (hectoPascals).\nNote that hPa and the also commonly used unit of millibars (mbar)
are numerically equivalent.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":                   ["oic.r.sensor.atmosphericpressure"],
                    "id":                   "unique_example_id",
                    "atmosphericPressure":  1000.4
                  }
                  ,
                "schema": { "$ref": "#/definitions/atmosphericPressure" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "atmosphericPressure" :
              {
          "properties": {
            "atmosphericPressure": {
              "description": "Current atmospheric pressure in hPa.",
              "readOnly": true,
              "type": "number"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
```

```
                ],
                "description": "Step value across the defined range",
                "readOnly": true
              },
              "value": {
                "anyOf": [
                  {
                    "type": "array"
                  },
                  {
                    "type": "string"
                  },
                  {
                    "type": "boolean"
                  },
                  {
                    "type": "integer"
                  },
                  {
                    "type": "number"
                  },
                  {
                    "type": "object"
                  }
                ],
                "description": "The value sensed or actuated by this Resource"
              }
            },
            "required": [
              "atmosphericPressure"
            ]
          }

      }
  }
```

B.8.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
atmosphericPressure	숫자	예	Read Only	hPa 단위의 현재 대기압

B.8.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AtmosphericPressureResURI		get			

B.9 오디오 제어

B.9.1 개요

이 resource 는 기본적인 오디오 제어 기능을 정의한다. Volume 은 백분율 [0,100]을 포함하는 정수이다. 0(zero) 의 volume 의 어떠한 사운드도 출력되지 않음을 의미한다. 100 의 volume 은 최대 사운드의 출력을 의미한다. mute 제어는 Boolean 형으로 구현된다. True 의 mute 값은 device 가 무음 상태로 됨(오디오 출력 없음)을 의미한다. false 의 mute 값은 device 가 무음 상태로 되지 않음(오디오 출력 있음)을 의미한다.

B.9.2 URI 예

/AudioResURI

B.9.3 Resource Type

resource type (rt)는 ['oic.r.audio']로 정의된다.

B.9.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Audio Controls",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AudioResURI" : {
      "get": {
        "description": "This resource defines basic audio control functions.\nThe volume is an
integer containing a percentage [0,100].\nA volume of 0 (zero) means no sound produced.\nA volume
of 100 means maximum sound production.\nThe mute control is implemented as a boolean.\nA mute value
of true means that the device is muted (no audio).\nA mute value of false means that the device is
not muted (audio).\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
```

```
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":     ["oic.r.audio"],
                    "id":     "unique_example_id",
                    "volume": 50,
                    "mute":   false
                  }
                  ,
                "schema": { "$ref": "#/definitions/Audio" }
              }
          }
        },
        "post": {
          "description": "",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/Audio" },
              "x-example":
                {
                  "id":     "unique_example_id",
                  "volume": 75,
                  "mute":   false
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":     "unique_example_id",
                    "volume": 75,
                    "mute":   false
                  }
                  ,
                "schema": { "$ref": "#/definitions/Audio" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Audio" :
              {
          "properties": {
            "mute": {
              "description": "Mute setting of an audio rendering device",
              "type": "boolean"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
```

```
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            },
            "volume": {
              "description": "Volume setting of an audio rendering device.",
              "maximum": 100,
              "minimum": 0,
              "type": "integer"
            }
          },
          "required": [
            "volume",
            "mute"
          ],
          "type": "object"
        }

    }
  }
```

B.9.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
mute	boolean	예		오디오 출력 장치의 무음 설정
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
volume	정수	예		오디오 출력 장치의 음량 설정
precision	숫자		Read Only	노출된 값의 정확도

B.9.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AudioResURI		get	post		

B.10 자동 초점

B.10.1 개요

이 resource 는 자동 초점 on/off 기능을 기술한다. 값은 Boolean 형이다. 'true'의 AutoFocus 값은 스위치가 on 임을 의미한다. 'false' 의 AutoFocus 값은 스위치가 off 임을 의미한다. Pan Tilt Zoom ('Pan Tilt Zoom' Resource 정의 참조) 사용 시에 autofocus 는 선택된 영역에서만 작용한다.

B.10.2 URI 예

/AutoFocusResURI

B.10.3 Resource Type

resource type (rt)는 ['oic.r.autofocus']로 정의된다.

B.10.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Auto Focus",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AutoFocusResURI" : {
      "get": {
        "description": "This resource describes an auto focus on/off feature.\nThe value is a
boolean.\nAn AutoFocus value of 'true' means that the switch is on.\nAn AutoFocus value of 'false'
means that the switch is off.\nNote that when Pan Tilt Zoom (see 'Pan Tilt Zoom' Resource
definition) is used the autofocus works only in the selected area.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":         ["oic.r.autofocus"],
                  "id":         "unique_example_id",
                  "autoFocus":  false
                }
                ,
              "schema": { "$ref": "#/definitions/AutoFocus" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/AutoFocus" },
            "x-example":
              {
                "id":         "unique_example_id",
                "autoFocus":  true
              }
          }
        ],
        "responses": {
            "200": {
```

```
                "description" : "",
                "x-example":
                  {
                    "id":         "unique_example_id",
                    "autoFocus":  true
                  }
                  ,
                "schema": { "$ref": "#/definitions/AutoFocus" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "AutoFocus" :
              {
          "properties": {
            "autoFocus": {
              "description": "Status of the Auto Focus",
              "type": "boolean"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
```

```
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "autoFocus"
          ],
          "type": "object"
        }

    }
  }
```

B.10.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
autoFocus	boolean	예		자동 초점의 상태
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도

B.10.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AutoFocusResURI		get	post		

B.11 자동 급지 장치

B.11.1 개요

이 resource 는 전형적으로 센서와 함께 사용되는 자동 급지 장치의 상태를 기술한다. 상태는 읽기 전용이다. adfState 는 가능한 동작 상태의 배열이다. adfProcessing 은 OK 상태이고, 다른 상태는

에러이거나 '사용자 관심'을 요구한다. currentAdfState 는 device 에 대한 ADF 상태의 현재 값이다. 현재의 자동 문서 공급기 상태를 검색한다.

B.11.2 URI 예

/AutomaticDocumentFeederResURI

B.11.3 Resource Type

resource type (rt)는 ['oic.r.automaticdocumentfeeder']로 정의된다.

B.11.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Automatic Document Feeder",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AutomaticDocumentFeederResURI" : {
      "get": {
        "description": "This resource describes the state of an automatic document feeder,
typically used with a scanner.\nThe states are read only.\nThe adfStates is an array of the
possible operational states.\nadfProcessing is the OK state, other states are errors or require
'user attention'.\nThe currentAdfState is the current value of the ADF state on the
device.\nRetrieves the current automatic document feeder state.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":               ["oic.r.automaticdocumentfeeder"],
                  "id":               "unique_example_id",
                  "adfStates":        ["adfProcessing", "adfEmpty", "adfJam", "adfLoaded",
"adfMispick", "adfHatchOpen", "adfDuplexPageTooShort", "adfDuplexPageTooLong",
"adfMultipickDetected", "adfInputTrayFailed", "adfInputTrayOverloaded"],
                  "currentAdfState":  "adfProcessing"
```

```
                  }
                  ,
                "schema": { "$ref": "#/definitions/AutomaticDocumentFeeder" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "AutomaticDocumentFeeder" :
              {
          "properties": {
            "adfStates": {
              "description": "array of the possible adf states.",
              "items": {
                "type": "string"
              },
              "readOnly": true,
              "type": "array"
            },
            "currentAdfState": {
              "description": "Current adf state.",
              "readOnly": true,
              "type": "string"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
```

```
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "adfStates",
            "currentAdfState"
          ],
          "type": "object"
        }

    }
  }
```

B.11.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
currentAdfState	스트링	예	Read Only	현재의 adf 상태.
adfStates	배열: schema 참조	예	Read Only	가능한 adf 상태의 배열.
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

B.11.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AutomaticDocumentFeederResURI		get			

B.12 Base Resource Schema

B.12.1 개요

이것은 본 스펙 내에서 정의된 모든 다른 resource 가 구축되는 base resource schema 이다. Value 는 이 resource 의 감지되거나 작동된 값이다. precision 은 값의 정확도이다. range 는 값이 유효한 범위이다. step 은 적용 가능하다면 정의된 범위에 걸친 증분 기능 (예: 항상 '2'만큼의 증분)이다. resource 의 상태를 검색한다.

B.12.2 URI 예

/BaseResourceSchemaResURI

B.12.3 Resource Type

resource type (rt)는 ['oic.baseresource']로 정의된다.

B.12.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Base Resource Schema",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BaseResourceSchemaResURI" : {
      "get": {
        "description": "This is the base resource schema on which all other resources defined in
this specification build.\nvalue is the sensed or actuated value of the Resource.\nprecision is the
accuracy granularity of the value.\nrange is the range over which value is valid.\nstep is the step
function over the defined range if applicable (e.g. always step by '2').\nretrieves the state of
the resource.",
        "parameters": [
          {"$ref": "#/parameters/interface-baseline"}
        ],
        "responses": {
            "200": {
              "description" : "",
```

```
                "x-example":
                  {
                    "rt" :            ["oic.baseresource"],
                    "if":             ["oic.if.baseline"],
                    "id":             "unique_example_id",
                    "value":          10.5,
                    "precision":      0.5,
                    "range":          [0.0,100.0]
                  }
                  ,
                "schema": { "$ref": "#/definitions/base" }
              }
          }
        },
        "post": {
          "description": "sets the read-write resource properties",
          "parameters": [
            {"$ref": "#/parameters/interface-a"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/base" },
              "x-example":
                {
                  "value":  20.5
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "value":  20.5
                  }
                  ,
                "schema": { "$ref": "#/definitions/base" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface-a" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a"]
      },
      "interface-baseline" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.baseline"]
      }
    },
    "definitions": {
      "base" :
              {
          "properties": {
            "id": {
              "description": "Instance ID of this specific resource",
              "maxLength": 64,
              "readOnly": true,
              "type": "string"
            },
            "if": {
              "description": "The interface set supported by this resource",
              "items": {
                "enum": [
```

```
                "oic.if.baseline",
                "oic.if.ll",
                "oic.if.b",
                "oic.if.lb",
                "oic.if.rw",
                "oic.if.r",
                "oic.if.a",
                "oic.if.s"
              ],
              "type": "string"
            },
            "minItems": 1,
            "readOnly": true,
            "type": "array"
          },
          "n": {
            "description": "Friendly name of the resource",
            "maxLength": 64,
            "readOnly": true,
            "type": "string"
          },
          "precision": {
            "description": "Accuracy granularity of the exposed value",
            "readOnly": true,
            "type": "number"
          },
          "range": {
            "description": "The valid range for the value Property",
            "items": {
              "anyOf": [
                {
                  "type": "number"
                },
                {
                  "type": "integer"
                }
              ]
            },
            "maxItems": 2,
            "minItems": 2,
            "readOnly": true,
            "type": "array"
          },
          "rt": {
            "description": "Resource Type",
            "items": {
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "readOnly": true,
            "type": "array"
          },
          "step": {
            "anyOf": [
              {
                "type": "integer"
              },
              {
                "type": "number"
              }
            ],
            "description": "Step value across the defined range",
            "readOnly": true
          },
          "value": {
            "anyOf": [
              {
                "type": "array"
              },
              {
```

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

    }
  }
```

B.12.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
if	배열: schema 참조		Read Only	이 resource 에 의해 지원되는 인터페이스 집합
rt	배열: schema 참조		Read Only	Resource Type
id	스트링		Read Only	특정 resource 의 개체 ID
n	스트링		Read Only	resource 의 친근한 명칭
precision	숫자		Read Only	노출된 값의 정확도

B.12.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify

/BaseResourceSchemaResURI		get	post		

B.13 배터리

B.13.1 개요

이 resource 는 배터리의 충전 상태를 표현한다. charge 는 현재의 배터리 충전 레벨을 보여주는 정수이다. charge 는 0-100 범위의 백분율이다. 0 의 값은 완전히 방전된 것을 의미한다. 100 의값은 완전히 충전된 것을 의미한다. 배터리의 상태를 검색한다.

B.13.2 URI 예

/BatteryResURI

B.13.3 Resource Type

resource type (rt)는 ['oic.r.energy.battery']로 정의된다.

B.13.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Battery",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BatteryResURI" : {
      "get": {
        "description": "This resource represents the charge state of a battery.\nThe charge is an
integer showing the current battery charge level.\nThe charge is a percentage in the range 0-
100.\nA value of 0 means fully discharged.\nA value of 100 means fully charged.\nRetrieves the
state of the battery.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
```

```
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":     ["oic.r.energy.battery"],
                    "id":     "unique_example_id",
                    "charge": 50
                  }
                  ,
                "schema": { "$ref": "#/definitions/Battery" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Battery" :
              {
          "properties": {
            "charge": {
              "description": "The current charge percentage.",
              "maximum": 100,
              "minimum": 0,
              "readOnly": true,
              "type": "integer"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
```

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

    }
  }
```

B.13.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
charge	정수	예	Read Only	현재의 충전 백분율
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

B.13.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/BatteryResURI		get			

B.14 바이너리 스위치

B.14.1 개요

이 resource 는 바이너리 스위치의 on/off 를 기술한다. value 는 Boolean 형이다. 'true' 값은 스위치가 on 임을 의미한다. 'false' 값은 switch 가 off 임을 의미한다.

B.14.2 URI 예

/BinarySwitchResURI

B.14.3 Resource Type

resource type (rt)는 ['oic.r.switch.binary']로 정의된다.

B.14.4 Swagger2.0 정의

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

```
                    "value":  false
                  }
                  ,
                "schema": { "$ref": "#/definitions/BinarySwitch" }
              }
          }
        },
        "post": {
          "description": "",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/BinarySwitch" },
              "x-example":
                {
                  "id":    "unique_example_id",
                  "value": true
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":    "unique_example_id",
                    "value": true
                  }
                  ,
                "schema": { "$ref": "#/definitions/BinarySwitch" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "BinarySwitch" :
              {
          "properties": {
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
```

```
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "description": "Status of the switch",
              "type": "boolean"
            }
          },
          "required": [
            "value"
          ],
          "type": "object"
        }

    }
  }
```

B.14.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
value	boolean	예		스위치의 상태
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

B.14.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/BinarySwitchResURI		get	post		

B.15 밝기

B.15.1 개요

이 resource 는 조명 또는 램프의 밝기를 기술한다. 밝기는 현재의 밝기 레벨을 0-100 범위의 정량화된 표현으로 나타내는 정수이다. 0 의 밝기는 resource 에 대한 최소값이다. 100 의 밝기는 resource 에 대한 최대값이다. 현재의 밝기 레벨을 검색한다.

B.15.2 URI 예

/BrightnessResURI

B.15.3 Resource Type

resource type (rt)는 ['oic.r.light.brightness']로 정의된다.

B.15.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Brightness",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BrightnessResURI" : {
      "get": {
        "description": "This resource describes the brightness of a light or lamp.\nbrightness is
an integer showing the current brightness level as a quantized representation in the range 0-
100.\nA brightness of 0 is the minimum for the resource.\nA brightness of 100 is the maximum for
the resource.\nRetrieves the current brightness level.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":         ["oic.r.light.brightness"],
                  "id":         "unique_example_id",
                  "brightness": 50
                }
                ,
              "schema": { "$ref": "#/definitions/Brightness" }
            }
        }
      },
      "post": {
        "description": "Sets the desired brightness level.\n",
        "parameters": [
```

```
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/Brightness" },
              "x-example":
                {
                  "id":         "unique_example_id",
                  "brightness": 10
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "Indicates that the brightness was changed.\nThe new brightness level
is provided in the response.\n",
                "x-example":
                  {
                    "id":         "unique_example_id",
                    "brightness": 10
                  }
                  ,
                "schema": { "$ref": "#/definitions/Brightness" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Brightness" :
              {
          "properties": {
            "brightness": {
              "description": "Quantized representation in the range 0-100 of the current sensed or
set value for Brightness",
              "maximum": 100,
              "minimum": 0,
              "type": "integer"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
```

```
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "brightness"
          ],
          "type": "object"
        }

  }
}
```

B.15.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
brightness	정수	예		Brightness 에

				대한 현재 감지되거나 설정된 값의 0-100 범위의 양자화된 표현

B.15.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/BrightnessResURI		get	post		

B.16 버튼 스위치

B.16.1 개요

이 resource 는 버튼 타입 스위치의 동작을 기술한다. 값은 Boolean 형이다. 'true' 값은 버튼이 눌려진 것을 의미한다. 'false' 값은 버튼이 눌려지지 않은 것을 의미한다.

B.16.2 URI 예

/ButtonResURI

B.16.3 Resource Type

resource type (rt)는 ['oic.r.button']로 정의된다.

B.16.4 Swagger2.0 정의

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

```
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ButtonResURI" : {
      "get": {
        "description": "This resource describes the operation of a button style switch.\nThe value
is a boolean.\nA value of 'true' means that the button is being pushed/pressed.\nA value of 'false'
means that the button is not being pushed/pressed.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":     ["oic.r.button"],
                  "id":     "unique_example_id",
                  "value":  true
                }
                ,
              "schema": { "$ref": "#/definitions/Button" }
            }
        }
      }
    }
  }
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Button" :
            {
        "properties": {
          "precision": {
            "description": "Accuracy granularity of the exposed value",
            "readOnly": true,
            "type": "number"
          },
          "range": {
            "description": "The valid range for the value Property",
            "items": {
              "anyOf": [
                {
                  "type": "number"
                },
                {
                  "type": "integer"
                }
              ]
            },
            "maxItems": 2,
            "minItems": 2,
            "readOnly": true,
            "type": "array"
          },
          "step": {
            "anyOf": [
              {
                "type": "integer"
              },
              {
                "type": "number"
              }
            ],
            "description": "Step value across the defined range",
```

```
              "readOnly": true
            },
            "value": {
              "description": "Status of the button",
              "readOnly": true,
              "type": "boolean"
            }
          },
          "required": [
            "value"
          ]
        }

    }
  }
```

B.16.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	버튼 의 상태
precision	숫자		Read Only	노출된 값의 정확도
range	배열 schema 참조		Read Only	value property 에 대한 유효 범위
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.16.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ButtonResURI		get			

B.17 이산화탄소 센서

B.17.1 개요

이 resource 는 이산화탄소가 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. ‘true’ 값은 이산화탄소가 검출되었음을 의미한다. ‘false’ 값은 이산화탄소가 검출되지 않았음을 의미한다.

B.17.2 URI 예

/CarbonDioxideResURI

B.17.3 Resource Type

resource type (rt)는 ['oic.r.sensor.carbondioxide']로 정의된다.

B.17.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Carbon Dioxide Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CarbonDioxideResURI" : {
      "get": {
        "description": "This resource describes whether carbon dioxide has been sensed or not.\nThe
value is a boolean.\nA value of 'true' means that carbon dioxide has been detected.\nA value of
'false' means that carbon dioxide has not been detected.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":    ["oic.r.sensor.carbondioxide"],
                  "id":    "unique_example_id",
                  "value": true
                }
                ,
              "schema": { "$ref": "#/definitions/CO2" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "CO2" :
            {
        "allOf": [
          {
            "properties": {
              "precision": {
                "description": "Accuracy granularity of the exposed value",
                "readOnly": true,
```

```
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
                "value": {
                  "description": "true = sensed, false = not sensed.",
                  "readOnly": true,
                  "type": "boolean"
                }
              },
              "type": "object"
            }
          ],
          "required": [
            "value"
          ]
        }

    }
  }
```

B.17.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
value	boolean	예	Read Only	true = 감지 false = 미 감지
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

B.17.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/CarbonDioxideResURI		get			

B.18 일산화탄소 센서

B.18.1 개요

이 resource 는 일산화탄소가 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 일산화탄소가 검출되었음을 의미한다. 'false' 값은 일산화탄소가 검출되지 않았음을 의미한다.

B.18.2 URI 예

/CarbonMonoxideResURI

B.18.3 Resource Type

resource type (rt)는 ['oic.r.sensor.carbonmonoxide']로 정의된다.

B.18.4 Swagger2.0 정의

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

```
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":     ["oic.r.sensor.carbonmonoxide"],
                    "id":     "unique_example_id",
                    "value":  true
                  }
                  ,
                "schema": { "$ref": "#/definitions/CO" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "CO" :
              {
          "allOf": [
            {
              "properties": {
                "precision": {
                  "description": "Accuracy granularity of the exposed value",
                  "readOnly": true,
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
                "value": {
                  "description": "true = sensed, false = not sensed.",
                  "readOnly": true,
                  "type": "boolean"
                }
              },
```

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

    }
  }
```

B.18.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열 schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도
value	boolean	예	Read Only	true = 감지 false = 미 감지
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.18.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/CarbonMonoxideResURI		get			

B.19 시계

B.19.1 개요

이 resource 는 시계 및 시간과 관련된 property 를 기술한다. Clock 은 시간 정보이다. Datetime 은 ISO 8601 datetime 형식 (예: "2007-04-05T14:30Z") (Time+Date+Timezone)을 사용한다. Countdown 은 카운트다운 동안 요구되는 초 단위의 총 시간이다. 현재의 datetime data 를 검색한다.

B.19.2 URI 예

/ClockResURI

B.19.3 Resource Type

resource type (rt)는 ['oic.r.clock']로 정의된다.

B.19.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Clock",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ClockResURI" : {
      "get": {
        "description": "This resource describes the properties associated with clock and
time.\nClock is a time information.\nDatetime is using ISO 8601 datetime format (e.g: \"2007-04-
05T14:30Z\") (Time+Date+Timezone)\nCountdown is the desired total seconds for countdown.\nRetrieves
the current datetime data.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":         ["oic.r.clock"],
                  "id":         "unique_example_id",
                  "datetime":  "2015-11-05T14:30Z",
                  "countdown": 0.0
                }
                ,
              "schema": { "$ref": "#/definitions/Clock" }
            }
        }
      },
      "post": {
        "description": "Sets the desired datetime.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Clock" },
            "x-example":
              {
                "id":     "unique_example_id",
                "datetime":  "2015-11-05T14:30Z",
                "countdown": 0.0
              }
          }
        ],
```

```
          "responses": {
              "200": {
                "description" : "Indicates that the datetime value was successfully changed.\nThe new
datetime value is provided in the response.\n",
                "x-example":
                  {
                    "id":     "unique_example_id",
                    "datetime":  "2015-11-05T14:30Z",
                    "countdown": 0.0
                  }
                  ,
                "schema": { "$ref": "#/definitions/Clock" }
              },
              "403": {
                "description" : "Indicates that OIC client sent an invalid property value to the
server.\nThe server responds with the required input representation.\n",
                "x-example":
                  {
                    "id":     "unique_example_id",
                    "datetime":  "2015-11-05T14:30Z",
                    "countdown": 0.0
                  }
                  ,
                "schema": { "$ref": "#/definitions/Clock" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Clock" :
              {
          "properties": {
            "countdown": {
              "description": "Desired total seconds for countdown",
              "minimum": 0,
              "type": "number"
            },
            "datetime": {
              "description": "Using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z, 2007-04-
05T14:30+09:00)",
              "type": "string"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
```

```
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "datetime"
          ],
          "type": "object"
        }

    }
  }
```

B.19.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도
datetime	스트링	예		ISO 8601 datetime 형식 (예: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00)을 사용

step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
countdown	숫자			카운트다운 동안 요구되는 초 단위의 총 시간

B.19.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ClockResURI		get	post		

B.20 자동 화이트 밸런스

B.20.1 개요

이 resource 는 자동 화이트 밸런스의 on/off 기능을 기술한다. 값은 boolean 형이다. 'true'의 AutoWhiteBalance 값은 스위치가 on 인 것을 의미한다. 'false'의 AutoWhiteBalance 값은 스위치가 off 인 것을 의미한다.

B.20.2 URI 예

/AutoWhiteBalanceResURI

B.20.3 Resource Type

resource type (rt)는 ['oic.r.colour.autowhitebalance']로 정의된다.

B.20.4 Swagger2.0 정의

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

```
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AutoWhiteBalanceResURI" : {
      "get": {
        "description": "This resource describes an auto balance on/off feature.\nThe value is a
boolean.\nAn AutoWhiteBalance value of 'true' means that the switch is on.\nAn AutoWhiteBalance
value of 'false' means that the switch is off.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":               ["oic.r.colour.autowhitebalance"],
                  "id":               "unique_example_id",
                  "autoWhiteBalance": false
                }
                ,
              "schema": { "$ref": "#/definitions/AutoWhiteBalance" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/AutoWhiteBalance" },
            "x-example":
              {
                "id":               "unique_example_id",
                "autoWhiteBalance": true
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "id":               "unique_example_id",
                  "autoWhiteBalance": true
                }
                ,
              "schema": { "$ref": "#/definitions/AutoWhiteBalance" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AutoWhiteBalance" :
            {
```

```
            "properties": {
              "autoWhiteBalance": {
                "description": "Status of the Auto White balance",
                "type": "boolean"
              },
              "precision": {
                "description": "Accuracy granularity of the exposed value",
                "readOnly": true,
                "type": "number"
              },
              "range": {
                "description": "The valid range for the value Property",
                "items": {
                  "anyOf": [
                    {
                      "type": "number"
                    },
                    {
                      "type": "integer"
                    }
                  ]
                },
                "maxItems": 2,
                "minItems": 2,
                "readOnly": true,
                "type": "array"
              },
              "step": {
                "anyOf": [
                  {
                    "type": "integer"
                  },
                  {
                    "type": "number"
                  }
                ],
                "description": "Step value across the defined range",
                "readOnly": true
              },
              "value": {
                "anyOf": [
                  {
                    "type": "array"
                  },
                  {
                    "type": "string"
                  },
                  {
                    "type": "boolean"
                  },
                  {
                    "type": "integer"
                  },
                  {
                    "type": "number"
                  },
                  {
                    "type": "object"
                  }
                ],
                "description": "The value sensed or actuated by this Resource"
              }
            },
            "required": [
              "autoWhiteBalance"
            ],
            "type": "object"
          }

      }
```

}

B.20.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
autoWhiteBalance	boolean	예		자동 화이트 밸런스의 상태
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
precision	숫자		Read Only	노출된 값의 정확도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값

B.20.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/AutoWhiteBalanceResURI		get	post		

B.21 채도

B.21.1 개요

이 resource 는 채도 값을 기술한다. 값은 정수이다. coloursaturation 은 [0,100]의 범위를 갖는다. 0 의 coloursaturation 값은 흑백 이미지의 생성을 의미한다. 50 의 coloursaturation 값은 device 고유의 정상적인 컬러 이미지의 생성을 의미한다. 100 의 coloursaturation 값은 device 의 풀 컬러 이미지의 생성을 의미한다.

