

TINE Studio (RBE\*)

# VIEWING ALARMS

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\*Real Best Ever

# ALARM SYSTEM

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## ✘ Alarms

- + Belong to a *registered device* !
- + Defined by: `/context/server/device` + **alarm code** + **starttime**.
- + Have a *history*
  - ✘ Tagged as '*new*', '*transient*', '*oscillating*', '*data changed*', '*heartbeat*', '*terminated*'.
- + Have '*static*' information defined by alarm code
  - ✘ alarm tag, various descriptive texts, url, severity, data format
- + Have '*dynamic*' information
  - ✘ descriptor, alarm time, alarm start time, alarm data
- + Alarm Message: *dynamic part* + cross-reference to *static part*.

# ALARM SYSTEM

✘ e.g. a magnet alarm :

*static* information:

*dynamic* information:

Property	Value
Alarm System	Magnete
Device Server	Mag.Main-EW1
Alarm Device	ME005
Device Text	HauptMagnet
FEC Name	PEMAG-EWEG1
Host Address	131.169.151.169
HostName	acclxpepwreweg1.desy.de
Location	bldg 20 rm MKKHausEG N1-6-R7 (R)
Alarm Text	PS IST-SOLL : Warnung
Severity	4
Alarm Data Text	Ist-Soll Amps
Alarm Tag	PS IST-SOLL WARNUNG
URL	
Code	524
Format	5
Dimension	1
Mask	0

Alarm Descriptor	Alarm Time	Duration
Data Changed Terminated	13:08:29.124 - Oct 05 CEST	34 sec
Data Changed	13:07:58.999 - Oct 05 CEST	4 sec
New	13:07:54.941 - Oct 05 CEST	4 sec
Data Changed Terminated	12:51:13.763 - Oct 05 CEST	38 sec
Data Changed	12:50:39.818 - Oct 05 CEST	4 sec
New	12:50:35.795 - Oct 05 CEST	4 sec
Data Changed Terminated	12:50:23.707 - Oct 05 CEST	39 sec
Data Changed	12:49:48.291 - Oct 05 CEST	4 sec
New	12:49:44.211 - Oct 05 CEST	4 sec

**Alarm Data: Ist-Soll Amps**  
-22.208591

Set Alarm Definition      Close

# ALARM SYSTEM

- ✘ *static* alarm definitions:
  - + Given by alarms.csv (or fec.xml or via API)
  - + Can be edited '*on-the-fly*'  
-> but changes are volatile !
  - + Best to leave '*alarm system*' = 0  
(signals the CAS to apply the alarm system registered for the server issuing the alarm).

**Edit Alarm Definition**

Any editorial changes will be lost upon the next server restart. Please notify the responsible parties if your edits need to be made permanent!

<b>Context</b>	PETRA	<b>System</b>	Magne
<b>Server</b>	Mag.Main-EXM	<b>Format</b>	INT32
<b>Data Size</b>	1	<b>Severity</b>	13
<b>Alarm Code</b>	532	<b>Mask</b>	0
<b>Tag</b>	> N PS ALARMS	<b>Text</b>	> 6 PS ALARMS
<b>Device Text</b>	HauptMagnet	<b>Data Text</b>	Num. PS Alarms
<b>URL</b>			

Add Close

# ALARM SYSTEM

## ✘ Alarm Code:

- + Systematic TINE error codes < 512
  - ✘ e.g. **hardware\_error** = 79
  - ✘ Have default severity (most have '8')
  - ✘ Have default alarm system = 0
- + User defined 512 and above (require corresponding static alarm definition in order to apply non-zero severity).

## ✘ Alarm System Numbers :

- + No particular systematics used
- + Alarm system 'tags' are more relevant in displays
- + e.g. alarm system 100 = 'Magnets'
- + '0' in server configuration => use canonical value !

## ✘ Alarm Severity:

- + 0 = none -> do not display
- + 1 -> 3 = information
- + 4 -> 8 = warning
- + 8 -> 11 = error
- + 13 -> 14 = impending doom
- + 15 = operations not possible

## ✘ Alarm Data:

- + 64 bytes to include 'other relevant information'

- Threshold exceeded:
  - Show the threshold and the value that exceed it !
- Hardware error:
  - Show the module address !

# ALARM SYSTEM

Only set to non-zero if setting alarms in another category than the server !

Java Instant Client

File Options Data Access Monitor Options Debug Options Help

Device Context: PETRA Device Subsystem: ALL Show Stock Properties

Device Server: BPM Device Name: BPM\_SWR\_13 Device Property: ALMDEFS

Data Size: 48 Data Type: STRUCT [ADSr4] Defined Alarm Descriptions Timeout

**/PETRA/BPM/BPM\_SWR\_13 ALMDEFS @ 18:26:26.52**

```
(0,0) [almTag] ->interlock
(0,1) [almCode] -> 543
(0,2) [almMask] -> 0
(0,3) [almSystem] -> 0
(0,4) [almSeverity] -> 1
(0,5) [almDataFormat] -> -1
(0,6) [almDataArraySize] -> 0
(0,7) [almOscWindow] -> 8
(0,8) [almOscPinned] -> 0
(0,9) [alarmText] ->alarm interlocked
(0,10) [deviceText] ->libera module
(0,11) [dataText] ->not supplied
(0,12) [url] ->not supplied
```

Buttons: Poll, Draw Mode, Log Scale, History, Suggest Decorations

Low severity => informational

No data

Useful reference to "further information"

# ALARM SYSTEM

Local Configuration issues !

