

Peem Tango Cpp Class

Contents :

- [Description](#)
- [Properties](#)
- [Commands](#)
 - [State](#)
 - [Status](#)
 - [ChangePSValue](#)
 - [GetPSValue](#)
 - [GetValueFromModule](#)
 - [SetPSValue](#)
 - [SetValueToModule](#)
 - [GetPSMnemonic](#)
 - [GetPSName](#)
 - [GetPSUnit](#)
 - [PSLimitLow](#)
 - [GetPSLimitHigh](#)
 - [GetMicrometerValue](#)
 - [ReadGauge](#)
 - [ReadGaugeLabel](#)
 - [ReadGaugeUnit](#)
 - [GetChangedModules](#)
 - [SelectPreset](#)
 - [SetPhi](#)
 - [ShutdownLEEM](#)
 - [ExportParameters](#)
 - [ImportParameters](#)
 - [AcquireSimpleImage](#)
 - [ExportImage](#)
- [Attributes](#)
 - [NrModules](#)
 - [PresetLabel](#)
 - [Leem2000Version](#)
 - [InitDone](#)
 - [Spin](#)
 - [FolderForImage](#)
 - [AcquisitionInProgress](#)
 - [CameraExpTime](#)
- [States](#)

Peem Class Identification :

Contact : at cells.es - amilan
 Class Family : Miscellaneous
 Platform : Windows
 Bus : Not Applicable
 Manufacturer : none

Peem Class Inheritance :

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

Manufacturer ref. :

Peem Class Description :

Device Server for access to the PEEM SW (Leem2000 and U-view)
It will use a DCOM communication.

Peem Properties :

There is no class properties

There is no device properties

Peem Class Commands				
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.
ChangePSValue	DEVVAR_FLOATARRAY	DEV_SHORT	OPERATOR	Modify the value (current, temperature etc.) of a module.
GetPSValue	DEV_USHORT	DEV_FLOAT	OPERATOR	Get the value (current, temperature, etc) of a module.
GetValueFromModule	DEV_STRING	CONST_DEV_STRING	OPERATOR	Get a value from module by name. Implemented for compatibility purposes with previous CORBA interface.
SetPSValue	DEVVAR_DOUBLEARRAY	DEV_VOID	OPERATOR	Set the value (current, temperature, etc) of a module.
SetValueToModule	DEVVAR_STRINGARRAY	DEV_STRING	OPERATOR	Get a value from module by name. Implemented for compatibility purposes with previous CORBA interface
GetPSMnemonic	DEV_SHORT	CONST_DEV_STRING	OPERATOR	Get the abbreviation for the specified power supply. This abbreviation is used for image sequencing.
GetPSName	DEV_SHORT	CONST_DEV_STRING	OPERATOR	Get the name of a module.

GetPSUnit	DEV_SHORT	DEV_STRING	OPERATOR	Get the units of a module.
PSLimitLow	DEV_SHORT	DEV_FLOAT	OPERATOR	Gets low limit of a module.
GetPSLimitHigh	DEV_SHORT	DEV_FLOAT	OPERATOR	Gets high limit of a module.
GetMicrometerValue	DEV_VOID	DEVVAR_FLOATARRAY	OPERATOR	Reads micrometers.
ReadGauge	DEV_SHORT	DEV_FLOAT	OPERATOR	Reads value (pressure) from vacuum gauge.
ReadGaugeLabel	DEV_SHORT	DEV_STRING	OPERATOR	Reads label assigned to respective vacuum gauge in LEEM program.
ReadGaugeUnit	DEV_SHORT	DEV_STRING	OPERATOR	Reads units of specified vacuum gauge in LEEM program
GetChangedModules	DEVVAR_FLOATARRAY	DEV_SHORT	OPERATOR	Checks if any of the power supply values have been changed since last call to this method.
SelectPreset	DEVVAR_STRINGARRAY	DEV_SHORT	OPERATOR	to remotely select a set of LEEM power supply presets
SetPhi	DEV_FLOAT	DEV_LONG	OPERATOR	Sets phi of the SpinGun supply. LEEM with spingun only
ShutdownLEEM	DEV_SHORT	DEV_SHORT	OPERATOR	Remotely shut down LEEM2000 including forced slow rampdown of all power supplies (despite of ``Slow Shutdown``). Possible use: Uninterruptable Power Supply calls this after power failure.
ExportParameters	DEV_STRING	DEV_SHORT	OPERATOR	Save all power supply settings to a text file. This file can subsequently be loaded by the ImportParameters method.
ImportParameters	DEV_STRING	DEV_SHORT	OPERATOR	Load power supply settings from a text file saved previously by the ExportParameter method. Settings assumed to be from the same microscope.
AcquireSimpleImage	DEV_SHORT	DEV_VOID	OPERATOR	Start acquiring a single image
ExportImage	DEVVAR_STRINGARRAY	DEV_VOID	OPERATOR	Saves the current image to a file of the chosen format.