B.21.2 URI 예

/ColourSaturationResURI

B.21.3 Resource Type

resource type (rt)는 ['oic.r.colour.saturation']로 정의된다.

B.21.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Saturation",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ColourSaturationResURI" : {
      "get": {
        "description": "This resource describes a Colour saturation value.\nThe value is an
integer.\nA coloursaturation has a range of [0,100].\nA coloursaturation value of 0 means producing
black and white images.\nA coloursaturation value of 50 means producing device specific normal
colour images.\nA coloursaturation value of 100 means producing device very full colour images.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":               ["oic.r.colour.saturation"],
                  "id":               "unique_example_id",
                  "colourSaturation": 50
                }
                ,
              "schema": { "$ref": "#/definitions/Saturation" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Saturation" },
            "x-example":
              {
                "id":               "unique_example_id",
                "colourSaturation": 60
              }
          }
        ],
        "responses": {
            "200": {
```

```
                "description" : "",
                "x-example":
                  {
                    "id":                "unique_example_id",
                    "colourSaturation": 60
                  }
                  ,
                "schema": { "$ref": "#/definitions/Saturation" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Saturation" :
              {
          "properties": {
            "colourSaturation": {
              "description": "The colour saturation value",
              "maximum": 100,
              "minimum": 0,
              "type": "integer"
            },
            "id": {
              "description": "Instance ID of this specific resource",
              "maxLength": 64,
              "readOnly": true,
              "type": "string"
            },
            "if": {
              "description": "The interface set supported by this resource",
              "items": {
                "enum": [
                  "oic.if.baseline",
                  "oic.if.ll",
                  "oic.if.b",
                  "oic.if.lb",
                  "oic.if.rw",
                  "oic.if.r",
                  "oic.if.a",
                  "oic.if.s"
                ],
                "type": "string"
              },
              "minItems": 1,
              "readOnly": true,
              "type": "array"
            },
            "n": {
              "description": "Friendly name of the resource",
              "maxLength": 64,
              "readOnly": true,
              "type": "string"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
```

```
                    {
                      "type": "number"
                    },
                    {
                      "type": "integer"
                    }
                  ]
                },
                "maxItems": 2,
                "minItems": 2,
                "readOnly": true,
                "type": "array"
              },
              "rt": {
                "description": "Resource Type",
                "items": {
                  "maxLength": 64,
                  "type": "string"
                },
                "minItems": 1,
                "readOnly": true,
                "type": "array"
              },
              "step": {
                "anyOf": [
                  {
                    "type": "integer"
                  },
                  {
                    "type": "number"
                  }
                ],
                "description": "Step value across the defined range",
                "readOnly": true
              },
              "value": {
                "anyOf": [
                  {
                    "type": "array"
                  },
                  {
                    "type": "string"
                  },
                  {
                    "type": "boolean"
                  },
                  {
                    "type": "integer"
                  },
                  {
                    "type": "number"
                  },
                  {
                    "type": "object"
                  }
                ],
                "description": "The value sensed or actuated by this Resource"
              }
            },
            "required": [
              "colourSaturation"
            ],
            "type": "object"
          }

      }
    }
```


B.21.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
if	배열: schema 참조		Read Only	이 resource 에 의해 지원되는 인터페이스 집합
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
id	스트링		Read Only	특정 resource 의 개체 ID
colourSaturation	정수	예		채도 값
rt	배열: schema 참조		Read Only	Resource Type
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
n	스트링		Read Only	resource 의 친근한 명칭
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값

B.21.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ColourSaturationResURI		get	post		

B.22 색채

B.22.1 개요

이 resource 는 색채 규약을 사용하여 색을 기술한다. Property 는 hue, saturation, csc, 및 ct 이다. Hue 및 saturation 은 CIECAM02 모델 정의 ([CIE CIE159:2004] 참조)에 의해 정의된 정수 값이다.

csc 는 CIE 색 공간 내의 색 공간 좌표이다. 배열 내의 제 1 항목은 X 좌표이다. 배열 내의 제 2 항목은 Y 좌표이다. ct 는 미레드(Mired) 색 온도이다. chroma 규약을 사용하여 컬러를 제공한다.

B.22.2 URI 예

/ColourChromaResURI

B.22.3 Resource Type

resource type (rt)는 ['oic.r.colour.chroma']로 정의된다.

B.22.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Chroma",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ColourChromaResURI" : {
      "get": {
        "description": "This resource describes the colour using chroma conventions.\nProperties
are hue, saturation, csc, and ct.\nHue and saturation are integer values as defined by the CIECAM02
model definition (see reference [CIE CIE159:2004]).\ncsc is the colour space coordinates in CIE
colour space.\n  The first item in the array is the X coordinate.\n  The second item in the array
is the Y coordinate.\nct is the Mired colour temperature.\nProvides the colour using chroma
conventions.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":         ["oic.r.colour.chroma"],
                  "id":         "unique_example_id",
                  "hue":        13088,
                  "saturation": 212,
                  "csc":        [0.41,0.51],
                  "ct":         457
                }
                ,
```

```
                "schema": { "$ref": "#/definitions/ColourChroma" }
              }
          }
        },
        "post": {
          "description": "Sets current colour chroma values\n",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/ColourChroma" },
              "x-example":
                {
                  "id":         "unique_example_id",
                  "hue":        13088,
                  "saturation": 212,
                  "csc":        [0.41,0.51],
                  "ct":         457
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":          "unique_example_id",
                    "hue":         13088,
                    "saturation":  212,
                    "csc":         [0.41,0.51],
                    "ct":          467
                  }
                  ,
                "schema": { "$ref": "#/definitions/ColourChroma" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "ColourChroma" :
              {
          "properties": {
            "csc": {
              "description": "X and Y coordinates of the colour in CIE colour space",
              "items": {
                "maximum": 1,
                "minimum": 0,
                "type": "number"
              },
              "maxItems": 2,
              "minItems": 2,
              "type": "array"
            },
            "ct": {
              "description": "Mired colour temperature",
              "type": "integer"
            },
            "hue": {
              "description": "Hue as defined by the CIECAM02 model definition",
              "type": "integer"
```

```
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "saturation": {
              "description": "Saturation as defined by the CIECAM02 model definition",
              "type": "integer"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "hue",
            "saturation",
            "csc"
          ],
          "type": "object"
        }
```



```
    }
  }
```

B.22.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
saturation	정수	예		CIECAM02 모델 정의에 의해 정의된 채도
ct	정수			미레드(Mired) 색온도
precision	숫자		Read Only	노출된 값의 정확도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
csc	배열: schema 참조	예		CIE 색 공간 내의 X 및 Y 좌표
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
hue	정수	예		CIECAM02 모델 정의에 의해 정의된 색조

B.22.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ColourChromaResURI		get	post		

B.23 컬러 RGB

B.23.1 개요

이 resource 는 정수의 배열로 표현된 RGB 공간 내의 실제 컬러를 규정한다. 각 컬러 값은 Red, Green, Blue 성분으로 기술된다. 이들 컬러 값은 정수 값의 배열 ([R,G,B])로 인코딩된다.

구성 요소 별 최소 및 최대 컬러 값은 (oic.r.baseresource 로부터) 범위에 의해 기술될 수 있다. (oic.r.baseresource 로부터) 범위가 생략되면 범위는 [0,255]이다. RGB 형식의 현재 컬러를 검색한다. 값은 R, G, B 순서의 정수 값의 배열이다.

B.23.2 URI 예

/ColourRGBResURI

B.23.3 Resource Type

resource type (rt)는 ['oic.r.colour.rgb']로 정의된다.

B.23.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour RGB",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ColourRGBResURI" : {
      "get": {
        "description": "This resource specifies the actual colour in the RGB space represented as
an array of integers.\nEach colour value is described with a Red, Green, Blue component.\nThese
colour values are encoded as an array of integer values ([R,G,B]).\nThe minimum and maximum colour
value per component may be described by range (from oic.r.baseresource).\nWhen range (from
oic.r.baseresource) is omitted, then the range is [0,255].\nRetrieves the current colour in
RGB.\nValue is an array of integer values in the order R,G,B.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":       ["oic.r.colour.rgb"],
                  "id":       "unique_example_id",
                  "rgbValue": [255,255,255],
```

```
                    "range":    [0,255]
                  }
                  ,
                "schema": { "$ref": "#/definitions/ColourRGB" }
              }
          }
        },
        "post": {
          "description": "Sets the current colourRGB value\n",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/ColourRGB" },
              "x-example":
                {
                  "id":       "unique_example_id",
                  "rgbValue": [255,0,0]
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":       "unique_example_id",
                    "rgbValue": [255,0,0]
                  }
                  ,
                "schema": { "$ref": "#/definitions/ColourRGB" }
              }
          }
        }
      }
    }
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "ColourRGB" :
              {
          "properties": {
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
```

```
            },
            "rgbValue": {
              "description": "RGB value; the first item is the R, second the G, third the B.",
              "items": {
                "type": "integer"
              },
              "maxItems": 3,
              "minItems": 3,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "rgbValue"
          ],
          "type": "object"
        }

    }
  }
```

B.23.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
rgbValue	배열: schema 참조	예		RGB 값. 제 1 항목은 R, 제 2

				항목은 G, 제 3 항목은 B 이다.
precision	숫자		Read Only	노출된 값의 정확도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값

B.23.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ColourRGBResURI		get	post		

B.24 소모품

B.24.1 개요

이 resource 는 필터 재료, 프린터 토너 등과 같은 소모품을 규정한다. Type 은 Smart Home Device 스펙에 의해 정의된 바와 같이 소모품을 정의하는 열거 형이다. Remaining 은 남아있는 수명의 백분율을 나타내는 정수이다. Orderpercentage 는 제조자가 교체 또는 충전을 권하는 백분율 수명을 나타내는 정수이다. url 은 소모품에 대해 미래의 정보를 얻을 수 있는 URL 을 포함하는 스트링이다.

B.24.2 URI 예

/ConsumableResURI

B.24.3 Resource Type

resource type (rt)는 ['oic.r.consumable']로 정의된다.

B.24.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Consumable",
    "version": "OCF-v1.0.0-20160620",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
```

```
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ConsumableResURI" : {
      "get": {
        "description": "This resource specifies a thing that can be consumed such as filter
material, printer toner etc\nThe type is an enumeration defining the thing being consumed as
defined by the Smart Home Device Specification\nThe remaining is an integer capturing the
percentatge remaining life\nThe orderpercentage is an integer capturing the percentage life at
which replacement or replenishment is recommended by the manufacturer\nThe url is a string
containing a URL at which further information may be obtained with respect to the consumable\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":               ["oic.r.consumable"],
                  "id":               "unique_example_id",
                  "typeofconsumable": "tonerBlack",
                  "remaining":        20,
                  "orderpercentage":  10,
                  "url":              "http://myreorderURL"
                }
                ,
              "schema": { "$ref": "#/definitions/consumable" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "consumable" :
            {
        "properties": {
          "orderpercentage": {
            "description": "Percentage at which re-ordering is recommended by the manufacturer",
            "readOnly": true,
            "type": "integer"
          },
          "precision": {
            "description": "Accuracy granularity of the exposed value",
            "readOnly": true,
            "type": "number"
          },
          "range": {
```

```
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "remaining": {
              "description": "Percentage remaining lifespan.",
              "maximum": 100,
              "minimum": 0,
              "readOnly": true,
              "type": "integer"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "typeofconsumable": {
              "description": "Thing that is being consumed.",
              "readOnly": true,
              "type": "string"
            },
            "url": {
              "description": "URL at which additional ordering information may be found.",
              "format": "uri",
              "readOnly": true,
              "type": "string"
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
```

```
            "typeofconsumable",
            "remaining"
          ],
          "type": "object"
        }

    }
  }
```

B.24.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
url	스트링		Read Only	추가적인 주문 정보를 찾을 수 있는 URL.
remaining	정수	예	Read Only	나머지 수명의 백분율
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
orderpercentage	정수		Read Only	제조자가 재주문을 권고하는 백분율
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
typeofconsumable	스트링	예	Read Only	소모되는 것.
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

B.24.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ConsumableResURI		get			

B.25 소모품

B.25.1 개요

이 resource 는 필터 재료, 프린터 토너 등과 같은 소모품을 규정한다. Resource 는 개별적인 소모품을 상술하는 oic.r.consumable 개체의 collection 이다. supportedconsumables 는 Resource 의 본 개체가 지원하는 소모품 유형의 집합이다.

B.25.2 URI 예

/ConsumablesBaselineResURI

B.25.3 Resource Type

resource type (rt)는 ['oic.r.consumablecollection', 'oic.wk.col']로 정의된다.

B.25.4 Swagger2.0 정의

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

```
                "schema": { "$ref": "#/definitions/consumables-ll" }
              }
          }
        }
      },
      "/ConsumablesBaselineResURI" : {
        "get": {
          "description": "This resource specifies things that can be consumed such as filter material,
printer toner etc\nThe resource is a collection of instances of oic.r.consumable detailing the
individual consumed items\nsupportedconsumables is the set of consumable types that this instance
of the Resource supports\n",
          "parameters": [
            {"$ref": "#/parameters/interface-baseline"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":                ["oic.r.consumablecollection","oic.wk.col"],
                    "id":                "unique_example_id",
                    "rts":               ["oic.r.consumable","oic.r.value.conditional"],
                    "supportedconsumables": ["tonerBlack","tonerCyan","tonerMagenta","tonerYellow"],
                    "links": [
                      {"href": "/myTonerBlackResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                      {"href": "/myTonerCyanResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                      {"href": "/myTonerMagentaResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                      {"href": "/myTonerYellowResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
                    ]
                  }
                  ,
                "schema": { "$ref": "#/definitions/consumables" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface-ll" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.ll"]
      },
      "interface-baseline" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.baseline"]
      }
    },
    "definitions": {
      "consumables-ll" :
              {
          "allOf": [
            {
              "description": "All forms of links in a collection",
              "oneOf": [
                {
                  "description": "A set (array) of simple or individual OIC Links. In addition to
properties required for an OIC Link, the identifier for that link in this set is also required",
                  "items": {
                    "properties": {
                      "anchor": {
                        "description": "This is used to override the context URI e.g. override the
URI of the containing collection",
                        "format": "uri",
```

```
                        "maxLength": 256,
                        "type": "string"
                      },
                      "di": {
                        "description": "Unique identifier for device (UUID)",
                        "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-
fA-F0-9]{12}$",
                        "type": "string"
                      },
                      "eps": {
                        "description": "the Endpoint information of the target Resource",
                        "items": {
                          "properties": {
                            "ep": {
                              "description": "URI with Transport Protocol Suites + Endpoint Locator
as specified in 10.2.1",
                              "format": "uri",
                              "type": "string"
                            },
                            "pri": {
                              "description": "The priority among multiple Endpoints as specified in
10.2.3",
                              "minimum": 1,
                              "type": "integer"
                            }
                          },
                          "type": "object"
                        },
                        "type": "array"
                      },
                      "href": {
                        "description": "This is the target URI, it can be specified as a Relative
Reference or fully-qualified URI. Relative Reference should be used along with the di parameter to
make it unique.",
                        "format": "uri",
                        "maxLength": 256,
                        "type": "string"
                      },
                      "if": {
                        "description": "The interface set supported by this resource",
                        "items": {
                          "enum": [
                            "oic.if.baseline",
                            "oic.if.ll",
                            "oic.if.b",
                            "oic.if.rw",
                            "oic.if.r",
                            "oic.if.a",
                            "oic.if.s"
                          ],
                          "type": "string"
                        },
                        "minItems": 1,
                        "type": "array"
                      },
                      "ins": {
                        "description": "The instance identifier for this web link in an array of web
links - used in collections",
                        "oneOf": [
                          {
                            "description": "An ordinal number that is not repeated - must be unique
in the collection context",
                            "type": "integer"
                          },
                          {
                            "description": "Any unique string including a URI",
                            "format": "uri",
                            "maxLength": 256,
                            "type": "string"
                          },
                          {
```

```
                            "description": "Unique identifier (UUID)",
                            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-
[a-fA-F0-9]{12}$",
                            "type": "string"
                          }
                        ]
                      },
                      "p": {
                        "description": "Specifies the framework policies on the Resource referenced
by the target URI",
                        "properties": {
                          "bm": {
                            "description": "Specifies the framework policies on the Resource
referenced by the target URI for e.g. observable and discoverable",
                            "type": "integer"
                          }
                        },
                        "required": [
                          "bm"
                        ],
                        "type": "object"
                      },
                      "rel": {
                        "description": "The relation of the target URI referenced by the link to the
context URI",
                        "oneOf": [
                          {
                            "default": [
                              "hosts"
                            ],
                            "items": {
                              "maxLength": 64,
                              "type": "string"
                            },
                            "minItems": 1,
                            "type": "array"
                          },
                          {
                            "default": "hosts",
                            "maxLength": 64,
                            "type": "string"
                          }
                        ]
                      },
                      "rt": {
                        "description": "Resource Type",
                        "items": {
                          "maxLength": 64,
                          "type": "string"
                        },
                        "minItems": 1,
                        "type": "array"
                      },
                      "title": {
                        "description": "A title for the link relation. Can be used by the UI to
provide a context",
                        "maxLength": 64,
                        "type": "string"
                      },
                      "type": {
                        "default": "application/cbor",
                        "description": "A hint at the representation of the resource referenced by
the target URI. This represents the media types that are used for both accepting and emitting",
                        "items": {
                          "maxLength": 64,
                          "type": "string"
                        },
                        "minItems": 1,
                        "type": "array"
                      }
                    },
```

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

      ,
      "consumables" :
              {
          "allOf": [
            {
              "description": "A collection is a set (array) of tagged-link or set (array) of simple
links along with additional properties to describe the collection itself",
              "properties": {
                "di": {
                  "description": "The device ID which is an UUIDv4 string; used for backward
compatibility with Spec A definition of /oic/res",
                  "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-
9]{12}$",
                  "type": "string"
                },
                "drel": {
                  "description": "When specified this is the default relationship to use when an OIC
Link does not specify an explicit relationship with *rel* parameter",
                  "type": "string"
                },
                "id": {
                  "anyOf": [
                    {
                      "description": "A number that is unique to that collection; like an ordinal
number that is not repeated",
                      "type": "integer"
                    },
                    {
                      "description": "A unique string that could be a hash or similarly unique",
                      "type": "string"
                    },
                    {
                      "description": "A unique string that could be a UUIDv4",
                      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-
F0-9]{12}$",
                      "type": "string"
                    }
                  ],
                  "description": "ID for the collection. Can be an value that is unique to the use
context or a UUIDv4"
                },
                "links": {
                  "description": "All forms of links in a collection",
                  "oneOf": [
                    {
                      "description": "A set (array) of simple or individual OIC Links. In addition to
properties required for an OIC Link, the identifier for that link in this set is also required",
                      "items": {
                        "properties": {
                          "anchor": {
                            "description": "This is used to override the context URI e.g. override
the URI of the containing collection",
                            "format": "uri",
                            "maxLength": 256,
                            "type": "string"
                          },
                          "di": {
```

```
                              "description": "Unique identifier for device (UUID)",
                              "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-
[a-fA-F0-9]{12}$",
                              "type": "string"
                            },
                            "eps": {
                              "description": "the Endpoint information of the target Resource",
                              "items": {
                                "properties": {
                                  "ep": {
                                    "description": "URI with Transport Protocol Suites + Endpoint
Locator as specified in 10.2.1",
                                    "format": "uri",
                                    "type": "string"
                                  },
                                  "pri": {
                                    "description": "The priority among multiple Endpoints as specified
in 10.2.3",
                                    "minimum": 1,
                                    "type": "integer"
                                  }
                                },
                                "type": "object"
                              },
                              "type": "array"
                            },
                            "href": {
                              "description": "This is the target URI, it can be specified as a Relative
Reference or fully-qualified URI. Relative Reference should be used along with the di parameter to
make it unique.",
                              "format": "uri",
                              "maxLength": 256,
                              "type": "string"
                            },
                            "if": {
                              "description": "The interface set supported by this resource",
                              "items": {
                                "enum": [
                                  "oic.if.baseline",
                                  "oic.if.ll",
                                  "oic.if.b",
                                  "oic.if.rw",
                                  "oic.if.r",
                                  "oic.if.a",
                                  "oic.if.s"
                                ],
                                "type": "string"
                              },
                              "minItems": 1,
                              "type": "array"
                            },
                            "ins": {
                              "description": "The instance identifier for this web link in an array of
web links - used in collections",
                              "oneOf": [
                                {
                                  "description": "An ordinal number that is not repeated - must be
unique in the collection context",
                                  "type": "integer"
                                },
                                {
                                  "description": "Any unique string including a URI",
                                  "format": "uri",
                                  "maxLength": 256,
                                  "type": "string"
                                },
                                {
                                  "description": "Unique identifier (UUID)",
                                  "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-
9]{4}-[a-fA-F0-9]{12}$",
                                  "type": "string"
```

```
                              }
                            ]
                          },
                          "p": {
                            "description": "Specifies the framework policies on the Resource
referenced by the target URI",
                            "properties": {
                              "bm": {
                                "description": "Specifies the framework policies on the Resource
referenced by the target URI for e.g. observable and discoverable",
                                "type": "integer"
                              }
                            },
                            "required": [
                              "bm"
                            ],
                            "type": "object"
                          },
                          "rel": {
                            "description": "The relation of the target URI referenced by the link to
the context URI",
                            "oneOf": [
                              {
                                "default": [
                                  "hosts"
                                ],
                                "items": {
                                  "maxLength": 64,
                                  "type": "string"
                                },
                                "minItems": 1,
                                "type": "array"
                              },
                              {
                                "default": "hosts",
                                "maxLength": 64,
                                "type": "string"
                              }
                            ]
                          },
                          "rt": {
                            "description": "Resource Type",
                            "items": {
                              "maxLength": 64,
                              "type": "string"
                            },
                            "minItems": 1,
                            "type": "array"
                          },
                          "title": {
                            "description": "A title for the link relation. Can be used by the UI to
provide a context",
                            "maxLength": 64,
                            "type": "string"
                          },
                          "type": {
                            "default": "application/cbor",
                            "description": "A hint at the representation of the resource referenced
by the target URI. This represents the media types that are used for both accepting and emitting",
                            "items": {
                              "maxLength": 64,
                              "type": "string"
                            },
                            "minItems": 1,
                            "type": "array"
                          }
                        },
                        "required": [
                          "href",
                          "rt",
                          "if"
```

```
                        ],
                        "type": "object"
                      },
                      "type": "array"
                    }
                  ]
                },
                "rts": {
                  "description": "Defines the list of allowable resource types (for Target and
anchors) in links included in the collection; new links being created can only be from this list",
                  "items": {
                    "maxLength": 64,
                    "type": "string"
                  },
                  "minItems": 1,
                  "readOnly": true,
                  "type": "array"
                }
              },
              "type": "object"
            },
            {
              "properties": {
                "id": {
                  "description": "Instance ID of this specific resource",
                  "maxLength": 64,
                  "readOnly": true,
                  "type": "string"
                },
                "if": {
                  "description": "The interface set supported by this resource",
                  "items": {
                    "enum": [
                      "oic.if.baseline",
                      "oic.if.ll",
                      "oic.if.b",
                      "oic.if.lb",
                      "oic.if.rw",
                      "oic.if.r",
                      "oic.if.a",
                      "oic.if.s"
                    ],
                    "type": "string"
                  },
                  "minItems": 1,
                  "readOnly": true,
                  "type": "array"
                },
                "n": {
                  "description": "Friendly name of the resource",
                  "maxLength": 64,
                  "readOnly": true,
                  "type": "string"
                },
                "rt": {
                  "items": {
                    "enum": [
                      "oic.r.consumablecollection",
                      "oic.wk.col"
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "type": "array",
                  "uniqueItems": true
                },
                "rts": {
                  "items": {
                    "anyOf": [
                      {
                        "enum": [
```

```
                          "oic.r.consumable",
                          "oic.r.value.conditional"
                        ]
                      },
                      {
                        "enum": [
                          "oic.r.consumable"
                        ]
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 1,
                  "type": "array",
                  "uniqueItems": true
                },
                "supportedconsumables": {
                  "description": "Array of possible consumables the device measures.",
                  "items": {
                    "type": "string"
                  },
                  "readOnly": true,
                  "type": "array"
                }
              }
            }
          ],
          "type": "object"
        }

    }
  }
```

B.25.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
if	배열: schema 참조		예	이 resource 에 의해 지원되는 인터페이스 집합
href	스트링	예		이것은 target URI 이고, 상대 참조 또는 완전한 URI 로 규정될 수 있다. 상대 참조는 고유하도록 di 파라미터와 함께 사용되어야 한다.
type	배열: schema 참조			target URI 에 의해 참조되는 resource 의 표현에 대한 힌트. 수락 및

				방출 모두를 위해 사용되는 Media 유형을 나타낸다.
rt	배열: schema 참조	예		Resource Type
title	스트링			link 관계에 대한 제목. 컨텍스트를 제공하기 위하여 UI 에 의해 사용될 수 있다.
anchor	스트링			이것은 컨텍스트 URI 를 무시하기 위하여, 예를 들어, collection 을 포함하는 URI 를 무시하기 위해 사용된다.
eps	배열: schema 참조			타깃 Resource 의 Endpoint 정보
di	스트링			Device 에 대한 고유 식별자 (UUID)
p	객체: schema 참조			타깃 URI 에 의해 참조되는 Resource 에 대한 framework 정책을 규정한다.
rel	복수 타입: schema 참조			link 에 의해 참조되는 target URI 의 컨텍스트 URI 에 대한 관계
ins	복수 타입: schema 참조			collection 에서 사용된 web link 배열 내의 web link 에 대한 개체

				식별자
if	배열: schema 참조	예	Read Only	이 resource 에 의해 지원되는 인터페이스 집합
n	스트링		Read Only	resource 의 친근한 명칭
rts	배열: schema 참조			
rt	배열: schema 참조	예		
supportedconsumables	배열: schema 참조		Read Only	device 가 판단 가능한 소모품의 배열
id	스트링		Read Only	특정 resource 의 개체 ID

B.25.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ConsumablesBaselineResURI		get			

B.26 접촉 센서

B.26.1 개요

이 resource 는 접촉 센서가 개방 또는 단락 되었는지를 기술한다. 전형적인 사용은 창 또는 도어가 개방된 것을 검출하는 보안 시스템의 경우이다. 값은 Boolean 형이다. 'true' 값은 접촉이 끊어졌음(개방)을 의미한다. 'false' 값은 접촉이 이루어졌음(폐쇄)을 의미한다.

B.26.2 URI 예

/ContactResURI

B.26.3 Resource Type

resource type (rt)는 ['oic.r.sensor.contact']로 정의된다.

B.26.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Contact Sensor",
```

```
      "version": "v1.1.0-20160519",
      "license": {
        "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
        "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
      }
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
      "/ContactResURI" : {
        "get": {
          "description": "This resource describes whether a contact sensor has been tripped or
not.\nTypical use case is in Security Systems detecting window or door open.\nThe value is a
boolean.\nA value of 'true' means that contact has been broken (open).\nA value of 'false' means
that contact is in place (closed).\n",
          "parameters": [
            {"$ref": "#/parameters/interface"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":     ["oic.r.sensor.contact"],
                    "id":     "unique_example_id",
                    "value":  true
                  }
                  ,
                "schema": { "$ref": "#/definitions/Contact" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Contact" :
              {
          "allOf": [
            {
              "properties": {
                "precision": {
                  "description": "Accuracy granularity of the exposed value",
                  "readOnly": true,
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
```

```
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
                "value": {
                  "description": "true = sensed, false = not sensed.",
                  "readOnly": true,
                  "type": "boolean"
                }
              },
              "type": "object"
            }
          ],
          "required": [
            "value"
          ]
        }

    }
  }
```

B.26.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
value	boolean	예	Read Only	true = 감지 false = 미 감지
precision	숫자		Read Only	노출된 값의 정확도

B.26.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify

/ContactResURI		get			

B.27 지연 제상

B.27.1 개요

이 resource 는 US Energy Star 스펙에 의해 정의된 지연 제상 기능을 기술한다. Energy Star Refrigerator Requirements Version 5 섹션 4)G(https://www.energystar.gov/sites/default/files/specs//private/ENERGY%20STAR%20Final%20Version%205.0%20Residential%20Refrigerators%20and%20Freezers%20Program%20Requirements.pdf)를 참조하기 바란다.

