

Mythen2Detector Tango Cpp Class

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Mythen2Detector Class Identification :

Contact : at synchrotron-soleil.fr - cedric.castel
Class Family : Acquisition
Platform : Unix Like
Bus : Data Socket

Mythen2Detector Class Inheritance :

- [Tango::DeviceImpl](#)
 - Mythen2Detector

Manufacturer : DECTRIS
Manufacturer ref. :

Mythen2Detector Class Description :

Device for Mythen2 detectors from DECTRIS company.
It connects to the Detector Control System (DCS4) which can manage four Mythen2 modules.

Mythen2Detector Properties :

There is no class properties

Device Properties			
Name	Description	Type	Default Value
DetectorHost	IP address or fully qualified host name	String	192.168.0.90
DetectorPort	TCP connection port	int	1031
MemorizedStreamType	Only the device could modify this property The User should never change this property	String	LOG_STREAM
MemorizedStreamTargetPath	Only the device could modify this property The User should never change this property	String	TO_BE_DEFINED
MemorizedStreamTargetFile	Only the device could modify this property The User should never change this property	String	TO_BE_DEFINED
MemorizedStreamNbAcqPerFile	Only the device could modify this property The User should never change this property	int	1
ExpertStreamWriteMode	Only an expert User could change this property Applicable for StreamNexus Only ! Available Values : - ASYNCHRONOUS - SYNCHRONOUS - DELAYED	String	ASYNCHRONOUS
StreamItems	Define the list of Items managed by the Streamer. (Nexus, CSV, ...) Available values are : Frame	String[]	Frame
SpoolID	Used only by the FlyScan application	String	TO_BE_DEFINED
MemorizedTriggerMode	Only the device could modify this property The User should never change this property	String	INTERNAL
MemorizedNbFrames	Only the device could modify this property The User should never change this property	int	1
MemorizedExposureTime	Only the device could modify this property The User should never change this property	double	1000.0

MemorizedDelayAfterFrame	Only the device could modify this property The User should never change this property	double	0.0
MemorizedDelayBeforeFrame	Only the device could modify this property The User should never change this property	double	0.0
MemorizedNbGatesByFrame	Only the device could modify this property The User should never change this property	int	1
MemorizedBadChannelInterpolation	Only the device could modify this property The User should never change this property	boolean	true
MemorizedFlatFieldCorrection	Only the device could modify this property The User should never change this property	boolean	true
MemorizedEnergy01	Only the device could modify this property The User should never change this property	float	8.05
MemorizedEnergy02	Only the device could modify this property The User should never change this property	float	8.05
MemorizedEnergy03	Only the device could modify this property The User should never change this property	float	8.05
MemorizedEnergy04	Only the device could modify this property The User should never change this property	float	8.05
MemorizedThreshold01	Only the device could modify this property The User should never change this property	float	6.40
MemorizedThreshold02	Only the device could modify this property The User should never change this property	float	6.40
MemorizedThreshold03	Only the device could modify this property The User should never change this property	float	6.40
MemorizedThreshold04	Only the device could modify this property The User should never change this property	float	6.40
MemorizedNbBits	Only the device could modify this property The User should never change this property	int	24
MemorizedRateCorrection	Only the device could modify this property The User should never change this property	boolean	false
MemorizedFlatfieldPath	Only the device could modify this property The User should never change this property	String	TO_BE_DEFINED
ExpertFrameRateLimitation	This is the maximum frame rate the device allows for the active detector modules. Defines the frame rate limitation per second (included). Set -1 to disable the fonctionnality.	int	-1

Name	Input type	Output type	Level	Description
State	DEV_VOID	DEV_STATE	OPERATOR	This command gets the device state (stored in its <i>device_state</i> data member) and returns it to the caller.
Status	DEV_VOID	CONST_DEV_STRING	OPERATOR	This command gets the device status (stored in its <i>device_status</i> data member) and returns it to the caller.
Snap	DEV_VOID	DEV_VOID	OPERATOR	Arm/Start the acquisition.
Stop	DEV_VOID	DEV_VOID	OPERATOR	Stop the acquisition.
Start	DEV_VOID	DEV_VOID	OPERATOR	Start the acquisition.
GetDataStreams	DEV_VOID	DEVVAR_STRINGARRAY	EXPERT	Returns the flyscan data streams associated with this device formatted as below :
StreamResetIndex	DEV_VOID	DEV_VOID	EXPERT	Reset the stream (Nexus) buffer index to 1.
ResetDCS4	DEV_VOID	DEV_VOID	EXPERT	Set the detector and its modules back to default settings.
CreateFlatfield	DEVVAR_STRINGARRAY	DEV_VOID	EXPERT	Create a flatfield file for a dcs module.
GetFlatfieldList	DEV_VOID	DEVVAR_STRINGARRAY	EXPERT	Display the list of available flatfield files.
ChooseFlatfield	DEV_STRING	DEV_VOID	EXPERT	Load the flatfield into the dcs modules and activate it.
RefreshFlatfield	DEV_VOID	DEV_VOID	EXPERT	Refresh the current flatfield data shows in the device.

