PANIC, The ALBA Alarm System

**Package for Alarms
and Notification of Incidences
from Controls**

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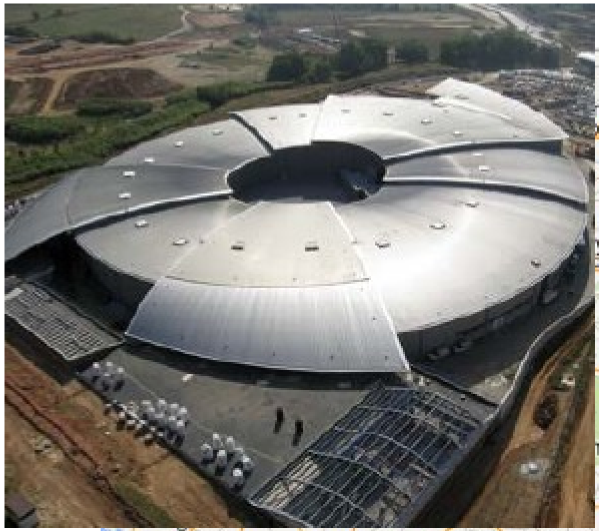
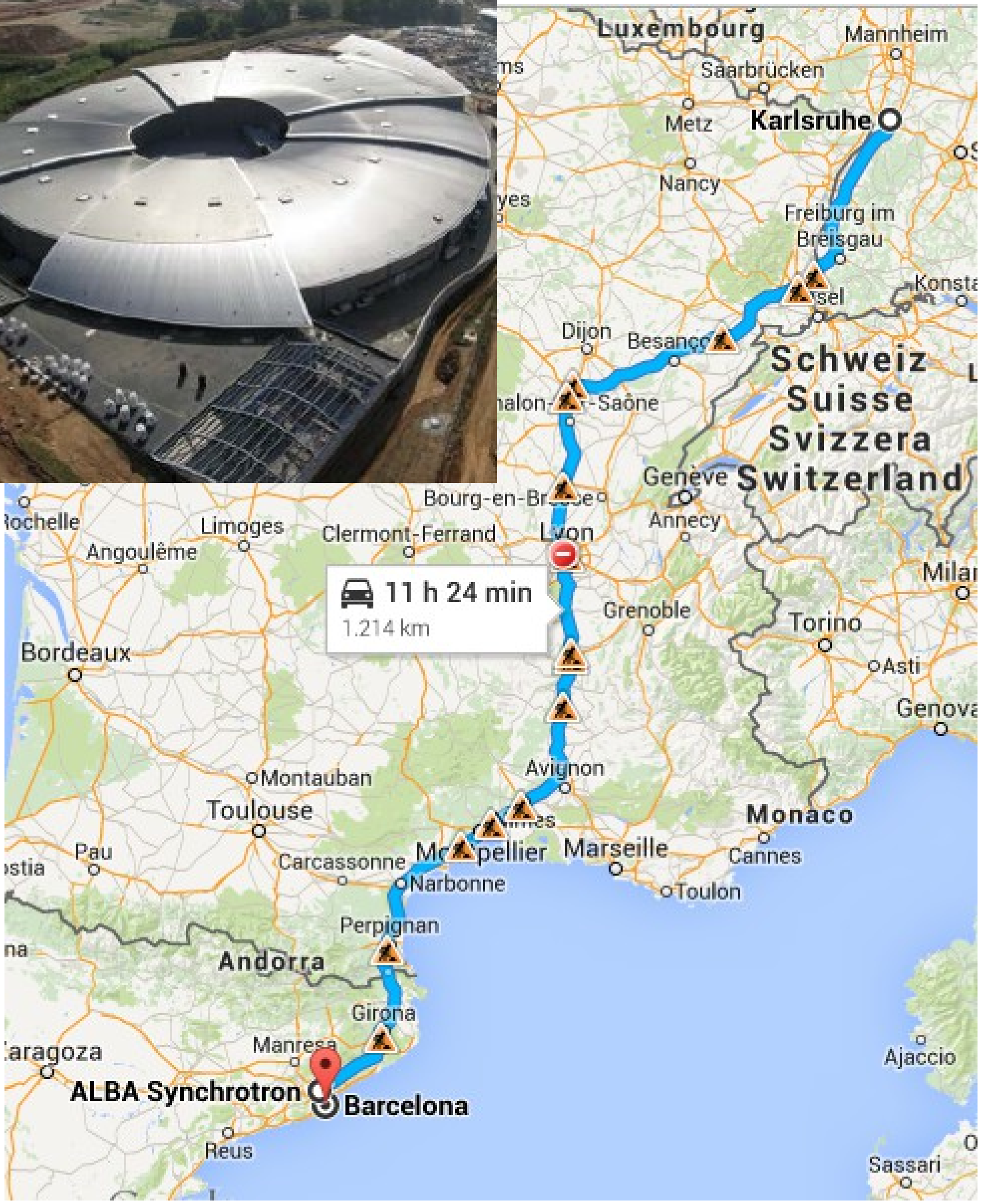
Some Alba Facts





- Less than 15 km. from Barcelona downtown.

- 3 Gev Lightsource, in operation since 2010
- 7 Beamlines open to users since 2012, 2 more in construction.

- Member of the Tango Collaboration.
- 4000+ Tango Devices, 160+ IOC's, 40+ virtual machines
- 90% of our devices are Python devices (PyTango)
- 99% of our graphic applications are PyQt (TAURUS)

- In active collaboration with all members of the Tango community in many projects:
  Tango, PyTango, Taurus, Sardana. Tango Archiving, Lima, Icepap, MxCube, **PANIC**

What an Alarm System should do:

- Verification of a set of conditions.
- Notification.
- Keep a log of what happened.
- Take automatic actions?
- Tools for configuration/visualization.

Panic Alarm Life Cycle

- TAG/Description: CIRCE_PRESSURE, Beamline pressure is high
- Receivers: circe@cells.es, SMS:+34333222111, ACTION(...
- Condition: CIRCE_PRESSURE:BL24/VC/VGCT-01/P1>3e-5

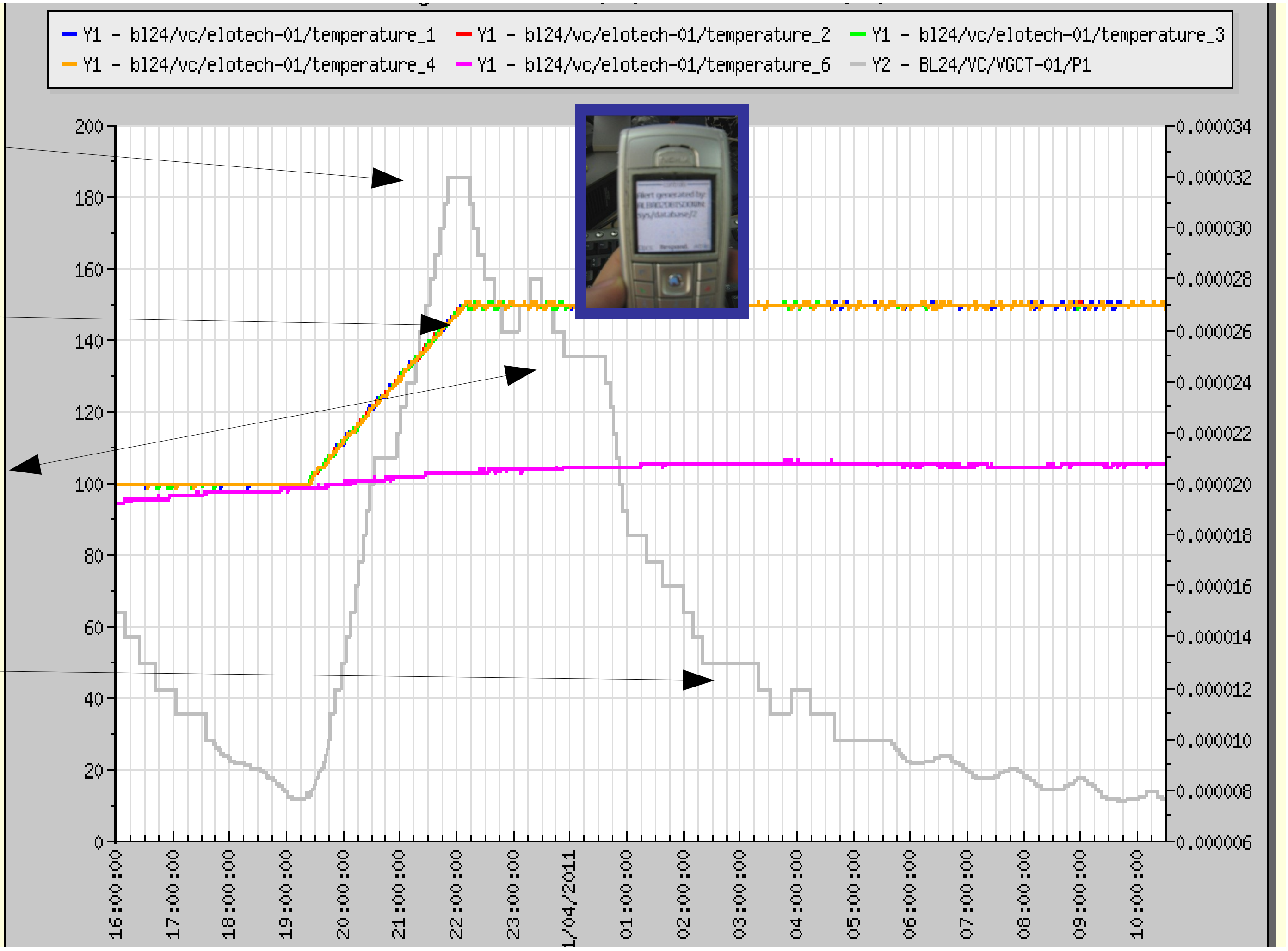
- Incidence
- ALARM
- Logging

- RECOVER
- REMINDER

- ACKNOWLEDGE

- RESET (Auto)
- Logging

- Further Actions?