Status 는 기능이 on 인지를 나타내는 Boolean 형이고, off 이면, Defrost 는 정상 device 동작의 일부로 예정된다. oir.r.time.period (mandatory)로부터의 startTime 은 제상이 발생하지 않아야 하는 간격에 대한 ISO8601 인코딩된 start time 이다.

oir.r.time.period 로부터의 stopTime 은 제상이 발생하지 않아야 하는 간격에 대한 ISO8601 인코딩된 stop time 이다. 추가적인 범위 제한을 갖는 oir.r.time.period 로부터의 interval 은 startTime 에서 시작하는 기간의 분 단위의 시간이다(만약 존재하지 않는다면, default 는 240 이다). stopTime 과 interval 은 상호 배타적이라 둘 다가 하나의 Resource instance 내에서 존재할 수는 없다. 현재의 지연 제상 기능 상태를 검색한다.

B.27.2 URI 예

/DelayDefrostResURI

B.27.3 Resource Type

resource type (rt)는 ['oic.r.delaydefrost']로 정의된다.

B.27.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Delay Defrost",
    "version": "OCF_v1.0.0-2016____",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
```

```
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/DelayDefrostResURI" : {
      "get": {
        "description": "This resource describes the delay defrost function as defined by the US
Energy Star Specifications.\nSee Energy Star Refrigerator Requirements Version 5 Section
4)G\n(https://www.energystar.gov/sites/default/files/specs//private/ENERGY%20STAR%20Final%20Version
%205.0%20Residential%20Refrigerators%20and%20Freezers%20Program%20Requirements.pdf)\nThe status is
a boolean indicating whether the function is on, if off then defrost is scheduled as part of normal
device operation.\nstartTime, from oir.r.time.period (mandatory) is an ISO8601 encoded start time
for the interval in which defrost shall not occur.\nstopTime, from oic.r.time.period is an ISO8601
encoded stop time for the interval in which defrost shall not occur.\ninterval, from
oic.r.time.period with additional range restrictions is the time in minutes of the period that
starts at starttime (if not present the default is 240).\nstopTime and interval are mutually
exlusive; they cannot both be present in a Resource instance\nRetrieves the current Delay Defrost
function status\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":     ["oic.r.delaydefrost"],
                  "id":     "unique_example_id",
                  "startTime":  "06:00Z",
                  "status": false
                }
                ,
              "schema": { "$ref": "#/definitions/DelayDefrost" }
            }
        }
      },
      "post": {
        "description": "Activates the desired Delay Defrost functions\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/DelayDefrost" },
            "x-example":
              {
                "id":         "unique_example_id",
                "status":     true,
                "startTime":  "06:00Z",
                "interval":   180
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the DelayDefrost function was changed.\nThe new
representation may be provided in the response.\n",
              "x-example":
                {
                  "id":         "unique_example_id",
                  "status":     true,
                  "startTime":  "06:00Z",
                  "interval":   180
```

```
                  }
                  ,
                "schema": { "$ref": "#/definitions/DelayDefrost" }
              },
              "403": {
                "description" : "Indicates the update to the time properties was rejected.\nReasons
for rejection:\n  invalid time entry\nThe current unchanged representation may be provided in the
response.\n",
                "x-example":
                  {
                    "id":         "unique_example_id",
                    "status":     true,
                    "startTime":  "06:00Z",
                    "interval":   180
                  }
                  ,
                "schema": { "$ref": "#/definitions/DelayDefrost" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "DelayDefrost" :
              {
          "allOf": [
            {
              "properties": {
                "interval": {
                  "description": "Time interval in minutes after the startTime, if present stopTime
cannot be present",
                  "type": "integer"
                },
                "startTime": {
                  "description": "Start time for the time period",
                  "type": "string"
                },
                "stopTime": {
                  "description": "Stop time for the time period, if present interval cannot be
present",
                  "type": "string"
                }
              },
              "required": [
                "startTime"
              ],
              "type": "object"
            },
            {
              "properties": {
                "interval": {
                  "default": 240,
                  "description": "Defrost interval as defined by Energy Star",
                  "maximum": 1440,
                  "minimum": 1,
                  "type": "integer"
                },
                "precision": {
                  "description": "Accuracy granularity of the exposed value",
                  "readOnly": true,
                  "type": "number"
                },
                "range": {
```

```
                    "description": "The valid range for the value Property",
                    "items": {
                      "anyOf": [
                        {
                          "type": "number"
                        },
                        {
                          "type": "integer"
                        }
                      ]
                    },
                    "maxItems": 2,
                    "minItems": 2,
                    "readOnly": true,
                    "type": "array"
                  },
                  "status": {
                    "description": "Indicates whether any supported delay defrost function is active",
                    "type": "boolean"
                  },
                  "step": {
                    "anyOf": [
                      {
                        "type": "integer"
                      },
                      {
                        "type": "number"
                      }
                    ],
                    "description": "Step value across the defined range",
                    "readOnly": true
                  },
                  "value": {
                    "anyOf": [
                      {
                        "type": "array"
                      },
                      {
                        "type": "string"
                      },
                      {
                        "type": "boolean"
                      },
                      {
                        "type": "integer"
                      },
                      {
                        "type": "number"
                      },
                      {
                        "type": "object"
                      }
                    ],
                    "description": "The value sensed or actuated by this Resource"
                  }
                },
                "required": [
                  "status"
                ]
              }
            ],
            "type": "object"
          }

      }
    }
```


B.27.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
interval	정수			Energy Star 에 의해 정의된 제상 간격
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
status	boolean	예		지원된 임의의 지연 제상 기능이 활성인지를 나타낸다
precision	숫자		Read Only	노출된 값의 정확도

B.27.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/DelayDefrostResURI		get	post		

B.28 조광

B.28.1 개요

이 resource 는 조광 기능을 기술한다. 값은 현재의 조광 레벨을 나타내는 정수이다. (oic.r.baseresource 로부터) 증분이 존재하면, 조광 값 간의 증가를 나타낸다.

(oic.r.baseresource 로부터) 범위가 생략되면 범위는 [0,100]이다. 0 의값은 완전히 어두운 것을 의미하고 100 의 값은 조광을 적용하지 않는 상태를 나타낸다. 현재의 조광 레벨을 검색한다.

B.28.2 URI 예

/DimmingResURI

B.28.3 Resource Type

resource type (rt)는 ['oic.r.light.dimming']으로 정의된다.

B.28.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Dimming",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/DimmingResURI" : {
      "get": {
        "description": "This resource describes a dimming function.\nThe value is an integer
showing the current dimming level.\nIf step (from oic.r.baseresource) is present then it represents
the increment between dimmer values.\nWhen range (from oic.r.baseresource) is omitted, then the
range is [0,100].\nA value of 0 means total dimming; a value of 100 means no dimming.\nRetrieves
the current dimming level.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":             ["oic.r.light.dimming"],
                  "id":             "unique_example_id",
                  "dimmingSetting": 30,
                  "step":           5,
                  "range":          [0,100]
                }
                ,
              "schema": { "$ref": "#/definitions/Dimming" }
            }
        }
      },
      "post": {
        "description": "Sets the desired dimming level.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Dimming" },
            "x-example":
```

```
                {
                  "id":             "unique_example_id",
                  "dimmingSetting": 40
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "Indicates that the dimming was changed.\nThe new dimming level is
provided in the response.\n",
                "x-example":
                  {
                    "id":             "unique_example_id",
                    "dimmingSetting": 40
                  }
                  ,
                "schema": { "$ref": "#/definitions/Dimming" }
              },
              "403": {
                "description" : "This response is generated by the OIC Server when the client
sends:\n  An update with an out of range property value for dimmingSetting.\nThe server responds
with the current resource representation.\n",
                "x-example":
                  {
                    "id":             "unique_example_id",
                    "dimmingSetting": 40
                  }
                  ,
                "schema": { "$ref": "#/definitions/Dimming" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Dimming" :
              {
          "properties": {
            "dimmingSetting": {
              "description": "Current dimming value",
              "type": "integer"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
```

```
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "dimmingSetting"
          ],
          "type": "object"
        }

    }
  }
```

B.28.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
dimmingSetting	정수	예		현재의 dimming value
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도

step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.28.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/DimmingResURI		get	post		

B.29 도어

B.29.1 개요

이 resource 는 도어의 개방 상태를 기술한다. 도어는 openState (Open/Closed), openDuration (ISO 8601 Time), 및 openAlarm (boolean)에 의해 모델링 된다. 개방 상태에 대해, 값 'Open'은 도어가 개방된 것을 나타낸다.

값 'Closed'는 도어가 닫힌 것을 나타낸다. openDuration 의 type 은 ISO 8601 Time 인코딩된 스트링이다. openAlarm 값 'true' 는 개방 알람이 설정되어 있음을 나타낸다. openAlarm 값 'false'는 개방 알람이 해제되어 있음을 나타낸다. 도어의 상태를 검색한다.

B.29.2 URI 예

/DoorResURI

B.29.3 Resource Type

resource type (rt)는 ['oic.r.door']로 정의된다.

B.29.4 Swagger2.0 정의

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

```
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
      "/DoorResURI" : {
        "get": {
          "description": "This resource describes the open state of the door.\nA door is modelled by
means of openState (Open/Closed), openDuration (ISO 8601 Time), and openAlarm (boolean).\nFor
openState, the value 'Open' indicates the door is open.\nThe value 'Closed' indicates the door is
closed.\nThe type of openDuration is an ISO 8601 Time encoded string.\nThe openAlarm value 'true'
indicates that the open alarm is active.\nThe openAlarm value 'false' indicates that open alarm is
not active.\nretrieves the state of the Door.",
          "parameters": [
            {"$ref": "#/parameters/interface-all"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt" :          ["oic.r.door"],
                    "id":           "unique_example_id",
                    "openState":    "Open",
                    "openDuration": "P0Y0M0DT2H25M5S",
                    "openAlarm":    true
                  }
                  ,
                "schema": { "$ref": "#/definitions/Door" }
              }
          }
        },
        "post": {
          "description": "Sets the current Door properties.\nThe only property that can be set as
part of an update operation is\n  the openAlarm.\nThis can be made active (true) or inactive
(false)\n",
          "parameters": [
            {"$ref": "#/parameters/interface-actuator"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/DoorUpdate" },
              "x-example":
                {
                  "id":         "unique_example_id",
                  "openAlarm":  false
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":         "unique_example_id",
                    "openAlarm":  false
                  }
                  ,
                "schema": { "$ref": "#/definitions/DoorUpdate" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface-actuator" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
```

```
      },
      "interface-all" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Door" :
              {
          "properties": {
            "openAlarm": {
              "description": "The state of the door open alarm",
              "type": "boolean"
            },
            "openDuration": {
              "description": "The time duration the door has been open",
              "readOnly": true,
              "type": "string"
            },
            "openState": {
              "description": "The state of the door (open or closed)",
              "enum": [
                "Open",
                "Closed"
              ],
              "readOnly": true
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
```

```
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "openState"
          ],
          "type": "object"
        }

      ,
      "DoorUpdate" :
              {
          "properties": {
            "openAlarm": {
              "description": "The state of the door open alarm",
              "type": "boolean"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
```

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

    }
  }
```

B.29.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
openDuration	string		Read Only	도어가 개방된 지속 시간
openState	복수 타입: schema 참조	예	Read Only	도어의 상태 (open 또는 closed)
openAlarm	boolean			도어개방 알람의 상태
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

precision	숫자		Read Only	노출된 값의 정확도
openAlarm	boolean			도어개방 알람의 상태

B.29.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/DoorResURI		get	post		

B.30 Demand Response Load Control (DRLC).

B.30.1 개요

이 resource 는 적용될 임의의 또는 현재 적용되는 DRLC 신호를 기술한다. DRType 은 Zigbee/HA Smart Energy Profile 2.0 에서 정의된 ApplianceLoadReductionType 이다. Start 는 ISO8601 인코딩된 start time 을 포함하는 스트링이다. Duration 값은 분 단위이다. Override 는 소비자가 request 를 무시하였는지(true) 또는 무시하지 않았는지(false)를 나타낸다. 적용되고 있는 현재의 DRLC 작용을 제공한다.

B.30.2 URI 예

/DRLCResURI

B.30.3 Resource Type

resource type (rt)는 ['oic.r.energy.drlc']로 정의된다.

B.30.4 Swagger2.0 정의

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

```
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
      "/DRLCResURI" : {
        "get": {
          "description": "This resource describes any to be applied or currently being applied DRLC
signal.\nThe DRType is the ApplianceLoadReductionType defined in Zigbee/HA Smart Energy Profile
2.0.\nStart is a string containing an ISO8601 encoded start time.\nThe duration value is in
minutes.\nOverride indicates whether the consumer has overridden the request (true) or not
(false).\nProvides the current DRLC action that is being applied.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":       ["oic.r.energy.drlc"],
                    "id":       "unique_example_id",
                    "DRType":   1,
                    "start":    "2015-01-09T16:45Z",
                    "duration": 10,
                    "override": false
                  }
                  ,
                "schema": { "$ref": "#/definitions/DRLC" }
              }
          }
        },
        "put": {
          "description": "Provides the DRLC action to be applied to the device or updates an existing
action.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/DRLC" },
              "x-example":
                {
                  "rt":       ["oic.r.energy.drlc"],
                  "id":       "unique_example_id",
                  "DRType":   1,
                  "start":    "2015-01-09T16:45Z",
                  "duration": 10
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "Indicates that the target DRLC resource was changed.\nThe new
resource attributes are provided in the response.\n",
                "x-example":
                  {
                    "DRType":   1,
                    "id":       "unique_example_id",
                    "start":    "2015-01-09T17:00Z",
                    "duration": 15,
                    "override": false
                  }
                  ,
                "schema": { "$ref": "#/definitions/DRLC" }
              },
              "201": {
                "description" : "Indicates successful creation of the DRLC resource with the
attributes provided.\nThe response includes the URI of the created resource.\n",
                "x-example":
```

```
                    {
                      "ResURI":   "/MyDevice/MyDRLCURI"
                    }
                    ,
                  "schema": { "$ref": "#/definitions/CreateResponse" }
                }
            }
          }
        }
      },
      "parameters": {
        "interface" : {
          "in" : "query",
          "name" : "if",
          "type" : "string",
          "enum" : ["oic.if.b", "oic.if.baseline"]
        }
      },
      "definitions": {
        "DRLC" :
                {
            "properties": {
              "DRType": {
                "description": "The to be applied demand-response type",
                "type": "integer"
              },
              "duration": {
                "description": "The duration of the to be applied DR type",
                "type": "integer"
              },
              "override": {
                "description": "Whether the consumer has overriden the application of DR",
                "type": "boolean"
              },
              "precision": {
                "description": "Accuracy granularity of the exposed value",
                "readOnly": true,
                "type": "number"
              },
              "range": {
                "description": "The valid range for the value Property",
                "items": {
                  "anyOf": [
                    {
                      "type": "number"
                    },
                    {
                      "type": "integer"
                    }
                  ]
                },
                "maxItems": 2,
                "minItems": 2,
                "readOnly": true,
                "type": "array"
              },
              "start": {
                "description": "The start time for the application of DR",
                "type": "string"
              },
              "step": {
                "anyOf": [
                  {
                    "type": "integer"
                  },
                  {
                    "type": "number"
                  }
                ],
                "description": "Step value across the defined range",
                "readOnly": true
```

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

      ,
      "CreateResponse" :
              {
          "properties": {
            "ResURI": {
              "type": "string"
            }
          },
          "type": "object"
        }

    }
  }
```

B.30.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
DRType	정수	예		적용될 demand-response type
precision	숫자		Read Only	노출된 값의 정확도
duration	정수			적용될 DR type 의 지속시간
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
override	boolean			DR 의 적용을 소비자가

				무시하였는지 여부
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
start	스트링			DR 의 적용에 대한 시작 시각
ResURI	스트링			

B.30.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/DRLCResURI	put	get			

B.31 에코 모드

B.31.1 개요

이 resource 는 Device 가 지원하는 현재 활성 상태인 에코 모드를 규정한다. Resource 는 supportedMode 및 Mode Property 의 모집단이 "disabled", "enabled", "notsupported"로 주어진 값의 집합으로 제한된다는 제약을 갖는 Mode (oic.r.mode)에 대한 기존의 schema 를 사용한다. adminforced Property 는 값이 다른 당사자에 의해(예: 일부 오프보드 Smart Energy 상호작용을 통해) 설정되었음을 나타낸다.

B.31.2 URI 예

/EcomodeResURI

B.31.3 Resource Type

resource type (rt)는 ['oic.r.ecomode']로 정의된다.

B.31.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Eco Mode",
    "version": "OCF-v1.0.0-20160620",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
```

```
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EcomodeResURI" : {
      "get": {
        "description": "This resource specifies the supported and currently active Eco Mode of a
Device\nThe Resource uses the existing schema for Mode (oic.r.mode) with a restriction that the
population of supportedmodes and modes Properties is restricted to the set of values given
below:\n\"disabled\",\"enabled\",\"notsupported\"\nThe adminforced Property indicates that the
value has been set by another party (e.g. via some offboard Smart Energy interaction)\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":               ["oic.r.ecomode"],
                  "id":               "unique_example_id",
                  "supportedModes": ["disabled","enabled"],
                  "modes": ["disabled"],
                  "adminforced": false
                }
                ,
              "schema": { "$ref": "#/definitions/ecomode" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ecomode-update" },
            "x-example":
              {
                "id":     "unique_example_id",
                "modes": ["enabled"]
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "id":     "unique_example_id",
                  "modes": ["enabled"]
                }
                ,
              "schema": { "$ref": "#/definitions/ecomode-update" }
            }
```

```
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "ecomode" :
              {
          "allOf": [
            {
              "properties": {
                "modes": {
                  "description": "Array of the currently active mode(s)",
                  "items": {
                    "type": "string"
                  },
                  "type": "array"
                },
                "supportedModes": {
                  "description": "Array of possible modes the device supports.",
                  "items": {
                    "type": "string"
                  },
                  "readOnly": true,
                  "type": "array"
                }
              },
              "type": "object"
            },
            {
              "properties": {
                "adminforced": {
                  "description": "Indicator that the current mode of operation has been forced by
admin action.",
                  "readOnly": true,
                  "type": "boolean"
                },
                "precision": {
                  "description": "Accuracy granularity of the exposed value",
                  "readOnly": true,
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
```

```
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
                "value": {
                  "anyOf": [
                    {
                      "type": "array"
                    },
                    {
                      "type": "string"
                    },
                    {
                      "type": "boolean"
                    },
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    },
                    {
                      "type": "object"
                    }
                  ],
                  "description": "The value sensed or actuated by this Resource"
                }
              }
            }
          ],
          "required": [
            "supportedModes",
            "modes"
          ],
          "type": "object"
        }

      ,
      "ecomode-update" :
              {
          "allOf": [
            {
              "properties": {
                "modes": {
                  "description": "Desired mode",
                  "items": {
                    "type": "string"
                  },
                  "type": "array"
                },
                "precision": {
                  "description": "Accuracy granularity of the exposed value",
                  "readOnly": true,
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
```

```
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
                "value": {
                  "anyOf": [
                    {
                      "type": "array"
                    },
                    {
                      "type": "string"
                    },
                    {
                      "type": "boolean"
                    },
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    },
                    {
                      "type": "object"
                    }
                  ],
                  "description": "The value sensed or actuated by this Resource"
                }
              },
              "type": "object"
            }
          ],
          "required": [
            "modes"
          ],
          "type": "object"
        }

    }
  }
```

B.31.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
adminforced	boolean		Read Only	동작의 현재 모드가 Admin 동작에 의해

				강제되었음을 나타내는 표시자.
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
Mode	배열: schema 참조	예		요구되는 모드
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.31.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/EcomodeResURI		get	post		

B.32 에너지 소비

B.32.1 개요

이 resource 는 전원이 투입된 이후 device 에 의해 소비된 에너지 (에너지 값의 단위는 Watt Hours [Wh]) 및 resource 가 조회되었을 때 device 의 순간적인 전력 인출 (전력 값의 단위는 Watts [W])를 기술한다. 전력 값의 단위는 Watts [W]이다. 에너지 값의 단위는 Watt Hours [Wh]이다. 현재의 전력 인출 및 누적 에너지 사용을 제공한다.

B.32.2 URI 예

/EnergyConsumptionResURI

B.32.3 Resource Type

resource type (rt)는 ['oic.r.energy.consumption']로 정의된다.

B.32.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Consumption",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyConsumptionResURI" : {
      "get": {
        "description": "This resource describes the energy consumed by the device since power up
(the energy value is in Watt Hours [Wh]) \nand the instantaneous power draw of the device (the
power value is in Watts [W]) at the time the resource was queried.\nThe power value is in Watts
[W].\nThe energy value is in Watt Hours [Wh].\nProvides the current power draw and cumulative
energy usage.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":     ["oic.r.energy.consumption"],
                  "id":     "unique_example_id",
                  "power":  2000.1,
                  "energy": 3500.4
                }
                ,
              "schema": { "$ref": "#/definitions/Consumption" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
```

```
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Consumption" :
              {
          "properties": {
            "energy": {
              "description": "Energy consumed",
              "readOnly": true,
              "type": "number"
            },
            "power": {
              "description": "Instantaneous Power",
              "readOnly": true,
              "type": "number"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
```

```
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "power",
            "energy"
          ],
          "type": "object"
        }

    }
  }
```

B.32.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
energy	숫자	예	Read Only	소비된 에너지
power	숫자	예	Read Only	순간 전력
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.32.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/EnergyConsumptionResURI		get			

B.33 에너지 과부하/회로 차단기

B.33.1 개요

이 resource 는 에너지 과부하 검출기/회로 차단기가 현재 개방 또는 단락 되었는지를 기술한다. 값은 Boolean 형이다. 'true' 값은 에너지 과부하가 검출 되었음을 의미한다. 'false' 값은 에너지 과부하가 검출되지 않았음을 의미한다.