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	true	..
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 ChangePSValue :

Modify the value (current, temperature etc.) of a module.

ChangePSValue Definition		
Input Argument	Tango::DEVVAR_FLOATARRAY	Comma separated list of arguments: 1. Index (must be a integer) 2. deltaValue (float value)
Output Argument	Tango::DEV_SHORT	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..

Command allowed for	All states	..
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Command GetPSValue :

Get the value (current, temperature, etc) of a module.

GetPSValue Definition		
Input Argument	Tango::DEV_USHORT	Index
Output Argument	Tango::DEV_FLOAT	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command GetValueFromModule :

Get a value from module by name. Implemented for compatibility purposes with previous CORBA interface.

GetValueFromModule Definition		
Input Argument	Tango::DEV_STRING	name: name of module as it appears in the LEEM window.
Output Argument	Tango::CONST_DEV_STRING	Stringified value of module if ok. Error messages: leem2000 get
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command SetPSValue :

Set the value (current, temperature, etc) of a module.

SetPSValue Definition		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command SetValueToModule :

Get a value from module by name. Implemented for compatibility purposes with previous CORBA interface

SetValueToModule Definition		
Input Argument	Tango::DEVVAR_STRINGARRAY	name: name of module as it appears in the LEEM window value: pointer to variant, value->vt is set to VT_R4 on return and value->fltVal contains the value of the module on return
Output Argument	Tango::DEV_STRING	TRUE`` if ok Error messages: leem2000 set
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command GetPSMnemonic :

Get the abbreviation for the specified power supply.
This abbreviation is used for image sequencing.

GetPSMnemonic Definition		
Input Argument	Tango::DEV_SHORT	Index for the power supply
Output Argument	Tango::CONST_DEV_STRING	Abbreviation for the specified power supply.
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command GetPSName :

Get the name of a module.

GetPSName Definition		
Input Argument	Tango::DEV_SHORT	Index of the module.
Output Argument	Tango::CONST_DEV_STRING	PSName.
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command GetPSUnit :

Get the units of a module.

GetPSUnit Definition		
Input Argument	Tango::DEV_SHORT	Index
Output Argument	Tango::DEV_STRING	Units of a module
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..

Command allowed for	All states	..
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Command PSLimitLow :

Gets low limit of a module.

PSLimitLow Definition		
Input Argument	Tango::DEV_SHORT	Index of a module
Output Argument	Tango::DEV_FLOAT	Low limit of a module
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command GetPSLimitHigh :

Gets high limit of a module.

GetPSLimitHigh Definition		
Input Argument	Tango::DEV_SHORT	Index
Output Argument	Tango::DEV_FLOAT	High limit of a module
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command GetMicrometerValue :

Reads micrometers.

GetMicrometerValue Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEVVAR_FLOATARRAY	1. xcoord 2. ycoord
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command ReadGauge :

Reads value (pressure) from vacuum gauge.

ReadGauge Definition		
Input Argument	Tango::DEV_SHORT	id= gauge id, possible values 1,2,3,4
Output Argument	Tango::DEV_FLOAT	Pressure
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command ReadGaugeLabel :

Reads label assigned to respective vacuum gauge in LEEM program.

ReadGaugeLabel Definition		
Input Argument	Tango::DEV_SHORT	id= gauge id, possible values 1,2,3,4
Output Argument	Tango::DEV_STRING	Label
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..

Command allowed for	All states	..
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Command ReadGaugeUnit :

Reads units of specified vacuum gauge in LEEM program

ReadGaugeUnit Definition		
Input Argument	Tango::DEV_SHORT	id= gauge id, possible values 1,2,3,4
Output Argument	Tango::DEV_STRING	Units.
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command GetChangedModules :

Checks if any of the power supply values have been changed since last call to this method.

GetChangedModules Definition		
Input Argument	Tango::DEVVAR_FLOATARRAY	The safearray is an array of float with twice the number of elements as returned by GetChangedModules: changeddata[n]: index of power supply module, -1 last entry, no more supplies follow changeddata[n+1]: value of that indexed power supply n=0 .. 2x nr of changed modules as returned by GetChangedModules
Output Argument	Tango::DEV_SHORT	Returns 0 if no change, return 1-3 if 1,2 or 3 supplies have changed returns <0 if internal error occurred (i.e. allocation of safearray). A maximum of 3 is returned.
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..

