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| Project | **Specification of Sensor Interface for Cyber and Physical World**<<https://sagroups.ieee.org/2888/> **>** |
| Title | **IMU sensor for the large space VR training system** |
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| Re: |  |
| Abstract | This contribution illustrates the JSON schema structure for describing Inertia Measurement Unit(IMU) sensor data for the large space VR training system in a standardized data format. The semantics and examples of the IMU sensor information are presented.  |
| Purpose | To start discussion on purpose of the standard |
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# Introduction

This contribution illustrates the JSON schema structure for describing Inertia Measurement Unit(IMU) sensor data for the large space VR training system in a standardized data format. The semantics and examples of the IMU sensor information are presented.

# IMU sensor data

## General

This subclause specifies a sensor data type, which describes the Inertia Measurement Unit(IMU) sensor.

## Syntax

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| --- |
| "IMUSensorData": { "type": "object", "properties": { "orientationInQuaternion": { "type": "object", "properties": { "x": {"type": "number"}, "y": {"type": "number"}, "z": {"type": "number"}, "w": {"type": "number"} } }  } "additionalProperties": false }, |
|  |

## Semantics

Semantics of the IMUSensor:

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| --- | --- |
| Name | Definition |
| IMUSensorData | Tool for describing sensor data from the IMU sensor orientation. |
| orientationInQuaternion | It describes the orientation of the IMU sensor in a large space. The quaternion is expressed as x, y, z and w. |

## Examples

 In this example, the measured orientation toward the y-axis and rotated 60 degrees around the y-axis.

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| --- |
| {“sensedInfoBaseAttributes”: {},“IMUSensorData”: { "orientationInQuaternion": { "x": 0, "y": 1.0, "z": 0 "w": 60 }} |