B.33.2 URI 예

/EnergyOverloadResURI

B.33.3 Resource Type

resource type (rt)는 ['oic.r.energy.overload']로 정의된다.

B.33.4 Swagger2.0 정의

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

```
    },
    "definitions": {
      "EnergyOverload" :
              {
          "allOf": [
            {
              "properties": {
                "precision": {
                  "description": "Accuracy granularity of the exposed value",
                  "readOnly": true,
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
                "value": {
                  "description": "true = sensed, false = not sensed.",
                  "readOnly": true,
                  "type": "boolean"
                }
              },
              "type": "object"
            }
          ],
          "required": [
            "value"
          ]
        }

    }
  }
```

B.33.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	true = 감지 false = 미 감지
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도

B.33.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/EnergyOverloadResURI		get			

B.34 에너지 사용

B.34.1 개요

이 resource 는 누적되는 시간 기반 에너지 사용의 조회를 기술한다. 이 resource 는 TimePeriod Resource 및 EnergyConsumption Resource 의 collection 으로 구성되는 복합 resource 이다. 시간에 걸친 소비의 복합물로서 에너지 사용 정보를 검색한다.

B.34.2 URI 예

/EnergyUsageResURI

B.34.3 Resource Type

resource type (rt)는 ['oic.r.energy.usage']로 정의된다.

B.34.4 Swagger2.0 정의

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

```
    },
    "schemes": ["http"],
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
      "/EnergyUsageResURI" : {
        "get": {
          "description": "This resource describes a cumulative time-based energy usage query..\nThe
resource is a composite resource being made up as a collection of:\n  TimePeriod Resource\n
EnergyConsumption Resource\nRetrieves the energy usage information as a composite of consumption
over time.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt": ["oic.r.energy.usage"],
                    "id": "unique_example_id",
                    "resources": [
                      {
                        "href": "/TimeIntervalResURI",
                        "rel":  "contains",
                        "rt":   ["oic.r.time.period"],
                        "if":   ["oic.if.a"],
                        "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
                      },
                      {
                        "href": "/EnergyConsumptionResURI",
                        "rel":  "contains",
                        "rt":   ["oic.r.energy.consumption"],
                        "if":   ["oic.if.s"],
                        "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
                      }
                    ]
                  }
                  ,
                "schema": { "$ref": "#/definitions/Usage" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Usage" :
              {
          "properties": {
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
```

```
                    }
                  ]
                },
                "maxItems": 2,
                "minItems": 2,
                "readOnly": true,
                "type": "array"
              },
              "resources": {
                "items": {
                  "properties": {
                    "anchor": {
                      "description": "This is used to override the context URI e.g. override the URI of
the containing collection",
                      "format": "uri",
                      "maxLength": 256,
                      "type": "string"
                    },
                    "di": {
                      "description": "Unique identifier for device (UUID)",
                      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-
F0-9]{12}$",
                      "type": "string"
                    },
                    "eps": {
                      "description": "the Endpoint information of the target Resource",
                      "items": {
                        "properties": {
                          "ep": {
                            "description": "URI with Transport Protocol Suites + Endpoint Locator as
specified in 10.2.1",
                            "format": "uri",
                            "type": "string"
                          },
                          "pri": {
                            "description": "The priority among multiple Endpoints as specified in
10.2.3",
                            "minimum": 1,
                            "type": "integer"
                          }
                        },
                        "type": "object"
                      },
                      "type": "array"
                    },
                    "href": {
                      "description": "This is the target URI, it can be specified as a Relative
Reference or fully-qualified URI. Relative Reference should be used along with the di parameter to
make it unique.",
                      "format": "uri",
                      "maxLength": 256,
                      "type": "string"
                    },
                    "if": {
                      "description": "The interface set supported by this resource",
                      "items": {
                        "enum": [
                          "oic.if.baseline",
                          "oic.if.ll",
                          "oic.if.b",
                          "oic.if.rw",
                          "oic.if.r",
                          "oic.if.a",
                          "oic.if.s"
                        ],
                        "type": "string"
                      },
                      "minItems": 1,
                      "type": "array"
                    },
                    "ins": {
```

```
                    "description": "The instance identifier for this web link in an array of web
links - used in collections",
                    "oneOf": [
                      {
                        "description": "An ordinal number that is not repeated - must be unique in
the collection context",
                        "type": "integer"
                      },
                      {
                        "description": "Any unique string including a URI",
                        "format": "uri",
                        "maxLength": 256,
                        "type": "string"
                      },
                      {
                        "description": "Unique identifier (UUID)",
                        "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-
fA-F0-9]{12}$",
                        "type": "string"
                      }
                    ]
                  },
                  "p": {
                    "description": "Specifies the framework policies on the Resource referenced by
the target URI",
                    "properties": {
                      "bm": {
                        "description": "Specifies the framework policies on the Resource referenced
by the target URI for e.g. observable and discoverable",
                        "type": "integer"
                      }
                    },
                    "required": [
                      "bm"
                    ],
                    "type": "object"
                  },
                  "rel": {
                    "description": "The relation of the target URI referenced by the link to the
context URI",
                    "oneOf": [
                      {
                        "default": [
                          "hosts"
                        ],
                        "items": {
                          "maxLength": 64,
                          "type": "string"
                        },
                        "minItems": 1,
                        "type": "array"
                      },
                      {
                        "default": "hosts",
                        "maxLength": 64,
                        "type": "string"
                      }
                    ]
                  },
                  "rt": {
                    "description": "Resource Type",
                    "items": {
                      "maxLength": 64,
                      "type": "string"
                    },
                    "minItems": 1,
                    "type": "array"
                  },
                  "title": {
                    "description": "A title for the link relation. Can be used by the UI to provide a
context",
```

```
                    "maxLength": 64,
                    "type": "string"
                  },
                  "type": {
                    "default": "application/cbor",
                    "description": "A hint at the representation of the resource referenced by the
target URI. This represents the media types that are used for both accepting and emitting",
                    "items": {
                      "maxLength": 64,
                      "type": "string"
                    },
                    "minItems": 1,
                    "type": "array"
                  }
                },
                "required": [
                  "href",
                  "rt",
                  "if"
                ],
                "type": "object"
              },
              "maxItems": 2,
              "minItems": 2,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "type": "object"
        }

    }
  }
```

B.34.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
resource	배열: schema 참조			
precision	숫자		Read Only	노출된 값의 정확도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값

B.34.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/EnergyUsageResURI		get			

B.35 일반 센서

B.35.1 개요

이 resource 는 일부 값, property 또는개체가 감지되었는지 여부를 기술한다. 값은 boolean 형이다. 'true' 값은 목표가 감지되었음을 의미한다. 'false' 값은 목표가 감지되지 않았음을 의미한다.

B.35.2 URI 예

/GenericSensorResURI

B.35.3 Resource Type

resource type (rt)는 ['oic.r.sensor']로 정의된다.

B.35.4 Swagger2.0 정의

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

```
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GenericSensorResURI" : {
      "get": {
        "description": "This resource describes whether some value or property or entity has been
sensed or not.\nThe value is a boolean.\nA value of 'true' means that the target has been
sensed.\nA value of 'false' means that the target has not been sensed.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":    ["oic.r.sensor"],
                  "id":    "unique_example_id",
                  "value": true
                }
                ,
              "schema": { "$ref": "#/definitions/Sensor" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Sensor" :
            {
        "properties": {
          "precision": {
            "description": "Accuracy granularity of the exposed value",
            "readOnly": true,
            "type": "number"
          },
          "range": {
            "description": "The valid range for the value Property",
            "items": {
              "anyOf": [
                {
                  "type": "number"
                },
                {
                  "type": "integer"
```

```
                    }
                  ]
                },
                "maxItems": 2,
                "minItems": 2,
                "readOnly": true,
                "type": "array"
              },
              "step": {
                "anyOf": [
                  {
                    "type": "integer"
                  },
                  {
                    "type": "number"
                  }
                ],
                "description": "Step value across the defined range",
                "readOnly": true
              },
              "value": {
                "description": "true = sensed, false = not sensed.",
                "readOnly": true,
                "type": "boolean"
              }
            },
            "type": "object"
          }

    }
  }
```

B.35.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
precision	숫자		Read Only	노출된 값의 정확도
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
value	boolean		Read Only	true = 감지 false = 미 감지

B.35.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/GenericSensorResURI		get			

B.36 지리 위치

B.36.1 개요

이 resource 는 현재의 지리 위치 좌표와 관련된 property 를 기술한다. 지리 위치는 지리 위치 좌표 데이터이다. Latitude 는 device 의 현재의 위도 좌표(도)(°)이다.

Longitude 는 device 의 현재의 경도 좌표(도)(°)이다. Altitude 는 device 의 현재의 고도 위치(미터)이다.

Accuracy 는 위도 및 경도 좌표(미터)의 정확도를 나타낸다. altitudeAccuracy 는 고도 좌표(미터)의 정확도를 나타낸다. Heading 은 device 의 이동 방향(도)(°)을 나타낸다. Speed 는 device 의 현재 속도(초당 미터)를 나타낸다. 현재의 지리 위치 좌표를 검색한다.

B.36.2 URI 예

/GeolocationResURI

B.36.3 Resource Type

resource type (rt)는 ['oic.r.sensor.geolocation']으로 정의된다.

B.36.4 Swagger2.0 정의

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

```
geolocation coordinate.\nGeolocation is a geolocation coordinate data.\nLatitude is a device's
current Latitude coordinate (degrees).\nLongitude is a device's current Longitude coordinate
(degrees).\nAltitude is a device's current Altitude position (metres).\nAccuracy is the accuracy
level of the latitude and longitude coordinates (metres).\naltitudeAccuracy is the accuracy level
of the altitude coordinates (metres).\nheading is a direction of travel of device (degree).\nspeed
is a device's current velocity (metres per second).\nRetrieves the current geolocation
coordinates.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":         ["oic.r.sensor.geolocation"],
                  "id":         "unique_example_id",
                  "latitude":  55.070859,
                  "longitude": -3.60512,
                  "alt": 12.07,
                  "accuracy": 65.0,
                  "altitudeAccuracy": 0.0,
                  "heading": 90.0,
                  "speed": 0.0
                }
                ,
              "schema": { "$ref": "#/definitions/Geolocation" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Geolocation" :
            {
        "allOf": [
          {
            "properties": {
              "alt": {
                "description": "The current height of the position (metres)",
                "minimum": 0,
                "readOnly": true,
                "type": "number"
              }
            },
            "type": "object"
          },
          {
            "properties": {
              "accuracy": {
                "description": "The accuracy level of the latitude and longitude coordinates
(metres)",
                "minimum": 0,
                "readOnly": true,
                "type": "number"
              },
              "altitudeAccuracy": {
                "description": "The accuracy level of the altitude coordinates (metres)",
                "minimum": 0,
                "readOnly": true,
                "type": "number"
              },
              "heading": {
```

```
                "description": "Direction of travel of device (degree)",
                "maximum": 360,
                "minimum": 0,
                "readOnly": true,
                "type": "number"
              },
              "latitude": {
                "description": "Device's Current Latitude coordinate (degrees)",
                "readOnly": true,
                "type": "number"
              },
              "longitude": {
                "description": "Device's Current Longitude coordinate (degrees)",
                "readOnly": true,
                "type": "number"
              },
              "precision": {
                "description": "Accuracy granularity of the exposed value",
                "readOnly": true,
                "type": "number"
              },
              "range": {
                "description": "The valid range for the value Property",
                "items": {
                  "anyOf": [
                    {
                      "type": "number"
                    },
                    {
                      "type": "integer"
                    }
                  ]
                },
                "maxItems": 2,
                "minItems": 2,
                "readOnly": true,
                "type": "array"
              },
              "speed": {
                "description": "Device's current velocity (metres per second)",
                "minimum": 0,
                "readOnly": true,
                "type": "number"
              },
              "step": {
                "anyOf": [
                  {
                    "type": "integer"
                  },
                  {
                    "type": "number"
                  }
                ],
                "description": "Step value across the defined range",
                "readOnly": true
              },
              "value": {
                "anyOf": [
                  {
                    "type": "array"
                  },
                  {
                    "type": "string"
                  },
                  {
                    "type": "boolean"
                  },
                  {
                    "type": "integer"
                  },
                  {
```

```
                        "type": "number"
                      },
                      {
                        "type": "object"
                      }
                    ],
                    "description": "The value sensed or actuated by this Resource"
                  }
                }
              }
            ],
            "required": [
              "latitude",
              "longitude",
              "alt"
            ],
            "type": "object"
          }

    }
  }
```

B.36.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
altitudeAccuracy	숫자		Read Only	고도 좌표(미터)의 정확도 레벨
longitude	숫자	예	Read Only	Device 의 현재의 경도 좌표(도)(°)
speed	숫자		Read Only	Device 의 현재의 속도 (초당 미터)
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
accuracy	숫자		Read Only	위도 및 경도 좌표(미터)의 정확도 레벨
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
heading	숫자		Read Only	Device 의 이동 방향 (도)(°)
precision	숫자		Read Only	노출된 값의 정확도
latitude	숫자	예	Read Only	Device 의 현재의

				위도 좌표 (도)(°)

B.36.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/GeolocationResURI		get			

B.37 유리 파손 센서

B.37.1 개요

이 resource 는 유리 파손 센서를 기술한다. 값은 boolean 형이다. ‘true’ 값은 유리 파손이 감지되었음을 의미한다. 'false' 의 값은 유리 파손이 감지되지 않았음을 의미한다.

B.37.2 URI 예

/GlassBreakResURI

B.37.3 Resource Type

resource type (rt)는 ['oic.r.sensor.glassbreak']로 정의된다.

B.37.4 Swagger2.0 정의

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

```
          "parameters": [
            {"$ref": "#/parameters/interface"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":     ["oic.r.sensor.glassbreak"],
                    "id":     "unique_example_id",
                    "value":  true
                  }
                  ,
                "schema": { "$ref": "#/definitions/GlassBreak" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "GlassBreak" :
              {
          "allOf": [
            {
              "properties": {
                "precision": {
                  "description": "Accuracy granularity of the exposed value",
                  "readOnly": true,
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
                "value": {
                  "description": "true = sensed, false = not sensed.",
                  "readOnly": true,
                  "type": "boolean"
```

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

    }
  }
```

B.37.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
value	boolean	예	Read Only	true = 감지 false = 미 감지
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.37.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/GlassBreakResURI		get			

B.38 심박수 존

B.38.1 개요

이 resource 는 Zoladz 방법을 사용하여 현재 Zone 에 의해 측정된 심장 박동수를 기술한다. Zoladz 방법은 최대 심장 박동수에 기초하여 Zone 을 정의한다; Zone 1 은 가장 낮고, Zone 5 는 가장 높다. heartRateZone 은: "Zone1", "Zone2", "Zone3", "Zone4", 및 "Zone5" 중 하나를 포함하는 열거형이다.

B.38.2 URI 예

/HeartRateZoneResURI

B.38.3 Resource Type

resource type (rt)는 ['oic.r.sensor.heart.zone']으로 정의된다.

B.38.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Heart Rate Zone",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HeartRateZoneResURI" : {
      "get": {
        "description": "This resource describes a measured heart rate by the current Zone using the
Zoladz method\nThe Zoladz method defines Zones based on maximum heart rate; Zone 1 is the lowest,
Zone 5 is the highest.\nThe heartRateZone is an enumeration containing one of: \"Zone1\", \"Zone2\",
\"Zone3\", \"Zone4\", \"Zone5\".\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":             ["oic.r.sensor.heart.zone"],
                  "id":             "unique_example_id",
                  "heartRateZone":  "Zone3"
                }
                ,
              "schema": { "$ref": "#/definitions/heartRateZone" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "heartRateZone" :
            {
        "properties": {
          "heartRateZone": {
            "description": "Current heart rate zone based on the Zoladz system.",
            "enum": [
              "Zone1",
```

```
                "Zone2",
                "Zone3",
                "Zone4",
                "Zone5"
              ],
              "readOnly": true
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "heartRateZone"
          ]
        }

    }
```

}

B.38.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
heartRateZone	복수 타입: schema 참조	예	Read Only	Zoladz 시스템에 기초한 현재의 심장 박동수 존
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

B.38.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/HeartRateZoneResURI		get			

B.39 가열 존

B.39.1 개요

이 resource 는 레인지 상부의 가열 영역의 상태에 관한 정보를 제공한다. 이는 동적으로 작동 가능한(즉, device 가 냄비를 인식하는) 영역을 갖는 레인지 상부의 경우를 기술한다.

maxheatinglevel 은 가열 영역에 대한 최대 레벨을 정의한다. heatinglevel 은 영역의 현재의 가열 레벨을 나타낸다. 각 요소에 대해 값 범위는 0(영역이 미 가열 상태임을 표시)으로부터 maxheatinglevel 까지이다. 현재의 가열 존 정보를 검색한다.

B.39.2 URI 예

/HeatingZoneResURI

B.39.3 Resource Type

resource type (rt)는 ['oic.r.heatingzone']으로 정의된다.

B.39.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Heating Zone",
    "version": "OCF1.0-20160722",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HeatingZoneResURI" : {
      "get": {
        "description": "This Resource provides information about the status of a heating zone of a
Cook-Top.\nIt describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the
device implements pot recognition).\nmaxheatinglevel defines the max level for the heating
zone\nheatinglevel is the current heating level of the zone\n  For each element the value range is
from 0 (indication that the zone is not heating) to maxheatinglevel,\nRetrieves the current heating
zone information.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":             ["oic.r.heatingzone"],
                  "id":             "unique_example_id",
                  "maxheatinglevel": 6,
                  "heatinglevel":    0
                }
                ,
              "schema": { "$ref": "#/definitions/HeatingZone" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
```

```
    "definitions": {
      "HeatingZone" :
              {
          "properties": {
            "heatinglevel": {
              "description": "Current heating level for the zone indicated.",
              "readOnly": true,
              "type": "integer"
            },
            "maxheatinglevel": {
              "description": "Maximum heating level for the zone indicated.",
              "readOnly": true,
              "type": "integer"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
```

```
          },
          "required": [
            "maxheatinglevel",
            "heatinglevel"
          ],
          "type": "object"
        }

    }
  }
```

B.39.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
maxheatinglevel	정수	예	Read Only	표시된 영역에 대한 최대 가열 레벨
precision	숫자		Read Only	노출된 값의 정확도
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
heatinglevel	정수	예	Read Only	표시된 영역에 대한 현재의 가열 레벨
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값

B.39.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/HeatingZoneResURI		get			

B.40 가열 존 Collection

B.40.1 개요

이 resource 는 레인지 상부의 가열 영역의 상태에 관한 정보를 제공한다. 이는 동적으로 작동 가능한(즉, device 가 냄비를 인식하는) 영역을 갖는 레인지 상부의 경우를 기술한다.

resource 는 개별적인 레인지 상부 영역을 기술하는 oic.r.heatingzone 의 개체의 collection 이다. 현재의 가열 존 정보를 검색한다.

B.40.2 URI 예

/HeatingZoneBaselineResURI

B.40.3 Resource Type

resource type (rt)는 ['oic.r.heatingzonecollection', 'oic.wk.col']로 정의된다.

B.40.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Heating Zone Collection",
    "version": "OCF1.0-20160722",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HeatingZoneLLResURI" : {
      "get": {
        "description": "This Resource provides information about the status of the heating zones of
a Cook-Top.\nIt describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the
device implements pot recognition).\nThe resource is a collection of instances of oic.r.heatingzone
detailing the individual cooktop zones\n",
        "parameters": [
          {"$ref": "#/parameters/interface-ll"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                [
                  {"href": "/myZone1ResURI", "rt": ["oic.r.heatingzone"], "if": ["oic.if.s"], "eps":
[{"ep": "coaps://[fe80::b1d6]:1122"}]},
                  {"href": "/myZone2ResURI", "rt": ["oic.r.heatingzone"], "if": ["oic.if.s"], "eps":
[{"ep": "coaps://[fe80::b1d6]:1122"}]},
                  {"href": "/myZone3ResURI", "rt": ["oic.r.heatingzone"], "if": ["oic.if.s"], "eps":
[{"ep": "coaps://[fe80::b1d6]:1122"}]},
                  {"href": "/myZone4ResURI", "rt": ["oic.r.heatingzone"], "if": ["oic.if.s"], "eps":
[{"ep": "coaps://[fe80::b1d6]:1122"}]}
                ]
                ,
              "schema": { "$ref": "#/definitions/HeatingZone-ll" }
            }
```

```
          }
        }
      },
      "/HeatingZoneBaselineResURI" : {
        "get": {
          "description": "This Resource provides information about the status of the heating zones of
a Cook-Top.\nIt describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the
device implements pot recognition).\nThe resource is a collection of instances of oic.r.heatingzone
detailing the individual cooktop zones\nRetrieves the current heating zone information.\n",
          "parameters": [
            {"$ref": "#/parameters/interface-baseline"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":    ["oic.r.heatingzonecollection","oic.wk.col"],
                    "id":    "unique_example_id",
                    "links": [
                      {"href": "/myZone1ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                      {"href": "/myZone2ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                      {"href": "/myZone3ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                      {"href": "/myZone4ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
                    ]
                  }
                  ,
                "schema": { "$ref": "#/definitions/HeatingZone" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface-ll" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.ll"]
      },
      "interface-baseline" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.baseline"]
      }
    },
    "definitions": {
      "HeatingZone-ll" :
              {
          "allOf": [
            {
              "description": "All forms of links in a collection",
              "oneOf": [
                {
                  "description": "A set (array) of simple or individual OIC Links. In addition to
properties required for an OIC Link, the identifier for that link in this set is also required",
                  "items": {
                    "properties": {
                      "anchor": {
                        "description": "This is used to override the context URI e.g. override the
URI of the containing collection",
                        "format": "uri",
                        "maxLength": 256,
                        "type": "string"
                      },
                      "di": {
```

```
                        "description": "Unique identifier for device (UUID)",
                        "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-
fA-F0-9]{12}$",
                        "type": "string"
                      },
                      "eps": {
                        "description": "the Endpoint information of the target Resource",
                        "items": {
                          "properties": {
                            "ep": {
                              "description": "URI with Transport Protocol Suites + Endpoint Locator
as specified in 10.2.1",
                              "format": "uri",
                              "type": "string"
                            },
                            "pri": {
                              "description": "The priority among multiple Endpoints as specified in
10.2.3",
                              "minimum": 1,
                              "type": "integer"
                            }
                          },
                          "type": "object"
                        },
                        "type": "array"
                      },
                      "href": {
                        "description": "This is the target URI, it can be specified as a Relative
Reference or fully-qualified URI. Relative Reference should be used along with the di parameter to
make it unique.",
                        "format": "uri",
                        "maxLength": 256,
                        "type": "string"
                      },
                      "if": {
                        "description": "The interface set supported by this resource",
                        "items": {
                          "enum": [
                            "oic.if.baseline",
                            "oic.if.ll",
                            "oic.if.b",
                            "oic.if.rw",
                            "oic.if.r",
                            "oic.if.a",
                            "oic.if.s"
                          ],
                          "type": "string"
                        },
                        "minItems": 1,
                        "type": "array"
                      },
                      "ins": {
                        "description": "The instance identifier for this web link in an array of web
links - used in collections",
                        "oneOf": [
                          {
                            "description": "An ordinal number that is not repeated - must be unique
in the collection context",
                            "type": "integer"
                          },
                          {
                            "description": "Any unique string including a URI",
                            "format": "uri",
                            "maxLength": 256,
                            "type": "string"
                          },
                          {
                            "description": "Unique identifier (UUID)",
                            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-
[a-fA-F0-9]{12}$",
                            "type": "string"
```

```
                          }
                        ]
                      },
                      "p": {
                        "description": "Specifies the framework policies on the Resource referenced
by the target URI",
                        "properties": {
                          "bm": {
                            "description": "Specifies the framework policies on the Resource
referenced by the target URI for e.g. observable and discoverable",
                            "type": "integer"
                          }
                        },
                        "required": [
                          "bm"
                        ],
                        "type": "object"
                      },
                      "rel": {
                        "description": "The relation of the target URI referenced by the link to the
context URI",
                        "oneOf": [
                          {
                            "default": [
                              "hosts"
                            ],
                            "items": {
                              "maxLength": 64,
                              "type": "string"
                            },
                            "minItems": 1,
                            "type": "array"
                          },
                          {
                            "default": "hosts",
                            "maxLength": 64,
                            "type": "string"
                          }
                        ]
                      },
                      "rt": {
                        "description": "Resource Type",
                        "items": {
                          "maxLength": 64,
                          "type": "string"
                        },
                        "minItems": 1,
                        "type": "array"
                      },
                      "title": {
                        "description": "A title for the link relation. Can be used by the UI to
provide a context",
                        "maxLength": 64,
                        "type": "string"
                      },
                      "type": {
                        "default": "application/cbor",
                        "description": "A hint at the representation of the resource referenced by
the target URI. This represents the media types that are used for both accepting and emitting",
                        "items": {
                          "maxLength": 64,
                          "type": "string"
                        },
                        "minItems": 1,
                        "type": "array"
                      }
                    },
                    "required": [
                      "href",
                      "rt",
                      "if"
```

```
                    ],
                    "type": "object"
                  },
                  "type": "array"
                }
              ]
            }
          ]
        }

      ,
      "HeatingZone" :
              {
          "allOf": [
            {
              "description": "A collection is a set (array) of tagged-link or set (array) of simple
links along with additional properties to describe the collection itself",
              "properties": {
                "di": {
                  "description": "The device ID which is an UUIDv4 string; used for backward
compatibility with Spec A definition of /oic/res",
                  "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-
9]{12}$",
                  "type": "string"
                },
                "drel": {
                  "description": "When specified this is the default relationship to use when an OIC
Link does not specify an explicit relationship with *rel* parameter",
                  "type": "string"
                },
                "id": {
                  "anyOf": [
                    {
                      "description": "A number that is unique to that collection; like an ordinal
number that is not repeated",
                      "type": "integer"
                    },
                    {
                      "description": "A unique string that could be a hash or similarly unique",
                      "type": "string"
                    },
                    {
                      "description": "A unique string that could be a UUIDv4",
                      "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-
F0-9]{12}$",
                      "type": "string"
                    }
                  ],
                  "description": "ID for the collection. Can be an value that is unique to the use
context or a UUIDv4"
                },
                "links": {
                  "description": "All forms of links in a collection",
                  "oneOf": [
                    {
                      "description": "A set (array) of simple or individual OIC Links. In addition to
properties required for an OIC Link, the identifier for that link in this set is also required",
                      "items": {
                        "properties": {
                          "anchor": {
                            "description": "This is used to override the context URI e.g. override
the URI of the containing collection",
                            "format": "uri",
                            "maxLength": 256,
                            "type": "string"
                          },
                          "di": {
                            "description": "Unique identifier for device (UUID)",
                            "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-
[a-fA-F0-9]{12}$",
                            "type": "string"
```

```
                            },
                            "eps": {
                              "description": "the Endpoint information of the target Resource",
                              "items": {
                                "properties": {
                                  "ep": {
                                    "description": "URI with Transport Protocol Suites + Endpoint
Locator as specified in 10.2.1",
                                    "format": "uri",
                                    "type": "string"
                                  },
                                  "pri": {
                                    "description": "The priority among multiple Endpoints as specified
in 10.2.3",
                                    "minimum": 1,
                                    "type": "integer"
                                  }
                                },
                                "type": "object"
                              },
                              "type": "array"
                            },
                            "href": {
                              "description": "This is the target URI, it can be specified as a Relative
Reference or fully-qualified URI. Relative Reference should be used along with the di parameter to
make it unique.",
                              "format": "uri",
                              "maxLength": 256,
                              "type": "string"
                            },
                            "if": {
                              "description": "The interface set supported by this resource",
                              "items": {
                                "enum": [
                                  "oic.if.baseline",
                                  "oic.if.ll",
                                  "oic.if.b",
                                  "oic.if.rw",
                                  "oic.if.r",
                                  "oic.if.a",
                                  "oic.if.s"
                                ],
                                "type": "string"
                              },
                              "minItems": 1,
                              "type": "array"
                            },
                            "ins": {
                              "description": "The instance identifier for this web link in an array of
web links - used in collections",
                              "oneOf": [
                                {
                                  "description": "An ordinal number that is not repeated - must be
unique in the collection context",
                                  "type": "integer"
                                },
                                {
                                  "description": "Any unique string including a URI",
                                  "format": "uri",
                                  "maxLength": 256,
                                  "type": "string"
                                },
                                {
                                  "description": "Unique identifier (UUID)",
                                  "pattern": "^[a-fA-F0-9]{8}-[a-fA-F0-9]{4}-[a-fA-F0-9]{4}-[a-fA-F0-
9]{4}-[a-fA-F0-9]{12}$",
                                  "type": "string"
                                }
                              ]
                            },
                            "p": {
```

```
                              "description": "Specifies the framework policies on the Resource
referenced by the target URI",
                              "properties": {
                                "bm": {
                                  "description": "Specifies the framework policies on the Resource
referenced by the target URI for e.g. observable and discoverable",
                                  "type": "integer"
                                }
                              },
                              "required": [
                                "bm"
                              ],
                              "type": "object"
                            },
                            "rel": {
                              "description": "The relation of the target URI referenced by the link to
the context URI",
                              "oneOf": [
                                {
                                  "default": [
                                    "hosts"
                                  ],
                                  "items": {
                                    "maxLength": 64,
                                    "type": "string"
                                  },
                                  "minItems": 1,
                                  "type": "array"
                                },
                                {
                                  "default": "hosts",
                                  "maxLength": 64,
                                  "type": "string"
                                }
                              ]
                            },
                            "rt": {
                              "description": "Resource Type",
                              "items": {
                                "maxLength": 64,
                                "type": "string"
                              },
                              "minItems": 1,
                              "type": "array"
                            },
                            "title": {
                              "description": "A title for the link relation. Can be used by the UI to
provide a context",
                              "maxLength": 64,
                              "type": "string"
                            },
                            "type": {
                              "default": "application/cbor",
                              "description": "A hint at the representation of the resource referenced
by the target URI. This represents the media types that are used for both accepting and emitting",
                              "items": {
                                "maxLength": 64,
                                "type": "string"
                              },
                              "minItems": 1,
                              "type": "array"
                            }
                          },
                          "required": [
                            "href",
                            "rt",
                            "if"
                          ],
                          "type": "object"
                        },
                        "type": "array"
```

```
                    }
                  ]
                },
                "rts": {
                  "description": "Defines the list of allowable resource types (for Target and
anchors) in links included in the collection; new links being created can only be from this list",
                  "items": {
                    "maxLength": 64,
                    "type": "string"
                  },
                  "minItems": 1,
                  "readOnly": true,
                  "type": "array"
                }
              },
              "type": "object"
            },
            {
              "properties": {
                "id": {
                  "description": "Instance ID of this specific resource",
                  "maxLength": 64,
                  "readOnly": true,
                  "type": "string"
                },
                "if": {
                  "description": "The interface set supported by this resource",
                  "items": {
                    "enum": [
                      "oic.if.baseline",
                      "oic.if.ll",
                      "oic.if.b",
                      "oic.if.lb",
                      "oic.if.rw",
                      "oic.if.r",
                      "oic.if.a",
                      "oic.if.s"
                    ],
                    "type": "string"
                  },
                  "minItems": 1,
                  "readOnly": true,
                  "type": "array"
                },
                "n": {
                  "description": "Friendly name of the resource",
                  "maxLength": 64,
                  "readOnly": true,
                  "type": "string"
                },
                "rt": {
                  "items": {
                    "enum": [
                      "oic.r.heatingzonecollection",
                      "oic.wk.col"
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "type": "array",
                  "uniqueItems": true
                },
                "rts": {
                  "items": {
                    "anyOf": [
                      {
                        "enum": [
                          "oic.r.heatingzone",
                          "oic.r.value.conditional"
                        ]
                      },
```

```
                        {
                          "enum": [
                            "oic.r.heatingzone"
                          ]
                        }
                      ]
                    },
                    "maxItems": 2,
                    "minItems": 1,
                    "type": "array",
                    "uniqueItems": true
                  }
                }
              }
            ],
            "type": "object"
          }

      }
    }
```