Command allowed for	All states	..
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Command SelectPreset :

to remotely select a set of LEEM power supply presets

SelectPreset Definition		
Input Argument	Tango::DEVVAR_STRINGARRAY	Comma separated arguments: 1. group: A or B 2. name: label of preset as in LEEM2000
Output Argument	Tango::DEV_SHORT	Returns: 0 if successful -2: no such group found -3: no such name for preset found
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command SetPhi :

Sets phi of the SpinGun supply. LEEM with spingun only

SetPhi Definition		
Input Argument	Tango::DEV_FLOAT	Angle
Output Argument	Tango::DEV_LONG	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command ShutdownLEEM :

Remotely shut down LEEM2000 including forced slow rampdown of all power supplies (despite of any selection of ``Slow Shutdown``).

Possible use: Uninterruptable Power Supply calls this after power failure.

ShutdownLEEM Definition		
Input Argument	Tango::DEV_SHORT	mode: currently not used, set to 0
Output Argument	Tango::DEV_SHORT	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command ExportParameters :

Save all power supply settings to a text file. This file can subsequently be loaded by the ImportParameters method.

ExportParameters Definition		
Input Argument	Tango::DEV_STRING	fullfilename: path and filename including 3 letter file type extension
Output Argument	Tango::DEV_SHORT	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command ImportParameters :

Load power supply settings from a text file saved previously by the ExportParameter method. Settings assumed to be from the same microscope.

ImportParameters Definition		
Input Argument	Tango::DEV_STRING	fullfilename: path and filename including 3 letter file type extension
Output Argument	Tango::DEV_SHORT	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command AcquireSimpleImage :

Start acquiring a single image

AcquireSimpleImage Definition		
Input Argument	Tango::DEV_SHORT	ImageID: Especificies in which image window to collect.
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command ExportImage :

Saves the current image to a file of the choosen format.

ExportImage Definition		
		Comma separated arguments: Filename,Format,Imagecontents Filename: Windows compliant file-name without extension. Format: 0: DAT (generic) Imagecontents: ignored, set to 0 1: PNG Imagecontents: 0: RGB(8+8+8),x,y,z as seen on screen 1: RGB(8+8+8),x,y raw,z as seen on screen

Input Argument	Tango::DEVVAR_STRINGARRAY	2: 16bit GRAYLEVEL, x,y,z raw data 2: TIFF Imagecontents: 0: RGB(8+8+8),x,y,z as seen on screen 1: RGB(8+8+8),x,y raw,z as seen on screen 3: BMP Imagecontents: 0: RGB(8+8+8),x,y,z as seen on screen 1: RGB(8+8+8),x,y raw,z as seen on screen 4: JPG quality as set in `Save As Dialog` in Uview Imagecontents: 0: RGB(8+8+8),x,y,z as seen on screen 5: TIFF Imagecontents: ignored, set to 0
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Peem Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
NrModules	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	Gets the number of implemented modules, power supply and others.
PresetLabel	false	false	Scalar	READ	Tango::DEV_STRING	OPERATOR	Returns the name of the currently active preset.
Leem2000Version	false	false	Scalar	READ	Tango::DEV_FLOAT	OPERATOR	Version + SubVersion*0.001
InitDone	false	false	Scalar	READ	Tango::DEV_BOOLEAN	OPERATOR	Tells the calling script that all LEEM startup tasks have been completed.
Spin	false	false	Scalar	READ_WRITE	Tango::DEV_SHORT	OPERATOR	set and read spin. LEEM with spingun only
FolderForImage	false	false	Scalar	READ_WRITE	Tango::DEV_STRING	OPERATOR	
AcquisitionInProgress	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	Get/Set the current state of image acquisition. True: acquisition in progress. False: image ready. If you set it to True, acquisition starts.

CameraExpTime	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	
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There is no dynamic attribute defined.

Attribute NrModules :

Gets the number of implemented modules, power supply and others.

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 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 PresetLabel :

Returns the name of the currently active preset.

Attribute Definition	
	Scalar

Attribute Properties	
label	

Attribute Event Criteria	
Periodic	Not set

Attribute Type	
R/W Type	READ
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	• OFF

unit	
standard unit	
display unit	
format	
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	Not set

Attribute Leem2000Version :

Version + SubVersion*0.001

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_FLOAT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	• OFF

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	Not set

Attribute InitDone :

Tells the calling script that all LEEM startup tasks have been completed.

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

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	Not set

Attribute Spin :

set and read spin. LEEM with spingun only

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_SHORT
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
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

Memorized	Not set
Read NOT allowed for	• OFF
Write allowed for	All states

min_alarm
max_warning
min_warning
delta_time
delta_val

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	Not set

Attribute FolderForImage :

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 allowed for	All states
Write 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 AcquisitionInProgress :

Get/Set the current state of image acquisition.
 True: acquisition in progress.
 False: image ready.
 If you set it to True, acquisition starts.

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	Not set
Read allowed for	All states
Write 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 CameraExpTime :

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.	true
Read allowed for	All states
Write 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

Peem Class States	
Name	Description
ON	Device is connected
OFF	Device is disconnected.