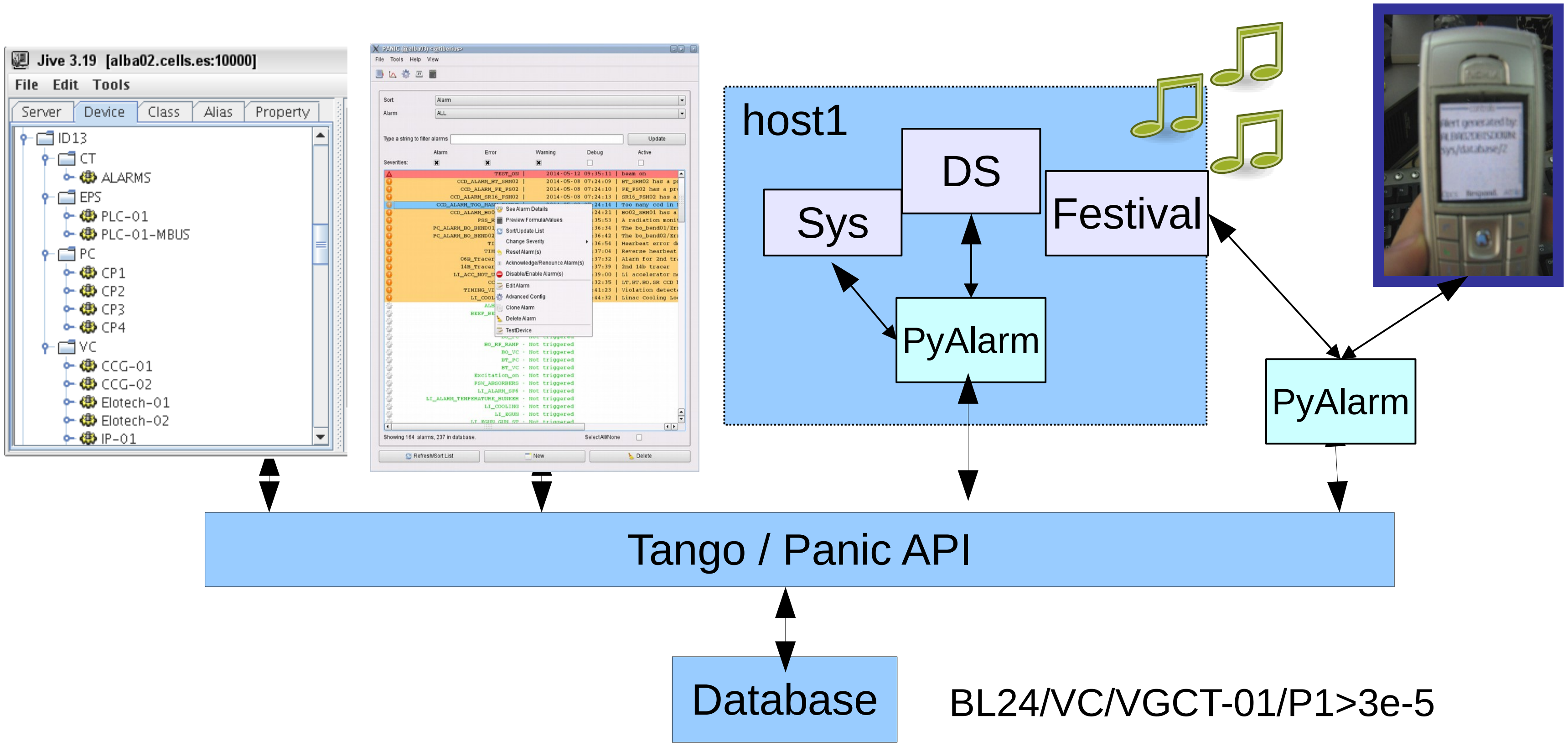


Package for Alarms and Notification of Incidences from Controls

- Based on **PyAlarm** Tango Device
- Each device evaluates a list of pseudo-**python** formulas
- Triggers actions/notifications associated to each alarm
- Evaluation is tuneable for each PyAlarm device
- Boolean attributes created for each Alarm, available to Archiving and other clients.
- Panic Client allow to manage,log and test alarms (2011)
- Mostly used by Vacuum and Accelerators groups.
- In operation at ALBA since 2007, 1200+ alarms declared.
- Running at MaxIV Linac since 2014.

PANIC, The Alba Alarm System

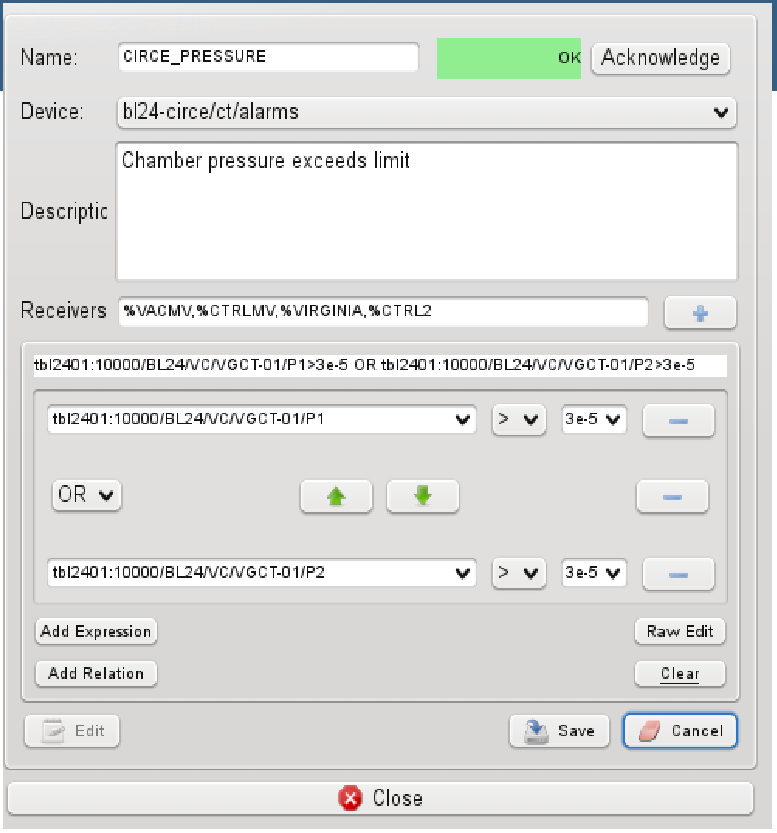
- Distributed in PyAlarm Device Servers, Panic **API provides a single view** of the system.
- Devices within a PyAlarm Server share the API and Eval objects, including caches.
- Configuration is stored in the **Tango Database,**common for all Alarms of a same device.
- Each PyAlarm device performs locally **both Logging and Notification (email/SMS)**
- **Additional actions** are passed **to external devices** (SnapArchiver, Speech, Pop-ups)
- Persistent **Alarm logging** is stored in the Tango **Snapshoting database**.



Declaring Alarms

Each Alarm is defined by:
- TAG,
- Formula,
- Description,
- Receivers,
- Severity,
- DeviceConfiguration

Those are stored using **device properties** of PyAlarm devices.



Name: CIRCE_PRESSURE

OK

Device: bl24-circe/ct/alarms

Descriptic: Chamber pressure exceeds limit

Receivers: %VACMV,%CTRLMV,%VIRGINIA,%CTRL2

```
tbl2401:10000/BL24/VC/VGCT-01/P1>3e-5 OR tbl2401:10000/BL24/VC/VGCT-01/P2>3e-5
```

tbl2401:10000/BL24/VC/VGCT-01/P1 > 3e-5

OR

tbl2401:10000/BL24/VC/VGCT-01/P2 > 3e-5

Alarm formulas:

CIRCE_LOST:	BL24/VC/VGCT-01/State == **UNKNOWN**
CIRCE_TEMP:	BL24/EPS/PLC-01/T1**.quality** == **ATTR_ALARM**
CIRCE_PRESSURE:	**tbl2401:10000**/BL24/VC/VGCT-01/P1 > **3e-5**
CIRCE_VALVE:	FE24/VC/PNV-01/State**.delta**!=0 #just moved!
CIRCE_CPU:	max(sys/profile/tbl2401/load_avg)>0.5
CIRCE_ERROR:	BL24/VC/VGCT-01/State.exception **OR** BL24/VC/VGCT-01/State.time < now-3600

Declaring Alarms with Regular Expressions

Regular expressions allow to apply wildcards to “Extended” Tango Attribute URLs:

[tango:host/][device/]Attribute[.value/quality/delta/time/exception/all]

FIND,GROUP are pre-parsing Macros, applying in-place replacement before the formula is evaluated.

any([t>85 for t in **FIND**(ID13/EPS/PLC-01/TTAP*****_VAL)])

any([min(t)<50 and 70<max(t)<1000 for t in **[FIND(**ID13/VC/Elotech*****/Temperature_**[0-9]**)]])

any([t==ATTR_ALARM for t in **FIND(**ID13/VC/Elotech*/Temperature_**[0-9].quality**)])

GROUP(BL24/CT/ALARMS/CIRCE_*)

But!, Protect yourself against FIND(*) queries!