B.40.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
title	스트링			link 관계에 대한 제목. 컨텍스트를 제공하기 위하여 UI 에 의해 사용될 수 있다.
di	스트링			Device 에 대한 고유 식별자 (UUID)
rt	배열: schema 참조	예		Resource Type
eps	배열: schema 참조			target Resource 의 Endpoint 정보
ins	복수 타입: schema 참조			collection 에서 사용된 web link 배열 내의 web link 에 대한 개체 식별자
if	배열: schema 참조	예		이 resource 에 의해 지원되는 인터페이스 집합
anchor	스트링			이것은 컨텍스트 URI 를 무시하기

				위하여, 예를 들어, collection 을 포함하는 URI 를 무시하기 위해 사용된다.
type	배열: schema 참조			target URI 에 의해 참조되는 resource 의 표현에 대한 힌트. 수락 및 방출 모두를 위해 사용되는 Media 유형을 나타낸다.
href	스트링	예		이것은 target URI 이고, 상대 참조 또는 완전한 URI 로 규정될 수 있다. 상대 참조는 고유하도록 di 파라미터와 함께 사용되어야 한다.
p	객체: schema 참조			타깃 URI 에 의해 참조되는 Resource 에 대한 framework 정책을 규정한다.
rel	복수 타입: schema 참조			link 에 의해 참조되는 target URI 의 컨텍스트 URI 에 대한 관계
rts	배열: schema 참조			
id	스트링		Read Only	특정 resource 의 개체 ID
rt	배열:	예		

	schema 참조			
n	스트링		Read Only	Resource 의 친근한 명칭
if	배열: schema 참조	예	Read Only	이 resource 에 의해 지원되는 인터페이스 집합

B.40.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/HeatingZoneBaselineResURI		get			

B.41 높이

B.41.1 개요

이 resource 는 물체의 물리적 크기의 높이와 관련된 property 를 기술한다. Height(height)는 물체의 높이이다. 물체의 높이를 검색한다.

B.41.2 URI 예

/HeightResURI

B.41.3 Resource Type

resource type (rt)는 ['oic.r.height']로 정의된다.

B.41.4 Swagger2.0 정의

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

```
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
      "/HeightResURI" : {
        "get": {
          "description": "This resource describes the properties associated with height of an
object's physical size.\nHeight (height) is height of an object.\nRetrieves height of an object.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":     ["oic.r.height"],
                    "id":     "unique_example_id",
                    "height": 100.0
                  }
                  ,
                "schema": { "$ref": "#/definitions/Height" }
              }
          }
        },
        "post": {
          "description": "Sets the Height.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/Height" },
              "x-example":
                {
                  "id":     "unique_example_id",
                  "height": 200.0
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "Indicates that the height was successfully changed.\nThe new height
is provided in the response.\n",
                "x-example":
                  {
                    "id":     "unique_example_id",
                    "height": 200.0
                  }
                  ,
                "schema": { "$ref": "#/definitions/Height" }
              },
              "403": {
                "description" : "Indicates that OIC client sent an invalid property value to the
server.\nThe server responds with the current resource representation.\n",
                "x-example":
                  {
                    "id":     "unique_example_id",
                    "height": 200.0
                  }
                  ,
                "schema": { "$ref": "#/definitions/Height" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
```

```
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Height" :
              {
          "properties": {
            "height": {
              "description": "Height of an object",
              "minimum": 0,
              "type": "number"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
```

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

    }
  }
```

B.41.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
Height	숫자	예		물체의 높이
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

B.41.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/HeightResURI		get	post		

B.42 습도

B.42.1 개요

이 resource 는 감지되거나 요구되는 습도를 기술한다. 값 humidity 는 측정된 상대 습도의 백분율을 기술하는 정수이다. 값 desiredHumidity 는 요구되는 상대 습도를 나타내는 정수 이다. 현재의 (상대) 습도 레벨을 검색한다.

B.42.2 URI 예

/HumidityResURI

B.42.3 Resource Type

resource type (rt)는 ['oic.r.humidity']로 정의된다.

B.42.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Humidity",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HumidityResURI" : {
      "get": {
        "description": "This resource describes a sensed or desired humidity.\nThe value humidity
is an integer describing the percentage measured relative humidity.\nThe value desiredHumidity is
an integer showing the desired target relative humidity.\nRetrieves the current (relative) humidity
level.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":               ["oic.r.humidity"],
                  "id":               "unique_example_id",
                  "humidity":         40,
                  "desiredHumidity":  40
                }
                ,
              "schema": { "$ref": "#/definitions/Humidity" }
            }
        }
      },
      "post": {
        "description": "Sets the desired relative humidity level.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/HumidityUpdate" },
            "x-example":
              {
                "id":               "unique_example_id",
                "desiredHumidity" : 45
              }
          }
        ],
        "responses": {
```

```
              "200": {
                "description" : "Indicates that the relative humidity level was changed.\nThe new
relative humidity level is provided in the response.\n",
                "x-example":
                  {
                    "id":               "unique_example_id",
                    "desiredHumidity": 45
                  }
                  ,
                "schema": { "$ref": "#/definitions/HumidityUpdate" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Humidity" :
              {
          "properties": {
            "desiredHumidity": {
              "description": "Desired value for Humidity",
              "type": "integer"
            },
            "humidity": {
              "description": "Current sensed value for Humidity",
              "readOnly": true,
              "type": "integer"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
```



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

      ,
      "HumidityUpdate" :
              {
          "properties": {
            "desiredHumidity": {
              "description": "Desired value for Humidity",
              "type": "integer"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
```

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

    }
  }
```

B.42.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
desiredHumidity	정수			습도에 대해 요구되는 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
습도	정수	예	Read Only	습도에 대해 현재 감지된 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
desiredHumidity	정수			습도에 대해

				요구되는 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.42.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/HumidityResURI		get	post		

B.43 제빙기

B.43.1 개요

이 resource 는 제빙기의 동작 상태를 기술한다. Status 는 가능한 제빙기 상태의 집합으로부터 하나의 값을 포함하는 하나의 스트링이다. 가능한 상태는 열거형 [on, off, full]에 의해 정의된다.

'on' 상태는 제빙기가 동작중인 것을 나타낸다. 'off' 상태는 제빙기가 동작하지 않음을 나타낸다.

'full' 상태는 얼음 통이 채워져 있음 (제빙기가 동작 중)을 나타낸다. 현재의 제빙기 상태를 검색한다.

B.43.2 URI 예

/IceMakerResURI

B.43.3 Resource Type

resource type (rt)는 ['oic.r.icemaker']로 정의된다.

B.43.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Ice Maker",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
```

```
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/IceMakerResURI" : {
      "get": {
        "description": "This resource describes an the operational state of an Ice Maker.\nThe
status is a string containing a value from the set of possible ice maker statuses.\nThe possible
statuses are defined by the enumeration [on, off, full]\nA status of 'on' means that the Ice Maker
is operating.\nA status of 'off' means that the Ice Maker is not operating.\nA status of 'full'
means that the ice collection bin is full (Ice Maker is operating).\nRetrieves the current Ice
Maker status.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":     ["oic.r.icemaker"],
                  "id":     "unique_example_id",
                  "status": "on"
                }
                ,
              "schema": { "$ref": "#/definitions/IceMaker" }
            }
        }
      },
      "post": {
        "description": "Sets the desired Ice Maker status.\nOnly valid settings for status in a
Post shall be [on,off].\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/IceMakerUpdate" },
            "x-example":
              {
                "id":     "unique_example_id",
                "status": "off"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the Ice Maker status was changed.\nThe new status  is
provided in the response.\n",
              "x-example":
                {
                  "id":     "unique_example_id",
                  "status": "off"
                }
                ,
              "schema": { "$ref": "#/definitions/IceMakerUpdate" }
            },
            "403": {
              "description" : "This response is generated by the OIC Server when the client
sends:\n  An update with an invalid property value for status.\nThe server responds with the
```

```
current resource representation.\n",
                "x-example":
                  {
                    "id":     "unique_example_id",
                    "status": "off"
                  }
                  ,
                "schema": { "$ref": "#/definitions/IceMakerUpdate" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "IceMaker" :
              {
          "properties": {
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "status": {
              "description": "Status of the Ice Maker",
              "enum": [
                "on",
                "off",
                "full"
              ]
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
```

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

      ,
      "IceMakerUpdate" :
              {
          "properties": {
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "status": {
              "description": "Set the status of the Ice Maker",
              "enum": [
                "on",
                "off"
              ]
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
```

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

    }
  }
```

B.43.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
status	복수 타입 schema 참조	예		제빙기의 상태
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도

step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
status	복수 타입: schema 참조	예		제빙기의 상태 설정

B.43.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/IceMakerResURI		get	post		

B.44 조도 센서

B.44.1 개요

이 resource 는 조도 센서를 기술한다. 조도는 부동 소수점 형이고, 단위 면적당 감지된 광속을 lux 단위로 표현한다.

B.44.2 URI 예

/IlluminanceSensorResURI

B.44.3 Resource Type

resource type (rt)는 ['oic.r.sensor.illuminance']로 정의된다.

B.44.4 Swagger2.0 정의

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

```
    "consumes": ["application/json"],
    "produces": ["application/json"],
    "paths": {
      "/IlluminanceSensorResURI" : {
        "get": {
          "description": "This resource describes an illuminance sensor.\nIlluminance is a float and
represents the sensed luminous flux per unit area in lux.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":           ["oic.r.sensor.illuminance"],
                    "id":           "unique_example_id",
                    "illuminance":  450.0
                  }
                  ,
                "schema": { "$ref": "#/definitions/Illuminance" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Illuminance" :
              {
          "properties": {
            "illuminance": {
              "description": "Sensed luminous flux per unit area in lux.",
              "readOnly": true,
              "type": "number"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
```

```
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "illuminance"
          ]
        }

    }
  }
```

B.44.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도
illuminance	숫자	예	Read Only	단위 면적당 lux 단위의 감지된 광속

B.44.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/IlluminanceSensorResURI		get			

B.45 잠금 코드

B.45.1 개요

잠금 코드를 기술하는 Resource. lockCodeList 는 잠금 관련 가능 코드의 배열이다. 이들은 모두 스트링으로 제공된다. 현재의 자물쇠 코드 값을 검색한다.

B.45.2 URI 예

/LockCodeResURI

B.45.3 Resource Type

resource type (rt)는 ['oic.r.lock.code']로 정의된다.

B.45.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Lock Code",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/LockCodeResURI" : {
      "get": {
        "description": "Resource describing a lock code.\nThe lockCodeList is an array of possible
codes that may be associated with a lock.\nThese are all presented as strings.\nRetrieves the
current lock code values.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
```

```
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":           ["oic.r.lock.code"],
                    "id":           "unique_example_id",
                    "lockCodeList": ["012345","112233"]
                  }
                  ,
                "schema": { "$ref": "#/definitions/LockCode" }
              }
          }
        },
        "post": {
          "description": "Updates the current lock code values.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/LockCode" },
              "x-example":
                {
                  "id":           "unique_example_id",
                  "lockCodeList": ["543210","332211"]
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":           "unique_example_id",
                    "lockCodeList": ["543210","332211"]
                  }
                  ,
                "schema": { "$ref": "#/definitions/LockCode" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "LockCode" :
              {
          "properties": {
            "lockCodeList": {
              "items": {
                "description": "Value for the lock code",
                "type": "string"
              },
              "type": "array"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
```

```
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "lockCodeList"
          ],
          "type": "object"
        }

    }
  }
```

B.45.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한

				유효 범위
lockCodeList	배열: schema 참조	예		
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
precision	숫자		Read Only	노출된 값의 정확도

B.45.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/LockCodeResURI		get	post		

B.46 잠금

B.46.1 개요

잠금을 기술하는 Resource. lockState 의 type 에 대해 값 'Locked'는 도어가 잠겨 있는 상태를 나타낸다. 값 'Unlocked' 는 도어가 잠겨 있지 않은 상태를 나타낸다.

B.46.2 URI 예

/LockStatusResURI

B.46.3 Resource Type

resource type (rt)는 ['oic.r.lock.status']로 정의된다.

B.46.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Lock",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
```

```
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/LockStatusResURI" : {
      "get": {
        "description": "Resource describing a lock.\nFor the type of lockState, the value 'Locked'
indicates that the door is Locked.\nThe value 'Unlocked' indicates that the door is
Unlocked.\nRetrieves the state of the lock.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":         ["oic.r.lock.status"],
                  "id":         "unique_example_id",
                  "lockState":  "Locked"
                }
                ,
              "schema": { "$ref": "#/definitions/Lock" }
            }
        }
      },
      "post": {
        "description": "Sets the current lock state.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Lock" },
            "x-example":
              {
                "id":         "unique_example_id",
                "lockState":  "Unlocked"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "id":         "unique_example_id",
                  "lockState":  "Unlocked"
                }
                ,
              "schema": { "$ref": "#/definitions/Lock" }
            },
            "403": {
              "description" : "This response is generated by the OIC Server when the client
sends:\n  An update with an invalid property value for lockState.\nThe server responds with the
current resource representation.\n",
              "x-example":
                {
                  "lockState": "Unlocked"
                }
                ,
```

```
                "schema": { "$ref": "#/definitions/Lock" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Lock" :
              {
          "properties": {
            "lockState": {
              "description": "State of the lock.",
              "enum": [
                "Locked",
                "Unlocked"
              ],
              "type": "string"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
```

```
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "lockState"
          ],
          "type": "object"
        }

    }
  }
```

B.46.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
lockState	스트링	예		자물쇠의 상태
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
precision	숫자		Read Only	노출된 값의 정확도
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

B.46.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/LockStatusResURI		get	post		

B.47 자계 방향 센서

B.47.1 개요

이 resource 는 공간 내에서 Observer 의 현재 지점에서 지구 자계의 방향을 기술한다. 일반적인 사용의 경우는 개인용 device 상에서 나침반 판독 값의 측정을 포함한다. 값은 각각이 부동 소수점 형인 Hx, Hy, 및 Hz (이 순서대로)를 포함하는 배열이다. Hx, Hy, 및 Hz 의 각각은 A/m 로 표현된다.

B.47.2 URI 예

/MagneticFieldDirectionResURI

B.47.3 Resource Type

resource type (rt)는 ['oic.r.sensor.magneticfielddirection']로 정의된다.

B.47.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Magnetic Field Direction Sensor",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MagneticFieldDirectionResURI" : {
      "get": {
        "description": "This resource describes the direction of the Earth's magnetic field at the
observer's current point in space.\nTypical use case includes measurement of compass readings on a
personal device.\nThe value is an array containing Hx, Hy, Hz (in that order) each of which are
floats.\nEach of Hx, Hy and Hz are expressed in A/m (Amperes per metre)\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":     ["oic.r.sensor.magneticfielddirection"],
                  "id":     "unique_example_id",
                  "value":  [100.0,15.0,90.0]
                }
                ,
              "schema": { "$ref": "#/definitions/magneticFieldDirection" }
            }
        }
      }
    }
  },
  "parameters": {
```

```
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "magneticFieldDirection" :
              {
          "properties": {
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "description": "Array containing Hx, Hy, Hz.",
              "items": {
                "type": "number"
              },
              "maxItems": 3,
              "minItems": 3,
              "readOnly": true,
              "type": "array"
            }
          },
          "required": [
            "value"
          ]
        }

    }
  }
```

B.47.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의

				정확도
range	배열 schema 참조		Read Only	value Property 에 대한 유효 범위
value	배열: schema 참조	예	Read Only	Hx, Hy, 및 Hz 를 포함하는 배열.
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.47.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/MagneticFieldDirectionResURI		get			

B.48 Media

B.48.1 개요

이 resource 는 OCF Serve 가 지원하는 Media 유형을 규정한다. Resource 는 Media 요소의 배열이다. 각 요소는 다음을 포함한다: 규정된 Media 유형이 액세스될 수 있는 URL. SDP 를 사용하는 Media 의 정의를 포함하는 스트링 배열. sdp 배열 내의 각 entry 는 SDP 라인이다. 각 라인은 SDP 스펙에서 정의된 SDP 구문을 따라야 한다.

SDP 스펙은 http://tools.ietf.org/html/rfc4566 에서 찾을 수 있다. 현재의 Media Source 를 검색한다.

B.48.2 URI 예

/MediaResURI

B.48.3 Resource Type

resource type (rt)는 ['oic.r.media']로 정의된다.

B.48.4 Swagger2.0 정의

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

```
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MediaResURI" : {
      "get": {
        "description": "This resource specifies the media types that an OCF Server supports.\nThe
resource is an array of media elements.  Each element contains:\n    A URL at which the specified
media type can be accessed.\n    A string array containing the definition of the media using SDP.\n
Each entry in the sdp array is an SDP line.\n    Each line shall follow the SDP description syntax
as defined in the SDP specification.\nThe SDP specification can be found at
http://tools.ietf.org/html/rfc4566.\nRetrieves the current media resource.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.media"],
                  "id": "unique_example_id",
                  "media": [
                    {
                      "url": "some example url",
                      "sdp": [
                        "m=video 1 RTP/AVP 96",
                        "a=rtpmap:96 H264/9000",
                        "a=fmtp:96 profile-level-id=42A028;packetization-mode=1"
                      ]
                    },
                    {
                      "url": "some other example1 url",
                      "sdp": [
                        "m=audio 2 RTP/AVP 97",
                        "a=rtpmap:97 MP4A-LATM/90000"
                      ]
                    },
                    {
                      "url": "some other example2 url",
                      "sdp": [
                        "m=video 3 RTP/AVP 98",
                        "a=rtpmap:98 jpeg/90000",
                        "a=fmtp:98 sampling=YCbCr-4:2:0;width=256;height=256"
                      ]
                    }
                  ]
                }
                ,
              "schema": { "$ref": "#/definitions/Media" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
```

```
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Media" :
              {
          "properties": {
            "media": {
              "items": {
                "properties": {
                  "sdp": {
                    "description": "Array of strings, one per SDP line",
                    "items": {
                      "description": "SDP media or attribute line",
                      "type": "string"
                    },
                    "type": "array"
                  },
                  "url": {
                    "description": "url for the media instance",
                    "type": "string"
                  }
                },
                "type": "object"
              },
              "type": "array"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
```

```
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "media"
          ]
        }

    }
  }
```

B.48.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
media	배열: schema 참조	예		

B.48.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/MediaResURI		get			

B.49 Media Source

B.49.1 개요

이 resource 는 device 상에 존재하는 Media Source 를 정의한다. sources 는 입력 Source 또는 출력 Source 가 될 수 있고, 이 resource 는 이에 관계 없이 기능한다. sourceName 은 미리-정의된 Media 입력 또는 출력 (예: "HDMI", "DVI")을 규정한다. sourceNumber 는 개체(예: "PC", 1)를

규정하기 위한 숫자형 식별자이다. sourceType 은 Source 가 오디오, 비디오 또는 둘 다인지를 정의하기 위한 열거형이다. Status 는 특정 Source 개체가 선택되었는지 여부를 결정하기 위한 Boolean 형이다. true 의 status 는 Source 개체가 선택되었음을 의미한다. false 의 status 는 Source 개체가 선택되지 않았음을 의미한다.

