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| Re: |  |
| Abstract | This contribution proposes syntaxes, semantics, and examples for representing environment- related sensor information in the physical world in a standardized data format. |
| Purpose | To start discussion on purpose of the standard |
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# Data formats for environment-related sensors

## Rain Sensor

### General

This subclause specifies a sensor data type that describes the amount of rainfall.

### Syntax

|  |
| --- |
| "rainSensorData ": { "type": "object", "properties": {"value": { "type": "number" }, "unit": { "$ref": "#/definitions/unitType" } }} |

### Semantics

Semantics of the rainSensorData:

| *Name* | *Definition* |
| --- | --- |
| rainSensorData | Provides a structure for describing sensor data acquired by a rain sensor. |
| value | Represents the measured value of the amount of rain. |
| unit | Specifies the unit of the value as a reference to a term provided by unitType. |

### Examples

The measured rainfall is 100 millimeters per hour.

|  |
| --- |
| {“sensedInfoBaseAttributes”:{},“rainSensorData”: { “value”: 100, “unit”: “millimetersperhour”}} |

## Insolation Sensor

### General

This subclause specifies a sensor data type that describes insolation.

### Syntax

|  |
| --- |
| "insolationSensorData ": { "type": "object", "properties": {"value": { "type": "number" }, "unit": { "$ref": "#/definitions/unitType" } }} |

### Semantics

The semantics of the insolationSensorData:

| *Name* | *Definition* |
| --- | --- |
| insolationSensorData | Provides a structure for describing sensor data acquired by an insolation sensor. |
| value | Represents the measured value of the amount of insolation. |
| unit | Specifies the unit of the value as a reference to a term provided by unitType. |

### Examples

The measured insolation is 100 watts per square meter.

|  |
| --- |
| {“sensedInfoBaseAttributes”:{},“insolationSensorData”: { “value”: 100, “unit”: “wattspersquaremeter”}} |

## Soil Moisture Sensor

### General

This subclause specifies a sensor data type that describes soil moisture.

### Syntax

|  |
| --- |
| "soilmoistureSensorData ": { "type": "object", "properties": {"value": { "type": "number" }, "unit": { "$ref": "#/definitions/unitType" } }} |

### Semantics

The semantics of the soilmoistureSensorData:

| *Name* | *Definition* |
| --- | --- |
| soilmoistureSensorData | Provides a structure for describing sensor data aquired by a soilmoisture sensor. |
| value | Represents the measured value of the amount of moisture contained in the soil per unit volume. |
| unit | Specifies the unit of the value as a reference to a term provided by unitType. |

### Examples

The measured soil moisture is 1 percent.

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| --- |
| {“sensedInfoBaseAttributes”: {},“soilmoistureSensorData”: { “value”: 1, “unit”: “percentage”}} |

## Tensionmeter sensor

### General

This subclause specifies a sensor data type that describes moisture tension in the soil.

### Syntax

|  |
| --- |
| "tensionmeterSensorData ": { "type": "object", "properties": {"value": { "type": "number" }, "unit": { "$ref": "#/definitions/unitType" } }} |

### Semantics

The semantics of the tensionmeterSensorData:

| *Name* | *Definition* |
| --- | --- |
| tensionmeterSensorData | Provides a structure for describing sensor data aquired by a tensionmeter sensor. |
| value | Represents the value of moisture tension in the soil. |
| unit | Specifies the unit of the value as a reference to a term provided by unitType. |

### Examples

The measured tensionmeter sensor is 1kPa.

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| --- |
| {“sensedInfoBaseAttributes”: {},“tensionmeterSensorData”: { “value”: 1,“unit”: “kPa”}} |

## Electrical Conductivity Sensor

### General

This subclause specifies a sensor data type that describes a electrical conductivity.

### Syntax

|  |
| --- |
| "electricalconductivitySensorData ": { "type": "object", "properties": {"value": { "type": "number" }, "unit": { "$ref": "#/definitions/unitType" } }} |

### Semantics

The semantics of the electricalconductivitySensorData:

| *Name* | *Definition* |
| --- | --- |
| electricalconductivitySensorData | Provides a structure for describing sensor data aquired by a electrical conductivity sensor. |
| value | Represents the measured value of electrical conductivity for drainage, soil, etc. |
| unit | Specifies the unit of the value as a reference to a term provided by unitType. |

### Examples

The measured electrical value is 100 microSiemens per centimeter.

|  |
| --- |
| {“sensedInfoBaseAttributes”: {},“electricalconductivitySensorData”: { “value”: 100, “unit”: “microSiemenspercentimeter”}} |

## Acidity Sensor

### General

This subclause specifies a sensor data type that describes acidity.

### Syntax

|  |
| --- |
| "aciditySensorData ": { "type": "object", "properties": {"value": { "type": "number" }, "unit": { "$ref": "#/definitions/unitType" } }} |

### Semantics

The semantics of the aciditySensorData:

| *Name* | *Definition* |
| --- | --- |
| aciditySensorData | Provides a structure for describing sensor data aquired by a acidity sensor. |
| value | Represents the measured value of hydrogen ion concentration (acidity) for drainage, soil, etc. |
| unit | Specifies the unit of the value as a reference to a term provided by unitType. |

### Examples

The measured acidity value is 10 pHs.

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| --- |
| {“sensedInfoBaseAttributes”: {},“aciditySensorData”: { “value”: 10, “unit”: “pH”}} |