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| Title | **Data Formats for Character Display Actuator** |
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| Re: |  |
| Abstract | This contribution proposes syntaxes, semantics, and examples for representing character display actuator information in the physical world in a standardized data format. |
| Purpose | To start a discussion on the purpose of the standard |
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# Introduction

This contribution proposes actuator command types which can control character display. It contains syntaxes, semantics, and examples for representing character display actuator information in the physical world in a standardized data format.

1. Data formats for Individual Actuators
	* 1. **Character display actuator**

**4.3.12.1 General**

This sub-clause specifies the actuator command type which can control character display.

**4.3.12.2 Syntax**

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| "characterDisplayCommandData": { "type": "object", "properties": { "xCoordinate": { "type": "integer", "minimum": 0 }, "yCoordinate ": { "type": "integer","minimum": 0 }, "foregroundColor": { "$ref": "#/definitions/colorType" }, "backgroundColor": { "$ref": "#/definitions/colorType" }, "textSize": { "type": "integer","minimum": 1 }, "text": { "type": "string" } }, "required": [ "xCoordinate", "yCoordinate", "text" ] }} |

**4.3.12.3 Semantics**

The semantics of the characterDisplayCommandData:

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| *Name* | *Definition* |
| characterDisplayCommandData | Provide a structure for describing a command for a character display actuator. |
| xCoordinate | Describes the x-coordinate of text position on a two-dimensional screen. If the type of display mode is text\_mode, it is represented in units of columns. If it is graphics\_mode, it is represented in units of pixels. |
| yCoordinate | Describes the y-coordinate of text position on a two-dimensional screen. If the type of display mode is text\_mode, it is represented in units of rows. If it is graphics\_mode, it is represented in units of pixels. |
| foregroundColor | Describes a text foreground color. If omitted, the current foreground color is used. If the type of display mode is text\_mode, it is ignored. |
| backgroundColor | Describes a text background color. If omitted, the background color is treated as a transparent color. If the type of display mode is text\_mode, it is ignored. |
| textSize | Describes the text size to be printed on a screen. If omitted, the current text size is used. If the type of display mode is text\_mode, it is ignored. |
| text | Describes a text string including letters, numbers, symbols, and simple figures that can be printed on a screen. |

**4.3.12.4 Examples**

This example shows the description of the actuator command of character display with the following semantics. The character display actuator outputs the text "hello world!" with red foreground color, black background color, and font size 1 on the screen at (12, 5) coordinates.

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| { "commandInfoBaseAttributes": {},  "characterDisplayCommandData":{ "xCoordinate":12, "yCoordinate ":5, "foregroundColor":"red", "backgroundColor":"black", "textSize":1, "text":"hello world!" }} |