B.49.2 URI 예

/mediaSourceResURI

B.49.3 Resource Type

resource type (rt)는 ['oic.r.mediasource']로 정의된다.

B.49.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Source",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/mediaSourceResURI" : {
      "get": {
        "description": "This resource defines a media source that exists on a device.\nThe source
can be an input source or output source, this resource is agnostic of that.\nThe sourceName
specifies a pre-defined media input or output (e.g.\"HDMI\", \"DVI\")\nThe sourceNumber is a
numeric identifier to specify the instance (e.g. \"PC\", 1)\nThe sourceType is an enumeration
defining whether the source is audio, video or both.\nThe status is a boolean that determines if
the specific source instance is selected or not.\n    A status of true means that the source
instance is selected.\n    A status of false means that the source instance is not selected.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":           ["oic.r.mediasource"],
                  "id":           "unique_example_id",
```

```
                    "sourceName":   "HDMI-CEC",
                    "sourceNumber": "1",
                    "sourceType":   "videoPlusAudio",
                    "status":       true
                  }
                  ,
                "schema": { "$ref": "#/definitions/mediaSource" }
              }
          }
        },
        "post": {
          "description": "Changes the status of the source.\nAllows changes of the sourceName and the
status.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/mediaSource" },
              "x-example":
                {
                  "id":           "unique_example_id",
                  "sourceName":   "my new name",
                  "sourceNumber": "1",
                  "status":       true
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":           "unique_example_id",
                    "sourceName":   "my new name",
                    "sourceNumber": "1",
                    "status":       true
                  }
                  ,
                "schema": { "$ref": "#/definitions/mediaSource" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "mediaSource" :
              {
          "properties": {
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
```

```
                "type": "integer"
              }
            ]
          },
          "maxItems": 2,
          "minItems": 2,
          "readOnly": true,
          "type": "array"
        },
        "sourceName": {
          "description": "Specifies a pre-defined media input or output",
          "type": "string"
        },
        "sourceNumber": {
          "description": "Numeric identifier to specify the instance",
          "readOnly": true,
          "type": [
            "integer",
            "string"
          ]
        },
        "sourceType": {
          "description": "Specifies the type of the source",
          "enum": [
            "audioOnly",
            "videoOnly",
            "audioPlusVideo"
          ],
          "readOnly": true
        },
        "status": {
          "description": "Specifies if the specific source instance is selected or not",
          "type": "boolean"
        },
        "step": {
          "anyOf": [
            {
              "type": "integer"
            },
            {
              "type": "number"
            }
          ],
          "description": "Step value across the defined range",
          "readOnly": true
        },
        "value": {
          "anyOf": [
            {
              "type": "array"
            },
            {
              "type": "string"
            },
            {
              "type": "boolean"
            },
            {
              "type": "integer"
            },
            {
              "type": "number"
            },
            {
              "type": "object"
            }
          ],
          "description": "The value sensed or actuated by this Resource"
        }
      },
      "required": [
```

```
            "sourceName",
            "status"
          ]
        }

    }
  }
```

B.49.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
sourceName	스트링	예		미리 정의된 Media 입력 또는 출력을 규정
sourceType	복수 타입: schema 참조		Read Only	소스의 유형을 규정
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도
status	boolean	예		특정 Source 개체가 선택되었는지 여부를 규정한다
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
sourceNumber	['정수', '스트링']		Read Only	개체를 규정하기 위한 숫자 식별자
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.49.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/mediaSourceResURI		get	post		

B.50 Media Source 목록

B.50.1 개요

이 resource 는 device 상에서 사용 가능한 Media Source 의 목록을 제공한다. Sources 는 개별적으로 정의된 mediaSource 의 배열이다.

기본적인 resource type oic.r.mediaSourceList 는 소스가 입력 또는 출력인지의 어떠한 표시도 제공하지 않는다. 따라서, 이 resource 의 2 가지 사양이 존재한다. Device 가 입력 소스를 노출할 때 oic.r.media.input 의 resource type 을 갖는 이 resource 의 개체가 노출된다.

Device 가 출력 소스를 노출할 때, oic.r.media.output 의 resource type 을 갖는 이 resource 의 개체가 노출된다. Device 가 입력 및 출력 소스를 둘 다 노출할 때 이 resource 의 2 가지 개체, 즉, 하나의 resource type oic.r.media.input 을 갖는 개체와 oic.r.media.output 의 resource type 을 갖는 개체를 노출시킨다.

B.50.2 URI 예

/mediaSourceListResURI

B.50.3 Resource Type

resource type (rt)는 ['oic.r.mediasourcelist']로 정의된다.

B.50.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Source List",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/mediaSourceListResURI" : {
      "get": {
        "description": "This resource provides the list of media sources available on the
device.\nThe sources are an array of mediaSource(s) as separately defined.\nThe basic resource type
oic.r.mediaSourceList does not provide any indications whether the source is input or
output.\nHence, two specializations of this resource exist.\nWhen a device exposes input sources
then an instance of this resource with a resource type of oic.r.media.input is exposed.\nWhen a
device exposes output sources then an instance of this resource with a resource type of
oic.r.media.output is exposed.\nA device that exposes both input and output media sources then
```

```
exposes two instances of this resource,\none with a resource type or oic.r.media.input and one with
a resource type of oic.r.media.output\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.mediasourcelist"],
                  "id": "unique_example_id",
                  "sources": [
                    {
                      "sourceName": "HDMI-CEC",
                      "sourceNumber": "1",
                      "sourceType": "audioPlusVideo",
                      "status": true
                    },
                    {
                      "sourceName": "dualRCA",
                      "sourceNumber": "1",
                      "sourceType": "audioOnly",
                      "status": false
                    }
                  ]
                }
                ,
              "schema": { "$ref": "#/definitions/mediaSourceList" }
            }
        }
      },
      "post": {
        "description": "Changes the status of the source(s).\nAllows changes of the sourceName and
the status.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/mediaSourceList" },
            "x-example":
              {
                "id":     "unique_example_id",
                "sources": [
                  {
                   "sourceName":    "my new name",
                   "sourceNumber":  "1",
                   "status":        true
                  }
                ]
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "id":     "unique_example_id",
                  "sources": [
                    {
                      "sourceName":   "my new name",
                      "sourceNumber": "1",
                      "status":       true
                    }
                  ]
                }
                ,
              "schema": { "$ref": "#/definitions/mediaSourceList" }
```

```
              }
            }
          }
        }
      },
      "parameters": {
        "interface" : {
          "in" : "query",
          "name" : "if",
          "type" : "string",
          "enum" : ["oic.if.a", "oic.if.baseline"]
        }
      },
      "definitions": {
        "mediaSourceList" :
              {
            "properties": {
              "precision": {
                "description": "Accuracy granularity of the exposed value",
                "readOnly": true,
                "type": "number"
              },
              "range": {
                "description": "The valid range for the value Property",
                "items": {
                  "anyOf": [
                    {
                      "type": "number"
                    },
                    {
                      "type": "integer"
                    }
                  ]
                },
                "maxItems": 2,
                "minItems": 2,
                "readOnly": true,
                "type": "array"
              },
              "sources": {
                "items": {
                  "oneOf": [
                    {
                      "properties": {
                        "sourceName": {
                          "description": "Specifies a pre-defined media input or output",
                          "type": "string"
                        },
                        "sourceNumber": {
                          "description": "Numeric identifier to specify the instance",
                          "readOnly": true,
                          "type": [
                            "integer",
                            "string"
                          ]
                        },
                        "sourceType": {
                          "description": "Specifies the type of the source",
                          "enum": [
                            "audioOnly",
                            "videoOnly",
                            "audioPlusVideo"
                          ],
                          "readOnly": true
                        },
                        "status": {
                          "description": "Specifies if the specific source instance is selected or not",
                          "type": "boolean"
                        }
                      }
                    }
```



```
                ]
              },
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "sources"
          ]
        }

    }
  }
```

B.50.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
sources	배열 schema 참조	예		
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도
range	배열: schema 참조		Read Only	value Property 에 대한

				유효 범위
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.50.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/mediaSourceListResURI		get	post		

B.51 Media Source 입력

B.51.1 개요

이 resource 는 device 상에서 사용 가능한 입력 Media Source 의 목록을 제공한다. Sources 는 개별적으로 정의된 mediaSource 의 배열이다.

B.51.2 URI 예

/mediaSourceInputResURI

B.51.3 Resource Type

resource type (rt)는 ['oic.r.media.input']로 정의된다.

B.51.4 Swagger2.0 정의

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

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

```
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "mediaSourceList" :
              {
          "properties": {
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "sources": {
              "items": {
                "oneOf": [
                  {
                    "properties": {
                      "sourceName": {
                        "description": "Specifies a pre-defined media input or output",
                        "type": "string"
                      },
                      "sourceNumber": {
                        "description": "Numeric identifier to specify the instance",
                        "readOnly": true,
                        "type": [
                          "integer",
                          "string"
                        ]
                      },
                      "sourceType": {
                        "description": "Specifies the type of the source",
                        "enum": [
                          "audioOnly",
                          "videoOnly",
                          "audioPlusVideo"
                        ],
                        "readOnly": true
                      },
                      "status": {
                        "description": "Specifies if the specific source instance is selected or not",
                        "type": "boolean"
                      }
                    }
                  }
                ]
              },
              "type": "array"
```

```
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "sources"
          ]
        }

  }
}
```

B.51.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
sources	배열: schema 참조	예		
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나

				작동된 값

B.51.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/mediaSourceInputResURI		get	post		

B.52 Media Source 출력

B.52.1 개요

이 resource 는 device 상에서 사용 가능한 출력 Media Source 의 목록을 제공한다. Sources 는 개별적으로 정의된 mediaSource 의 배열이다.

B.52.2 URI 예

/mediaSourceOutputResURI

B.52.3 Resource Type

resource type (rt)는 ['oic.r.media.output']으로 정의된다.

B.52.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Source Output",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/mediaSourceOutputResURI" : {
      "get": {
        "description": "This resource provides the list of output media sources available on the
device.\nThe sources are an array of mediaSource(s) as separately defined.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
```

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

```
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "mediaSourceList" :
              {
          "properties": {
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "sources": {
              "items": {
                "oneOf": [
                  {
                    "properties": {
                      "sourceName": {
                        "description": "Specifies a pre-defined media input or output",
                        "type": "string"
                      },
                      "sourceNumber": {
                        "description": "Numeric identifier to specify the instance",
                        "readOnly": true,
                        "type": [
                          "integer",
                          "string"
                        ]
                      },
                      "sourceType": {
                        "description": "Specifies the type of the source",
                        "enum": [
                          "audioOnly",
                          "videoOnly",
                          "audioPlusVideo"
                        ],
                        "readOnly": true
                      },
                      "status": {
                        "description": "Specifies if the specific source instance is selected or not",
                        "type": "boolean"
                      }
                    }
                  }
                ]
              },
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
```

```
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "sources"
          ]
        }

    }
  }
```

B.52.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
sources	배열: schema 참조	예		
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
precision	숫자		Read Only	노출된 값의 정확도

B.52.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/mediaSourceOutputResURI		get	post		

B.53 모드

B.53.1 개요

이 resource 는 하나의 device 가 제공할 수 있는 동작 모드를 기술한다. 모드는 판독 또는 설정될 수 있다. supportedMode 는 device 가 지원 가능한 모드의 배열이다. modes 는 현재 활성인 모드의 배열이다. 현재의 모드를 검색한다.

B.53.2 URI 예

/ModeResURI

B.53.3 Resource Type

resource type (rt)는 ['oic.r.mode']로 정의된다.

B.53.4 Swagger2.0 정의

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

```
          "parameters": [
            {"$ref": "#/parameters/interface"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":             ["oic.r.mode"],
                    "id":             "unique_example_id",
                    "supportedModes": ["active","armedAway","armedStay","armedInstant"],
                    "modes":          ["active"]
                  }
                  ,
                "schema": { "$ref": "#/definitions/Mode" }
              }
          }
        },
        "post": {
          "description": "Sets the desired mode.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/ModeUpdate" },
              "x-example":
                {
                  "id":    "unique_example_id",
                  "modes": ["armedAway"]
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":    "unique_example_id",
                    "modes": ["armedAway"]
                  }
                  ,
                "schema": { "$ref": "#/definitions/ModeUpdate" }
              },
              "403": {
                "description" : "This response is generated by the OIC Server when the client
sends:\n  An update with an value for mode that is not found in supportedModes.\nThe server
responds with the current resource representation.\n",
                "x-example":
                  {
                    "id":             "unique_example_id",
                    "supportedModes": ["active","armedAway","armedStay","armedInstant"],
                    "modes":          ["active"]
                  }
                  ,
                "schema": { "$ref": "#/definitions/Mode" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
```

```
      "Mode" :
              {
          "properties": {
            "modes": {
              "description": "Array of the currently active mode(s)",
              "items": {
                "type": "string"
              },
              "type": "array"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "supportedModes": {
              "description": "Array of possible modes the device supports.",
              "items": {
                "type": "string"
              },
              "readOnly": true,
              "type": "array"
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
```



```
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "supportedModes",
            "modes"
          ],
          "type": "object"
        }

      ,
      "ModeUpdate" :
              {
          "properties": {
            "modes": {
              "description": "Desired mode",
              "items": {
                "type": "string"
              },
              "type": "array"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
```

```
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "modes"
          ],
          "type": "object"
        }

    }
  }

```

B.53.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
supportedMode	배열: schema 참조	예	Read Only	device 가 지원 가능한 모드의 배열
Mode	배열: schema 참조	예		현재 활성인 모드의 배열
precision	숫자		Read Only	노출된 값의 정확도
precision	숫자		Read Only	노출된 값의 정확도
Mode	배열: schema 참조	예		요구되는 모드
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값

B.53.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ModeResURI		get	post		

B.54 모션 센서

B.54.1 개요

이 resource 는 움직임이 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 움직임이 감지되었음을 의미한다. 'false' 값은 움직임이 감지되지 않았음을 의미한다.

B.54.2 URI 예

/MotionResURI

B.54.3 Resource Type

resource type (rt)는 ['oic.r.sensor.motion']으로 정의된다.

B.54.4 Swagger2.0 정의

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

```
        "get": {
          "description": "This resource describes whether motion has been sensed or not.\nThe value
is a boolean.\nA value of 'true' means that motion has been sensed.\nA value of 'false' means that
motion not been sensed.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":    ["oic.r.sensor.motion"],
                    "id":    "unique_example_id",
                    "value": true
                  }
                  ,
                "schema": { "$ref": "#/definitions/Motion" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Motion" :
              {
          "allOf": [
            {
              "properties": {
                "precision": {
                  "description": "Accuracy granularity of the exposed value",
                  "readOnly": true,
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
```

```
                "value": {
                  "description": "true = sensed, false = not sensed.",
                  "readOnly": true,
                  "type": "boolean"
                }
              },
              "type": "object"
            }
          ],
          "required": [
            "value"
          ]
        }

    }
  }
```

B.54.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	true = 감지 false = 미 감지
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도

B.54.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/MotionResURI		get			

B.55 이동

B.55.1 개요

이 resource 는 선형 이동을 규정한다. movementSettings 는 가능한 이동 값(예: 회전, 정지, 좌측, 우측)을 포함하는 스트링의 배열이다. Movement 는 현재 선택된 이동 값이다. movementModifier 는 이동 값에 대한 변경자 (예: "회전", "90")이다.

B.55.2 URI 예

/MovementResURI

B.55.3 Resource Type

resource type (rt)는 ['oic.r.movement.linear']로 정의된다.

B.55.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Movement",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MovementResURI" : {
      "get": {
        "description": "This resource specifies linear movement.\nThe movementSettings is an array
of strings containing possible movement values (e.g. spin, stop, left, right).\nThe movement is the
currently selected movement value.\nThe movementModifier is a modifier to the movement value (e.g.
\"spin\", \"90\")\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":               ["oic.r.movement.linear"],
                  "id":               "unique_example_id",
                  "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
                  "movement":         "rotate",
                  "movementModifier": "90"
                }
                ,
              "schema": { "$ref": "#/definitions/movement" }
            }
        }
      },
      "post": {
        "description": "Sets the current device movement\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/movement" },
            "x-example":
              {
```

```
                  "id":       "unique_example_id",
                  "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
                  "movement": "stop"
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":       "unique_example_id",
                    "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
                    "movement": "stop"
                  }
                  ,
                "schema": { "$ref": "#/definitions/movement" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "movement" :
              {
          "properties": {
            "movement": {
              "description": "Current movement value",
              "type": "string"
            },
            "movementModifier": {
              "description": "Modifier to the movement value (e.g. spin-90, left-20), units are
device dependent",
              "type": "string"
            },
            "movementSettings": {
              "description": "array of possible movement values",
              "items": {
                "type": "string"
              },
              "readOnly": true,
              "type": "array"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
```

```
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "movementSettings",
            "movement"
          ],
          "type": "object"
        }

    }
  }
```

B.55.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도
movementSettings	배열: schema 참조	예	Read Only	가능한 이동 값의 배열
movement	스트링	예		현재의 이동 값
movementModifier	스트링			이동 값에 대한

				변경자(예: 회전 90, 좌측 20). 단위는 device 에 의존한다.
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값

B.55.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/MovementResURI		get	post		

B.56 야간 모드

B.56.1 개요

이 resource 는 야간 모드 on/off 기능을 기술한다. 'true'의 nightMode 값은 기능이 on 임을 의미한다. 'false' 의 nightMode 값은 기능이 off 임을 의미한다.

B.56.2 URI 예

/NightModeResURI

B.56.3 Resource Type

resource type (rt)는 ['oic.r.nightmode']로 정의된다.

B.56.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Night Mode",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
```

```
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/NightModeResURI" : {
      "get": {
        "description": "This resource describes a night mode on/off feature.\nA nightMode value of
'true' means that the feature is on.\nA nightMode value of 'false' means that the feature is
off.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":         ["oic.r.nightmode"],
                  "id":         "unique_example_id",
                  "nightMode":  false
                }
                ,
              "schema": { "$ref": "#/definitions/NightMode" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/NightMode" },
            "x-example":
              {
                "id":         "unique_example_id",
                "nightMode":  true
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "id":         "unique_example_id",
                  "nightMode":  true
                }
                ,
              "schema": { "$ref": "#/definitions/NightMode" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
```

```
      "NightMode" :
              {
          "properties": {
            "nightMode": {
              "description": "Status of the Night Mode",
              "type": "boolean"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "nightMode"
          ],
          "type": "object"
        }

```



```
    }
  }
```

B.56.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
nightMode	boolean	예		야간 모드의 상태

B.56.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/NightModeResURI		get	post		

B.57 개방도

B.57.1 개요

이 resource 는 창, 도어, 블라인드, 또는 셔터와 같은 개체가 얼마나 개방되어 있는지를 기술한다. openLevel 은 판독될 수 있다 (센서로 작용). openLevel 은 또한 설정될 수 있다 (액츄에이터로 작용).

openLevel 은 제공된 범위에 걸쳐 device 에 의존한다. (oic.r.baseresource 로 부터의) 범위가 생략되면 0 내지 100 이 가정되고, 여기에서 0 은 폐쇄를 의미하고, 100 은 완전 개방을 의미한다. 하나의 범위가 제공되면, 하한=폐쇄이고, 상한=개방이다. (oic.r.baseresource 로부터의) 증분이 제공되면 가능한 값 사이의 증가를 표현하고 제공되지 않는다면, 1 이 가정된다. 현재의 개방도를 검색한다.

B.57.2 URI 예

/OpenLevelResURI

B.57.3 Resource Type

resource type (rt)는 ['oic.r.openlevel']로 정의된다.

B.57.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Open Level",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/OpenLevelResURI" : {
      "get": {
        "description": "This resource describes how open or ajar an entity such as a window, door,
blind or shutter is.\nThe openLevel can be read (acting as a sensor).\nThe openLevel can also be
set (acting as an actuator).\nThe openLevel is device dependent across the range provided.\nWhen
range (from oic.r.baseresource) is omitted then 0 to 100 is assumed where 0 means closed, 100 means
fully open.\nIf a range is provided then the lower bound=closed, upper bound=open.\nIf step (from
oic.r.baseresource) is present then it represents the increment between possible values; if not
provided 1 is assumed.\nRetrieves the current openLevel.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":         ["oic.r.openlevel"],
                  "id":         "unique_example_id",
                  "openLevel":  50,
                  "step":       2,
                  "range":      [0,100]
                }
                ,
              "schema": { "$ref": "#/definitions/OpenLevel" }
            }
        }
      },
      "post": {
        "description": "Sets the desired openLevel.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
```

```
              "schema": { "$ref": "#/definitions/OpenLevel" },
              "x-example":
                {
                  "id":         "unique_example_id",
                  "openLevel":  0
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":         "unique_example_id",
                    "openLevel":  0
                  }
                  ,
                "schema": { "$ref": "#/definitions/OpenLevel" }
              },
              "403": {
                "description" : "This response is generated by the OIC Server when the client
sends:\n  An update with an out of range property value for openLevel.\nThe server responds with
the current resource representation.\n",
                "x-example":
                  {
                    "id":         "unique_example_id",
                    "openLevel":  50,
                    "step":       2,
                    "range":      [0,100]
                  }
                  ,
                "schema": { "$ref": "#/definitions/OpenLevel" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "OpenLevel" :
              {
          "properties": {
            "increment": {
              "description": "Deprecated, use 'step' instead.",
              "readOnly": true,
              "type": "integer"
            },
            "openLevel": {
              "description": "How open or ajar the entity is",
              "type": "integer"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
```

```
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "openLevel"
          ],
          "type": "object"
        }

    }
  }
```

B.57.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
increment	정수		Read Only	사용 중지, 대신에 'step'을 사용
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

precision	숫자		Read Only	노출된 값의 정확도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
openLevel	정수	예		개체가 얼마나 개방되어 있는지

B.57.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/OpenLevelResURI		get	post		

B.58 동작 상태

B.58.1 개요

이 resource 는 device 에 대한 동작 및 작업 상태를 기술한다. states 는 판독 또는 설정될 수 있고, setting 은 요구되는 상태를 나타낸다.

Device 는 불리한 동작 특성을 초래할 수 있는 상태로의 설정 시도를 거부할 수 있다. machineStates 는 가능한 동작 상태의 배열이다. currentMachineState 는 device 동작의 현재의 상태이다. jobStates 는 가능한 작업 상태의 배열이다. currentJobState 는 현재 활성인 job 상태이다.

runningTime 은 현재의 동작상태내에서 ISO8601 인코딩된 경과 시간이다. remainingTime 은 현재의 동작상태의 완료까지 ISO8601 인코딩된 시간이다. progressPercentage 는 현재 jobState 의 완료도를 백분율로 표시한다. 현재의 동작 및 작업 상태를 검색한다.

B.58.2 URI 예

/OperationalStateResURI

B.58.3 Resource Type

resource type (rt)는 ['oic.r.operational.state']로 정의된다.

