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| Project | **Standard for Actuator Interface for Cyber and Physical World**  <https://sagroups.ieee.org/2888/ **>** |
| Title | **Application Programming Interfaces for Environmental Change Related Actuators** |
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| Re: |  |
| Abstract | This contribution proposes the application programming interfaces for environmental change related actuators |
| Purpose | To start discussion on purpose of the standard |
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# Introduction

This contribution proposes the application programming interfaces for environmental change related actuators.

Environmental change related actuators include:

* Sprayer actuator
* Fog actuator
* Wind actuator
* Bubble actuator

# API for individual actuators

Table 1 – Sprayer API

|  |  |
| --- | --- |
| Nested Classes | |
| Modifier and Type | Method and Description |
|  |  |
| Constructor | |
| Constructor and Description | |
| Sprayer() | |
| *Default constructor.* | |
|  | |
| Sprayer(String id) | |
|  | |
| Sprayer(String id, String serverIPAddress, integer serverPort) | |
|  | |
| Fields | |
| Modifier and Type | Field and Description |
|  |  |
| Methods | |
| Modifier and Type | Method and Description |
| int | setSprayerComplexCommand(sprayerType sprayer, int intensity) |
|  | *This function sets a command to designate a sprayed material type and the intensity of sprayer actuator. This function shall include a sprayer parameter defined by sprayerType from IEEE2888.2(Section 4.2.5) with intensity parameter. If the command succeeds, this function returns 1; otherwise, it returns 0.* |
|  |  |
| int | setSprayerType(sprayerType sprayer) |
|  | *This function sets a command to designate a sprayed material type of sprayer actuator. This function shall include a sprayer parameter defined by sprayerType from IEEE2888.2(Section 4.2.5). If the command succeeds, this function returns 1; otherwise, it returns 0.* |
|  |  |
| Int | setSprayerIntensity(int intensity) |
|  | *This function sets a command for control intensity of scent emission on scent actuator. This function shall include the intensity parameter. If the command succeeds, this function returns 1; otherwise, it returns 0.* |
|  |  |

Table 2 – Fog API

|  |  |
| --- | --- |
| Nested Classes | |
| Modifier and Type | Method and Description |
|  |  |
| Constructor | |
| Constructor and Description | |
| Fog() | |
| *Default constructor.* | |
|  | |
| Fog(String id) | |
|  | |
| Fog(String id, String serverIPAddress, integer serverPort) | |
|  | |
| Fields | |
| Modifier and Type | Field and Description |
|  |  |
| Methods | |
| Modifier and Type | Method and Description |
| int | setFogIntensity (int intensity) |
|  | *This function sets a command to control the intensity of fog emissions on the fog actuator. This function shall include the intensity parameter. If the command succeeds, this function returns 1; otherwise, it returns 0.* |
|  |  |

Table 3 – Wind API

|  |  |
| --- | --- |
| Nested Classes | |
| Modifier and Type | Method and Description |
|  |  |
| Constructor | |
| Constructor and Description | |
| Wind() | |
| *Default constructor.* | |
|  | |
| Wind(String id) | |
|  | |
| Wind(String id, String serverIPAddress, integer serverPort) | |
|  | |
| Fields | |
| Modifier and Type | Field and Description |
|  |  |
| Methods | |
| Modifier and Type | Method and Description |
| int | setWindIntensity (int intensity) |
|  | *This function sets a command to control the intensity of wind on the wind actuator. This function shall include the intensity parameter. If the command succeeds, this function returns 1; otherwise, it returns 0.* |
|  |  |

Table 4 – Bubble API

|  |  |
| --- | --- |
| Nested Classes | |
| Modifier and Type | Method and Description |
|  |  |
| Constructor | |
| Constructor and Description | |
| Bubble() | |
| *Default constructor.* | |
|  | |
| Bubble(String id) | |
|  | |
| Bubble(String id, String serverIPAddress, integer serverPort) | |
|  | |
| Fields | |
| Modifier and Type | Field and Description |
|  |  |
| Methods | |
| Modifier and Type | Method and Description |
| int | setBubble() |
|  | *This function sets a command to turn on the wind actuator. If the command succeeds, this function returns 1; otherwise, it returns 0.* |
|  |  |