



TANGO
Device
Server

HLSDRawData Acquisition User's Guide

HLSDRawData Class

**Revision: release_1_1_1 - Author: guigne
Implemented in C++**

Introduction:

Device which acquire data from HLS (currently uses HLS device)

Class Inheritance:

- Tango::Device_3Impl
 - HLSDRawData

Properties:

Device Properties

Property name	Property type	Description
DeviceNameToConnect	Array of string	List of device names to connect in order to get the voltage.
AttributeNameToRead	Tango::DEV_STRING	The attribute name to read on device(s) which is used for voltage acquisition.
RingCellNumber	Tango::DEV_SHORT	This property is for indicate the cell number location which is manage by this device server. e.g. : At the SOLEIL Synchrotron, there are 16 cells areas for the ring.
DataSavedPath	Tango::DEV_STRING	Path of the files containing short time HLS acquisition datas.

Device Properties Default Values:

Property Name	Default Values
DeviceNameToConnect	No default value
AttributeNameToRead	No default value
RingCellNumber	1
DataSavedPath	No default value

There is no Class properties.

States:

States	
Names	Descriptions
RUNNING	Normal operation
ALARM	At Least one HLS is not responding
FAULT	Initialization failed. check properties and retry.

Attributes:

Scalar Attributes

Attribute name	Data Type	R/W Type	Expert
numCell : Cell number of the ANS.	DEV_SHORT	READ	No
zMeanOfCell : Average Z of a cell.	DEV_DOUBLE	READ	No
zStdevOfCell : Standard deviation Z of a cell.	DEV_DOUBLE	READ	No
depthMean : Size of buffer to compute the average.	DEV_SHORT	READ_WRITE	No
sensorNumber : Number of sensors HLS.	DEV_SHORT	READ	No

Spectrum Attributes

Attribute name	Data Type	X Data Length	Expert
zStdevSpectr : Standard deviation spectrum of all HLS sensors.	DEV_DOUBLE	13	No
zSpectr : Z spectrum of HLS raw data values.	DEV_DOUBLE	13	No
zMeanSpectr : Z mean spectrum of HLS sensors.	DEV_DOUBLE	13	No
xHLSPoSSpectr : List of X HLS sensor positions.	DEV_DOUBLE	13	No
yHLSPoSSpectr : List of the Y HLS sensor positions.	DEV_DOUBLE	13	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
GetVoltage	DEV_SHORT	DEV_DOUBLE
GetZMeasure	DEV_SHORT	DEV_DOUBLE
GetYPosHls	DEV_SHORT	DEV_DOUBLE
GetXPosHls	DEV_SHORT	DEV_DOUBLE
GetZMeasureMean	DEV_SHORT	DEV_DOUBLE
GetZMeasureStdev	DEV_SHORT	DEV_DOUBLE
GetZMeasureMeanDepth	DEV_VOID	DEV_SHORT
SetZMeasureMeanDepth	DEV_SHORT	DEV_VOID
GetCoeffA	DEV_SHORT	DEV_DOUBLE
GetCoeffB	DEV_DOUBLE	DEV_DOUBLE
GetCoeffC	DEV_SHORT	DEV_DOUBLE
GetCoeffK	DEV_SHORT	DEV_DOUBLE
WzSpectrFiler	DEV_VOID	DEV_VOID
WzMeanSpectrFiler	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::RUNNING
 - Tango::ALARM
 - 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::ALARM
 - 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::ALARM
 - Tango::FAULT

4 - GetVoltage

- **Description:** To get the voltage of a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Numhls
- **Argout:**
DEV_DOUBLE : Voltage
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

5 - GetZMeasure

- **Description:** To get the Z measure of a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Numhls
- **Argout:**
DEV_DOUBLE : Z measure

- **Command allowed for:**

- Tango::RUNNING

- Tango::ALARM

6 - GetYPosHls

- **Description:** To get the Y position of a HLS sensor with its index.