B.58.4 Swagger2.0 정의

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

```
  "info": {
    "title": "Operational State",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/OperationalStateResURI" : {
      "get": {
        "description": "This resource describes the operational and job states on a device.\nThe
states can be read or set, setting indicates a desired state.\nA device may reject an attempt to
set a state that would result\nin adverse operational characteristics.\nThe machineStates is an
array of the possible operational states.\nThe currentMachineState is the current state of
operation of the device.\nThe jobStates is an array of the possible job states.\nThe
currentJobState is the currently active jobState.\nThe runningTime is the ISO8601 encoded elapsed
time in the current operational state.\nThe remainingTime is the ISO8601 encoded time till
completion of the current operational state.\nThe progressPercentage is the percentage completeness
of the current jobState.\nRetrieves the current operational and job states.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":                   ["oic.r.operational.state"],
                  "id":                   "unique_example_id",
                  "machineStates":        ["pause", "stopped", "idle", "active"],
                  "currentMachineState":  "active",
                  "jobStates":            ["preWash", "wash", "rinse", "spin", "dry", "airDry",
"wrinklePrevent"],
                  "currentJobState":      "rinse",
                  "runningTime":          "PT15M20S",
                  "remainingTime":        "PT10M40S",
                  "progressPercentage":    75
                }
                ,
              "schema": { "$ref": "#/definitions/Operation" }
            }
        }
      },
      "post": {
        "description": "Sets the desired operational or job state.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/OperationUpdate" },
            "x-example":
```

```
                {
                  "id":                    "unique_example_id",
                  "currentMachineState":  "pause",
                  "currentJobState":      "wash"
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":                    "unique_example_id",
                    "currentMachineState":  "pause",
                    "currentJobState":      "wash"
                  }
                  ,
                "schema": { "$ref": "#/definitions/OperationUpdate" }
              },
              "403": {
                "description" : "This response is generated by the OIC Server when the client
sends:\n  An update with an value for currentMachineState that is not found in machineStates.\n  An
update with an value for currentJobState that is not found in jobStates.\nThe server responds with
the current resource representation.\n",
                "x-example":
                  {
                    "id":                    "unique_example_id",
                    "machineStates":        ["pause", "stopped", "idle", "active"],
                    "currentMachineState":  "active",
                    "jobStates":            ["preWash", "wash", "rinse", "spin", "dry", "airDry",
"wrinklePrevent"],
                    "currentJobState":      "rinse",
                    "runningTime":          "PT15M20S",
                    "remainingTime":        "PT10M40S",
                    "progressPercentage":   75
                  }
                  ,
                "schema": { "$ref": "#/definitions/Operation" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Operation" :
              {
          "properties": {
            "currentJobState": {
              "description": "Currently active jobState",
              "type": "string"
            },
            "currentMachineState": {
              "description": "Current state of operation of the device.",
              "type": "string"
            },
            "jobStates": {
              "description": "array of the possible job states.",
              "items": {
                "type": "string"
              },
              "readOnly": true,
              "type": "array"
            },
```

```
            "machineStates": {
              "description": "array of the possible operational states.",
              "items": {
                "type": "string"
              },
              "readOnly": true,
              "type": "array"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "progressPercentage": {
              "description": "Percentage completeness of the current jobState",
              "readOnly": true,
              "type": "integer"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "remainingTime": {
              "description": "Time till completion of the current operational state",
              "readOnly": true,
              "type": "string"
            },
            "runningTime": {
              "description": "Elapsed time in the current operational state",
              "readOnly": true,
              "type": "string"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
```

```
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "machineStates",
            "currentMachineState"
          ],
          "type": "object"
        }

      ,
      "OperationUpdate" :
              {
          "properties": {
            "currentJobState": {
              "description": "Currently active jobState",
              "type": "string"
            },
            "currentMachineState": {
              "description": "Current state of operation of the device.",
              "type": "string"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
```

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

    }
  }
```

B.58.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
runningTime	스트링		Read Only	현재의 동작 상태에서 경과 시간
jobStates	배열 schema 참조		Read Only	가능한 작업 상태의 배열
precision	숫자		Read Only	노출된 값의 정확도
currentJobState	스트링			현재 활성인 작업 상태
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
progressPercentage	정수		Read Only	현재 작업 상태의 완료도의 백분율
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
machineStates	배열: schema 참조	예	Read Only	가능한 동작 상태의 배열
currentMachineState	스트링	예		device 동작의

				현재 상태
remainingTime	스트링		Read Only	현재의 동작 상태의 완료까지의 시간
precision	숫자		Read Only	노출된 값의 정확도
currentJobState	스트링			현재 활성인 작업 상태
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
currentMachineState	스트링			device 동작의 현재 상태
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값

B.58.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/OperationalStateResURI		get	post		

B.59 존재 센서

B.59.1 개요

이 resource 는 존재가 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 존재가 감지되었음을 의미한다. 'false' 값은 존재가 감지되지 않았음을 의미한다.

B.59.2 URI 예

/PresenceResURI

B.59.3 Resource Type

resource type (rt)는 ['oic.r.sensor.presence']로 정의된다.

B.59.4 Swagger2.0 정의

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

```
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
                "value": {
                  "description": "true = sensed, false = not sensed.",
                  "readOnly": true,
                  "type": "boolean"
                }
              },
              "type": "object"
            }
          ],
          "required": [
            "value"
          ]
        }

    }
  }
```

B.59.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
value	boolean	예	Read Only	true = 감지 false = 미 감지

B.59.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/PresenceResURI		get			

B.60 팬 틸트 줌 동작

B.60.1 개요

이 resource 는 device 의 회전 경사 및 줌 기능을 규정한다. resource rt 는 동적이고, 값이 device 의 물리적인 움직임에 적용되지는 또는 이미지에 대한 디지털/버츄얼 향상에 적용되는지를 반영한다. 물리적인 움직임에 대해, rt 는 'oic.r.movement.ptz'이다. 디지털/버츄얼 이미지 향상에 대해, rt 는 'oic.r.image.ptz'이다. 회전 및 경사는 도(°)로 규정된다.

줌 인자는 선형 (광학) 줌에 대해 1-100 범위의 값이다. 디지털 줌에 대해 줌 인자는 [1x, 2x, 4x, 8x, 16x, 32x] 범위의 값이다. 설정할 줌 값이 없다면, 줌 인자는 '1x'가 된다. 0 도의 값은 중간을 의미하고, 이것은 제조사가 정의한 설정이다. 이 resource 가 물리적인 움직임에 대한 옵셋을 생성하기 위해 사용될 수도 있다. 이러한 경우, rt 값은 oic.r.movement.offset.ptz 이다.

이 resource 가 이미지 움직임에 대한 옵셋을 생성하기 위해 사용될 수도 있다. 이러한 경우, rt 값은 oic.r.image.offset.ptz 이다. pan_range 값이 생략되면 범위는 [-180.0,180.0]이다. Pan 이 지원되지 않는다면, 범위는 [0.0,0.0]이다. tilt_range 값이 생략되면 범위는 [- 180.0,180.0]이다. tilt 가 지원되지 않는다면, 범위는 [0.0,0.0]이다. 현재의 pan, tilt, 및 zoom 설정을 검색한다.

B.60.2 URI 예

/PanTiltZoomResURI

B.60.3 Resource Type

resource type (rt)는 ['oic.r.ptz']로 정의된다.

B.60.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Pan Tilt Zoom Movement",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
```

```
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PanTiltZoomResURI" : {
      "get": {
        "description": "This resource specifies the pan tilt and zoom capabilities of a
device.\nThe resource rt is dynamic and reflects whether the values apply to\n  physical movement
of the device or digital/virtual enhancements to the image.\nFor physical movement the rt is
'oic.r.movement.ptz'.\nFor digital/virtual image enhancements the rt is 'oic.r.image.ptz'.\nThe Pan
and Tilt are specified in degrees.\nThe Zoom Factor is a value in the range 1-100 for linear
(optical) zoom.\nThe Zoom Factor is a value in the range [1x, 2x, 4x, 8x, 16x, 32x] for digital
zoom.\nIf there is no zoom value to set the Zoom Factor shall be '1x'.\nThe value 0 degrees means
neutral, this is the vendor defined setting.\nNote that this resource also can be used to create an
offset for physical movement.\nWhen that is the case, the rt value is:
oic.r.movement.offset.ptz\nNote that this resource also can be used to create an offset for image
movement.\nWhen that is the case, the rt value is: oic.r.image.offset.ptz\nWhen the pan_range value
is omitted, then the range is [-180.0,180.0].\nIf pan is not supported then the range shall be
[0.0,0.0]\nWhen the tilt_range value is omitted, then the range is [-180.0,180.0].\nIf tilt is not
supported then the range shall be [0.0,0.0]\nRetrieves the current pan, tilt and zoom setting.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":         ["oic.r.ptz"],
                  "id":         "unique_example_id",
                  "pan":        0.0,
                  "tilt":       0.0,
                  "zoomFactor": "2x"
                }
                ,
              "schema": { "$ref": "#/definitions/PanTiltZoom" }
            }
        }
      },
      "post": {
        "description": "Sets the current pan, tilt and zoom value\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/PanTiltZoom" },
            "x-example":
              {
                "id":         "unique_example_id",
                "pan":        10.0,
                "tilt":       -10.0,
                "zoomFactor": "4x"
```

```
                }
            }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "id":         "unique_example_id",
                  "pan":        10.0,
                  "tilt":       -10.0,
                  "zoomFactor": "4x"
                }
                ,
              "schema": { "$ref": "#/definitions/PanTiltZoom" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "PanTiltZoom" :
            {
        "properties": {
          "pan": {
            "description": "horizontal pan in degrees",
            "type": "number"
          },
          "pan_range": {
            "description": "Min and Max values for the pan setting",
            "items": {
              "type": "number"
            },
            "maxItems": 2,
            "minItems": 2,
            "readOnly": true,
            "type": "array"
          },
          "precision": {
            "description": "Accuracy granularity of the exposed value",
            "readOnly": true,
            "type": "number"
          },
          "range": {
            "description": "The valid range for the value Property",
            "items": {
              "anyOf": [
                {
                  "type": "number"
                },
                {
                  "type": "integer"
                }
              ]
            },
            "maxItems": 2,
            "minItems": 2,
            "readOnly": true,
            "type": "array"
          },
          "step": {
            "anyOf": [
              {
```

```
                "type": "integer"
              },
              {
                "type": "number"
              }
            ],
            "description": "Step value across the defined range",
            "readOnly": true
          },
          "tilt": {
            "description": "vertical tilt in degrees",
            "type": "number"
          },
          "tilt_range": {
            "description": "Min and Max values for the tilt setting",
            "items": {
              "type": "number"
            },
            "maxItems": 2,
            "minItems": 2,
            "readOnly": true,
            "type": "array"
          },
          "value": {
            "anyOf": [
              {
                "type": "array"
              },
              {
                "type": "string"
              },
              {
                "type": "boolean"
              },
              {
                "type": "integer"
              },
              {
                "type": "number"
              },
              {
                "type": "object"
              }
            ],
            "description": "The value sensed or actuated by this Resource"
          },
          "zoomFactor": {
            "description": "The Zoomfactor value",
            "type": "string"
          },
          "zoomFactorRange": {
            "description": "allowed Zoom Factor values. Linear equates to a 1-100 min/max.",
            "enum": [
              "linear",
              "1x",
              "2x",
              "4x",
              "8x",
              "16x",
              "32x"
            ],
            "readOnly": true,
            "type": "string"
          }
        },
        "required": [
          "pan",
          "tilt",
          "zoomFactor"
        ],
        "type": "object"
```

```
        }

    }
  }
```

B.60.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
tilt_range	배열: schema 참조		Read Only	경사 설정에 대한 최소 및 최대 값
pan	숫자	예		도(°) 단위의 수평 회전
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
zoomFactorRange	스트링		Read Only	허용된 줌 인자 값. 선형은 1-100 min/max 와 같다.
precision	숫자		Read Only	노출된 값의 정확도
pan_range	배열: schema 참조		Read Only	회전 설정에 대한 최소 및 최대 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
zoomFactor	스트링	예		줌 인자 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
tilt	숫자	예		도(°) 단위의 수직 경사

B.60.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/PanTiltZoomResURI		get	post		

B.61 램프 타임

B.61.1 개요

이 resource 는 조광 기능의 램프 타임을 기술한다. 이것은 2 개의 조광 값 간의 변화의 실제 속도를 규정한다. Time 은 밀리초[ms]로 규정된다. (oic.r.baseresource 로부터의) 범위가 생략되면 최대값은 100 ms 이다. 0 ms 의 RampTime 은 구현을 통해 가능한 최소 지연을 나타낸다. 현재의 Ramp Time 을 검색한다.

B.61.2 URI 예

/RampTimeResURI

B.61.3 Resource Type

resource type (rt)는 ['oic.r.light.ramptime']으로 정의된다.

B.61.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Ramp Time",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/RampTimeResURI" : {
      "get": {
        "description": "This resource that describes the Ramp Time of a dimming function.\nThis
specifies the actual speed of changing between 2 dimming values.\nTime is specified in milliseconds
[ms].\nWhen range (from oic.r.baseresource) is omitted the maximum value is 100 ms.\nThe RampTime
of 0ms indicates the minimal delay possible by the implementation.\nRetrieves the current
RampTime.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
```

```
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":       ["oic.r.light.ramptime"],
                    "id":       "unique_example_id",
                    "rampTime": 0,
                    "range":    [0,100]
                  }
                  ,
                "schema": { "$ref": "#/definitions/RampTime" }
              }
          }
        },
        "post": {
          "description": "Sets the current RampTime.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/RampTime" },
              "x-example":
                {
                  "id":       "unique_example_id",
                  "rampTime": 50
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":       "unique_example_id",
                    "rampTime": 50
                  }
                  ,
                "schema": { "$ref": "#/definitions/RampTime" }
              },
              "403": {
                "description" : "This response is generated by the OIC Server when the client
sends:\n  An update with an out of range property value for rampTime.\nThe server responds with the
current resource representation.\n",
                "x-example":
                  {
                    "id":       "unique_example_id",
                    "rampTime": 40
                  }
                  ,
                "schema": { "$ref": "#/definitions/RampTime" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "RampTime" :
              {
          "properties": {
            "precision": {
              "description": "Accuracy granularity of the exposed value",
```

```
              "readOnly": true,
              "type": "number"
            },
            "rampTime": {
              "description": "Actual speed of changing between 2 dimming values",
              "type": "integer"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "rampTime"
          ],
          "type": "object"
        }

    }
  }
```


B.61.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
rampTime	정수	예		2 개의 조광 값 간의 변화의 실제 속도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.61.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/RampTimeResURI		get	post		

B.62 냉장

B.62.1 개요

이 resource 는 냉장 기능을 기술한다. filter 상태는 여과기의 나머지 수명의 백분율을 제공하는 읽기 전용 값이다. RapidFreeze 는 존재한다면 신속 동결 성능을 제어하는 boolean 형이다. RapidCool 은 존재한다면 신속 냉각 성능을 제어하는 boolean 형이다.

Defrost 는 존재한다면 제상 주기를 제어하는 boolean 형이다. 열거된 Property 중 적어도 하나는 Resource instance 에 존재해야 한다. 현재의 냉장 기능 상태를 검색한다. Device 에 의해 지원되는 모든 Property 가 리턴 된다.

B.62.2 URI 예

/RefrigerationResURI

B.62.3 Resource Type

resource type (rt)는 ['oic.r.refrigeration']로 정의된다.

B.62.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Refrigeration",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/RefrigerationResURI" : {
      "get": {
        "description": "This resource describes a refrigeration function.\nThe filter state is a
read-only value providing the percentage life time remaining for the water filter.\nRapidFreeze is
a boolean that controls the rapid freeze capability if present.\nRapidCool is a boolean that
controls the rapid cool capability if present.\nDefrost is a boolean that controls the defrost
cycle if present.\nAt least one of the listed Properties shall be present in a Resource
Instance.\nRetrieves the current Refrigeration function status; all Properties supported by the
Device are returned.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":           ["oic.r.refrigeration"],
                  "id":           "unique_example_id",
                  "filter":       75,
                  "rapidFreeze":  false,
                  "rapidCool":    false,
                  "defrost":      true
                }
                ,
              "schema": { "$ref": "#/definitions/Refrigeration" }
            }
        }
      },
      "post": {
        "description": "Activates the desired Refrigeration functions.\nSuported values are
rapidFreeze, rapidCool and defrost.\nAt least on of the supported values shall be provided.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
```

```
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/RefrigerationUpdate" },
              "x-example":
                {
                  "id":           "unique_example_id",
                  "rapidFreeze":  true
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "Indicates that the Refrigeration function was changed.\nThe new
status can be provided in the response.\n",
                "x-example":
                  {
                    "id":           "unique_example_id",
                    "rapidFreeze":  true
                  }
                  ,
                "schema": { "$ref": "#/definitions/RefrigerationUpdate" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Refrigeration" :
              {
          "anyOf": [
            {
              "required": [
                "filter"
              ]
            },
            {
              "required": [
                "rapidFreeze"
              ]
            },
            {
              "required": [
                "rapidCool"
              ]
            },
            {
              "required": [
                "defrost"
              ]
            }
          ],
          "properties": {
            "defrost": {
              "description": "Indicates whether a defrost cycle is currently active",
              "type": "boolean"
            },
            "filter": {
              "description": "Percentage life time remaining for the water filter",
              "readOnly": true,
              "type": "integer"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
```

```
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "rapidCool": {
              "description": "Indicates whether the unit has a rapid cool capability active",
              "type": "boolean"
            },
            "rapidFreeze": {
              "description": "Indicates whether the unit has a rapid freeze capability active.",
              "type": "boolean"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "type": "object"
        }

      ,
      "RefrigerationUpdate" :
              {
          "anyOf": [
```

```
            {
              "required": [
                "rapidFreeze"
              ]
            },
            {
              "required": [
                "rapidCool"
              ]
            },
            {
              "required": [
                "defrost"
              ]
            }
          ],
          "properties": {
            "defrost": {
              "description": "Indicates whether a defrost cycle is currently active",
              "type": "boolean"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "rapidCool": {
              "description": "Indicates whether the unit has a rapid cool capability active",
              "type": "boolean"
            },
            "rapidFreeze": {
              "description": "Indicates whether the unit has a rapid freeze capability active.",
              "type": "boolean"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
```

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

    }
  }
```

B.62.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
defrost	boolean	예		제상 주기가 현재 활성인지를 표시
rapidCool	boolean			장치가 신속 냉장 성능을 활성으로 하였는지를 표시
filter	정수		Read Only	여과기 에 대해 남아 있는 수명의 백분율
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 value
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
rapidFreeze	boolean			장치가 신속 동결 성능을 활성으로 하였는지를 표시
precision	숫자		Read Only	노출된 값의 정확도

defrost	boolean	예		제상 주기가 현재 활성인지를 표시
rapidCool	boolean			장치가 신속 냉장 성능을 활성으로 하였는지를 표시
precision	숫자		Read Only	노출된 값의 정확도
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
rapidFreeze	boolean			장치가 신속 동결 성능을 활성으로 하였는지를 표시
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값

B.62.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/RefrigerationResURI		get	post		

B.63 선택 가능 레벨

B.63.1 개요

이 resource 는 동작을 위해 선택될 수 있는 device 정의 '레벨'의 집합을 제공한다. 설정될 수 있는 상이한 습도 레벨을 모델링하는 이산 집합을 가습기가 갖는 예를 든다.

availablelevels 은 선택될 수 있는 레벨의 배열이고, 이들은 숫자 또는 정수가 될 수 있다. targetlevel 은 현재 선택된 레벨이고, 새로운 레벨을 선택하기 위하여 기록된다. 검색될 때, targetlevel 은 선택된 실제 값을 제공한다. 현재의 선택 가능한 level 을 검색한다.

B.63.2 URI 예

/SelectableLevelsResURI

B.63.3 Resource Type

resource type (rt)는 ['oic.r.selectablelevels']로 정의된다.

B.63.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Selectable Levels",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SelectableLevelsResURI" : {
      "get": {
        "description": "This Resource provides a set of device defined 'levels' that can be
selected for an operation.\nFor example where a humidifier has a discrete set that model different
humidity levels that can be set.\navailablelevels is an array of the levels that can be selected,
these can be a number or an integer.\ntargetlevel is the level that has currently been selected and
is written to in order to select a new level.\nWhen retrieved the targetlevel provides the actual
value that has been selected.\nRetrieves the current selectable levels.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":             ["oic.r.selectablelevels"],
                  "id":             "unique_example_id",
                  "availablelevels":[0,2,4,6,8],
                  "targetlevel":    2
                }
                ,
              "schema": { "$ref": "#/definitions/SelectableLevels" }
            }
        }
      },
      "post": {
        "description": "Sets the current level from the set that is selectable",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
```

```
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/UpdateSchema" },
              "x-example":
                {
                  "targetlevel": 4
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "targetlevel": 4
                  }
                  ,
                "schema": { "$ref": "#/definitions/UpdateSchema" }
              },
              "403": {
                "description" : "Generated by a Server when an attempt is made to update to a
targetlevel that is not in the set of availablelevels",
                "x-example":
                  {
                    "id":             "unique_example_id",
                    "availablelevels":[0,2,4,6,8],
                    "targetlevel":    2
                  }
                  ,
                "schema": { "$ref": "#/definitions/SelectableLevels" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "SelectableLevels" :
              {
          "properties": {
            "availablelevels": {
              "description": "Set of levels from which one can be selected",
              "items": {
                "anyOf": [
                  {
                    "type": "integer"
                  },
                  {
                    "type": "number"
                  }
                ]
              },
              "readOnly": true,
              "type": "array"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
```

```
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "targetlevel": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "The target level from the available selectable set"
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "availablelevels",
            "targetlevel"
          ],
          "type": "object"
        }

      ,
      "UpdateSchema" :
              {
```

```
      "properties": {
        "precision": {
          "description": "Accuracy granularity of the exposed value",
          "readOnly": true,
          "type": "number"
        },
        "range": {
          "description": "The valid range for the value Property",
          "items": {
            "anyOf": [
              {
                "type": "number"
              },
              {
                "type": "integer"
              }
            ]
          },
          "maxItems": 2,
          "minItems": 2,
          "readOnly": true,
          "type": "array"
        },
        "step": {
          "anyOf": [
            {
              "type": "integer"
            },
            {
              "type": "number"
            }
          ],
          "description": "Step value across the defined range",
          "readOnly": true
        },
        "targetlevel": {
          "description": "The target level from the available selectable set",
          "type": [
            "integer",
            "number"
          ]
        },
        "value": {
          "anyOf": [
            {
              "type": "array"
            },
            {
              "type": "string"
            },
            {
              "type": "boolean"
            },
            {
              "type": "integer"
            },
            {
              "type": "number"
            },
            {
              "type": "object"
            }
          ],
          "description": "The value sensed or actuated by this Resource"
        }
      },
      "required": [
        "targetlevel"
      ],
      "type": "object"
    }
```



```
  }
}
```

B.63.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
targetlevel	복수 타입: schema 참조	예		사용 가능하고 선택 가능한 집합으로부터의 목표 레벨
availablelevels	배열: schema 참조	예	Read Only	하나를 선택할 수 있는 레벨의 집합
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
precision	숫자		Read Only	노출된 값의 정확도
targetlevel	['정수','number']	예		사용 가능하고 선택 가능한 집합으로부터의 목표 레벨
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도

B.63.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/SelectableLevelsResURI		get	post		

B.64 신호 강도

B.64.1 개요

이 resource 는 lqi 및 rssi 에 의해 신호의 강도를 기술한다. lqi 는 Link Quality 표시자를 나타내는 부동 소수점 숫자이다. rssi 는 수신된 신호 강도 표시자를 나타내는 부동 소수점 숫자이다.

B.64.2 URI 예

/SignalStrengthResURI

B.64.3 Resource Type

resource type (rt)는 ['oic.r.signalstrength']로 정의된다.

B.64.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Signal Strength",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SignalStrengthResURI" : {
      "get": {
        "description": "This resource describes the strength of a signal by means of lqi and
rssi.\nThe lqi is a floating point number that represents Link Quality Indicator.\nThe rssi is a
floating point number that represents the received signal strength indicator.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
```

```
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":   ["oic.r.signalstrength"],
                    "id":   "unique_example_id",
                    "lqi":  10.0,
                    "rssi": 55.0
                  }
                  ,
                "schema": { "$ref": "#/definitions/SignalStrength" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "SignalStrength" :
              {
          "properties": {
            "lqi": {
              "description": "current value of Link Quality Indicator",
              "readOnly": true,
              "type": "number"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "rssi": {
              "description": "current value of Received Signal Strength Indicator",
              "readOnly": true,
              "type": "number"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
```

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

    }
  }
```

B.64.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
precision	숫자		Read Only	노출된 값의 정확도
rssi	숫자	예	Read Only	수신된 신호 강도 표시자의 현재 값
lqi	숫자	예	Read Only	Link Quality 표시자의 현재 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.64.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/SignalStrengthResURI		get			

B.65 취침 센서

B.65.1 개요

이 resource 는 사람의 수면이 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 수면이 감지되었음을 의미한다. 'false' 값은 수면이 감지되지 않았음을 의미한다.

B.65.2 URI 예

/SleepSensorResURI

B.65.3 Resource Type

resource type (rt)는 ['oic.r.sensor.sleep']로 정의된다.

B.65.4 Swagger2.0 정의

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

```
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":     ["oic.r.sensor.sleep"],
                    "id":     "unique_example_id",
                    "value":  true
                  }
                  ,
                "schema": { "$ref": "#/definitions/sleep" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "sleep" :
              {
          "allOf": [
            {
              "properties": {
                "precision": {
                  "description": "Accuracy granularity of the exposed value",
                  "readOnly": true,
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
                "value": {
                  "description": "true = sensed, false = not sensed.",
                  "readOnly": true,
                  "type": "boolean"
                }
              },
```

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

    }
  }
```

B.65.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	true = 감지 false = 미 감지
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
precision	숫자		Read Only	노출된 값의 정확도

B.65.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/SleepSensorResURI		get			

B.66 연기 센서

B.66.1 개요

이 resource 는 연기가 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 연기가 감지되었음을 의미한다. 'false' 값은 연기가 감지되지 않았음을 의미한다.

B.66.2 URI 예

/SmokeSensorResURI

B.66.3 Resource Type

resource type (rt)는 ['oic.r.sensor.smoke']로 정의된다.

B.66.4 Swagger2.0 정의

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

```
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
                "value": {
                  "description": "true = sensed, false = not sensed.",
                  "readOnly": true,
                  "type": "boolean"
                }
              },
              "type": "object"
            }
          ],
          "required": [
            "value"
          ]
        }

    }
  }
```

B.66.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
value	boolean	예	Read Only	true = 감지 false = 미 감지
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
precision	숫자		Read Only	노출된 값의 정확도
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

B.66.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/SmokeSensorResURI		get			

B.67 음성 합성 TTS

B.67.1 개요

이 resource 는, OCF Client 에 의해 음성을 렌더링할 수 있고 client 가 SSML 문서에 렌더링할 텍스트를 제공하는 것을 허용하는 OCF Server 상에서 생성될 수 있거나, 또는 일부 상주 애플리케이션에 의해 OCF Server 상에서 생성될 수 있다.

렌더링 된 음성은 Server 에 국소적인 본 단계에 존재한다 (즉, 스트리밍 되지 않는다). 발성은 SSML 문서이다. supportedLanguages 는 지원되는 RFC 5646 정의 언어 태그의 배열이다. supportedVoices 는 지원되는 음성을 나타내는 SSML 문서의 단편이다.

본 예에서의 발성은 적절하게 나온(JSON Rule) SSML 문서이어야 한다. 아래에 예를 보인다.

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

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

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

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

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

xml:lang="en-US">



The title of the movie is:

"Monty Pythons The Meaning of Life"

which is directed by Terry Jones.
```


</speak"

B.67.2 URI 예

/SpeechTTSResURI

B.67.3 Resource Type

resource type (rt)는 ['oic.r.speech.tts']로 정의된다.

