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| Title | **Syntax and semantics of environment-related sensor capabilities** |
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| Re: |  |
| Abstract | This contribution illustrates the basic JSON schema structure for representing environment-related sensor capabilities in a standardized data format. The semantics and examples of the environment-related sensor capabilities are presented.  |
| Purpose | To start discussion on purpose of the standard |
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# **Introduction**

This contribution illustrates the basic JSON schema structure for representing environment-related sensor capabilities in a standardized data format. The semantics and examples of the environmental sensor capabilities are presented.

# **Data formats for environmental sensor capabilities**

## **Rain sensor capability**

### **General**

This subclause specifies the capability of a rain sensor.

### **Syntax**

|  |
| --- |
| "rainSensorCapabilityData": {"type": "object","properties": { "sensorCapabilityBaseData": { "$ref": "#/definitions/sensorCapabilityBaseData" }}} |

### **Semantics**

Semantics of the rainSensorCapabilityData:

| *Name* | *Definition* |
| --- | --- |
| rainSensor CapabilityData | Tool for describing a rain sensor capability. |

### **Examples**

This example shows the description of rain sensing capability with the following semantics. The unit of measurement for this sensor is millimeters per hour. "minValue" is 0 millimeters per hour and "maxValue" is 900 millimeters per hour.

|  |
| --- |
| {"sensorCapabilityBaseData": { "unit": "millimetersperhour", "minValue": 0, "maxValue": 900},} |

## **Insolation sensor capability**

### **General**

This subclause specifies the capability of an insolation sensor.

### **Syntax**

|  |
| --- |
| "insolationSensorCapabilityData": {"type": "object","properties": { "sensorCapabilityBaseData": { "$ref": "#/definitions/sensorCapabilityBaseData" },}} |

### **Semantics**

Semantics of the insolationSensorCapabilityData:

| *Name* | *Definition* |
| --- | --- |
| insolationSensor CapabilityData | Tool for describing an insolation sensor capability. |

### **Examples**

This example shows the description of insolation sensing capability with the following semantics. The unit of measurement for this sensor is watts per square meter. "minValue" is 0 watts per square meter and "maxValue" is 2500 watts per square meter.

|  |
| --- |
| {"sensorCapabilityBaseData": { "unit": "wattspersquaremeter", "minValue": 0, "maxValue": 2500}} |

## **Soil moisture sensor capability**

### **General**

This subclause specifies the capability of a soil moisture sensor.

### Syntax

|  |
| --- |
| "soilMoistureSensorCapabilityData": {"type": "object","properties": { "sensoryDeviceCapabilityBaseData": { "$ref": "#/definitions/sensoryDeviceCapabilityBaseData" }, }} |

### **Semantics**

Semantics of the soilmoistureSensorCapabilityData:

| Name | Definition |
| --- | --- |
| soilMoistureCapabilityData | Tool for describing a soil moisture capability. |

### **Examples**

This example shows the description of a soil moisture sensing capability with the following semantics. The unit of measurement for this sensor is percentage. "minValue" is 0 percent and "maxValue" is 50 percent.

|  |
| --- |
| {"sensorCapabilityBaseData": { "unit": "percentage", "minValue": 0, "maxValue": 50}} |

## **Tensiometer sensor capability**

### **General**

This subclause specifies the capability of a tensiometer sensor.

### **Syntax**

|  |
| --- |
| "tensiometerSensorCapabilityData": {"type": "object","properties": { "sensorCapabilityBaseData": { "$ref": "#/definitions/sensorCapabilityBaseData" },}} |

### **Semantics**

Semantics of the tensiometerSensorCapabilityData:

| *Name* | *Definition* |
| --- | --- |
| tensiometerSensorCapabilityData | Tool for describing a tensiometer sensor capability. |

### **Examples**

This example shows the description of a tensiometer sensing capability with the following semantics. The unit of measurement for this sensor is kpa. "minValue" is 0 kpa and "maxValue" is 240 kpa.

|  |
| --- |
| {"sensorCapabilityBaseData": { "unit": "kpa", "minValue": 0, "maxValue": 240},} |

## **Electrical conductivity sensor capability**

### General

This subclause specifies the capability of an electrical conductivity sensor.

### **Syntax**

|  |
| --- |
| "electricalConductivitySensorCapabilityData": {"type": "object","properties": { "sensorCapabilityBaseData": { "$ref": "#/definitions/sensorCapabilityBaseData" }}} |

### **Semantics**

Semantics of the electricalconductivitySensorCapabilityData:

| *Name* | *Definition* |
| --- | --- |
| electricalConductivitySensorCapabilityData | Tool for describing an electrical conductivity sensor capability. |

### **Examples**

This example shows the description of a electrical conductivity sensing capability with the following semantics. The unit of measurement for this sensor is microSiemens per centimeter. "minValue" is 0 microsiemens per centimeter and "minValue" is 20 microsiemens per centimeter.

|  |
| --- |
| {"sensorCapabilityBaseData": { "unit": "microsiemenspercentimeter", "minValue": 0, "maxValue": 20}} |

## **Acidity sensor capability**

### **General**

This subclause specifies the capability of an acidity sensor.

### **Syntax**

|  |
| --- |
| "aciditySensorCapabilityData": {"type": "object","properties": { "sensorCapabilityBaseData": { "$ref": "#/definitions/sensorCapabilityBaseData" },}} |

### **Semantics**

Semantics of the aciditySensorCapabilityData:

| *Name* | *Definition* |
| --- | --- |
| aciditySensorCapabilityData | Tool for describing an acidity sensor capability. |

### **Examples**

This example shows the description of acidity sensing capability with the following semantics. The unit of measurement for this sensor is ph. "minValue" is 0 and "minValue" is 14.

|  |
| --- |
| {"sensorCapabilityBaseData": { "unit": "ph", "minValue": 0, "maxValue": 14}} |