



**TANGO**  
Device  
Server

# **NI6602**

## **User's Guide**

### **NI6602 Class**

Revision: release\_1\_8\_0 - Author: langlois  
Implemented in C++ - CVS repository: tango-ds

## **Introduction:**

## **Class Identification:**

- **Contact** : at [synchrotron-soleil.fr](http://synchrotron-soleil.fr) - langlois
- **Class Family** : Acquisition
- **Platform** : Windows
- **Bus** : Compact PCI
- **Manufacturer** : National Instrument
- **Reference** : 6602

## **Class Inheritance:**

- Tango::Device\_4Impl
  - NI6602

## Properties:

| Device Properties                     |                    |                                                                                                                                                                                                                                                                                          |
|---------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Property name                         | Property type      | Description                                                                                                                                                                                                                                                                              |
| <b>Boards</b>                         | Array of string    | The name of the boards as specified in Measurement & Automation eXplorer (MAX).                                                                                                                                                                                                          |
| <b>IsMaster</b>                       | Tango::DEV_BOOLEAN | Specify if the board generates the counting signal or if this signal comes from an external input.<br>- If 1, the counter0 will generate the signal that specify the integration time of the other counters of the board.<br>-If 0, the integration time will come from the input PFI38. |
| <b>Slaves</b>                         | Array of string    | The slaves device names (used only if IsMaster is equals to 1).                                                                                                                                                                                                                          |
| <b>NexusNbAcqPerFile</b>              | Tango::DEV_LONG    | Define the number of acquisition (steps) in each nexus file.                                                                                                                                                                                                                             |
| <b>MemorizedNexusFileGeneration</b>   | Tango::DEV_BOOLEAN | Allows storage of acquired data into Nexus files.                                                                                                                                                                                                                                        |
| <b>MemorizedNexusTargetPath</b>       | Tango::DEV_STRING  | Define the root path for generated nexus files.                                                                                                                                                                                                                                          |
| <b>MemorizedContinuousAcquisition</b> | Tango::DEV_BOOLEAN | Allows the auto restart of the acquisition.                                                                                                                                                                                                                                              |
| <b>NexusMeasureDimension</b>          | Tango::DEV_SHORT   | Dimension of the measure to be pushed into the nexus file, can be : 0 -> for a 0D measure (a scalar value) 1 -> for a 1D measure (a spectrum value)                                                                                                                                      |

## Device Properties Default Values:

| Property Name                  | Default Values   |
|--------------------------------|------------------|
| Boards                         | No default value |
| IsMaster                       | No default value |
| Slaves                         | No default value |
| NexusNbAcqPerFile              | 1                |
| MemorizedNexusFileGeneration   | false            |
| MemorizedNexusTargetPath       | d:\\target       |
| MemorizedContinuousAcquisition | false            |
| NexusMeasureDimension          | 0                |

There is no Class properties.

## States:

| States         |              |
|----------------|--------------|
| Names          | Descriptions |
| <b>RUNNING</b> |              |
| <b>STANDBY</b> |              |
| <b>FAULT</b>   |              |

## Attributes:

| Spectrum Attributes     |            |               |        |
|-------------------------|------------|---------------|--------|
| Attribute name          | Data Type  | X Data Length | Expert |
| <b>actuators</b>        | DEV_STRING | 1000          | Yes    |
| <b>sensors</b>          | DEV_STRING | 1000          | Yes    |
| <b>actuatorsProxies</b> | DEV_STRING | 1000          | Yes    |

## Commands:

More Details on commands....

| Device Commands for Operator Level |             |                  |
|------------------------------------|-------------|------------------|
| Command name                       | Argument In | Argument Out     |
| <b>Init</b>                        | DEV_VOID    | DEV_VOID         |
| <b>State</b>                       | DEV_VOID    | DEV_STATE        |
| <b>Status</b>                      | DEV_VOID    | CONST_DEV_STRING |
| <b>Start</b>                       | DEV_VOID    | DEV_VOID         |
| <b>Stop</b>                        | DEV_VOID    | DEV_VOID         |
| <b>SetBufferedMode</b>             | DEV_VOID    | DEV_VOID         |
| <b>SetScalarMode</b>               | DEV_VOID    | DEV_VOID         |

| Device Commands for Expert Level Only |             |              |
|---------------------------------------|-------------|--------------|
| Command name                          | Argument In | Argument Out |
| <b>GetInfo</b>                        | DEV_VOID    | DEV_STRING   |

## 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::RUNNING
  - Tango::STANDBY
  - 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::RUNNING
- Tango::STANDBY
- 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::RUNNING
- Tango::STANDBY
- Tango::FAULT

## 4 - Start

- **Description:** Start acquisition

- **Argin:**  
**DEV\_VOID** :

- **Argout:**  
**DEV\_VOID** :

- **Command allowed for:**

- Tango::RUNNING
- Tango::STANDBY
- Tango::FAULT

## 5 - Stop

- **Description:** Stop the current acquisition
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::RUNNING
  - Tango::STANDBY
  - Tango::FAULT

## 6 - GetInfo (for expert only)

- **Description:** Get driver version, Enumerate available boards with their type
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_STRING :
- **Command allowed for:**
  - Tango::RUNNING
  - Tango::STANDBY
  - Tango::FAULT

## 7 - SetBufferedMode

- **Description:** switch the device from scalar mode to buffered mode
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::RUNNING
  - Tango::STANDBY
  - Tango::FAULT

## 8 - SetScalarMode

- **Description:** switch the device from buffered mode to scalar mode
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::RUNNING
  - Tango::STANDBY
  - Tango::FAULT

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