Command State :

This command gets the device state (stored in its *device_state* data member) and returns it to the caller.

State Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::DEV_STATE	State Code
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Status :

This command gets the device status (stored in its *device_status* data member) and returns it to the caller.

Status Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::CONST_DEV_STRING	Status description
DisplayLevel	OPERATOR	..

Inherited	true	..
Abstract	true	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Snap :

Arm/Start the acquisition.

Snap Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..

Command Stop :

Stop the acquisition.

Stop Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT 	..

Command Start :

Start the acquisition.

Start Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..

Command GetDataStreams :

Returns the flyscan data streams associated with this device formatted as below :

GetDataStreams Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEVVAR_STRINGARRAY	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..

Command StreamResetIndex :

Reset the stream (Nexus) buffer index to 1.

StreamResetIndex Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT 	..

Command ResetDCS4 :

Set the detector and its modules back to default settings.

ResetDCS4 Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • RUNNING 	..

Command CreateFlatfield :

Create a flatfield file for a dcs module.

CreateFlatfield Definition		
Input Argument	Tango::DEVVAR_STRINGARRAY	flatfield alias;relative module number [1...module number]
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..

Command GetFlatfieldList :

Display the list of available flatfield files.

GetFlatfieldList Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEVVAR_STRINGARRAY	

DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
		..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..

Command ChooseFlatfield :

Load the flatfield into the dcs modules and activate it.

ChooseFlatfield Definition		
Input Argument	Tango::DEV_STRING	Flatfield alias
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
		..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..

Command RefreshFlatfield :

Refresh the current flatfield data shows in the device.

RefreshFlatfield Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
		..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..

Mythen2Detector Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
nbModules	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	DCS4 number of active modules
nbChannels	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	DCS4 total number of channels of active modules
nbBadChannels	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	DCS4 total number of bad channels of active modules
nbBits	false	false	Scalar	READ_WRITE	Tango::DEV_ULONG	EXPERT	Number of bits to be read out, thereby determining the dynamic range and the readout time. Allowed values: 4 8 16 24
triggerMode	false	false	Scalar	READ_WRITE	Tango::DEV_STRING	OPERATOR	Set/Get current trigger mode Available Trigger Modes are : INTERNAL EXTERNAL_SINGLE EXTERNAL_MULTIPLE EXTERNAL_GATE
frameRateMax	false	false	Scalar	READ	Tango::DEV_FLOAT	OPERATOR	Maximum allowed frame rate for the active detector modules.
nbFrames	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	Define the number of frames within an acquisition. Available only with the Snap command. With the Start command, it is always forced to 0, this is mean that we request an infinite number of frames.
currentFrame	false	false	Scalar	READ	Tango::DEV_ULONG	OPERATOR	Display the current frame number. Only relevant with the Snap command.
readoutTime	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	Get the readout time (in ms). It depends of the current

							resolution (number of bits)
exposureTime	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	<p>Set/Get exposure time (in ms).</p> <p>Only relevant for these trigger modes :</p> <p>INTERNAL</p> <p>EXTERNAL_SINGLE</p> <p>EXTERNAL_MULTIPLE</p>
delayAfterFrame	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	<p>Set/Get the delay between two subsequent frames (in ms).</p> <p>This is the delay between two exposures.</p> <p>In the Mythen2 documentation, this data is called tafter or delafter.</p> <p>Only relevant for these trigger modes :</p> <p>INTERNAL</p> <p>EXTERNAL_SINGLE</p>
delayBeforeFrame	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	<p>Set/Get the delay between the trigger and the start of the exposure (in ms).</p> <p>In the Mythen2 documentation, this data is called tbefore or delbef.</p> <p>Only relevant for these trigger modes :</p> <p>EXTERNAL_SINGLE</p> <p>EXTERNAL_MULTIPLE</p>
nbGatesByFrame	false	false	Scalar	READ_WRITE	Tango::DEV_ULONG	OPERATOR	<p>Number of gates within a frame.</p> <p>Only relevant for the trigger mode :</p> <p>EXTERNAL_GATE</p>
							<p>Turns on or off the interpolation routine for bad channels.</p> <p>When enabled, the</p>