- ✘ Every server has a ***Local Alarm System***
  - + ***Does nothing*** unless:
    - ✘ Alarms are ***defined*** (see alarms.csv, fec.xml, or API call, or code < 512)
      - \* code, severity, tag, + ...
    - ✘ Alarms are ***set*** (and cleared)
      - \* via **API** : setAlarm(), clearAlarm() (terminateAlarm())
      - \* via **alarm watch table** (see almwatch.csv, fec.xml, or API call)
      - \* **special cases**: Link error alarms, disk space alarms
  - + ***Manages*** the local alarm list
    - ✘ Sets the alarm 'descriptor' bits
      - \* '***new***', '***heartbeat***', '***oscillating***', '***data change***', '***transient***', '***terminated***'
    - ✘ Sets the alarm timestamps (start time, alarm time)
    - ✘ Collapses alarm ***storms*** to a single alarm.
  - + ***Offers alarms*** list to any interested clients (e.g. the **CAS**)
  - + ***Clears alarm list*** at the Central Alarm Server (**CAS**) upon start up.

# ALARM SYSTEM

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## × Alarm descriptors

- + ‘*new*’ applied to initial entry into the alarm list.
  - × *start time* = *alarm time* = time of setAlarm().
- + ‘*heartbeat*’ applied every 20 minutes
  - × *alarm time* updated
- + ‘*oscillating*’ applied when a ‘cleared’ alarm has been reset prior to termination
  - × *alarm time* updated
  - × Note: clearAlarm() augments a clear counter but by itself does not mark an alarm as terminated
  - × ‘*oscillation window*’ (default = 8) gives clear-termination threshold.
- + ‘*data change*’ applied when alarm data have changed
  - × *alarm time* updated
  - × ‘*data change window*’ (default = 30 sec) gives elapsed time before a new alarm time is applied.



# ALARM SYSTEM

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## ✘ Alarm descriptors

- + *'terminated'* applied when the alarm is declared as terminated.
  - ✘ *alarm time* = time of termination.
  - ✘ clear counter > oscillation window
  - ✘ removeAlarm() has been called.
- + *'transient'* applied when setAlarm() declares the alarm as transient.
  - ✘ *start time* = *alarm time* = time of setAlarm()
  - ✘ *'new'* and *'terminated'* applied simultaneously !
  - ✘ does not have a duration !
- + *'test'* (= *'suppress'*) is ignored by the CAS
- + *'disabled'* is set by the CAS

# ALARM SYSTEM (API)

## ✘ setAlarm() strategies

(alarm system managed):

Let the system check for  
oscillating alarms !

e.g. PSC Ist-Soll Abweichungen

## ✘ setAlarm() strategies

(user managed):

'remove' marks an alarm for  
termination immediately !  
(oscillation not possible)

e.g. RF Modulator trips

```
public void update()
{
    clearAlarms();
    int[] v = new int[numberValues];
    getReadbackValues(v);
    for (int i = 0; i < numberValues; i++)
    {
        if (v[i] > numberThreshold) setAlarm(512,v[i]);
    }
}
```

clear all alarms at start  
of update cycle

get the new data

set alarm if necessary

```
public void update()
{
    int[] v = new int[numberValues];
    getReadbackValues(v);
    for (int i = 0; i < numberValues; i++)
    {
        if (v[i] <= numberThreshold)
        {
            removeAlarm(512);
        }
        else
        {
            setAlarm(512,v[i]);
        }
    }
}
```

get the new data

either remove alarm

or set alarm

# ALARM SYSTEM (WATCH TABLE)

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- ✘ Automatic Alarms: *Alarm Watch Table*
  - + *Monitors* a specific **property** via a local call to the associated equipment module.
  - + *Checks readback value* against low and high *thresholds*
    - ✘ *value\_too\_high*, *value\_too\_low*
  - + or *Checks readback value* against a valid *pattern*
    - ✘ *invalid\_data*
  - + Supply monitor parameters via **almwatch.csv**, **fec.xml**, or **API**.
    - ✘ Can supply '*on-the-fly*' (but new information is volatile).
  - + All '*setAlarm()*' and '*clearAlarm()*' logic is done for you.



# ALARM SYSTEM (WATCH TABLE)

**New !**

✘ Can supply a link filter !