Alarm Receivers and Notifications

- Condition: CIRCE_PRESSURE:BL24/VC/VGCT-01/P1>3e-5

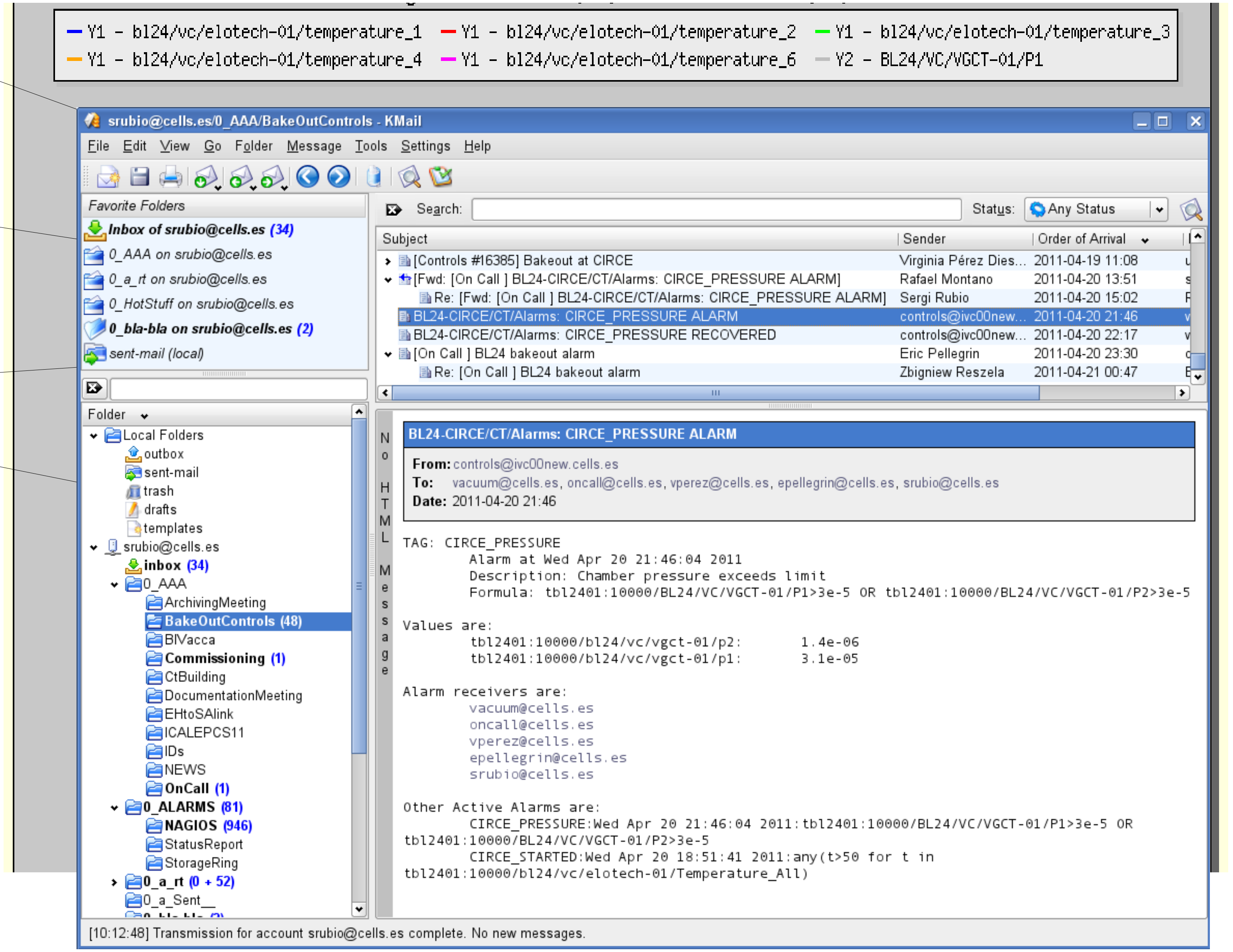
- Incidence
- Notification
- Archiving

- Recovery
- Reminder

- Acknowledge

- AutoReset

- Actions?



Y1 - bl24/vc/elotech-01/temperature_1 — Y1 - bl24/vc/elotech-01/temperature_2 — Y1 - bl24/vc/elotech-01/temperature_3
Y1 - bl24/vc/elotech-01/temperature_4 — Y1 - bl24/vc/elotech-01/temperature_6 — Y2 - BL24/VC/VGCT-01/P1

srubio@cells.es/0_AAA/BakeOutControls - KMail

Subject	Sender	Order of Arrival
[Controls #16385] Bakeout at CIRCE	Virginia Pérez Dies...	2011-04-19 11:08
[Fwd: [On Call] BL24-CIRCE/CT/Alarms: CIRCE_PRESSURE ALARM]	Rafael Montano	2011-04-20 13:51
Re: [Fwd: [On Call] BL24-CIRCE/CT/Alarms: CIRCE_PRESSURE ALARM]	Sergi Rubio	2011-04-20 15:02
BL24-CIRCE/CT/Alarms: CIRCE_PRESSURE ALARM	controls@ivc00new...	2011-04-20 21:46
BL24-CIRCE/CT/Alarms: CIRCE_PRESSURE RECOVERED	controls@ivc00new...	2011-04-20 22:17
[On Call] BL24 bakeout alarm	Eric Pellegrin	2011-04-20 23:30
Re: [On Call] BL24 bakeout alarm	Zbigniew Reszela	2011-04-21 00:47

BL24-CIRCE/CT/Alarms: CIRCE_PRESSURE ALARM

From: controls@ivc00new.cells.es
To: vacuum@cells.es, oncall@cells.es, vperez@cells.es, epellegrin@cells.es, srubio@cells.es
Date: 2011-04-20 21:46

```
TAG: CIRCE_PRESSURE
        Alarm at Wed Apr 20 21:46:04 2011
        Description: Chamber pressure exceeds limit
        Formula: tbl2401:10000/BL24/VC/VGCT-01/P1>3e-5 OR tbl2401:10000/BL24/VC/VGCT-01/P2>3e-5

Values are:
        tbl2401:10000/bl24/vc/vgct-01/p2:       1.4e-06
        tbl2401:10000/bl24/vc/vgct-01/p1:       3.1e-05

Alarm receivers are:
        vacuum@cells.es
        oncall@cells.es
        vperez@cells.es
        epellegrin@cells.es
        srubio@cells.es

Other Active Alarms are:
        CIRCE_PRESSURE:Wed Apr 20 21:46:04 2011:tbl2401:10000/BL24/VC/VGCT-01/P1>3e-5 OR
tbl2401:10000/BL24/VC/VGCT-01/P2>3e-5
        CIRCE_STARTED:Wed Apr 20 18:51:41 2011:any(t>50 for t in
tbl2401:10000/bl24/vc/elotech-01/Temperature_All)
```

[10:12:48] Transmission for account srubio@cells.es complete. No new messages.

Declaring Receivers in Phonebook

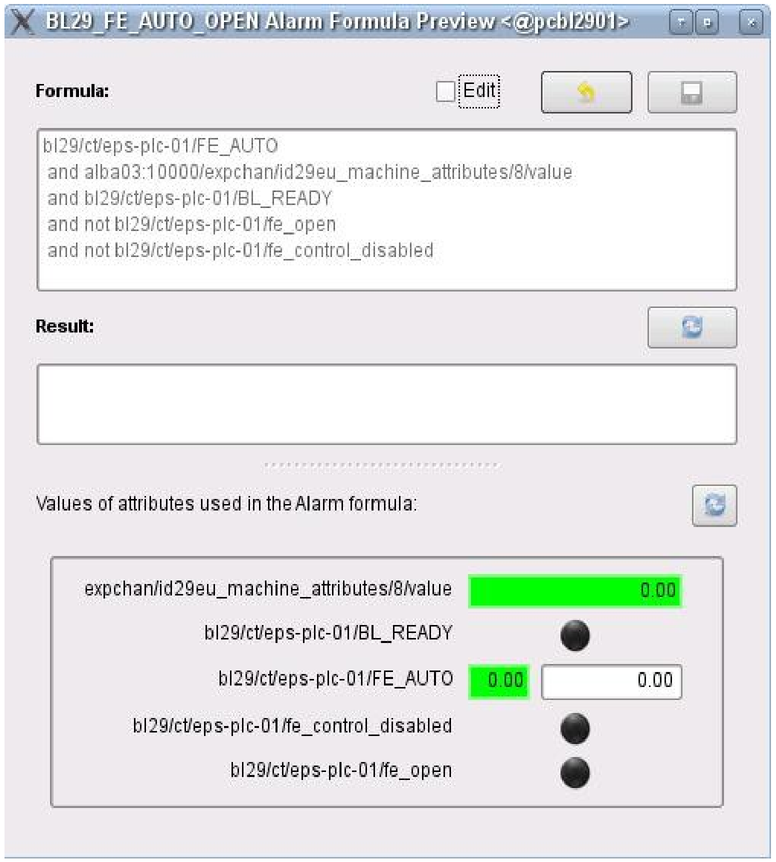
Receivers are stored in the AlarmReceivers Device property.

Aliases for most common used receivers can be created using the PyAlarm.Phonebook Class Property in the Tango Database.

Default formats are: email, SMS, ACTION(command/attribute, ...)

```
%BEEP:ACTION(alarm:command,mach/alarm/beep/play,$DESCRIPTION)

%CONTROLROOM:operators@cells.es,SMS:+34646.....

%CTRLMV:oncall@cells.es,SMS:+34682.....

%CTRLBL:oncall@cells.es,SMS:+34682......

%PLCMV:plc@cells.es,SMS:+34638....
```

Executing Actions and/or External Notifications



BL29_FE_AUTO_OPEN Alarm Formula Preview <@pcbl2901>

Formula:

```
bl29/ct/eps-plc-01/FE_AUTO
 and alba03:10000/expchan/id29eu_machine_attributes/8/value
 and bl29/ct/eps-plc-01/BL_READY
 and not bl29/ct/eps-plc-01/fe_open
 and not bl29/ct/eps-plc-01/fe_control_disabled
```

Result:

Values of attributes used in the Alarm formula:

expchan/id29eu_machine_attributes/8/value	0.00	
bl29/ct/eps-plc-01/BL_READY	●	
bl29/ct/eps-plc-01/FE_AUTO	0.00	0.00
bl29/ct/eps-plc-01/fe_control_disabled	●	
bl29/ct/eps-plc-01/fe_open	●	

AlarmsList:

BL_FE_OPEN:
bl/ct/plc-01/FE_AUTO and
host:10000/chan/ct/fe/value and
bl/ct/plc-01/BL_READY and
not bl/ct/plc-01/fe_open and
not bl/ct/-plc-01/fe_control_disabled

AlarmsReceivers:

BL_FE_OPEN:
ACTION(**alarm:attribute**,bl/ct/plc-01/OPEN_FE,1),

ACTION(**alarm:command**:test/notif/blmachine/**popup**
,**$ALARM,$DESCRIPTION**,15)