badChannelInterpolation	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	<p>number of counts for a bad channel is set to the average number of counts of the next lower and the next upper working channels.</p> <p>If there is no next lower (upper) working channel, the number of counts of the next upper (lower) working channel is used.</p> <p>When disabled the number of counts for a bad channel is set to -2.</p>
flatFieldCorrection	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	Enables or disables the flatfield correction.
temperature	false	false	Scalar	READ	Tango::DEV_FLOAT	EXPERT	Returns the temperature of the SoC die on the DCS4 in degrees Celcius.
streamType	false	false	Scalar	READ_WRITE	Tango::DEV_STRING	EXPERT	<p>Available stream types :</p> <p>NO_STREAM</p> <p>LOG_STREAM</p> <p>CSV_STREAM</p> <p>NEXUS_STREAM</p>
streamTargetPath	false	false	Scalar	READ_WRITE	Tango::DEV_STRING	EXPERT	Defines the root path for generated Stream files.
streamTargetFile	false	false	Scalar	READ_WRITE	Tango::DEV_STRING	EXPERT	Define the file name for generated Stream files.
streamNbAcqPerFile	false	false	Scalar	READ_WRITE	Tango::DEV_ULONG	EXPERT	Define the number of acquisition for each Stream file.
rateCorrection	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	Enables or disables the rate correction. After initialization, the rate correction is disabled.
flatfieldPath	false	false	Scalar	READ_WRITE	Tango::DEV_STRING	EXPERT	Defines the root path for generated flatfield files (.fff).
flatfieldName	false	false	Scalar	READ	Tango::DEV_STRING	EXPERT	Shows the last loaded flatfield name.
fileGeneration	false	false	Scalar	READ	Tango::DEV_BOOLEAN	EXPERT	File generation after a start/snap command
estimatedFrameRate	false	false	Scalar	READ	Tango::DEV_FLOAT	EXPERT	Estimated frame rate for the active detector modules.
frame	false	false	Spectrum	READ	Tango::DEV_LONG	EXPERT	Last number of detected photons in each detector channel.
flatfield	false	false	Spectrum	READ	Tango::DEV_LONG	EXPERT	<p>Shows the channel values of the current flatfield.</p> <p>Use the flatfield refresh</p>

command for an update of this spectrum.

There is no dynamic attribute defined.

Attribute nbModules :

DCS4 number of active modules

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT

Attribute Properties	
label	
unit	Â
standard unit	Â
display unit	Â
format	%d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute nbChannels :

DCS4 total number of channels of active modules

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set

Attribute Properties	
label	
unit	Â
standard unit	Â
display unit	Â
format	%d
max_value	
min_value	
max_alarm	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false

Read NOT allowed for	<ul style="list-style-type: none"> INIT FAULT
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min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Push Archive event by user code	false
Push DataReady event by user code	false

Attribute nbBadChannels :

DCS4 total number of bad channels of active modules

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	30000
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> INIT FAULT

Attribute Properties	
label	
unit	Â
standard unit	Â
display unit	Â
format	%d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute nbBits :

Number of bits to be read out,
thereby determining the dynamic range and the readout time.

Allowed values:

- 4
- 8
- 16
- 24

Attribute Definition	
Attribute Type	Scalar

Attribute Properties	
label	

Attribute Event Criteria	
Periodic	Not set

R/W Type	READ_WRITE
Data Type	Tango::DEV_ULONG
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

unit	bits
standard unit	bits
display unit	bits
format	%2d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute triggerMode :

Set/Get current trigger mode

Available Trigger Modes are :

INTERNAL

EXTERNAL_SINGLE

EXTERNAL_MULTIPLE

EXTERNAL_GATE

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

Attribute Properties	
label	
unit	Â
standard unit	Â
display unit	Â
format	%s
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute frameRateMax :

Maximum allowed frame rate for the active detector modules.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_FLOAT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	2000
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none">• INIT• FAULT

Attribute Properties	
label	
unit	frames/s
standard unit	frames/s
display unit	frames/s
format	%.2f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute nbFrames :

Define the number of frames within an acquisition.

Available only with the Snap command.

With the Start command, it is always forced to 0, this is mean that we request an infinite number of frames.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none">• INIT• FAULT
Write NOT allowed for	<ul style="list-style-type: none">• INIT• FAULT• RUNNING

Attribute Properties	
label	
unit	Â
standard unit	Â
display unit	Â
format	%6d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute currentFrame :

Display the current frame number.
Only relevant with the Snap command.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_ULONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	50
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none">• INIT• FAULT

Attribute Properties	
label	
unit	Â
standard unit	Â
display unit	Â
format	%6d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute readoutTime :

Get the readout time (in ms).

It depends of the current resolution (number of bits)

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none">• INIT• FAULT

Attribute Properties	
label	
unit	ms
standard unit	ms
display unit	ms
format	%7.4f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

delta_time	
delta_val	

Attribute exposureTime :

Set/Get exposure time (in ms).

