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

This contribution proposes the application programming interfaces for haptic related actuators.

Haptic related actuators include:

* Heating actuator
* Cooling actuator
* Vibration actuator

# API for individual actuators

Table 1 – Heating API

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

Table 2 – Cooling API

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

Table 3 – Vibration API

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