



**TANGO**  
Device  
Server

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# **Brehmstrahlung monitor User's Guide**

## **Bsm Class**

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**Revision: V3\_0 - Author: peru**  
**Implemented in C++ - CVS repository: ESRF**

### **Introduction:**

A class which performs a scan with an XBPM motorisation while getting measures from a Brehmstrahlung sensor.

### **Class Inheritance:**

- Tango::Device\_4Impl
  - Bsm

### **Class Description:**

## Properties:

<b>Device Properties</b>		
<b>Property name</b>	<b>Property type</b>	<b>Description</b>
<b>ScanStartPosX</b>	Tango::DEV_FLOAT	The value of the start X position of the scan.
<b>ScanStartPosZ</b>	Tango::DEV_FLOAT	The value of the start Z position of the scan.
<b>ScanEndPosX</b>	Tango::DEV_FLOAT	The value of the end X position of the scan.
<b>ScanEndPosZ</b>	Tango::DEV_FLOAT	The value of the end Z position of the scan.
<b>ScanStepX</b>	Tango::DEV_FLOAT	Increment value of the X axis.
<b>ScanStepZ</b>	Tango::DEV_FLOAT	Increment value of the Z axis.
<b>DeviceSensor</b>	Tango::DEV_STRING	The name of the device to access in order to read the Brehmstrahlung intensity value.
<b>XBPMDevice</b>	Tango::DEV_STRING	Device name of the XBPM.
<b>CurrentDS</b>	Tango::DEV_STRING	Device name of the machine current DS.
<b>IdDevice</b>	Tango::DEV_STRING	Associated insertion device device name.
<b>HDBdevname</b>	Tango::DEV_STRING	The device used to access HDB.
<b>HDBdevprefix</b>	Tango::DEV_STRING	The prefix of the signal name.
<b>MaxNbRead</b>	Tango::DEV_SHORT	Max number of read attempts before aborting a scan.

## Device Properties Default Values:

<b>Property Name</b>	<b>Default Values</b>
ScanStartPosX	No default value
ScanStartPosZ	No default value
ScanEndPosX	No default value
ScanEndPosZ	No default value
ScanStepX	No default value
ScanStepZ	No default value
DeviceSensor	No default value
XBPMDevice	No default value
CurrentDS	No default value
IdDevice	No default value
HDBdevname	No default value
HDBdevprefix	No default value
MaxNbRead	No default value

**There is no Class properties.**

## States:

<b>States</b>	
<b>Names</b>	<b>Descriptions</b>
<b>MOVING</b>	Set while a scan is in progress.
<b>STANDBY</b>	Normal state out of scan period.

## Attributes:

<b>Scalar Attributes</b>			
<b>Attribute name</b>	<b>Data Type</b>	<b>R/W Type</b>	<b>Expert</b>
<b>ScanProgress:</b> This is the percentage of done work for the scan in progress.	DEV_LONG	READ	No
<b>Xpos</b>	DEV_FLOAT	READ	No
<b>Zpos</b>	DEV_FLOAT	READ	No
<b>ReadValue</b>	DEV_FLOAT	READ	No

## 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>ScanStart</b>	DEV_VOID	DEV_VOID
<b>ScanAbort</b>	DEV_VOID	DEV_VOID
<b>ScanGetResult</b>	DEV_VOID	DEVVAR_DOUBLEARRAY
<b>ScanGetSignalAndBackground</b>	DEV_VOID	DEVVAR_DOUBLEARRAY
<b>On</b>	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::MOVING
  - Tango::STANDBY

## 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::MOVING
- Tango::STANDBY

### 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::MOVING
- Tango::STANDBY

### 4 - ScanStart

- **Description:** Start a scan. Allowed only if there is no scan in progress (state Tango::STANDBY).

- **Argin:**

**DEV\_VOID** :

- **Argout:**

**DEV\_VOID** :

- **Command allowed for:**

- Tango::STANDBY

### 5 - ScanAbort

- **Description:** Abort a scan. Allowed only if a scan is in progress (state Tango::RUNNING).

- **Argin:**

**DEV\_VOID** :

- **Argout:**

**DEV\_VOID** :

- **Command allowed for:**

- Tango::MOVING

## 6 - ScanGetResult

- **Description:** Returns an array of double containing: - X position at - Z position at array - Sensor value at
- **Argin:**  
**DEV\_VOID :**
- **Argout:**  
**DEVVAR\_DOUBLEARRAY :** Scan output data
- **Command allowed for:**
  - Tango::STANDBY

## 7 - ScanGetSignalAndBackground

- **Description:** Returns an array of double: - Index 0 contains the signal value. - Index 1 contains the background. - Index 2 contains the machine current value.
- **Argin:**  
**DEV\_VOID :**
- **Argout:**  
**DEVVAR\_DOUBLEARRAY :** Output data stored in a double array.
- **Command allowed for:**
  - Tango::STANDBY

## 8 - On

- **Description:** Implemented for test purposes.
- **Argin:**  
**DEV\_VOID :**
- **Argout:**  
**DEV\_VOID :**
- **Command allowed for:**
  - Tango::MOVING
  - Tango::STANDBY

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