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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 |
| --- | --- |
| tensiometer SensorCapabilityData | 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 pH and "minValue" is 14 pH.

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