



TANGO Device Server

Multi channel Steerer class for the ESRF storage ring User's Guide

MchSteerer Class

Revision: MchSteerer-Release_1_9 - Author: meyer
Implemented in C++ - CVS repository: ESRF

Introduction:

A multi channel steerer device should regroup all horizontal or vertical steerers of the ESRF storage ring. Reading and setting of steerer currents and voltages is done by spectrum attributes, which contain the values of the individual steerer devices.

Class Identification:

- **Contact :** at esrf.fr - meyer
- **Class Family :** PowerSupply (Specific Specific)
- **Platform :** Unix Like
- **Bus :** Tango

Class Inheritance:

- Tango::Device_4Impl
  - MchSteerer

Properties:

Device Properties		
Property name	**Property type**	**Description**
SteererNames	Array of string	The list of available steerer device names in the order the values have to be arranged in the Current and Voltage spectra.
UpdatePeriod	Tango::DEV_LONG	The update period of all aquired values from the steerer devices in milli seconds.

Device Properties Default Values:

Property Name	**Default Values**
SteererNames	No default value
UpdatePeriod	500

There is no Class properties.

States:

States	
Names	**Descriptions**
ON	All steerers switched on.
OFF	One or more steerers are off.
ALARM	Alarm detected on one or more steerers.
FAULT	Fault detected on one or more steerers.
UNKNOWN	Connection problems with one or more steerers.

Attributes:

Spectrum Attributes			
Attribute name	**Data Type**	**X Data Length**	**Expert**
Current: Array of current values. Not yet available channels are filled with NaN values.	DEV_DOUBLE	256	No
Voltage: Array of voltage values. Not yet available channels are filled with NaN values.	DEV_DOUBLE	256	No
SetCurrentAverage: Array of calculated average AC current setpoint values per second.. When not yet available, the channels are filled with NaN values.	DEV_DOUBLE	256	No
SetCurrentRMS: Array of calculated RMS AC current setpoint values per second.. When not yet available, the channels are filled with NaN values.	DEV_DOUBLE	256	No
SteererStates: The states of the individual steerer devices.	DEV_STATE	256	No
SteererNames: The names of the individual steerer devices.	DEV_STRING	256	No
SteererLocations: The locations of the individual Bilt power supply devices used for every steerer.	DEV_STRING	256	No

Commands:

More Details on commands....

Device Commands for Operator Level		
Command name	**Argument In**	**Argument Out**
Init	DEV_VOID	DEV_VOID
State	DEV_VOID	DEV_STATE
Status	DEV_VOID	CONST_DEV_STRING
On	DEV_VOID	DEV_VOID
Off	DEV_VOID	DEV_VOID
Reset	DEV_VOID	DEV_VOID
SetpointCheck	DEVVAR_DOUBLEARRAY	DEV_SHORT

1 - Init

- **Description:** This commands re-initialise a device keeping the same network connection.
  After an Init command executed on a device, it is not necessary for client to re-connect to the device.
  This command first calls the device *delete_device()* method and then execute its *init_device()* method.
  For C++ device server, all the memory allocated in the *nit_device()* method must be freed in the *delete_device()* method.
  The language device desctructor automatically calls the *delete_device()* method.

- **Argin:**
  DEV_VOID : none.

- **Argout:**
  DEV_VOID : none.

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::ALARM
  - Tango::FAULT
  - Tango::UNKNOWN

2 - State

- **Description:** This command gets the device state (stored in its *device_state* data member) and returns it to the caller.

- **Argin:**
  DEV_VOID : none.

- **Argout:**
  DEV_STATE : State Code

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::ALARM
  - Tango::FAULT
  - Tango::UNKNOWN

3 - Status

- **Description:** This command gets the device status (stored in its *device_status* data member) and returns it to the caller.

- **Argin:**

DEV_VOID : none.

- **Argout:**
  CONST_DEV_STRING : Status description

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::ALARM
  - Tango::FAULT
  - Tango::UNKNOWN

4 - On

- **Description:** Switch all steerers on.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::OFF
  - Tango::ALARM

5 - Off

- **Description:** Switch all steerers off.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::ALARM
  - Tango::FAULT
  - Tango::UNKNOWN

6 - Reset

- **Description:** Reset all steerers.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::ALARM
  - Tango::FAULT
  - Tango::UNKNOWN

7 - SetpointCheck

- **Description:** Check the requested setpoint values for all steerers, against the steerer current limits. Returns 0 when inside the limits for all steerers and otherwise -1.

- **Argin:**
  DEVVAR_DOUBLEARRAY :

- **Argout:**
  DEV_SHORT :

- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::ALARM