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| Title | **Data Formats for Haptic Related Actuator** |
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| Re: |  |
| Abstract | This contribution proposes syntaxes, semantics, and examples for representing haptic 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 command types which can generate haptic related effect. It contains syntaxes, semantics, and examples for representing sight related actuator information in the physical world in a standardized data format. Haptic related actuators include heating actuator, cooling actuator, vibration actuator.

2 Data formats for interfacing actuator command

* 1. Heating actuator
		1. General

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

Syntax

|  |
| --- |
| "heatingCommandData": { "type": "object", "properties": { "intensity": { "type": "integer", }, "intensityUnit": { "$ref": "#/definitions/unitType" } } }, |

* + 1. Semantics

Semantics of the heatingCommandData:

| *Name* | *Definition* |
| --- | --- |
| heatingCommandData | Provide a structure for describing a command for a heating actuator. |
| intensity | Describes the intensity of the heating temperature based on the intensityUnit in relation to the range of possible temperature control. |
| intensityUnit | Describes 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 an actuator command of heating effect with the following semantics. This heating actuator commands the intensity of 40 Celsius temperature.

|  |
| --- |
| {"commandInfoBaseAttributes": {},"heatingCommandData": { "intensity": 40}} |

* 1. Cooling actuator
		1. General

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

* + 1. Syntax

|  |
| --- |
| "coolingCommandData": { "type": "object", "properties": { "intensity": { "type": "integer", }, "intensityUnit": { "$ref": "#/definitions/unitType" }  } }, |

* + 1. Semantics

Semantics of the coolingCommandData:

| *Name* | *Definition* |
| --- | --- |
| coolingCommandData | Provide a structure for describing a command for a cooling actuator. |
| intensity | Describes the intensity of the cooling temperature based on the intensityUnit in relation to the range of possible temperature control. |
| intensityUnit | Describes the intensity 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 an actuator command of heating effect with the following semantics. This cooling actuator commands the intensity of -10 Celsius temperature.

|  |
| --- |
| {"commandInfoBaseAttributes": {},"coolingCommandData": { "intensity": -10, }} |

* 1. Vibration actuator
		1. General

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

* + 1. Syntax

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

* + 1. Semantics

Semantics of the vibrationCommandData:

| *Name* | *Definition* |
| --- | --- |
| vibrationCommandData | Provide a structure for describing a command for a vibration actuator. |
| intensity | Describes the intensity of the vibration effect based on the intensityUnit in relation to the range of possible vibrate control. |
| intensityUnit | Describes the intensity 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 an actuator command of vibration effect with the following semantics. This vibration actuator commands the intensity 120 hz.

|  |
| --- |
| {"commandInfoBaseAttributes": {},"vibrationCommandData": { "intensity": 120}} |