- **Argin:**

- DEV_SHORT** : Numhls

- **Argout:**

- DEV_DOUBLE** : Y position

- **Command allowed for:**

- Tango::RUNNING

- Tango::ALARM

7 - GetXPosHls

- **Description:** To get the X position of a HLS sensor with its index.

- **Argin:**

- DEV_SHORT** : Numhls

- **Argout:**

- DEV_DOUBLE** : X position

- **Command allowed for:**

- Tango::RUNNING

- Tango::ALARM

8 - GetZMeasureMean

- **Description:** To get the Z measure mean of a HLS sensor with its index.

- **Argin:**

- DEV_SHORT** : Numhls

- **Argout:**

- DEV_DOUBLE** : Zmean

- **Command allowed for:**

- Tango::RUNNING

- Tango::ALARM

9 - GetZMeasureStdev

- **Description:** To get the Z measure standard deviation of a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Numhls
- **Argout:**
DEV_DOUBLE : Stdev
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

10 - GetZMeasureMeanDepth

- **Description:** To get the mean depth setting of the Z measure mean.
- **Argin:**
DEV_VOID : None
- **Argout:**
DEV_SHORT : Depthmean
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

11 - SetZMeasureMeanDepth

- **Description:** To set the mean depth setting of the Z measure mean.
- **Argin:**
DEV_SHORT : Depthmean
- **Argout:**
DEV_VOID : None
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

12 - GetCoeffA

- **Description:** To get the value of conversion coefficient A for a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Sensor number
- **Argout:**
DEV_DOUBLE : Coeff A
- **Command allowed for:**

- Tango::RUNNING
- Tango::ALARM

13 - GetCoeffB

- **Description:** To get the value of conversion coefficient B for a HLS sensor with its index.
- **Argin:**
DEV_DOUBLE : Sensor number
- **Argout:**
DEV_DOUBLE : Coeff B
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

14 - GetCoeffC

- **Description:** To get the value of conversion coefficient C for a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Sensor number
- **Argout:**
DEV_DOUBLE : Coeff C
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

15 - GetCoeffK

- **Description:** To get the value of conversion coefficient K for a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Sensor number
- **Argout:**
DEV_DOUBLE : Coeff K
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

16 - WzSpectrFiler

- **Description:** Write ZSpectr values in a file.
- **Argin:**
DEV_VOID : None

- **Argout:**
DEV_VOID : None

- **Command allowed for:**

- Tango::RUNNING
- Tango::ALARM
- Tango::FAULT

17 - WzMeanSpectrFiler

- **Description:** Write ZMeanSpectr value in a file.

- **Argin:**
DEV_VOID : None

- **Argout:**
DEV_VOID : None

- **Command allowed for:**

- Tango::RUNNING
- Tango::ALARM
- Tango::FAULT

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Device Properties Default Values:

Property Name	Default Values
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AttributeNameToRead	No default value
RingCellNumber	1
DataSavedPath	No default value

There is no Class properties.

States:

States	
Names	Descriptions
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ALARM	At Least one HLS is not responding
FAULT	Initialization failed. check properties and retry.

Attributes:

Scalar Attributes

Attribute name	Data Type	R/W Type	Expert
numCell : Cell number of the ANS.	DEV_SHORT	READ	No
zMeanOfCell : Average Z of a cell.	DEV_DOUBLE	READ	No
zStdevOfCell : Standard deviation Z of a cell.	DEV_DOUBLE	READ	No
depthMean : Size of buffer to compute the average.	DEV_SHORT	READ_WRITE	No
sensorNumber : Number of sensors HLS.	DEV_SHORT	READ	No