Executing Actions and/or External Notifications

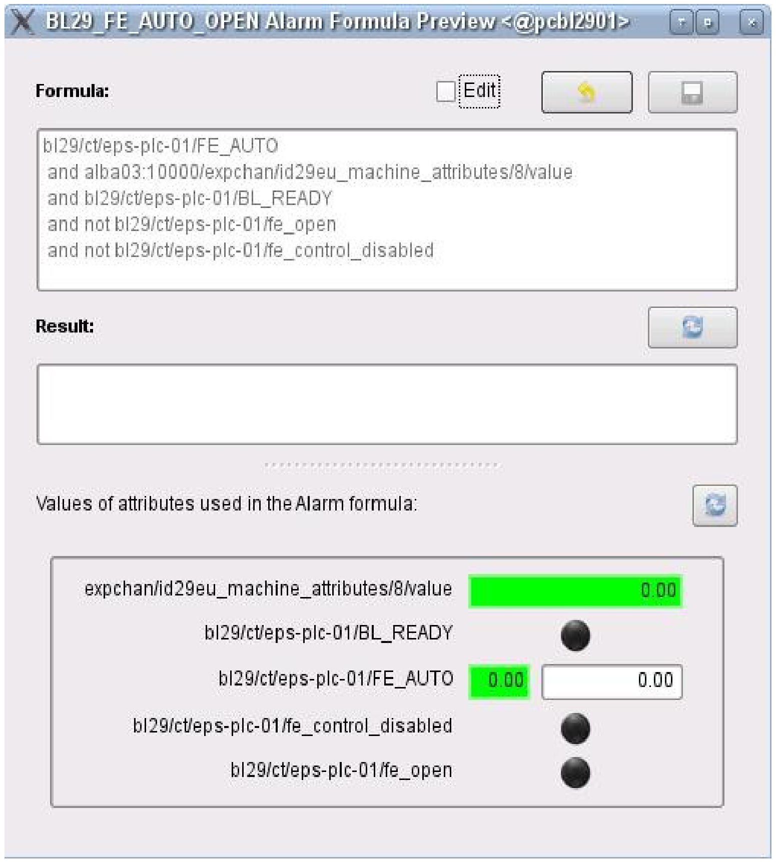
AlarmsList:

BL_FE_OPEN:
bl/ct/plc-01/FE_AUTO and
host:10000/chan/ct/fe/value and
bl/ct/plc-01/BL_READY and
not bl/ct/plc-01/fe_open and
not bl/ct/-plc-01/fe_control_disabled

AlarmsReceivers:

BL_FE_OPEN:
ACTION(**alarm:attribute**,bl/ct/plc-01/OPEN_FE,1),

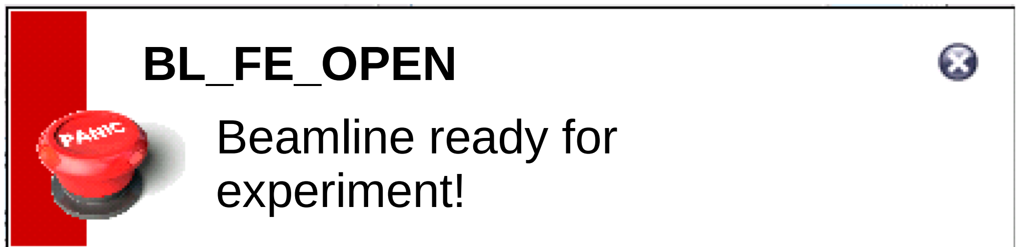
ACTION(**alarm:command**:test/notif/blmachine/**popup**
,$ALARM,$DESCRIPTION,15)



```
bl29/ct/eps-plc-01/FE_AUTO
 and alba03:10000/expchan/id29eu_machine_attributes/8/value
 and bl29/ct/eps-plc-01/BL_READY
 and not bl29/ct/eps-plc-01/fe_open
 and not bl29/ct/eps-plc-01/fe_control_disabled
```

Values of attributes used in the Alarm formula:

expchan/id29eu_machine_attributes/8/value	0.00
bl29/ct/eps-plc-01/BL_READY	●
bl29/ct/eps-plc-01/FE_AUTO	0.00 0.00
bl29/ct/eps-plc-01/fe_control_disabled	●
bl29/ct/eps-plc-01/fe_open	●



BL_FE_OPEN

Beamline ready for experiment!

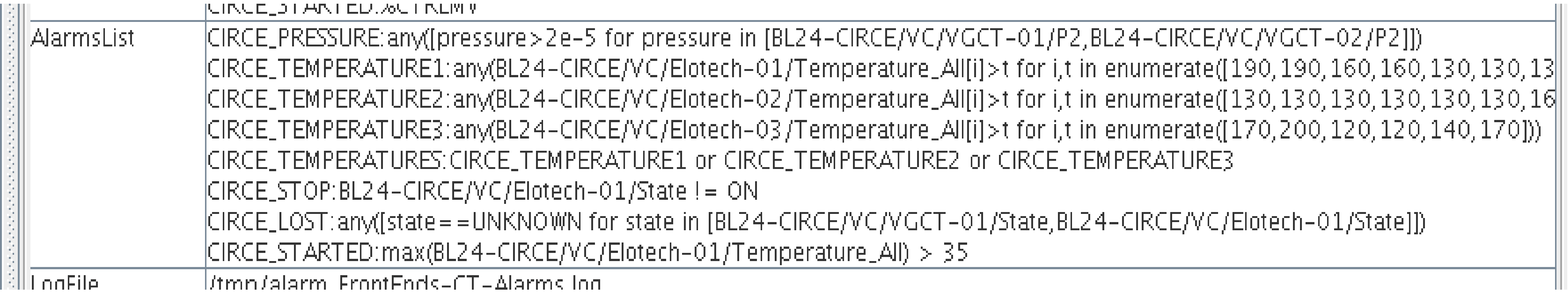
ALBA

Database dependency

PyAlarm uses TANGO as Alarms Configuration Database, storing the Alarm configurations using Device and Class properties (Phonebook, SMSConfig):

- Pro: It just needs the TANGO database (or a no-db file) to work.
- Cons: It is filling the Tango database with a lot of ugly information.
- Merging with Elettra's database has been delayed for years.

Thanks to Panic API the device server and the GUI are completely independent from the database. It will allow us to adapt our servers to some tools developed by Elettra, Soleil, Max IV, ...



```
             CIRCE_STARTED:%CTRLMV
AlarmsList   CIRCE_PRESSURE:any([pressure>2e-5 for pressure in [BL24-CIRCE/VC/VGCT-01/P2,BL24-CIRCE/VC/VGCT-02/P2]])
             CIRCE_TEMPERATURE1:any(BL24-CIRCE/VC/Elotech-01/Temperature_All[i]>t for i,t in enumerate([190,190,160,160,130,130,13
             CIRCE_TEMPERATURE2:any(BL24-CIRCE/VC/Elotech-02/Temperature_All[i]>t for i,t in enumerate([130,130,130,130,130,130,16
             CIRCE_TEMPERATURE3:any(BL24-CIRCE/VC/Elotech-03/Temperature_All[i]>t for i,t in enumerate([170,200,120,120,140,170]))
             CIRCE_TEMPERATURES:CIRCE_TEMPERATURE1 or CIRCE_TEMPERATURE2 or CIRCE_TEMPERATURE3
             CIRCE_STOP:BL24-CIRCE/VC/Elotech-01/State != ON
             CIRCE_LOST:any([state==UNKNOWN for state in [BL24-CIRCE/VC/VGCT-01/State,BL24-CIRCE/VC/Elotech-01/State]])
             CIRCE_STARTED:max(BL24-CIRCE/VC/Elotech-01/Temperature_All) > 35
LogFile      /tmp/alarm_FrontEnds-CT-Alarms.log
```

PANIC API

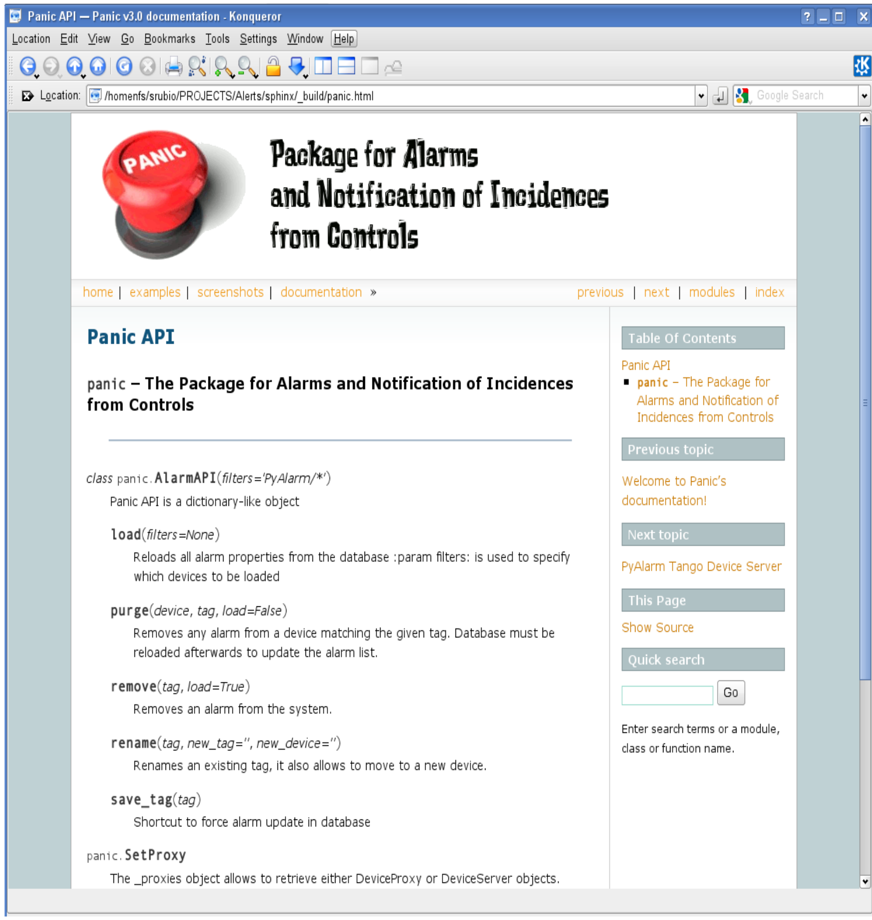
Panic contains the python AlarmAPI for managing the PyAlarm device servers from a client application or a python shell. The panic module is part of the Panic bliss package.

```
import panic
alarms = panic.api()
```

Browsing existing alarms

The AlarmAPI is a dictionary-like object containing Alarm objects for each registered Alarm tag. In addition the AlarmAPI.get method allows caseless search by tag, device, attribute or receiver:

```
alarms.get(self, tag='', device='', attribute='', receiver='')

alarms.get(device='boreas')
Out[232]:
[Alarm(BL29-BOREAS_STOP:The BakeOut controller has been stop),
 Alarm(BL29-BOREAS_PRESSURE_1:),
 Alarm(BL29-BOREAS_PRESSURE_2:),
 Alarm(BL29-BOREAS_START: BL29-BOREAS bakeout started
 …]

alarms.get(receiver='eshraq')
Out[234]:
[Alarm(RF_LOST_EUROTHERM:),
 Alarm(OVEN_COMMS_FAILED:Oven temperatures not updated in the last
5 minutes),
 Alarm(RF_PRESSURE:The pressure in the cavity exceeds Range),
 Alarm(OVEN_TEMPERATURE:The Temperature of the Oven exceeds
Range),
 Alarm(RF_EUROTHERM:),
 Alarm(RF_LOST_MKS:),
 Alarm(RF_TEMPERATURE_MAX2:),
 ...]
alarms['RF_LOST_MKS'].receivers
Out[237]: '%SRUBIO,%ESHRAQ,%VACUUM,%LOTHAR,%JNAVARRO'
```


Panic API — Panic v3.0 documentation - Konqueror
Location Edit View Go Bookmarks Tools Settings Window Help
Location: /homenfs/srubio/PROJECTS/Alerts/sphinx/_build/panic.html
Google Search
PANIC
Package for Alarms and Notification of Incidences from Controls
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previous | next | modules | index

Panic API

panic – The Package for Alarms and Notification of Incidences from Controls

class panic.**AlarmAPI**(*filters='PyAlarm/*'*)

Panic API is a dictionary-like object

load(*filters=None*)

Reloads all alarm properties from the database :param filters: is used to specify which devices to be loaded

purge(*device, tag, load=False*)

Removes any alarm from a device matching the given tag. Database must be reloaded afterwards to update the alarm list.

remove(*tag, load=True*)

Removes an alarm from the system.

rename(*tag, new_tag='', new_device=''*)

Renames an existing tag, it also allows to move to a new device.

save_tag(*tag*)

Shortcut to force alarm update in database

panic.**SetProxy**

The _proxies object allows to retrieve either DeviceProxy or DeviceServer objects.

