



TANGO Device Server

SimulatedMotor User's Guide

SimulatedMotor Class

Revision: release_1_0_5 - Author: anoureddine
Implemented in C++ - CVS repository: tango-ds

Introduction:

Simulating an axis motor.

Class Inheritance:

- Tango::Device_4Impl
  - SimulatedMotor

Class Description:

Simulating an Axis motor. Implemented with Tango C++ & YAT4Tango task

Properties:

Device Properties		
Property name	**Property type**	**Description**
PositionConversionRatio	Tango::DEV_DOUBLE	Conversion factor between user units and hardware units. User unit = hardware position * PositionConversionRatio. [default : 1.0] NB: Not implemented. [has no effect on the device]
StepSize	Tango::DEV_DOUBLE	Step size of the motor. [default = 0.01]
MemorizedAccuracy	Tango::DEV_DOUBLE	Memorize the last accuracy attribute value. [default = 0.02]
MemorizedOffset	Tango::DEV_DOUBLE	Memorize the last offset attribute value. [default = 0]
MemorizedPower	Tango::DEV_BOOLEAN	Memorize tbhe last power off motor state attribute value. [default = false => Motor on by default]
MemorizedVelocity	Tango::DEV_DOUBLE	Memorize the last velocity attribute value. [default = 1]

Device Properties Default Values:

Property Name	**Default Values**
PositionConversionRatio	1.0
StepSize	0.01
MemorizedAccuracy	0.02
MemorizedOffset	0
MemorizedPower	false
MemorizedVelocity	1

There is no Class properties.

States:

States	
Names	**Descriptions**
STANDBY	Axis idle, ready for commands.
MOVING	Axis moving.
ALARM	Non-blocking fault, axis can move.
FAULT	Blocking fault, axis cannot move.
OFF	Power unit off.
INIT	Device is not completly initializated.

Attributes:

Scalar Attributes			
Attribute name	**Data Type**	**R/W Type**	**Expert**
offset: Offset added to position attribute value to meet user's needings. Use this attribute to change the zero position. Does not change the position software limits.	DEV_DOUBLE	READ_WRITE	No
position: Device position in user units.	DEV_DOUBLE	READ_WRITE	No
acceleration: Not implemented. [has no effect on the device]	DEV_DOUBLE	READ_WRITE	Yes
deceleration: Not implemented. [has no effect on the device]	DEV_DOUBLE	READ_WRITE	Yes
velocity: Define the speed of the device. This accelerates the value increment of position attribute value. Range [0.1 - 60]. Typical values : 1. 1 increment of StepSize in 1000 (ms) 10. 1 increment of StepSize in 100 (ms) 50. 1 increment of StepSize in 20 (ms) 60. 1 increment of StepSize in 16 (ms)	DEV_DOUBLE	READ_WRITE	No
accuracy: Define the precision of position attribute value. Position is considered OK, when (reached position - requested position) < precision. NB: Always use accuracy > stepSize.	DEV_DOUBLE	READ_WRITE	Yes

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
Forward	DEV_VOID	DEV_VOID
Backward	DEV_VOID	DEV_VOID
InitializeReferencePosition	DEV_DOUBLE	DEV_VOID
Stop	DEV_VOID	DEV_VOID
MotorON	DEV_VOID	DEV_VOID
MotorOFF	DEV_VOID	DEV_VOID

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::STANDBY
  - Tango::MOVING
  - Tango::ALARM
  - Tango::FAULT
  - Tango::OFF
  - Tango::INIT

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::STANDBY
  - Tango::MOVING
  - Tango::ALARM
  - Tango::FAULT
  - Tango::OFF
  - Tango::INIT

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::STANDBY
  - Tango::MOVING
  - Tango::ALARM
  - Tango::FAULT
  - Tango::OFF
  - Tango::INIT

4 - Forward

- **Description:** Increment in a continuous way the position attribute value of the device.
  Each increment is equal to StepSize.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

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

5 - Backward

- **Description:** decrement in a continuous way the position attribute value of the device.
  Each increment is equal to StepSize.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

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

6 - InitializeReferencePosition

- **Description:** Not implemented. [has no effect on the device]

- **Argin:**
  DEV_DOUBLE : the value of the home position

- **Argout:**
  DEV_VOID :

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

7 - Stop

- **Description:** Stop the current movement of the device.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

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

8 - MotorON

- **Description:** Switch the power of the motor to On. State is switched to Standby.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

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

9 - MotorOFF

- **Description:** Switch the power of the motor to Off. State is switched to Off.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

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