Spectrum Attributes

Attribute name	Data Type	X Data Length	Expert
zStdevSpectr : Standard deviation spectrum of all HLS sensors.	DEV_DOUBLE	13	No
zSpectr : Z spectrum of HLS raw data values.	DEV_DOUBLE	13	No
zMeanSpectr : Z mean spectrum of HLS sensors.	DEV_DOUBLE	13	No
xHLSPoSSpectr : List of X HLS sensor positions.	DEV_DOUBLE	13	No
yHLSPoSSpectr : List of the Y HLS sensor positions.	DEV_DOUBLE	13	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
GetVoltage	DEV_SHORT	DEV_DOUBLE
GetZMeasure	DEV_SHORT	DEV_DOUBLE
GetYPosHls	DEV_SHORT	DEV_DOUBLE
GetXPosHls	DEV_SHORT	DEV_DOUBLE
GetZMeasureMean	DEV_SHORT	DEV_DOUBLE
GetZMeasureStdev	DEV_SHORT	DEV_DOUBLE
GetZMeasureMeanDepth	DEV_VOID	DEV_SHORT
SetZMeasureMeanDepth	DEV_SHORT	DEV_VOID
GetCoeffA	DEV_SHORT	DEV_DOUBLE
GetCoeffB	DEV_DOUBLE	DEV_DOUBLE
GetCoeffC	DEV_SHORT	DEV_DOUBLE
GetCoeffK	DEV_SHORT	DEV_DOUBLE
WzSpectrFiler	DEV_VOID	DEV_VOID
WzMeanSpectrFiler	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::RUNNING
 - Tango::ALARM
 - 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::ALARM
 - 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::ALARM
 - Tango::FAULT

4 - GetVoltage

- **Description:** To get the voltage of a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Numhls
- **Argout:**
DEV_DOUBLE : Voltage
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

5 - GetZMeasure

- **Description:** To get the Z measure of a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Numhls
- **Argout:**
DEV_DOUBLE : Z measure

- **Command allowed for:**

- Tango::RUNNING

- Tango::ALARM

6 - GetYPosHls

- **Description:** To get the Y position of a HLS sensor with its index.

- **Argin:**

- **DEV_SHORT :** Numhls

- **Argout:**

- **DEV_DOUBLE :** Y position

- **Command allowed for:**

- Tango::RUNNING

- Tango::ALARM

7 - GetXPosHls

- **Description:** To get the X position of a HLS sensor with its index.

- **Argin:**

- **DEV_SHORT :** Numhls

- **Argout:**

- **DEV_DOUBLE :** X position

- **Command allowed for:**

- Tango::RUNNING

- Tango::ALARM

8 - GetZMeasureMean

- **Description:** To get the Z measure mean of a HLS sensor with its index.

- **Argin:**

- **DEV_SHORT :** Numhls

- **Argout:**

- **DEV_DOUBLE :** Zmean

- **Command allowed for:**

- Tango::RUNNING

- Tango::ALARM

9 - GetZMeasureStdev

- **Description:** To get the Z measure standard deviation of a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Numhls
- **Argout:**
DEV_DOUBLE : Stdev
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

10 - GetZMeasureMeanDepth

- **Description:** To get the mean depth setting of the Z measure mean.
- **Argin:**
DEV_VOID : None
- **Argout:**
DEV_SHORT : Depthmean
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

11 - SetZMeasureMeanDepth

- **Description:** To set the mean depth setting of the Z measure mean.
- **Argin:**
DEV_SHORT : Depthmean
- **Argout:**
DEV_VOID : None
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

12 - GetCoeffA

- **Description:** To get the value of conversion coefficient A for a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Sensor number
- **Argout:**
DEV_DOUBLE : Coeff A
- **Command allowed for:**

- Tango::RUNNING
- Tango::ALARM

13 - GetCoeffB

- **Description:** To get the value of conversion coefficient B for a HLS sensor with its index.
- **Argin:**
DEV_DOUBLE : Sensor number
- **Argout:**
DEV_DOUBLE : Coeff B
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

14 - GetCoeffC

- **Description:** To get the value of conversion coefficient C for a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Sensor number
- **Argout:**
DEV_DOUBLE : Coeff C
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

15 - GetCoeffK

- **Description:** To get the value of conversion coefficient K for a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Sensor number
- **Argout:**
DEV_DOUBLE : Coeff K
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

16 - WzSpectrFiler

- **Description:** Write ZSpectr values in a file.
- **Argin:**
DEV_VOID : None

- **Argout:**
DEV_VOID : None

- **Command allowed for:**

- Tango::RUNNING
- Tango::ALARM
- Tango::FAULT

17 - WzMeanSpectrFiler

- **Description:** Write ZMeanSpectr value in a file.