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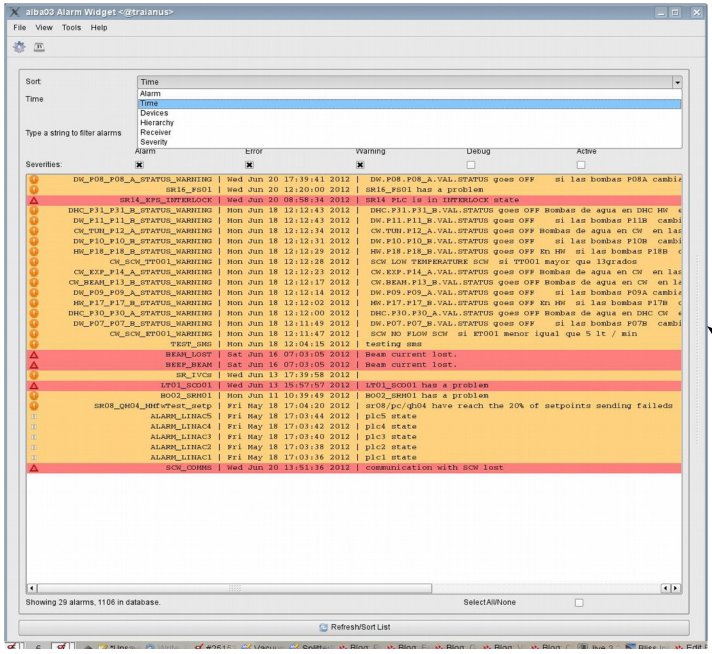
Enter search terms or a module, class or function name.

Panic User Interface

The Panic tool shows the list of active or declared alarms. It provides several filters to search alarms: by state (active/inactive), severity, subsystem, receiver or historic values.

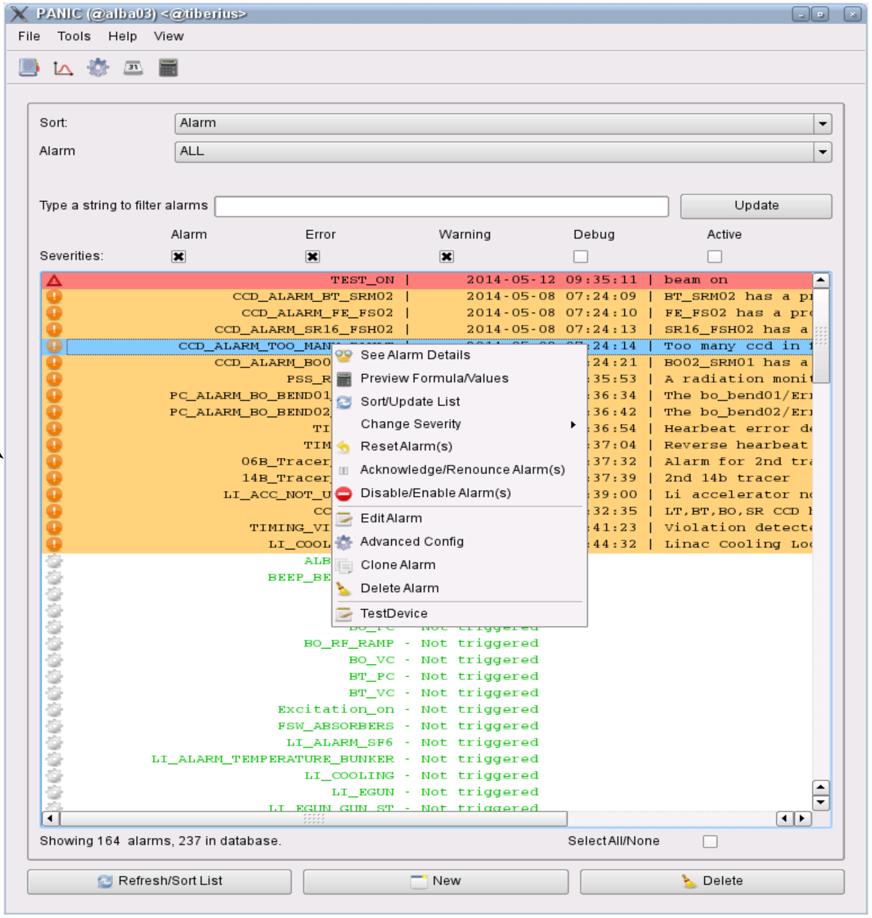
Alarms are sorted by severity: ERROR, ALARM, WARNING, INFO, DEBUG

A text search is also provided that allow to locate alarms by any of the attributes used in formula or words used in description (soon available as Taurus Search Bar).



```
      DW_P08_P08_A_STATUS_WARNING | Wed Jun 20 17:39:41 2012 |  DW.P08.P08_A.VAL.STATUS goes OFF    si las bombas P08A cambia
                      SR16_FS01 | Wed Jun 20 12:20:00 2012 | SR16_FS01 has a problem
             SR14_EPS_INTERLOCK | Wed Jun 20 08:58:34 2012 | SR14 PLC is in INTERLOCK state
     DHC_P31_P31_B_STATUS_WARNING | Mon Jun 18 12:12:43 2012 |  DHC.P31.P31_B.VAL.STATUS goes OFF Bombas de agua en DHC HW  e
      DW_P11_P11_B_STATUS_WARNING | Mon Jun 18 12:12:43 2012 |  DW.P11.P11_B.VAL.STATUS goes OFF    si las bombas P11B  cambi
      CW_TUN_P12_A_STATUS_WARNING | Mon Jun 18 12:12:34 2012 |  CW.TUN.P12_A.VAL.STATUS goes OFF Bombas de agua en CW  en las
      DW_P10_P10_B_STATUS_WARNING | Mon Jun 18 12:12:31 2012 |  DW.P10.P10_B.VAL.STATUS goes OFF    si las bombas P10B  cambi
      HW_P18_P18_B_STATUS_WARNING | Mon Jun 18 12:12:29 2012 |  HW.P18.P18_B.VAL.STATUS goes OFF En HW  si las bombas P18B  c
           CW_SCW_TT001_WARNING | Mon Jun 18 12:12:28 2012 |  SCW LOW TEMPERATURE SCW  si TT001 mayor que 13grados
      CW_EXP_P14_A_STATUS_WARNING | Mon Jun 18 12:12:23 2012 |  CW.EXP.P14_A.VAL.STATUS goes OFF Bombas de agua en CW  en las
     CW_BEAM_P13_B_STATUS_WARNING | Mon Jun 18 12:12:17 2012 |  CW.BEAM.P13_B.VAL.STATUS goes OFF Bombas de agua en CW  en la
      DW_P09_P09_A_STATUS_WARNING | Mon Jun 18 12:12:14 2012 |  DW.P09.P09_A.VAL.STATUS goes OFF    si las bombas P09A cambia
      HW_P17_P17_B_STATUS_WARNING | Mon Jun 18 12:12:02 2012 |  HW.P17.P17_B.VAL.STATUS goes OFF En HW  si las bombas P17B  c
     DHC_P30_P30_A_STATUS_WARNING | Mon Jun 18 12:12:00 2012 |  DHC.P30.P30_A.VAL.STATUS goes OFF Bombas de agua en DHC CW  e
      DW_P07_P07_B_STATUS_WARNING | Mon Jun 18 12:11:49 2012 |  DW.P07.P07_B.VAL.STATUS goes OFF    si las bombas P07B  cambi
           CW_SCW_ET001_WARNING | Mon Jun 18 12:11:47 2012 |  SCW NO FLOW SCW  si ET001 menor igual que 5 lt / min
                       TEST_SMS | Mon Jun 18 12:04:15 2012 | testing sms
                      BEAM_LOST | Sat Jun 16 07:03:05 2012 | Beam current lost.
                      BEEP_BEAM | Sat Jun 16 07:03:05 2012 | Beam current lost.
                        SR_IVCs | Wed Jun 13 17:39:58 2012 |
                     LT01_SC001 | Wed Jun 13 15:57:57 2012 | LT01_SC001 has a problem
                     BO02_SRM01 | Mon Jun 11 10:39:49 2012 | BO02_SRM01 has a problem
          SR08_QH04_HHfwTest_setp | Fri May 18 17:04:20 2012 | sr08/pc/qh04 have reach the 20% of setpoints sending faileds
                   ALARM_LINAC5 | Fri May 18 17:03:44 2012 | plc5 state
                   ALARM_LINAC4 | Fri May 18 17:03:42 2012 | plc4 state
                   ALARM_LINAC3 | Fri May 18 17:03:40 2012 | plc3 state
                   ALARM_LINAC2 | Fri May 18 17:03:38 2012 | plc2 state
                   ALARM_LINAC1 | Fri May 18 17:03:36 2012 | plc1 state
                      SCW_COMMS | Wed Jun 20 13:51:36 2012 | communication with SCW lost
```

Showing 29 alarms, 1106 in database.



