Remote control with a Wiimote
User's Guide

Wiimote Class

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Implemented in C++ - CVS repository: tango-ds

Introduction:

This class is a Tango interface to the Nintendo Wiimote game controller. The Wiimote is the Nintendo Wii game system controller. You associate Tango object (command or attribute) with Wiimote button/accelerators and then, you can control them using the Wiimote

Class Inheritance:

- Tango::Device_4Impl
  - Wiimote

Class Description:

Properties:

Class Properties		
Property name	**Property type**	**Description**
NintendoAddr	Tango::DEV_STRING	Manufacturer part of the Bluetooth address for Nintendo

Device Properties		
Property name	**Property type**	**Description**
BluetoothAddress	Tango::DEV_STRING	The Wiimote bluetooth address
ErrorBipTime	Tango::DEV_LONG	Time (in mS) during which the Wiimote will rumble in case of exception received when executing the command and writing the attribuute
ContModeSleepTime	Tango::DEV_LONG	Sleep time (in mS) between two actions on Tango object i Continuous mode
PollSleepTime	Tango::DEV_LONG	Sleep time (in mS) between two polling in continuous mode when waiting for end of action
AccThreshold	Tango::DEV_SHORT	Acceleration threshold to fire a Tango object change

Class Properties Default Values:

Property Name	Default Values</td>
NintendoAddr	00:19:1D

Device Properties Default Values:

Property Name	Default Values
BluetoothAddress	NotDefined
ErrorBipTime	500
ContModeSleepTime	400
PollSleepTime	50
AccThreshold	64

States:

States	
Names	**Descriptions**
ON	The Wiimote is ready to be used
FAULT	Impossible to communicate with the Wiimote Most of the time, this means it is not connected

Attributes:

Scalar Attributes			
Attribute name	**Data Type**	**R/W Type**	**Expert**
AButton: Name of the Tango object associated with the Wiimote A button. The Tango object can be: 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
AButtonStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote A button is associated with an attribute and pressed	DEV_DOUBLE	READ_WRITE	Yes
BButton: Name of the Tango object associated with the Wiimote B button. The Tango object can be: 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
BButtonStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote B button is associated with an attribute and pressed	DEV_DOUBLE	READ_WRITE	Yes
DownButton: Name of the Tango object associated with the Wiimote cross Down button. The Tango object can be: 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
DownButtonStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote cross Down button is associated with an attribute and pressed	DEV_DOUBLE	READ_WRITE	Yes
HomeButton: Name of the Tango object associated with the Wiimote Home button. The Tango object can be: 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No

HomeButtonStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote Home button is associated with an attribute and pressed	DEV_DOUBLE	READ_WRITE	Yes
LeftButton: Name of the Tango object associated with the Wiimote cross Left button. The Tango object can be: 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
LeftButtonStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote cross Left button is associated with an attribute and pressed	DEV_DOUBLE	READ_WRITE	Yes
MinusButton: Name of the Tango object associated with the Wiimote - button. The Tango object can be: 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
MinusButtonStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote - button is associated with an attribute and pressed	DEV_DOUBLE	READ_WRITE	Yes
OneButton: Name of the Tango object associated with the Wiimote 1 button. The Tango object can be: 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
OneButtonStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote 1 button is associated with an attribute and pressed	DEV_DOUBLE	READ_WRITE	Yes
PlusButton: Name of the Tango object associated with the Wiimote + button. The Tango object can be: 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
PlusButtonStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote + button is associated with an attribute and pressed	DEV_DOUBLE	READ_WRITE	Yes
RightButton: Name of the Tango object associated with the Wiimote cross Right button. The Tango object can be: 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
RightButtonStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote cross Right button is associated with an attribute and pressed	DEV_DOUBLE	READ_WRITE	Yes

TwoButton: Name of the Tango object associated with the Wiimote 2 button. The Tango object can be: 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
TwoButtonStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote 2button is associated with an attribute and pressed	DEV_DOUBLE	READ_WRITE	Yes
UpButton: Name of the Tango object associated with the Wiimote cross Up button. The Tango object can be: 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
UpButtonStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote cross Up button is associated with an attribute and pressed	DEV_DOUBLE	READ_WRITE	Yes
XAxisMinus: Name of the Tango object associated with a Wiimote negative acceleration on the X axis 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
XAxisMinusStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote X negative acceleration is associated with an attribute	DEV_DOUBLE	READ_WRITE	Yes
XAxisPlus: Name of the Tango object associated with a Wiimote positive acceleration on the X axis 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
XAxisPlusStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote Xpositive acceleration is associated with an attribute	DEV_DOUBLE	READ_WRITE	Yes
YAxisMinus: Name of the Tango object associated with a Wiimote negative acceleration on the Y axis 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
YAxisMinusStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote Y negative acceleration is associated with an attribute	DEV_DOUBLE	READ_WRITE	Yes
YAxisPlus: Name of the Tango object associated with a Wiimote positive acceleration on the Y axis 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No

YAxisPlusStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote Y positive acceleration is associated with an attribute	DEV_DOUBLE	READ_WRITE	Yes
ZAxisMinus: Name of the Tango object associated with a Wiimote negative acceleration on the Z axis 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
ZAxisMinusStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote Z negative acceleration is associated with an attribute	DEV_DOUBLE	READ_WRITE	Yes
ZAxisPlus: Name of the Tango object associated with a Wiimote positive acceleration on the Z axis 1 - A device attribute specified with its four fields name (device name/attribute name). Only SCALAR, WRITE or READ_WRITE, numerical data type can be used. 2 - A device command specified using the same syntax than the one used for attribute name (device name/command name) Only VOID - VOID command can be used	DEV_STRING	READ_WRITE	No
ZAxisPlusStep: Delta applied (pos or neg) to the Tango attribute when the Wiimote Z positive acceleration is associated with an attribute	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
Connect	DEV_VOID	DEV_VOID
Disconnect	DEV_VOID	DEV_VOID
SwitchOnLed	DEV_SHORT	DEV_VOID
SwitchOffLed	DEV_SHORT	DEV_VOID
SwitchOnRumble	DEV_VOID	DEV_VOID
SwitchOffRumble	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::ON
- Tango::FAULT

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::FAULT

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::FAULT

4 - Connect

- **Description:** Connect the deice and the Wiimote

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
○ Tango::ON
○ Tango::FAULT

5 - Disconnect

- **Description:** Disconnect a devce froma Wiimote

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
○ Tango::ON
○ Tango::FAULT

6 - SwitchOnLed

- **Description:** Switch a Wiimote Led on. Each Wiimote LED has a number between 1 and 4. One is for the botton left LED. Four is for the botton right LED.

- **Argin:**
  DEV_SHORT : Led number (between 1 and 4)

- **Argout:**
  DEV_VOID :

- **Command allowed for:**
○ Tango::ON

7 - SwitchOffLed

- **Description:** Switch a Wiimote Led off. Each Wiimote LED has a number between 1 and 4. One is for the botton left LED. Four is for the botton right LED.

- **Argin:**
  DEV_SHORT : Led number (between 1 and 4)

- **Argout:**
  DEV_VOID :

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

8 - SwitchOnRumble

- **Description:** Switch On the Wiimote Rumble

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

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

9 - SwitchOffRumble

- **Description:** Switch Off the Wiimote Rumble

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

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