Only relevant for these trigger modes :

INTERNAL

EXTERNAL_SINGLE

EXTERNAL_MULTIPLE

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

Attribute Properties	
label	
unit	ms
standard unit	ms
display unit	ms
format	%7.4f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute delayAfterFrame :

Set/Get the delay between two subsequent frames (in ms).

This is the delay between two exposures.

In the Mythen2 documentation, this data is called tafter or delafter.

Only relevant for these trigger modes :

INTERNAL

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

Attribute Properties	
label	
unit	ms
standard unit	ms
display unit	ms
format	%7.4f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute delayBeforeFrame :

Set/Get the delay between the trigger and the start of the exposure (in ms).

In the Mythen2 documentation, this data is called tbef or delbef.

Only relevant for these trigger modes :
EXTERNAL_SINGLE

EXTERNAL_MULTIPLE

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT

Attribute Properties	
label	
unit	ms
standard unit	ms
display unit	ms
format	%7.4f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Write NOT allowed for	• INIT
	• FAULT
	• RUNNING

delta_time	
delta_val	

Attribute nbGatesByFrame :

Number of gates within a frame.

Only relevant for the trigger mode :
EXTERNAL_GATE

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_ULONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

Attribute Properties	
label	
unit	Â
standard unit	Â
display unit	Â
format	%5d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute badChannelInterpolation :

Turns on or off the interpolation routine for bad channels.

When enabled, the number of counts for a bad channel is set to the average number of counts of the next lower and the next upper working channels.

If there is no next lower (upper) working channel, the number of counts of the next upper (lower) working channel is used.

When disabled the number of counts for a bad channel is set to -2.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_BOOLEAN
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none"> INIT FAULT
Write NOT allowed for	<ul style="list-style-type: none"> INIT FAULT RUNNING

Attribute Properties	
label	
unit	Â
standard unit	Â
display unit	Â
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute flatFieldCorrection :

Enables or disables the flatfield correction.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_BOOLEAN
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none"> INIT FAULT
Write NOT allowed for	<ul style="list-style-type: none"> INIT FAULT RUNNING

Attribute Properties	
label	
unit	Â
standard unit	Â
display unit	Â
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute temperature :

Returns the temperature of the SoC die on the DCS4 in degrees Celcius.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_FLOAT
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT

Attribute Properties	
label	
unit	C
standard unit	C
display unit	C
format	%.2f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute streamType :

Available stream types :

NO_STREAM

LOG_STREAM

CSV_STREAM

NEXUS_STREAM

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute streamTargetPath :

Defines the root path for generated Stream files.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	%s
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute streamTargetFile :

Define the file name for generated Stream files.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	%s
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute streamNbAcqPerFile :

Define the number of acquisition for each Stream file.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_ULONG
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none">• INIT• FAULT
Write NOT allowed for	<ul style="list-style-type: none">• INIT• FAULT• RUNNING

Attribute Properties	
label	
unit	Â
standard unit	Â
display unit	Â
format	%6d
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute rateCorrection :

Enables or disables the rate correction. After initialization, the rate correction is disabled.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_BOOLEAN
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none">• INIT• FAULT
Write NOT allowed for	<ul style="list-style-type: none">• INIT• FAULT• RUNNING

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute flatfieldPath :

Defines the root path for generated flatfield files (.ff).

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	Not set
Read NOT allowed for	<ul style="list-style-type: none"> INIT
Write NOT allowed for	<ul style="list-style-type: none"> INIT RUNNING

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	%s
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute flatfieldName :

Shows the last loaded flatfield name.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_STRING
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> INIT FAULT

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	%s
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute fileGeneration :

File generation after a start/snap command

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_BOOLEAN
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute estimatedFrameRate :

Estimated frame rate for the active detector modules.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_FLOAT
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	2000
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	
unit	frames/s
standard unit	frames/s
display unit	frames/s
format	%.2f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute frame :

Last number of detected photons in each detector channel.

Attribute Definition	
Attribute Type	Spectrum (5120)
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> INIT FAULT

Attribute Properties	
label	Last number of detected photons in each detector channel.
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute flatfield :

Shows the channel values of the current flatfield.
Use the flatfield refresh command for an update of this spectrum.

Attribute Definition	
Attribute Type	Spectrum (5120)
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed	<ul style="list-style-type: none"> INIT

Attribute Properties	
label	Current flatfield
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set

for _____ | FAULT

max_warning	
min_warning	
delta_time	
delta_val	

Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Mythen2Detector Class States	
Name	Description
INIT	
STANDBY	
FAULT	
RUNNING	