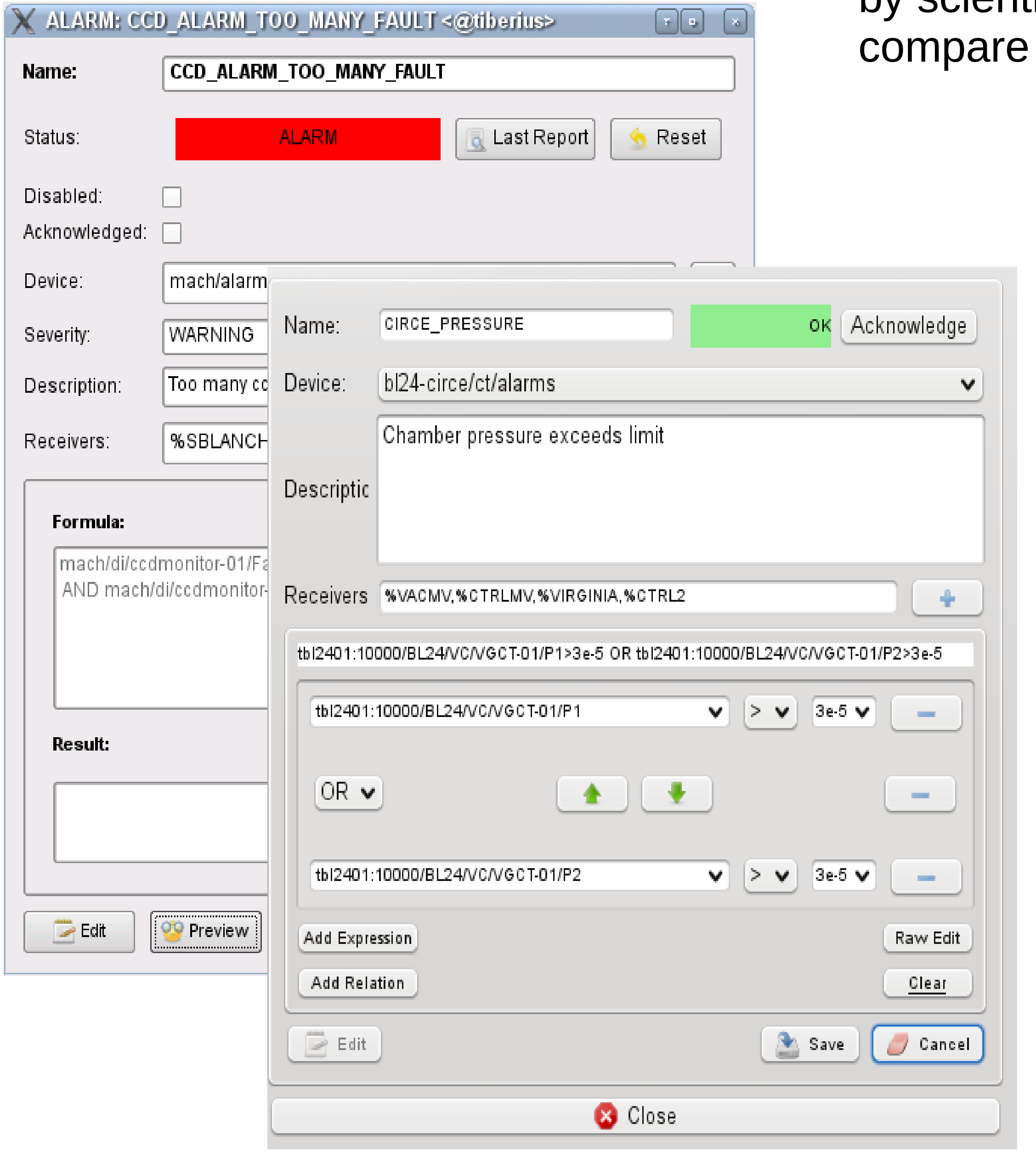
```
               TEST_ON |  2014-05-12 09:35:11 | beam on
     CCD_ALARM_BT_SRM02 |  2014-05-08 07:24:09 | BT_SRM02 has a pr
     CCD_ALARM_FE_FS02 |  2014-05-08 07:24:10 | FE_FS02 has a pro
   CCD_ALARM_SR16_FSH02 |  2014-05-08 07:24:13 | SR16_FSH02 has a
  CCD_ALARM_TOO_MAN                    :24:14 | Too many ccd in t
     CCD_ALARM_BO0                     :24:21 | BO02_SRM01 has a
              PSS_R                    :35:53 | A radiation monit
    PC_ALARM_BO_BEND01                 :36:34 | The bo_bend01/Err
    PC_ALARM_BO_BEND02                 :36:42 | The bo_bend02/Err
                  TI                   :36:54 | Hearbeat error de
                 TIM                   :37:04 | Reverse hearbeat
           06B_Tracer                  :37:32 | Alarm for 2nd tra
           14B_Tracer                  :37:39 | 2nd 14b tracer
        LI_ACC_NOT_U                   :39:00 | Li accelerator no
                  CC                   :32:35 | LT,BT,BO,SR CCD h
           TIMING_VI                   :41:23 | Violation detecte
             LI_COOL                   :44:32 | Linac Cooling Loc
                 ALB
             BEEP_BE
           BO_RF_RAMP - Not triggered
                BO_VC - Not triggered
                BT_PC - Not triggered
                BT_VC - Not triggered
        Excitation_on - Not triggered
        FSW_ABSORBERS - Not triggered
         LI_ALARM_SF6 - Not triggered
LI_ALARM_TEMPERATURE_BUNKER - Not triggered
           LI_COOLING - Not triggered
             LI_EGUN - Not triggered
       LI_EGUN_GUN_ST - Not triggered
```

Showing 164 alarms, 237 in database.

For each alarm the menu allows to Configure, Reset the alarm or show the attribute values that triggered it.

UI Editor and Preview

The preview panel is an independent widget, used by scientists as a Tango calculator that allows to compare formula against current system values.



ALARM: CCD_ALARM_TOO_MANY_FAULT <@tiberius>

Name:	CCD_ALARM_TOO_MANY_FAULT
Status:	ALARM
Disabled:	☐
Acknowledged:	☐
Device:	mach/alarm
Severity:	WARNING
Description:	Too many cc
Receivers:	%SBLANCH

Formula:

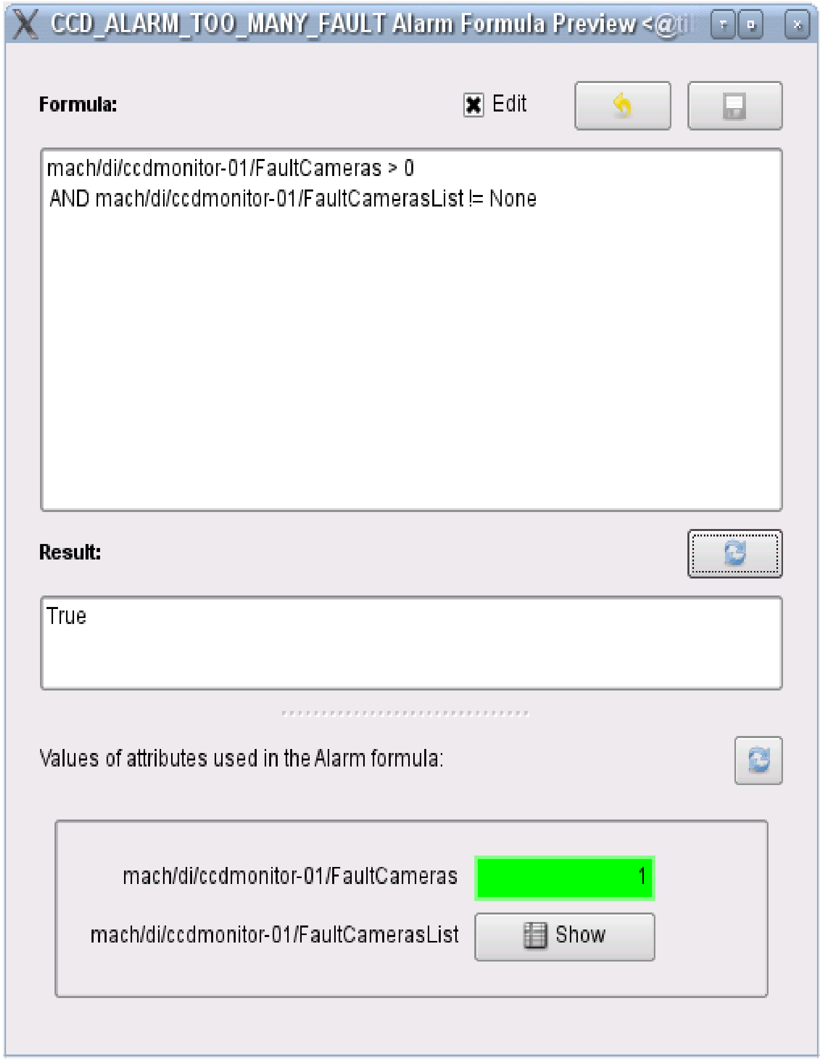
```
mach/di/ccdmonitor-01/Fa
AND mach/di/ccdmonitor-
```

Result:

Name:	CIRCE_PRESSURE	OK
Device:	bl24-circe/ct/alarms	
Descriptic	Chamber pressure exceeds limit	
Receivers	%VACMV,%CTRLMV,%VIRGINIA,%CTRL2	

```
tbl2401:10000/BL24/VC/VGCT-01/P1>3e-5 OR tbl2401:10000/BL24/VC/VGCT-01/P2>3e-5
```

tbl2401:10000/BL24/VC/VGCT-01/P1	>	3e-5
OR		
tbl2401:10000/BL24/VC/VGCT-01/P2	>	3e-5



CCD_ALARM_TOO_MANY_FAULT Alarm Formula Preview <@ti

Formula: ☒ Edit

```
mach/di/ccdmonitor-01/FaultCameras > 0
AND mach/di/ccdmonitor-01/FaultCamerasList != None
```

Result:

```
True
```

Values of attributes used in the Alarm formula:

