



**TANGO**  
Device  
Server

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# **Taco Ccd wrapper User's Guide**

## **TacoCcd Class**

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**Revision: TacoCcd-Release\_2\_5 - Author: meyer**  
**Implemented in C++ - CVS repository: ESRF**

### **Introduction:**

This is a wrapper for the old Taco ccd interface

### **Class Inheritance:**

- Tango::Device\_4Impl
  - TacoCcd

### **Properties:**

<b>Device Properties</b>		
<b>Property name</b>	<b>Property type</b>	<b>Description</b>
<b>Ccd_device</b>	Tango::DEV_STRING	name of tango ccd device
<b>Bpm_device</b>	Tango::DEV_STRING	Name of the bpm device to read the beam parameters from.

Device Properties Default Values:

<b>Property Name</b>	<b>Default Values</b>
Ccd_device	No default value
Bpm_device	No default value

**There is no Class properties.**

**States:**

<b>States</b>	
<b>Names</b>	<b>Descriptions</b>
<b>ON</b>	ccd is ON, taking pictures
<b>OFF</b>	ccd is OFF, ready to take pictures
<b>FAULT</b>	ccd is in FAULT, cannot take pictures

**Commands:**

More Details on commands....

<b>Device Commands for Operator Level</b>		
<b>Command name</b>	<b>Argument In</b>	<b>Argument Out</b>
<b>Init</b>	DEV_VOID	DEV_VOID
<b>State</b>	DEV_VOID	DEV_STATE
<b>Status</b>	DEV_VOID	CONST_DEV_STRING
<b>TacoState</b>	DEV_VOID	DEV_LONG
<b>DevCcdStart</b>	DEV_VOID	DEV_VOID

<b>DevCcdStop</b>	DEV_VOID	DEV_VOID
<b>DevCcdRead</b>	DEVVAR_LONGARRAY	DEVVAR_CHARARRAY
<b>DevCcdReadJpeg</b>	DEV_SHORT	DEVVAR_CHARARRAY
<b>DevCcdWrite</b>	DEV_VOID	DEV_VOID
<b>DevCcdSetExposure</b>	DEV_FLOAT	DEV_VOID
<b>DevCcdGetExposure</b>	DEV_VOID	DEV_FLOAT
<b>DevCcdSetRoI</b>	DEVVAR_LONGARRAY	DEV_VOID
<b>DevCcdSetFilePar</b>	DEVVAR_STRINGARRAY	DEV_VOID
<b>DevCcdGetFilePar</b>	DEV_VOID	DEVVAR_STRINGARRAY
<b>DevCcdDepth</b>	DEV_VOID	DEV_LONG
<b>DevCcdYSize</b>	DEV_VOID	DEV_LONG
<b>DevCcdXSize</b>	DEV_VOID	DEV_LONG
<b>DevCcdReset</b>	DEV_VOID	DEV_VOID
<b>DevCcdSetMode</b>	DEV_LONG	DEV_VOID
<b>DevCcdGetMode</b>	DEV_VOID	DEV_LONG
<b>DevCcdWriteFile</b>	DEV_LONG	DEV_VOID
<b>DevCcdGetBin</b>	DEV_VOID	DEVVAR_LONGARRAY
<b>DevCcdSetBin</b>	DEVVAR_LONGARRAY	DEV_VOID
<b>DevCcdSetFrames</b>	DEV_LONG	DEV_VOID
<b>DevCcdGetFrames</b>	DEV_VOID	DEV_LONG
<b>DevCcdGetChannel</b>	DEV_VOID	DEV_LONG
<b>DevCcdSetChannel</b>	DEV_LONG	DEV_VOID
<b>DevCcdGetRoI</b>	DEV_VOID	DEVVAR_LONGARRAY
<b>DevReadValues</b>	DEV_VOID	DEVVAR_DOUBLEARRAY
<b>DevReadSigValues</b>	DEV_VOID	DEVVAR_DOUBLEARRAY
<b>DevCcdGetTGradient</b>	DEV_SHORT	DEV_LONG
<b>DevCcdGetLstErrMsg</b>	DEV_VOID	DEV_STRING
<b>DevCcdLive</b>	DEV_LONG	DEV_VOID
<b>DevSetCalib</b>	DEVVAR_LONGARRAY	DEV_VOID
<b>DevGetCalib</b>	DEV_VOID	DEVVAR_DOUBLEARRAY
<b>DevCalibration</b>	DEVVAR_LONGARRAY	DEV_VOID
<b>DevCcdSetThreshold</b>	DEV_LONG	DEV_VOID
<b>DevCcdGetThreshold</b>	DEV_VOID	DEV_LONG
<b>BpmOn</b>	DEV_VOID	DEV_VOID

<b>BpmOff</b>	DEV_VOID	DEV_VOID
<b>ColorMode</b>	DEV_LONG	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::OFF
  - 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::OFF
  - 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::OFF
  - Tango::FAULT

## 4 - TacoState

- **Description:**
- **Argin:**  
**DEV\_VOID** :
- **Argout:**  
**DEV\_LONG** : taco state
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 5 - DevCcdStart

