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| Project | **Standard for Actuator Interface for Cyber and Physical World**<https://sagroups.ieee.org/2888/ **>** |
| Title | **Data Formats for Sight Related Actuator** |
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| Re: |  |
| Abstract | This contribution proposes syntaxes, semantics, and examples for representing sight related actuator information in the physical world in a standardized data format. |
| Purpose | To start discussion on purpose of the standard |
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# Introduction

This contribution proposes actuator(actuator) command types which can generate sight related effect. It contains syntaxes, semantics, and examples for representing sight related actuator information in the physical world in a standardized data format. Sight related actuators include light actuator and flash actuator.

2 Data formats for interfacing actuator command

* 1. **Light actuator**
		1. **General**

This sub-clause specifies the actuator command type which can generate a light effect.

* + 1. **Syntax**

|  |
| --- |
| "lightCommandData": { "type": "object", "properties": { "color": { "$ref": "#/definitions/colorType" }, "intensity": { "type": "integer", "minimum": 0 }, "intensityUnit": { "$ref": "#/definitions/unitType" } }}, |

* + 1. **Semantics**

The semantics of the lightCommandData:

|  |  |
| --- | --- |
| *Name* | *Definition* |
| lightCommandData | Provide a structure for describing a command for a light actuator. |
| color | Describes the color that the light actuator can provide either as a reference to a term that shall be using the colorType. |
| intensity | Describes the intensity of the lighting based on the intensityUnit in relation to the range of possible bright control. |
| intensityUnit | Specifies the intensity unit of the command value as a reference to a term that shall be using the unitType. |

* + 1. **Examples**

This example shows the description of the actuator command of light effect with the following semantics. This light actuator commands the intensity of 120 lux with the color “blue”.

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| --- |
| {"commandInfoBaseAttributes": {},"lightCommandData": { "color": "blue", "value": 120, "intensityUnit": "lux" }} |

* 1. **Flash actuator**
		1. **General**

This Subclause specifies a actuator command type which can generate a flash effect.

* + 1. **Syntax**

|  |
| --- |
| "flashCommandData": { "type": "object", "allOf": [{  "$ref": "#/definitions/lightCommandData"  }], "properties": { "frequency": {  "type": "integer","minumum": 0}, "frequencyUnit": { "$ref": "#/definitions/unitType" } }}, |

* + 1. **Semantics**

Semantics of the flashCommandData:

|  |  |
| --- | --- |
| *Name* | *Definition* |
| flashCommandData | Provide a structure for describing a command for a flash actuator. |
| color | Describes the list of colors that the light actuator can provide either as a reference to a term that shall be using the colorType. |
| intensity | Describes the intensity of the lighting based on the intensityUnit in relation to the range of possible bright control. |
| intensityUnit | Specifies the intensity unit of the command value as a reference to a term that shall be using the unitType. |
| frequency | Describes the number of flickering based on the intensityUnit in relation to the range of frequency that the specific flash actuator can generate. |
| frequencyUnit | Specifies the frequency unit of the command value as a reference to a term that shall be using the unitType. |

* + 1. **Example**

This example shows the description of the actuator command of flash effect with the following semantics. This flash actuator commands the light intensity of 120 lux and frequency of 200 hz.

|  |
| --- |
| {"commandInfoBaseAttributes": {},"flashCommandData": { "intensity": 120, "intensityUnit": "lux", "frequency": 200, "frequencyUnit": "hz", }} |