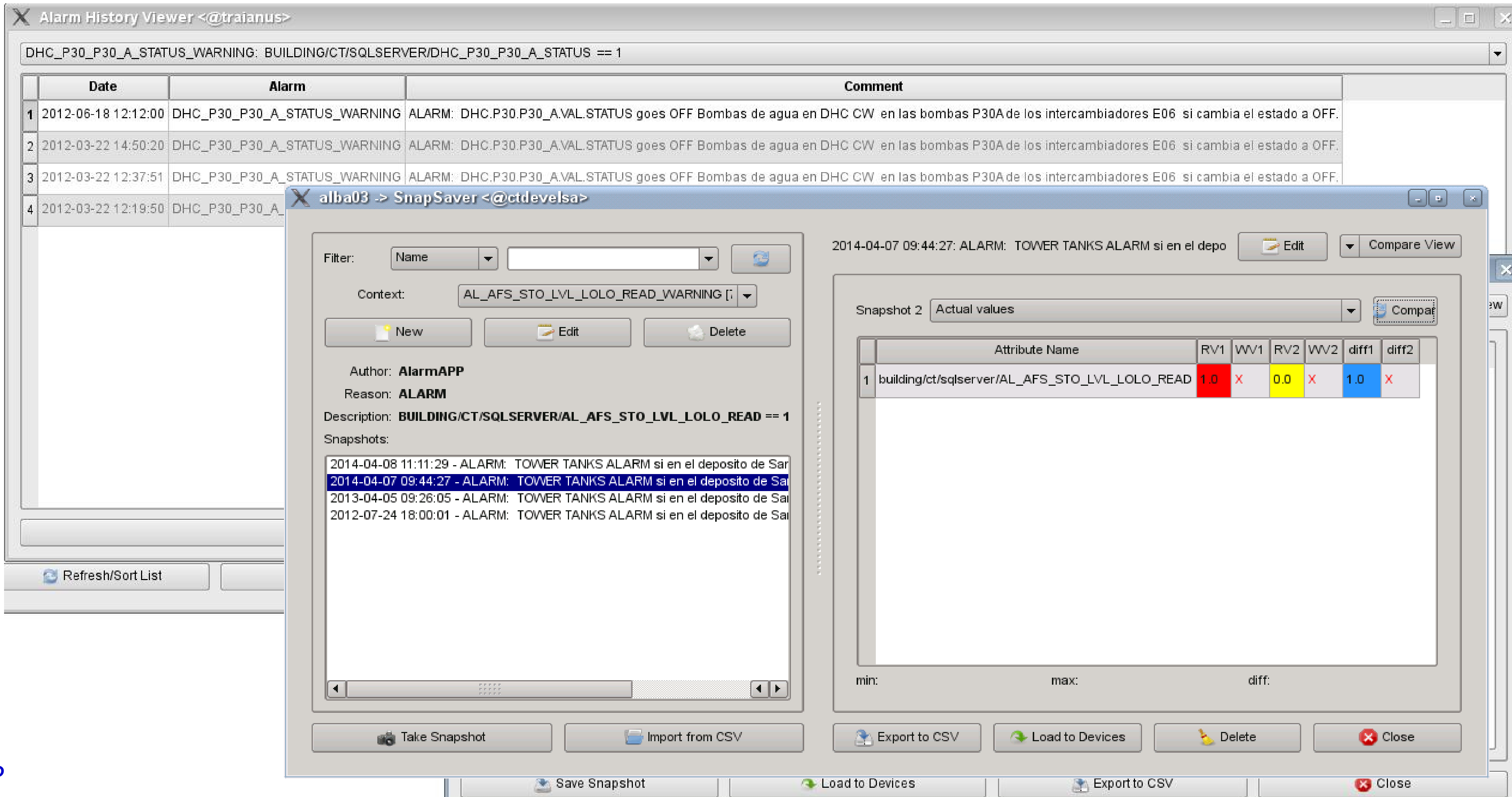
mach/di/ccdmonitor-01/FaultCameras	1
mach/di/ccdmonitor-01/FaultCamerasList	Show

Record/View Alarm History using Snaps

If alarm history is enabled, (**SNAP Receiver or UseSnaps+CreateNewContext** property) then attribute values will be recorded every time that the alarm is triggered.

The alarm will create a context in the Tango Snapshoting database with all the attributes that appear in the formula. It can be modified later to include additional attributes.

Alarm history can be viewed either from Panic or PyTangoArchiving.widget.snap widgets.



Alarm History Viewer <@traianus>

DHC_P30_P30_A_STATUS_WARNING: BUILDING/CT/SQLSERVER/DHC_P30_P30_A_STATUS == 1

	Date	Alarm	Comment
1	2012-06-18 12:12:00	DHC_P30_P30_A_STATUS_WARNING	ALARM: DHC.P30.P30_A.VAL.STATUS goes OFF Bombas de agua en DHC CW en las bombas P30A de los intercambiadores E06 si cambia el estado a OFF.
2	2012-03-22 14:50:20	DHC_P30_P30_A_STATUS_WARNING	ALARM: DHC.P30.P30_A.VAL.STATUS goes OFF Bombas de agua en DHC CW en las bombas P30A de los intercambiadores E06 si cambia el estado a OFF.
3	2012-03-22 12:37:51	DHC_P30_P30_A_STATUS_WARNING	ALARM: DHC.P30.P30_A.VAL.STATUS goes OFF Bombas de agua en DHC CW en las bombas P30A de los intercambiadores E06 si cambia el estado a OFF.
4	2012-03-22 12:19:50	DHC_P30_P30_A	

alba03 -> SnapSaver <@ctdevelsa>

Filter: Name

Context: AL_AFS_STO_LVL_LOLO_READ_WARNING [

Author: AlarmAPP

Reason: ALARM

Description: BUILDING/CT/SQLSERVER/AL_AFS_STO_LVL_LOLO_READ == 1

Snapshots:

```
2014-04-08 11:11:29 - ALARM:  TOWER TANKS ALARM si en el deposito de Sar
2014-04-07 09:44:27 - ALARM:  TOWER TANKS ALARM si en el deposito de Sa
2013-04-05 09:26:05 - ALARM:  TOWER TANKS ALARM si en el deposito de Sa
2012-07-24 18:00:01 - ALARM:  TOWER TANKS ALARM si en el deposito de Sa
```

2014-04-07 09:44:27: ALARM: TOWER TANKS ALARM si en el depo

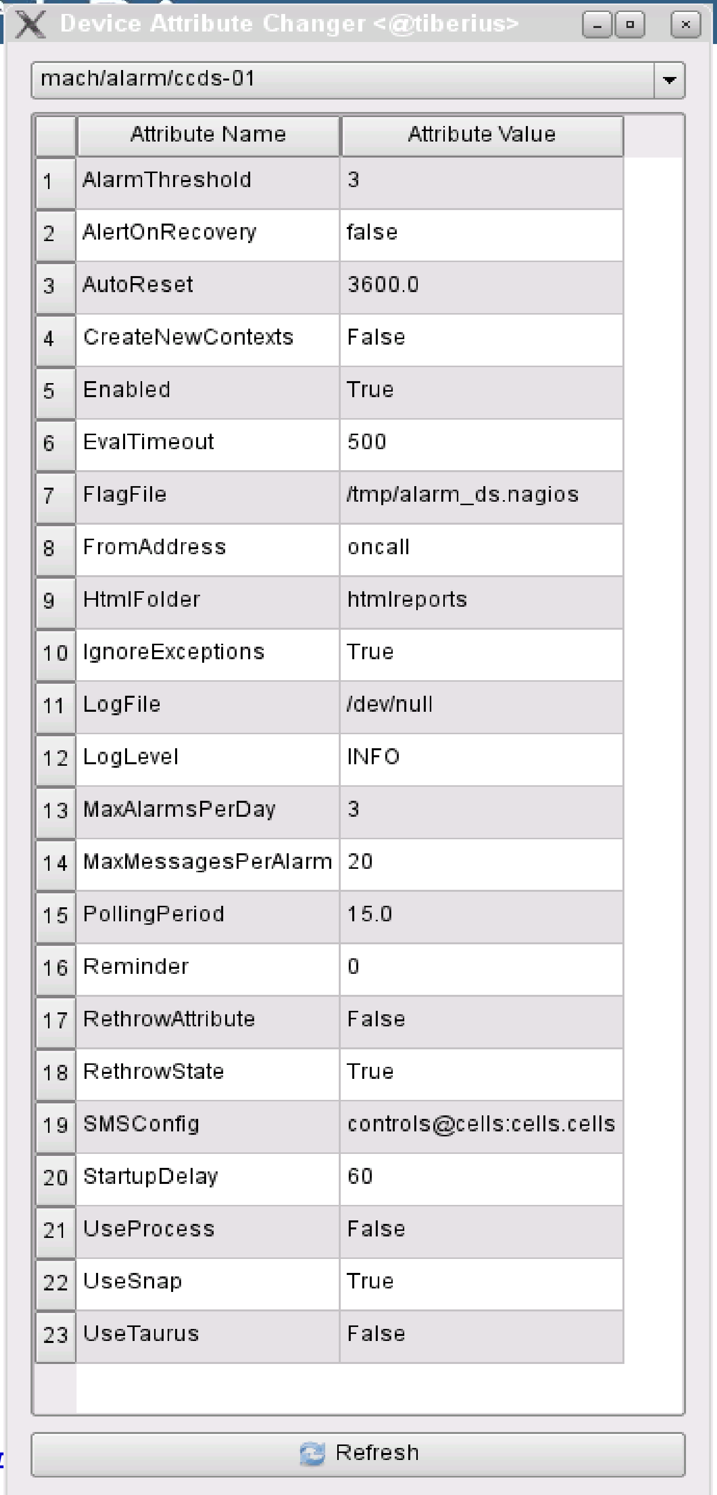
Snapshot 2: Actual values

	Attribute Name	RV1	WV1	RV2	WV2	diff1	diff2
1	building/ct/sqlserver/AL_AFS_STO_LVL_LOLO_READ	1.0	X	0.0	X	1.0	X

min: max: diff:

P

PyAlarm Tuning: Device Properties



mach/alarm/ccds-01

	Attribute Name	Attribute Value
1	AlarmThreshold	3
2	AlertOnRecovery	false
3	AutoReset	3600.0
4	CreateNewContexts	False
5	Enabled	True
6	EvalTimeout	500
7	FlagFile	/tmp/alarm_ds.nagios
8	FromAddress	oncall
9	HtmlFolder	htmlreports
10	IgnoreExceptions	True
11	LogFile	/dev/null
12	LogLevel	INFO
13	MaxAlarmsPerDay	3
14	MaxMessagesPerAlarm	20
15	PollingPeriod	15.0
16	Reminder	0
17	RethrowAttribute	False
18	RethrowState	True
19	SMSConfig	controls@cells:cells.cells
20	StartupDelay	60
21	UseProcess	False
22	UseSnap	True
23	UseTaurus	False

PollingPeriod controls the frequency of update.
AlarmThreshold controls alarm triggering and .delta cache
AutoReset time will reset the alarm if condition recovers

Enabled can be set to True/False or a time(e.g. 120) to ignore alarms already enabled during startup.