B.67.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Speech Synthesis-TTS",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SpeechTTSResURI" : {
      "get": {
        "description": "This resource may be created on the OIC Server that is capable of rendering
speech by an OIC Client\n  and allows the client to provide an SSML document with text to render\n
or may be created on the OIC Server by some resident application.\nThe audio rendered is at this
stage local to the Server (i.e. not streamed).\nThe utterance is an SSML document.\nThe
supportedLanguages is an array of the RFC 5646 defined language tags that are supported.\nThe
```

```
supportedVoices is an SSML document fragment indicating the voices that are supported.\nUtterance
in the example shall be a properly escaped (JSON rules) SSML document. An example is given below:\n
\"<?xml version=\"1.0\" encoding=\"ISO-8859-1\"?>\n\r\n  <speak version=\"1.1\"
xmlns=\"http:\/\/www.w3.org\/2001\/10\/synthesis\"\n\r\n
\txmlns:xsi=\"http:\/\/www.w3.org\/2001\/XMLSchema-instance\"\n\r\n
\txsi:schemaLocation=\"http:\/\/www.w3.org\/2001\/10\/synthesis\n\r\n
\thttp:\/\/www.w3.org\/TR\/speech-synthesis11\/synthesis.xsd\"\n\r\n  \txml:lang=\"en-US\">\n\r\n
\n\r\n  \tThe title of the movie is:\n\r\n  \t\"Monty Pythons The Meaning of Life\"\n\r\n  \twhich
is directed by Terry Jones.\n\r\n  <\/speak\"\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":                 ["oic.r.speech.tts"],
                  "id":                 "unique_example_id",
                  "utterance":          "SSML Document",
                  "supportedLanguages": ["en-US", "en-GB", "fr-CA"],
                  "supportedVoices":    "<voice gender=\"female\" variant=\"2\"><\/voice>\n\r<voice
name=\"Mike\"><\/voice>"
                }
                ,
              "schema": { "$ref": "#/definitions/Speech" }
            }
        }
      },
      "post": {
        "description": "Changes the utterance being rendered.\nExample shows a change in language
selected.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Speech" },
            "x-example":
              {
                "rt":         ["oic.r.speech.tts"],
                "id":         "unique_example_id",
                "utterance":  "SSML Document"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":         ["oic.r.speech.tts"],
                  "id":         "unique_example_id",
                  "utterance":  "SSML Document"
                }
                ,
              "schema": { "$ref": "#/definitions/Speech" }
            }
        }
      }
    }
    }
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
```

```
    "definitions": {
      "Speech" :
              {
          "properties": {
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "supportedLanguages": {
              "description": "array of supported language tags",
              "items": {
                "type": "string"
              },
              "readOnly": true,
              "type": "array"
            },
            "supportedVoices": {
              "description": "SSML document fragment indicating supported voices",
              "readOnly": true,
              "type": "string"
            },
            "utterance": {
              "description": "SSML document including the speech body",
              "type": "string"
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
```



```
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "utterance"
          ],
          "type": "object"
        }

    }
  }
```

B.67.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
supportedVoices	스트링		Read Only	지원되는 음성을 나타내는 SSML 문서의 단편
utterance	스트링	예		음성 본문을 포함하는 SSML 문서
supportedLanguages	배열: schema 참조		Read Only	지원되는 언어 태그의 배열
precision	숫자		Read Only	노출된 값의 정확도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값

B.67.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/SpeechTTSResURI		get	post		

B.68 온도

B.68.1 개요

이 resource 는 감지되거나 작동된 온도 값을 기술한다. temperature 는 측정된 현재의 값을 기술한다. units 는 C, F 또는 K 중 하나인 단일 값이다.

이는 온도 값에 대한 측정 단위를 제공한다. 이것은 server 가 제공하는 읽기 전용 값이다. units Property 가 없으면 default 는 섭씨[C]이다. (oic.r.baseresource 로부터의) 범위가 생략되면 default 는 +/- MAXINT 이다. 현재의 온도 값을 검색한다.

Client 는 query 파라미터의 사용에 의해 요청된 온도에 대한 단위를 규정할 수 있다. 어떠한 query 파라미터도 제공되지 않는다면 sever 는 default 측정치 또는 설정 값을 제공한다.

B.68.2 URI 예

/TemperatureResURI

B.68.3 Resource Type

resource type (rt)는 ['oic.r.temperature']로 정의된다.

B.68.4 Swagger2.0 정의

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

```
temperature describes the current value measured.\nThe units is a single value that is one of C, F
or K.\nIt provides the unit of measurement for the temperature value.\nIt is a read-only value that
is provided by the server.\nIf the units Property is missing the default is Celsius [C].\nWhen
range (from oic.r.baseresource) is omitted the default is +/- MAXINT.\nRetrieves the current
temperature value.\nA client can specify the units for the requested temperature by use of a query
parameter.\nIf no query parameter is provided the server provides its default measure or set
value.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "in": "query",
            "description": "Units",
            "type": "string",
            "enum": ["C", "F", "K"],
            "name": "units"
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":           ["oic.r.temperature"],
                  "id":           "unique_example_id",
                  "temperature":  20.0,
                  "units":        "C",
                  "range":        [0.0,100.0]
                }
                ,
              "schema": { "$ref": "#/definitions/Temperature" }
            },
            "403": {
              "description" : "This response is generated by the OIC Server when the client
sends:\n  A retrieve with q queryParameter indicating a unit that the server does not support.\nThe
server responds with the current resource representation including the\nunits property illustrating
the supported units and the error.\n",
              "x-example":
                {
                  "id":           "unique_example_id",
                  "temperature":  20.0,
                  "units":        "C"
                }
                ,
              "schema": { "$ref": "#/definitions/Temperature" }
            }
        }
      },
      "post": {
        "description": "Sets the desired temperature value.\nIf a unit is included and the server
does not support the unit indicated the request will fail.\nIf the units are omitted value is taken
to be in C.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Temperature" },
            "x-example":
              {
                "id":           "unique_example_id",
                "temperature":  18.0
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "id":          "unique_example_id",
```

```
                    "temperature": 18.0
                  }
                  ,
                "schema": { "$ref": "#/definitions/Temperature" }
              },
              "403": {
                "description" : "This response is generated by the OIC Server when the client
sends:\n  An update with an out of range property value for temperature.\n  An update with an
unsupported unit for this server.\nThe server responds with the current resource representation
including\nthe range property illustrating the supported range and the error.\n",
                "x-example":
                  {
                    "id":           "unique_example_id",
                    "temperature":  20.0,
                    "units":        "C",
                    "range":        [0.0,100.0]
                  }
                  ,
                "schema": { "$ref": "#/definitions/Temperature" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Temperature" :
              {
          "properties": {
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "temperature": {
```

```
              "description": "Current temperature setting or measurement",
              "type": "number"
            },
            "units": {
              "description": "Units for the temperature value",
              "enum": [
                "C",
                "F",
                "K"
              ],
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "temperature"
          ],
          "type": "object"
        }

  }
}
```

B.68.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
temperature	숫자	예		현재의 온도 설정 또는 측정치
precision	숫자		Read Only	노출된 값의 정확도
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
units	복수 타입: schema 참조		Read Only	온도 값에 대한 단위

value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값

B.68.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/TemperatureResURI		get	post		

B.69 3 축 센서

B.69.1 개요

이 resource 는 3 축 센서로부터 측정 표현을 제공한다. orientation 은 x-평면, y-평면 및 z-평면 값을 표현하는 숫자의 배열이다. 각 평면에 대한 측정의 단위는 'g'이다.

B.69.2 URI 예

/ThreeAxisResURI

B.69.3 Resource Type

resource type (rt)는 ['oic.r.sensor.threeaxis']로 정의된다.

B.69.4 Swagger2.0 정의

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

```
axis sensor.\nThe orientation is an array of numbers representing x-plane, y-plane and z-plane
values.\nThe unit of measurement for each pane is 'g'.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":           ["oic.r.sensor.threeaxis"],
                  "id":           "unique_example_id",
                  "orientation":  [0.7, 1.1, -0.2]
                }
                ,
              "schema": { "$ref": "#/definitions/threeAxis" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "threeAxis" :
            {
        "properties": {
          "orientation": {
            "description": "Array containing x-plane, y-plane and z-plane orientation in 'g'.",
            "items": {
              "type": "number"
            },
            "maxItems": 3,
            "minItems": 3,
            "readOnly": true,
            "type": "array"
          },
          "precision": {
            "description": "Accuracy granularity of the exposed value",
            "readOnly": true,
            "type": "number"
          },
          "range": {
            "description": "The valid range for the value Property",
            "items": {
              "anyOf": [
                {
                  "type": "number"
                },
                {
                  "type": "integer"
                }
              ]
            },
            "maxItems": 2,
            "minItems": 2,
            "readOnly": true,
            "type": "array"
          },
          "step": {
            "anyOf": [
              {
                "type": "integer"
              },
              {
```

```
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "orientation"
          ]
        }

    }
  }
```

B.69.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
orientation	배열 schema 참조	예	Read Only	x-평면, y-평면 및 z-평면의 'g' 단위의 방위를 포함하는 배열
precision	숫자		Read Only	노출된 값의 정확도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
range	배열 schema 참조		Read Only	value Property 에 대한 유효 범위

B.69.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ThreeAxisResURI		get			

B.70 기간

B.70.1 개요

이 resource 는 임의의 추가적으로 제공된 정보가 도출되거나 제한되는 기간을 기술한다. startTime 및 stopTime 은 ISO8601 인코딩된 스트링이다. startTime 은 반드시 있어야 한다.

interval 은 분 단위의 간격이고, 존재한다면, 이 값은 1 분 이상이어야 한다. stopTime 및 interval 은 상호 배타적이고; 두 Property 가 하나의 Resource instance 에 함께 존재할 수 없다. 정보 검색, 동작 또는 다른 작용에 대한 기간을 정의한다.

B.70.2 URI 예

/TimePeriodResURI

B.70.3 Resource Type

resource type (rt)는 ['oic.r.time.period']로 정의된다.

B.70.4 Swagger2.0 정의

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

```
      "/TimePeriodResURI" : {
        "get": {
          "description": "This resource describes the time period over which any additionally
provided\ninformation is derived or bounded.\nThe startTime and stopTime are ISO8601 encoded
strings.  startTime must be present.\nThe interval is the interval of the time period in minutes,
if present this value must be no less than 1 minute.\nstoptime and interval are mutually exclusive;
both Properties cannot be present in a Resource instance.\nDefines a time period for information
retrieval, action or other behaviour.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":       ["oic.r.time.period"],
                    "id":       "unique_example_id",
                    "startTime":"2015-01-09T14:30Z",
                    "stopTime": "2015-01-09T14:45Z"
                  }
                  ,
                "schema": { "$ref": "#/definitions/TimePeriod" }
              }
          }
        },
        "post": {
          "description": "Sets or updates a time period for information retrieval, action or other
behavior.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {
              "name": "body",
              "in": "body",
              "required": true,
              "schema": { "$ref": "#/definitions/TimePeriod" },
              "x-example":
                {
                  "id":       "unique_example_id",
                  "startTime":"2015-01-09T14:30Z",
                  "stopTime": "2015-01-09T14:45Z"
                }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "id":       "unique_example_id",
                    "startTime":"2015-01-09T14:30Z",
                    "stopTime": "2015-01-09T14:45Z"
                  }
                  ,
                "schema": { "$ref": "#/definitions/TimePeriod" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "TimePeriod" :
              {
```

```
          "properties": {
            "interval": {
              "description": "Time interval in minutes after the startTime, if present stopTime
cannot be present",
              "type": "integer"
            },
            "precision": {
              "description": "Accuracy granularity of the exposed value",
              "readOnly": true,
              "type": "number"
            },
            "range": {
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "startTime": {
              "description": "Start time for the time period",
              "type": "string"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "stopTime": {
              "description": "Stop time for the time period, if present interval cannot be present",
              "type": "string"
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
```

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

    }
  }
```

B.70.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
startTime	스트링	예		기간의 시작 시간
precision	숫자		Read Only	노출된 값의 정확도
stopTime	스트링			기간의 종료 시간. 이 property 가 있으면 interval 이 있을 수 없다.
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
interval	정수			startTime 이후 분 단위의 시간 간격. 이 property 가 있으면 stopTime 이 있을 수 없다.
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값

B.70.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/TimePeriodResURI		get	post		

B.71 터치 센서

B.71.1 개요

이 resource 는 터치가 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. ‘true’ 값은 터치가 감지되었음을 의미한다. ‘false’ 값은 터치가 감지되지 않았음을 의미한다.

B.71.2 URI 예

/TouchResURI

B.71.3 Resource Type

resource type (rt)는 ['oic.r.sensor.touch']로 정의된다.

B.71.4 Swagger2.0 정의

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

```
                    "value": true
                  }
                  ,
                "schema": { "$ref": "#/definitions/Touch" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Touch" :
              {
          "allOf": [
            {
              "properties": {
                "precision": {
                  "description": "Accuracy granularity of the exposed value",
                  "readOnly": true,
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
                "value": {
                  "description": "true = sensed, false = not sensed.",
                  "readOnly": true,
                  "type": "boolean"
                }
              },
              "type": "object"
            }
          ],
          "required": [
            "value"
          ]
        }

```

```
    }
  }
```

B.71.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
precision	숫자		Read Only	노출된 값의 정확도
value	boolean	예	Read Only	true = 감지 false = 미 감지
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위

B.71.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/TouchResURI		get			

B.72 UV 방출

B.72.1 개요

이 resource 는 UV 방출 측정을 규정한다. 측정은 현재 측정된 UV 인덱스이다. 현재의 UV 방출 값을 검색한다.

B.72.2 URI 예

/UVRadiationResURI

B.72.3 Resource Type

resource type (rt)는 ['oic.r.sensor.radiation.uv']로 정의된다.

B.72.4 Swagger2.0 정의

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

```
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/UVRadiationResURI" : {
      "get": {
        "description": "This resource specifies UV radiation measurement.\nThe measurement is the
current measured UV Index\nRetrieves the current UV Radiation value\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":           ["oic.r.sensor.radiation.uv"],
                  "id":           "unique_example_id",
                  "measurement":  3.5
                }
                ,
              "schema": { "$ref": "#/definitions/UVRadiation" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "UVRadiation" :
            {
        "properties": {
          "measurement": {
            "description": "The measured UV Index",
            "readOnly": true,
            "type": "number"
          },
          "precision": {
            "description": "Accuracy granularity of the exposed value",
            "readOnly": true,
            "type": "number"
          },
          "range": {
            "description": "The valid range for the value Property",
            "items": {
              "anyOf": [
                {
                  "type": "number"
                },
                {
                  "type": "integer"
```

```
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            }
          },
          "required": [
            "measurement"
          ],
          "type": "object"
        }

    }
  }
```

B.72.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
measurement	숫자	예	Read Only	측정된 UV 인덱스
precision	숫자		Read Only	노출된 값의 정확도
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나

				작동된 값
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.72.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/UVRadiationResURI		get			

B.73 값 조건문

B.73.1 개요

이 resource 는 임의의 Resource 내에서 Observe 값에 적용될 수 있는 조건을 규정한다. 이들 조건은 Resource 에 대한 요청으로 인해 임의로 생성된 통지에 Resource 를 노출하는 server 에 의해 적용된다. Resource 에 대한 unicast RETRIEVE 는 가장 최근의 값을 수신하고, 이는 가장 최근에 통보된 값이 아닐 수 있다.

Server 는 Observe 값을 전달하는 Resource 와 관련하여 이 resource 를 노출시킨다. 이것은, ["oic.r.<thing being observed>", "oic.r.value.conditional"], 예를 들어, ["oic.r.temperature", "oic.r.value.conditional"]의 RT 를 갖는 새로운 Resource 개체에 의해 이루어진다. 자세한 사항은 공개된 OCF Resource Type 스펙의 섹션 5.7.1 을 참조하기 바란다. Threshold 는 통보가 송신되기 전에 Observe 되는 것이 변해야 하는 양이다.

Minnotifyperiod 는 통보가 송신되기 전에 경과해야 하는 ms (밀리초) 단위의 최소 시간이다. maxnotifyperiod (ms (밀리초) 단위의 시간)가 경과하면 통보가 송신되어야 한다. maxnotifyperiod 타이머는 통보가 송신될 때마다 리셋 된다. 임의의 threshold, minnotifyperiod, 또는 maxnotifyperiod 에 대한 '0'의 값은 성능이 지원되지만 활성이 아닌 것을 의미한다.

B.73.2 URI 예

/ValueConditionalResURI

B.73.3 Resource Type

resource type (rt)는 ['oic.r.value.conditional']로 정의된다.

B.73.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Value Conditional",
    "version": "v1.1.0-20161031",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ValueConditionalResURI" : {
      "get": {
        "description": "This resource specifies conditions that can be applied to an observed value
in any Resource.\nThese conditions are applied by the server exposing the Resource to any generated
notifications because of subscriptions to the Resource.\nA unicast RETRIEVE to the Resource will
receive the most recent value; which may not be the most recent notified value.\nA server exposes
this Resource in association with the Resource conveying the observed value.\nThis is done by means
of a new Resource instance with an RT of [\"oic.r.<thing being observed>\",
\"oic.r.value.conditional\"], e.g [\"oic.r.temperature\", \"oic.r.value.conditional\"].  Please see
Section 5.7.1 of the published OCF Resource Type Specification for more details.\nThe threshold is
the amount by which the thing being observed must change before a notification is sent.\nThe
minnotifyperiod is the minimum time in ms (milliseconds) that must elapse before a notification is
sent.\nIf the maxnotifyperiod (time in ms (milliseconds)) elapses then a notification must be
sent.\nThe maxnotifyperiod timer resets each time a notification is sent.\nA value of '0' for any
of threshold, minnotifyperiod or maxnotifyperiod means that the capability is supported but not
active.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":         ["oic.r.value.conditional"],
                  "id":         "unique_example_id",
                  "threshold":        2,
                  "minnotifyperiod":  2000,
                  "maxnotifyperiod":  5000
                }
                ,
              "schema": { "$ref": "#/definitions/valueconditional" }
            }
        }
      },
      "post": {
        "description": "body:\n application/json:\n   schema: valueconditional\n   example: |\n
{\n       \"threshold\":        2,\n       \"minnotifyperiod\":  1500\n     }\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
```

```
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "threshold":        2,
                    "minnotifyperiod":  1500
                  }
                  ,
                "schema": { "$ref": "#/definitions/valueconditional" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.rw", "oic.if.baseline"]
      }
    },
    "definitions": {
      "valueconditional" :
              {
          "anyOf": [
            {
              "required": [
                "threshold"
              ]
            },
            {
              "required": [
                "minnotifyperiod"
              ]
            },
            {
              "required": [
                "maxnotifyperiod"
              ]
            }
          ],
          "properties": {
            "id": {
              "description": "Instance ID of this specific resource",
              "maxLength": 64,
              "readOnly": true,
              "type": "string"
            },
            "if": {
              "description": "The interface set supported by this resource",
              "items": {
                "enum": [
                  "oic.if.baseline",
                  "oic.if.ll",
                  "oic.if.b",
                  "oic.if.lb",
                  "oic.if.rw",
                  "oic.if.r",
                  "oic.if.a",
                  "oic.if.s"
                ],
                "type": "string"
              },
              "minItems": 1,
              "readOnly": true,
              "type": "array"
            },
            "maxnotifyperiod": {
              "description": "Maximum elapsed time in ms before a notification must be sent.",
```

```
              "minimum": 0,
              "type": "integer"
            },
            "minnotifyperiod": {
              "description": "Minimum elapsed time in ms before a notification is sent.",
              "minimum": 0,
              "type": "integer"
            },
            "n": {
              "description": "Friendly name of the resource",
              "maxLength": 64,
              "readOnly": true,
              "type": "string"
            },
            "rt": {
              "description": "Resource Type",
              "items": {
                "maxLength": 64,
                "type": "string"
              },
              "minItems": 1,
              "readOnly": true,
              "type": "array"
            },
            "threshold": {
              "description": "Amount by which the measured value must change before a notification is
sent.",
              "minimum": 0,
              "type": "number"
            }
          },
          "type": "object"
        }

  }
}
```

B.73.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
if	배열: schema 참조		Read Only	이 resource 에 의해 지원되는 인터페이스 집합
id	스트링		Read Only	특정 resource 의 개체 ID
rt	배열: schema 참조		Read Only	Resource Type
minnotifyperiod	정수			통보가 송신되기 전에 ms 단위의 최소 경과 시간
n	스트링		Read Only	resource 의 친근한 명칭
maxnotifyperiod	정수	예		통보가 송신되기 전에 ms 단위의 최대 경과 시간

threshold	숫자			통보가 송신되기 전에 측정된 값이 변해야만 하는 양

B.73.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/ValueConditionalResURI		get	post		

B.74 수분 센서

B.74.1 개요

이 resource 는 수분이 감지되었는지 여부를 기술한다. 값은 Boolean 형이다. 'true' 값은 수분이 감지되었음을 의미한다. 'false' 값은 수분이 감지되지 않았음을 의미한다.

B.74.2 URI 예

/WaterResURI

B.74.3 Resource Type

resource type (rt)는 ['oic.r.sensor.water']로 정의된다.

B.74.4 Swagger2.0 정의

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

```
        "get": {
          "description": "This resource describes whether water has been sensed or not.\nThe value is
a boolean.\nA value of 'true' means that water has been sensed.\nA value of 'false' means that
water not been sensed.\n",
          "parameters": [
            {"$ref": "#/parameters/interface"}
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "rt":    ["oic.r.sensor.water"],
                    "id":    "unique_example_id",
                    "value": true
                  }
                  ,
                "schema": { "$ref": "#/definitions/Water" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface" : {
        "in" : "query",
        "name" : "if",
        "type" : "string",
        "enum" : ["oic.if.s", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Water" :
              {
          "allOf": [
            {
              "properties": {
                "precision": {
                  "description": "Accuracy granularity of the exposed value",
                  "readOnly": true,
                  "type": "number"
                },
                "range": {
                  "description": "The valid range for the value Property",
                  "items": {
                    "anyOf": [
                      {
                        "type": "number"
                      },
                      {
                        "type": "integer"
                      }
                    ]
                  },
                  "maxItems": 2,
                  "minItems": 2,
                  "readOnly": true,
                  "type": "array"
                },
                "step": {
                  "anyOf": [
                    {
                      "type": "integer"
                    },
                    {
                      "type": "number"
                    }
                  ],
                  "description": "Step value across the defined range",
                  "readOnly": true
                },
```

```
                "value": {
                  "description": "true = sensed, false = not sensed.",
                  "readOnly": true,
                  "type": "boolean"
                }
              },
              "type": "object"
            }
          ],
          "required": [
            "value"
          ]
        }

    }
  }
```

B.74.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값
precision	숫자		Read Only	노출된 값의 정확도
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
value	boolean	예	Read Only	true = 감지 false = 미 감지

B.74.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/WaterResURI		get			

B.75 무게

B.75.1 개요

이 resource 는 물체의 무게와 관련된 property 를 기술한다. Weight (weight)는 물체의 무게이다. 물체의 무게를 검색한다.

B.75.2 URI 예

/WeightResURI

B.75.3 Resource Type

resource type (rt)는 ['oic.r.weight']로 정의된다.

B.75.4 Swagger2.0 정의

```
{
  "swagger": "2.0",
  "info": {
    "title": "Weight",
    "version": "v1.1.0-20160519",
    "license": {
      "name": "copyright 2016-2017 Open Connectivity Foundation, Inc. All rights reserved.",
      "x-description": "Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:\n        1.
Redistributions of source code must retain the above copyright notice, this list of conditions and
the following disclaimer.\n        2.  Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer in the documentation and/or
other materials provided with the distribution.\n\n        THIS SOFTWARE IS PROVIDED BY THE Open
Connectivity Foundation, INC. \"AS IS\" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR
WARRANTIES OF NON-INFRINGEMENT, ARE DISCLAIMED.\n        IN NO EVENT SHALL THE Open Connectivity
Foundation, INC. OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY,
OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)\n        HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY
OF SUCH DAMAGE.\n"
    }
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/WeightResURI" : {
      "get": {
        "description": "This resource describes the properties associated with weight of an
object.\nWeight (weight) is weight of an object.\nRetrieves weight of an object.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":     ["oic.r.weight"],
                  "id":     "unique_example_id",
                  "weight": 200.0
                }
                ,
              "schema": { "$ref": "#/definitions/Weight" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Weight" :
            {
        "properties": {
          "precision": {
            "description": "Accuracy granularity of the exposed value",
            "readOnly": true,
            "type": "number"
          },
          "range": {
```

```
              "description": "The valid range for the value Property",
              "items": {
                "anyOf": [
                  {
                    "type": "number"
                  },
                  {
                    "type": "integer"
                  }
                ]
              },
              "maxItems": 2,
              "minItems": 2,
              "readOnly": true,
              "type": "array"
            },
            "step": {
              "anyOf": [
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                }
              ],
              "description": "Step value across the defined range",
              "readOnly": true
            },
            "value": {
              "anyOf": [
                {
                  "type": "array"
                },
                {
                  "type": "string"
                },
                {
                  "type": "boolean"
                },
                {
                  "type": "integer"
                },
                {
                  "type": "number"
                },
                {
                  "type": "object"
                }
              ],
              "description": "The value sensed or actuated by this Resource"
            },
            "weight": {
              "description": "Weight of an object",
              "minimum": 0,
              "readOnly": true,
              "type": "number"
            }
          },
          "required": [
            "weight"
          ],
          "type": "object"
        }

    }
  }
```


B.75.5 Property 정의

Property name	Value type	필수	액세스 모드	설명
precision	숫자		Read Only	노출된 값의 정확도
range	배열: schema 참조		Read Only	value Property 에 대한 유효 범위
Weight	숫자	예	Read Only	물체의 무게
value	복수 타입: schema 참조			이 resource 에 의해 감지되거나 작동된 값
step	복수 타입: schema 참조		Read Only	정의된 범위에 걸친 증분 값

B.75.6 CRUDN 동작

Resource	Create	Read	Update	Delete	Notify
/WeightResURI		get			

