TANGO Device Server

# Multi Channel Scaler
# User's Guide

# MCS Class

**Revision: - Author: tere29**
**Implemented in C++**

## Introduction:

Class for a counter used in Multi Channel Scaler mode

## Class Inheritance:

- Tango::Device_4Impl
  - MCS

## Properties:

| Device Properties | | |
|---|---|---|
| **Property name** | **Property type** | **Description** |
| **MaxNbChannels** | Tango::DEV_LONG | Maximum number of channels en Multi Channel Scaler |
| **MaxNbAcquisitions** | Tango::DEV_LONG | Maximum number of acquisitions to be readout for every channel |

Device Properties Default Values:

| **Property Name** | **Default Values** |
|---|---|
| MaxNbChannels | No default value |
| MaxNbAcquisitions | No default value |

**There is no Class properties.**

# States:

| States | |
|---|---|
| **Names** | **Descriptions** |
| **ON** | |

# Attributes:

| Scalar Attributes | | | |
|---|---|---|---|
| **Attribute name** | **Data Type** | **R/W Type** | **Expert** |
| **NbChannels**: Nb of channels to be readout | DEV_LONG | READ_WRITE | No |
| **NbAcquisitions**: Nb of acquisitions to be readout | DEV_LONG | READ_WRITE | No |
| **Preset**: MCS preset value | DEV_LONG | READ_WRITE | No |

| Image Attributes | | | | |
|---|---|---|---|---|
| **Attribute name** | **Data Type** | **X Data Length** | **Y Data Length** | **Expert** |
| **CountsArray**: Readout of the MCS. It is one array of efective dimension NbChannel*NbAcquisitions. These has to be used for extracting the readout of a given channel. The counts for all channels in one acquisition are consecutive. For exemplo if the array values are: 1, 3, 5, 6, 2, 8, for 2 channels in 3 acquisitions, the readout of the first channel would be: 1, 5, 2 and of the second: 3, 6, 8. | DEV_LONG | 32 | 10000 | 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 |
| **SetupMCS** | DEV_VOID | DEV_LONG |
| **ReadMCS** | DEV_VOID | DEV_LONG |

## 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

## 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

## 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

## 4 - SetupMCS

- **Description:** Setup the counter to Multi Channel Scaler Mode

- **Argin:**
  **DEV_VOID** :

- **Argout:**
  **DEV_LONG** : Completion status

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

# 5 - ReadMCS

- **Description:** Read Multi Channel Scaler

- **Argin:**
  **DEV_VOID** :

- **Argout:**
  **DEV_LONG** : Completion status

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