- **Argin:**
DEV_VOID : None

- **Argout:**
DEV_VOID : None

- **Command allowed for:**

- Tango::RUNNING
- Tango::ALARM
- Tango::FAULT

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HLSDRawData Acquisition Device Commands Description HLSDRawData Class

Revision: release_1_1_1 - Author: guigne

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 *init_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::ALARM
 - 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::ALARM
- 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::ALARM
- Tango::FAULT

4 - GetVoltage

- **Description:** To get the voltage of a HLS sensor with its index.

- **Argin:**

DEV_SHORT : Numhls

- **Argout:**

DEV_DOUBLE : Voltage

- **Command allowed for:**

- Tango::RUNNING
- Tango::ALARM

5 - GetZMeasure

- **Description:** To get the Z measure of a HLS sensor with its index.

- **Argin:**

DEV_SHORT : Numhls

- **Argout:**

DEV_DOUBLE : Z measure

- **Command allowed for:**

- Tango::RUNNING
- Tango::ALARM

6 - GetYPosHls

- **Description:** To get the Y position of a HLS sensor with its index.

- **Argin:**

DEV_SHORT : Numhls

- **Argout:**

DEV_DOUBLE : Y position

- **Command allowed for:**

- Tango::RUNNING
- Tango::ALARM

7 - GetXPosHls

- **Description:** To get the X position of a HLS sensor with its index.

- **Argin:**

DEV_SHORT : Numhls

- **Argout:**

DEV_DOUBLE : X position

- **Command allowed for:**

- Tango::RUNNING
- Tango::ALARM

8 - GetZMeasureMean

- **Description:** To get the Z measure mean of a HLS sensor with its index.

- **Argin:**

DEV_SHORT : Numhls

- **Argout:**

DEV_DOUBLE : Zmean

- **Command allowed for:**

- Tango::RUNNING

- Tango::ALARM

9 - GetZMeasureStdev

- **Description:** To get the Z measure standard deviation of a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Numhls
- **Argout:**
DEV_DOUBLE : Stdev
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

10 - GetZMeasureMeanDepth

- **Description:** To get the mean depth setting of the Z measure mean.
- **Argin:**
DEV_VOID : None
- **Argout:**
DEV_SHORT : Depthmean
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

11 - SetZMeasureMeanDepth

- **Description:** To set the mean depth setting of the Z measure mean.
- **Argin:**
DEV_SHORT : Depthmean
- **Argout:**
DEV_VOID : None
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

12 - GetCoeffA

- **Description:** To get the value of conversion coefficient A for a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Sensor number
- **Argout:**
DEV_DOUBLE : Coeff A
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

13 - GetCoeffB

- **Description:** To get the value of conversion coefficient B for a HLS sensor with its index.
- **Argin:**
DEV_DOUBLE : Sensor number
- **Argout:**
DEV_DOUBLE : Coeff B
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

14 - GetCoeffC

- **Description:** To get the value of conversion coefficient C for a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Sensor number
- **Argout:**
DEV_DOUBLE : Coeff C
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

15 - GetCoeffK

- **Description:** To get the value of conversion coefficient K for a HLS sensor with its index.
- **Argin:**
DEV_SHORT : Sensor number
- **Argout:**
DEV_DOUBLE : Coeff K
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM

16 - WzSpectrFiler

- **Description:** Write ZSpectr values in a file.
- **Argin:**
DEV_VOID : None
- **Argout:**
DEV_VOID : None
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

17 - WzMeanSpectrFiler

- **Description:** Write ZMeanSpectr value in a file.
- **Argin:**
DEV_VOID : None
- **Argout:**
DEV_VOID : None
- **Command allowed for:**
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

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