eleta encoder driving
User's Guide

Encoder Class

Revision: Encoder-Release_1_1 - Author: penel
Implemented in C++ - CVS repository: ESRF

Introduction:

Classe writen to read an encoder

Class Identification:

- **Contact :** at esrf.fr - penel
- **Class Family :** Motion
- **Platform :** All Platforms
- **Bus :** Serial Line

Class Inheritance:

- Tango::Device_4Impl
    - Encoder

Properties:

Device Properties		
Property name	**Property type**	**Description**
Direction	Tango::DEV_SHORT	The rotation direction (+1 or -1
Line	Tango::DEV_STRING	serial line device name ex : " id/ser/i7
Max_char_in_buff	Tango::DEV_SHORT	The Max number of caractere allowed in the serial line buffer. If this number is reach then the encoder goes in FAULT state. Status signal Buffer OVERLOAD
Pos_at_ref	Tango::DEV_DOUBLE	Position at reference in mm (ex 480 ; this position is the position return when the encoder return step_at_ref
Steps_at_ref	Tango::DEV_DOUBLE	number of step read at ref position (ex typical 500000
Steps_by_unit	Tango::DEV_DOUBLE	number of encoder steps for a unit (ex : 10000

Device Properties Default Values:

Property Name	Default Values
Direction	No default value
Line	No default value
Max_char_in_buff	No default value
Pos_at_ref	No default value
Steps_at_ref	No default value
Steps_by_unit	No default value

There is no Class properties.

States:

States	
Names	**Descriptions**
ON	Encoder is ON and OK
FAULT	fault on encoder could come from serial line probleme : timeout; bad setting ,lost of caracter, reading too old.....

Attributes:

Scalar Attributes			
Attribute name	**Data Type**	**R/W Type**	**Expert**
Position: the Position give by the Encoder after compute. NB : the attribute is automaticcly refresh after each encoder message each message from the serial line .	DEV_DOUBLE	READ	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
Reset	DEV_VOID	DEV_VOID
DevReadPos	DEV_VOID	DEV_DOUBLE

Device Commands for Expert Level Only		
Command name	**Argument In**	**Argument Out**
SetPos	DEV_DOUBLE	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 - Reset

- **Description:** reset the encoder Flush the serial line Set the Serial line to the first available message

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

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

5 - DevReadPos

- **Description:** Return the last available value of the encoder in mm. The value you read is the last fresh value send by the Encoder (every 40ms). Don't care on polling of this value it's done by an asynchronous call to the serial line that refresh the value.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_DOUBLE : The position read on the encoder in mm

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

6 - SetPos (for expert only)

- **Description:** Change the pos_at_ref value to obtain a read at actual position equal to argin

- **Argin:**
  DEV_DOUBLE : new position

- **Argout:**
  DEV_VOID :

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