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| Project | **Standard for Actuator Interface for Cyber and Physical World**<https://sagroups.ieee.org/2888.2/ **>** |
| Title | **Data Format for Charater Display Actuator Capabilities** |
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| Re: |  |
| Abstract | This contribution proposes syntax, semantics, and an example of the character display actuator capabilities. |
| Purpose | To start a discussion on the purpose of the standard |
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# Introduction

This contribution proposes syntaxes, semantics, and examples of character display actuator capability description vocabulary.

# Data formats for describing actuator capabilities

### **5.2.13 Character display actuator capability**

5.2.13.1 General

This subclause specifies the syntax and semantics of the capabilities of character display actuators.

5.2.13.2 Syntax

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| "characterDisplayActuatorCapabilityData": { "type": "object", "properties": {"displayMode": {"type": "string","enum": [ "text\_mode", "graphics\_mode"]}, "width": { "type": "integer" "minimum": 1 }, "height": { "type": "integer""minimum": 1 }, "colorNumber": { "type": "integer" }, "colors": { "type": "array", "items": { "$ref": "#/definitions/colorType"} }, "textSizeNumber": { "type": "integer" }, "textSizes": { "type": "array", "items": { "type": "string","pattern": "^[0-9]\*x[0-9]\*$"} } }, "required": [ "displayMode", "width", "height",] }} |

5.2.13.3 Semantics

The semantics of the characterDisplayActuatorCapabilityData:

| *Name* | *Definition* |
| --- | --- |
| characterDisplayActuatorCapabilityData | Provide a structure for describing a command for a character display actuator. |
| displayMode | Describes the type of display mode supported by a character display actuator, which is classified into text\_mode and graphics\_mode. Text\_mode is a display mode divided into rows and columns of boxes showing characters. The font size, foreground color, and background color for characters are fixed in text\_mode. Graphics\_mode is a display mode divided into pixels vertically and horizontally. The font size, foreground color, and background color for characters are variable in graphics\_mode. |
| width | Describes the horizontal resolution on a display screen. In text\_mode, it is the maximum range of columns that can display characters horizontally. In graphics\_mode, it is the maximum range of pixels that can display characters horizontally. |
| height | Describes the vertical resolution on a display screen. In text\_mode, it is the maximum range of rows that can display characters vertically In graphics\_mode, it is the maximum range of pixels that can display characters vertically. |
| colorNumber | Describes the number of supported colors. If displayMode is text\_mode, it is ignored. |
| colors | Describes a list of all supported colors. If displayMode is text\_mode, it is ignored. |
| textSizeNumber | Describes the number of supported font sizes. If displayMode is text\_mode, it is ignored. |
| textSizes | Describes a list of all supported font sizes. The font size is represenred into a horizontal x vertical format. If displayMode is text\_mode, it is ignored. |

5.2.13.4 Examples

This example shows the description of a character display capability with the following semantics. The character display actuator supports a resolution of 320x240 pixels, 16 colors (black, red, green, blue, cyan, white, etc), and three text sizes (6x8, 12x16, 18x24).

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| "characterDisplayActuatorCapabilityData": { "actuatorCapabilityBaseData": {},"dispalyMode": "graphics\_mode", "width": 320, "height": 240, "colorNumber": 16,"colors":["black","navy\_blue","green\_html/css\_green"," maroon\_html/css","purple\_html/css","olive","grey","blue"," lime\_web\_x11\_green","cyan","red","magenta","yello","white","pink"," green-yellow"], "textSizeNumber":3, "textSizes":["6x8","12x16","18x24"]} |