- **Description:**
- **Argin:**  
**DEV\_VOID** :
- **Argout:**  
**DEV\_VOID** :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 6 - DevCcdStop

- **Description:**
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 7 - DevCcdRead

- **Description:**
- **Argin:**  
DEVVAR\_LONGARRAY :
- **Argout:**  
DEVVAR\_CHARARRAY :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 8 - DevCcdReadJpeg

- **Description:**
- **Argin:**  
DEV\_SHORT : jpeg compression
- **Argout:**  
DEVVAR\_CHARARRAY : jpeg compressed image
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 9 - DevCcdWrite

- **Description:**
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 10 - DevCcdSetExposure

- **Description:**
- **Argin:**  
DEV\_FLOAT :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 11 - DevCcdGetExposure

- **Description:** read ccd exposure
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_FLOAT :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 12 - DevCcdSetRoI

- **Description:**
- **Argin:**  
DEVVAR\_LONGARRAY :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 13 - DevCcdSetFilePar

- **Description:**
- **Argin:**  
DEVVAR\_STRINGARRAY :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 14 - DevCcdGetFilePar

- **Description:**
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEVVAR\_STRINGARRAY :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT



## 15 - DevCcdDepth

- **Description:** read depth of image in bits
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_LONG :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 16 - DevCcdYSize

- **Description:** get ccd y dimension in pixels
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_LONG :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 17 - DevCcdXSize

- **Description:** get ccd image x dimension in pixels
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_LONG :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 18 - DevCcdReset

- **Description:** reset ccd
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 19 - DevCcdSetMode

- **Description:**
- **Argin:**  
DEV\_LONG : mode
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 20 - DevCcdGetMode

- **Description:**
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_LONG :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 21 - DevCcdWriteFile

- **Description:**
- **Argin:**  
DEV\_LONG : frame to write
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 22 - DevCcdGetBin

- **Description:**
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEVVAR\_LONGARRAY :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 23 - DevCcdSetBin

- **Description:**
- **Argin:**  
DEVVAR\_LONGARRAY :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 24 - DevCcdSetFrames

- **Description:**
- **Argin:**  
DEV\_LONG :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 25 - DevCcdGetFrames

- **Description:**
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_LONG :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 26 - DevCcdGetChannel

- **Description:**
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_LONG :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 27 - DevCcdSetChannel

- **Description:**
- **Argin:**  
DEV\_LONG :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 28 - DevCcdGetRoI

- **Description:** get the region of interest coordinates
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEVVAR\_LONGARRAY : region of interest
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 29 - DevReadValues

- **Description:**
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEVVAR\_DOUBLEARRAY :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 30 - DevReadSigValues

- **Description:**
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEVVAR\_DOUBLEARRAY :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 31 - DevCcdGetTGradient

- **Description:** This command makes an estimation about the focalization of the camera. The calculation is done on the current image.
- **Argin:**  
DEV\_SHORT :
- **Argout:**  
DEV\_LONG :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 32 - DevCcdGetLstErrMsg

- **Description:** Get the last error message is mapped to the status of the Tango ccd device
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_STRING :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 33 - DevCcdLive

- **Description:** Switches to the live acquisition mode with the input argument set to 1. Switches off the live mode with the input argument set to 0.
- **Argin:**  
**DEV\_LONG :**
- **Argout:**  
**DEV\_VOID :**
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 34 - DevSetCalib

- **Description:** Calibrates the images to a maximum intensity in a given interval. The exposure time will be modified to reach the requested intensity level.
- **Argin:**  
**DEVVAR\_LONGARRAY :** min\_intensity max\_intensity
- **Argout:**  
**DEV\_VOID :**
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 35 - DevGetCalib

- **Description:** Reads the maximum intensity in the image after the last calibration and the applied exposure time.
- **Argin:**  
**DEV\_VOID :**
- **Argout:**  
**DEVVAR\_DOUBLEARRAY :** max\_intensity exposure\_time
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF

- Tango::FAULT

## 36 - DevCalibration

- **Description:** Calibrates the images to a maximum intensity in a given interval before every image acquisition. The exposure time will be modified to reach the requested intensity level.
- **Argin:**  
DEVVAR\_LONGARRAY : min\_intensity max\_intensity
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 37 - DevCcdSetThreshold

- **Description:** Sets the threshold of a monochrome image
- **Argin:**  
DEV\_LONG :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 38 - DevCcdGetThreshold

- **Description:** Reads the applied threshold value
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_LONG :
- **Command allowed for:**
  - Tango::ON



- Tango::OFF
- Tango::FAULT

## 39 - BpmOn

- **Description:** Switch on the BPM device when specified.
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 40 - BpmOff

- **Description:** Switch off the BPM device when specified.
- **Argin:**  
DEV\_VOID :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**
  - Tango::ON
  - Tango::OFF
  - Tango::FAULT

## 41 - ColorMode

- **Description:** Switches to a color image acquisition with the input argument set to 1. Switches to a monochrome image acquisition with the input argument set to 0.
- **Argin:**  
DEV\_LONG :
- **Argout:**  
DEV\_VOID :
- **Command allowed for:**

- Tango::ON
- Tango::OFF
- Tango::FAULT

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