|  |  |
| --- | --- |
| Project | **Specification of Sensor Interface for Cyber and Physical World**<<https://sagroups.ieee.org/2888.1/> **>** |
| Title | **Syntax and semantics of bend sensor capabilities** |
| DCN | **2888-21-0067-01-0001** |
| Date Submitted | **Oct. 13th, 2021** |
| Source(s) | Sang-Kyun Kim, goldmunt@gmail.com (Myongji University)Min Hyuk Jeong, jmh8900@gmail.com (Myongji University) |
| Re: |  |
| Abstract | This contribution illustrates the basic JSON schema structure for representing bend sensor capabilities in a standardized data format. The semantics and examples of the bend sensor capabilities are presented.  |
| Purpose | To start discussion on purpose of the standard |
| Notice | This document has been prepared to assist the IEEE 2888 Working Group. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein. |
| Release | The contributor grants a free, irrevocable license to the IEEE to incorporate material contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE’s name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE’s sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that IEEE 2888 may make this contribution public. |
| Patent Policy | The contributor is familiar with IEEE patent policy, as stated in [Section 6 of the IEEE-SA Standards Board bylaws](http://standards.ieee.org/guides/opman/sect6.html#6.3) <[http://standards.ieee.org/guides/bylaws/sect6-7.html#6](http://127.0.0.1:4664/cache?event_id=757737&schema_id=1&s=5X0vID10lu_E6yrIkWkNd4Wz2H8&q=hancock)> and in *Understanding Patent Issues During IEEE Standards Development* <http://standards.ieee.org/board/pat/faq.pdf> |

# Introduction

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

# Bend sensor capability

## General

This sub-clause specifies a sensor capability of a bend sensor.

## Syntax

|  |
| --- |
| "bendSensorCapability": {"type": "object","properties": { "sensorCapabilityBaseType": { "$ref": "#/definitions/sensorCapabilityBaseType" }, "numOfJoints" : {"type": "integer"}, "numOfAxis" : { "type": "integer", "minimum": 1, "maximum": 3, } }} |

## Semantics

Semantics of the bendSensorCapability:

| Name | Definition |
| --- | --- |
| bendSensor CapabilityType | Tool for describing a bend sensor capability. |
| numOfJoints | Describes the number of joints that a bend sensor can sense bend angles. |
| numOfAxis | Describes the dimension that the bend sensor can perceive the bend angles. |

## Examples

 The bend sensor in this example can measure from -180 to 180 degrees, and the number of joints is 5. This bend sensor only supports unidirectional measurement.

|  |
| --- |
| {"sensorCapabilityBaseType": { "maxValue": 180, "minValue": -180},"numOfJoints": 5,"numOfAxis": 1} |