Reminder/AlertOnRecover for extra notifications

Alarm history controlled by CreateNewContexts/UseSnap
UseTaurus allows to delegate polling/event management to Taurus.core library. (http://sourceforge.net/p/sardana)

IgnoreExceptions/RethrowAttribute/State control whether exceptions should trigger alarm or not or be replaced by None.

UseProcess (evaluate formulas in background processes) \ still under development

FlagFile, HtmlFolder, LogFile : alternative logging that can be recorded in the local filesystem or NFS mounted folders.

Panic Alarm Life Cycle

- TAG/Description: CIRCE_PRESSURE, Beamline pressure is high
- Receivers: circe@cells.es, SMS:+34333222111, ACTION(...
- Condition: CIRCE_PRESSURE:BL24/VC/VGCT-01/P1>3e-5

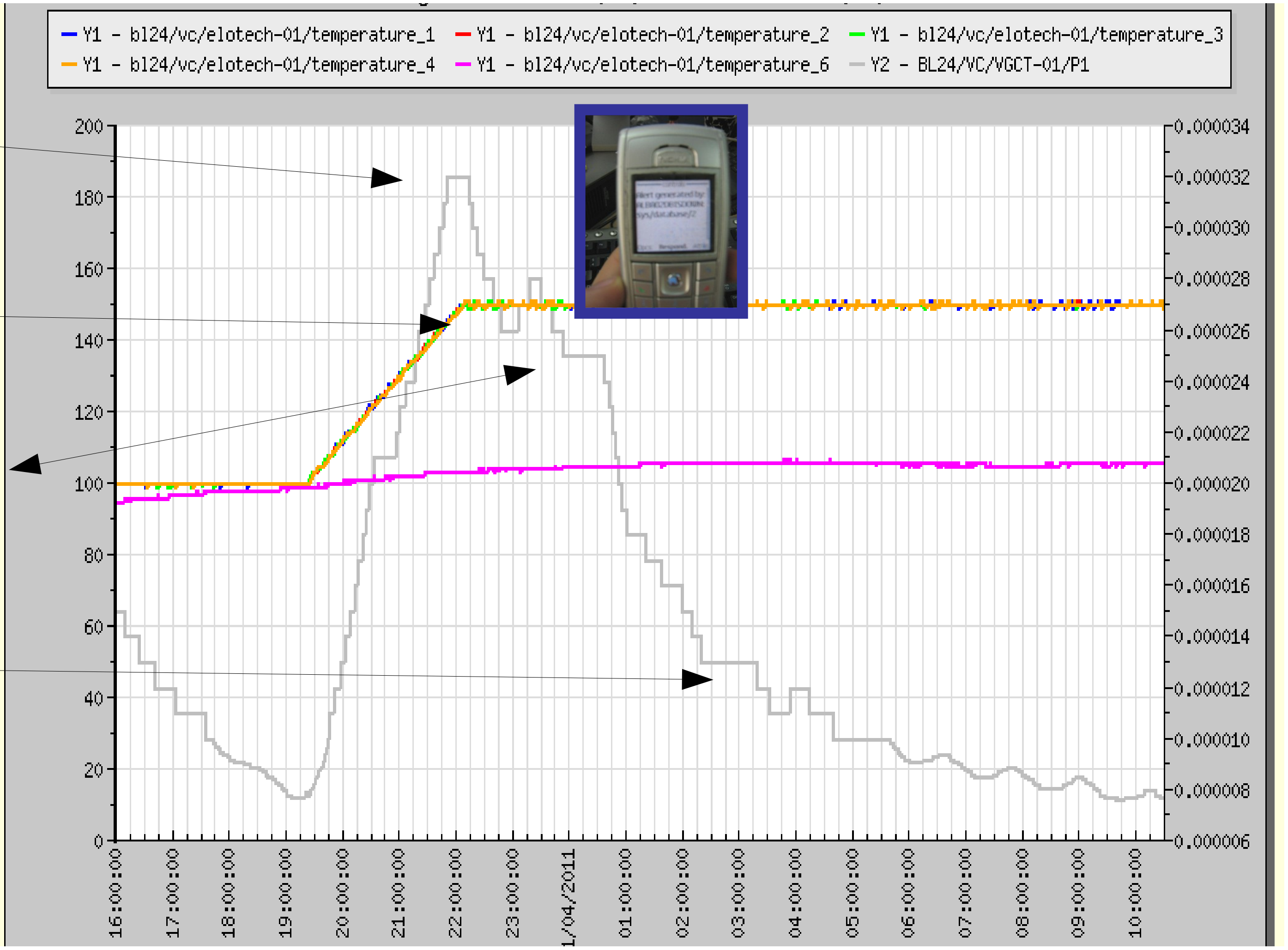
- Incidence
- ALARM
- Logging

- RECOVER
- REMINDER

- ACKNOWLEDGE

- RESET (Auto)
- Logging

- Further Actions?



Related Projects

ProcessProfiler
- Provides CPU stats (cpuUsage, memUsage, ...)
- Can be used to trigger alarms (complementary to **Nagios or Icinga**)

FestivalDS
- Beeping (using OS services)
- **Speech synthesizer** (using Festival linux package)
- Beep+Speech
- **Pop-up** notifications, using libnotify
- FestivalDS must run with the same user that is managing the desktop

e.g. ACTION(alarm:command:test/notif/controls01/popup,$ALARM,$DESCRIPTION,15)

Fandango.tango.*

- Caseless **regular expression** parsing/sorting/matching (cached, offline when possible)
  e.g. get_matching_[device/attributes/labels/alias/properties/hosts/...](regexp)

- TangoEval (evaluation of alarm-like code; with user-macros like FIND or GROUP)
- Smart singletons: TangoCommand, CachedAttributeProxy, TangoedValues
- ProxiesDict when UseTaurus = False

PyAlarm, PANIC, UI, and these devices are available at:
http://sourceforge.net/p/tango-ds/code/

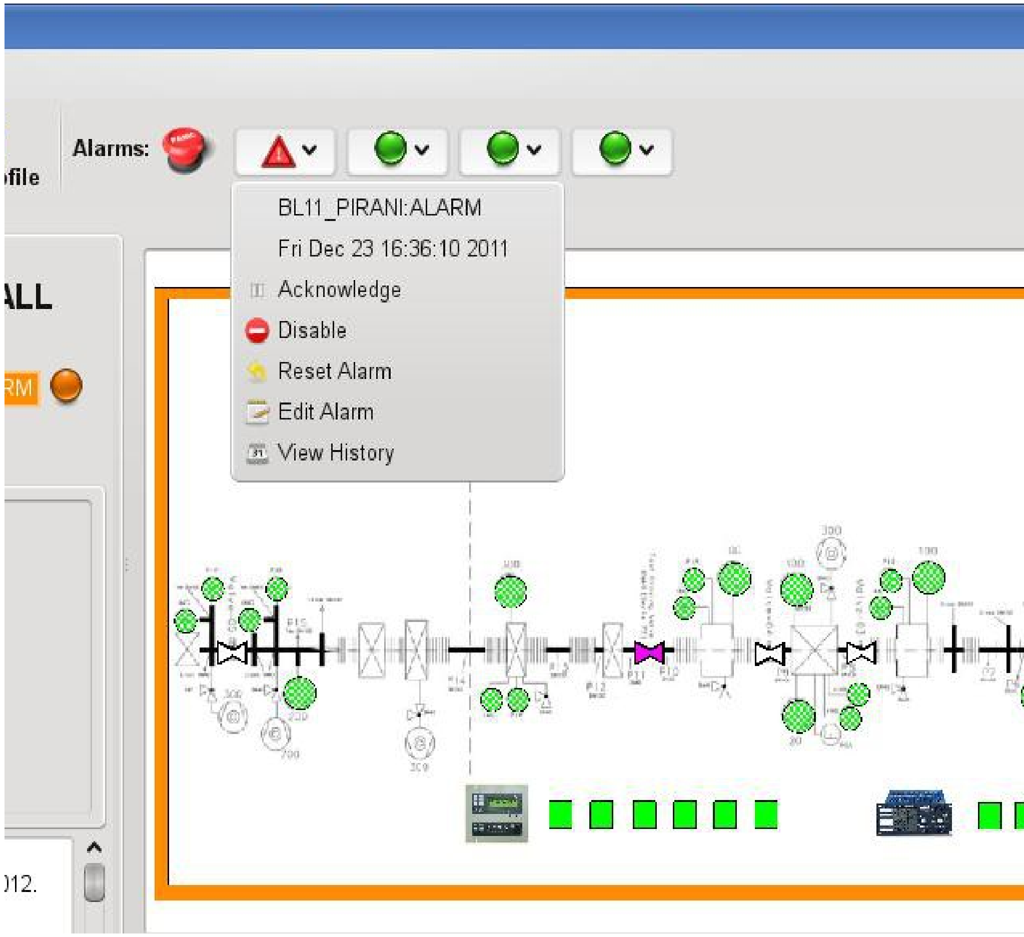
ACKNOWLEDGE

- **S**oleil and Elettra institutes for their Alarm and Archiving Systems, that inspired PANIC.
- The ALBA Accelerators division for the involvement in the development of the PANIC UI
- ALBA Vacuum section for their intensive usage of early PyAlarm
- MaxIV for their development of plugins for PyAlarm and Fandango

Pending TODO's in Panic:

- Multiprocess
- Use alarms to navigate clients.
- Use own DB for configuration and logging
- Persistent notification history
- Easier alarm-on-dropped-attributes-quality
- Events receiving/filtering/pushing
- Alarms Expiration Date (now using T(date))
- PhoneBook System-Wide
- Alarm based config instead of Device
- Taurus Alarm Toolbar
- Web-based config tool

PANIC still evolving ...



Alarms:
file
ALL
RM
BL11_PIRANI:ALARM
Fri Dec 23 16:36:10 2011
Acknowledge
Disable
Reset Alarm
Edit Alarm
View History
)12.