+ Column "FILTER" (.csv) or tag "FILTER" (.xml)

+ Parse filter string a la

*/context/server/device[property]<comparator>value*

✘ *<comparator>* is one of "=", "!=" , ">" , "<"

	A	B	C	D	E	F	G	H	I	J	K
1	LOCALNAME	DEVICENAME	PROPERTY	SIZE	FORMAT	SEVERITY	HIGH	LOW	HIGHWARN	LOWWARN	FILTER
2	SINEQM	#0	SINE	10	Float	15	500	0	400	10	/DESY2/GLOBALS[ParticleType]=1
3											
4											
5											

almwatch.csv

fec.xml

```
<REDIRECTION></REDIRECTION>
<ALARM>
  <DEVICE_NAME>SineGen0</DEVICE_NAME>
  <SEVERITY_HIGH>12</SEVERITY_HIGH>
  <SEVERITY_LOW>12</SEVERITY_LOW>
  <SEVERITY_HIGH_WARN>10</SEVERITY_HIGH_WARN>
  <SEVERITY_LOW_WARN>10</SEVERITY_LOW_WARN>
  <SYSTEM>100</SYSTEM>
  <VALUE_MASK></VALUE_MASK>
  <VALUE_NORMAL></VALUE_NORMAL>
  <COUNT_THRESHOLD>3</COUNT_THRESHOLD>
  <VALUE_HIGH>800</VALUE_HIGH>
  <VALUE_LOW>50</VALUE_LOW>
  <VALUE_HIGH_WARN>700</VALUE_HIGH_WARN>
  <VALUE_LOW_WARN>100</VALUE_LOW_WARN>
  <FILTER>/DESY2/GLOBALS[ParticleType]=1</FILTER>
</ALARM>
```

# ALARM SYSTEM (AUTOMATIC)

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## × Automatic Alarms:

+ 'link\_error' alarms (middle layer servers).

× analogous to 'hardware error' for front end server!

× important information is missing ?

× can suppress if desired

## × Disk space alarms:

+ 'low\_disk\_space' if given path does not have the registered minimum disk space.

× *Yes, there's an API call !*

# ALARM SYSTEM

---

- ✗ Central Alarm Server (**CAS**)
  - + Uses a '*pull*' strategy to acquire alarms
    - ✗ **NOT** a '*push*' strategy from the server!
  - + Has a *configuration database* giving which servers to listen to.
    - ✗ A server knows if the CAS is listening to it ! **and it's in the fec.log file !**
    - ✗ Servers 'clear' their alarm lists at the CAS when they start up.
      - \* */context/CAS/server* + "REMOVEALARMS"
  - + Can take '*actions*' upon specific alarms
    - ✗ Trigger events
    - ✗ Send emails (SMS)
- ✗ Alarms pulled via stock properties "**NALARMS**" and "**ALARMS**"

# ALARM SYSTEM

## ✘ Stock Property “NALARMS”

- + Provides a ‘snapshot’ of the current alarm situation at the server.

Acquire info for all devices

There are 40 alarms in the list

Most recent alarm time stamp

Highest alarm severity in the list

18 alarms have the most recent alarm time

40 alarms have the highest severity

Index	Value
(0,0)	40
(0,1)	1317833082
(0,2)	8
(0,3)	18
(0,4)	40



# ALARM SYSTEM

- ✘ Stock Property “ALARMS”
  - + Can provide range as input (default = all alarm times)
  - + And minimum severity as input (default = 0)

The screenshot shows the Java Instant Client interface. The window title is "Java Instant Client". The menu bar includes "File", "Options", "Data Access", "Monitor Options", "Debug Options", and "Help".

Configuration fields include:

- Device Context: PETRA
- Device Subsystem: ALL
- Device Server: PEVAC-NW.CDI
- Device Name: \*
- Device Property: ALARMS
- Data Size: 512
- Data Type: STRUCT
- Timeout: 1000

The main display area shows the title "/PETRA/PEVAC-NW.CDI/\* ALARMS @ 18:53:57.861" and a list of alarm data:

```
(0,0) [server] ->PEVAC-NW.CDI
(0,1) [device] ->INTLK-NW.status
(0,2) [almTag] ->Hardware error
(0,3) [almCode] -> 34
(0,4) [almTime] -> 1317833341
(0,5) [almMask] -> 0
(0,6) [almData] -> 67,65,78,80,69,65
(0,7) [almDataFormat] -> 4
(0,8) [almDataLen] -> 64
(0,9) [almSeverity] -> 8
(0,10) [almDescriptor] -> 6
(0,11) [almSystem] -> 0
```

On the right side, there are buttons for "Read" and "Poll", and a "Draw Mode" section with options: "Textbox" (selected), "Autoscale" (checked), "Log Scale" (unchecked), "History" (unchecked), "Suggest Decorations" (checked), and "Input Pane" (unchecked).

# ALARM SYSTEM

Server and FEC Remote Control Panel for DESY2

File View Tools Help

CNT-VXW	EVENTS	MAGHIST	SERTEMP-VEE
CNT-Energie-VXW	EVENTSTORE	MAGHIST-VXW	SigBergerLahrServer
CNT-Energie2-VXW	FECSTATS	MAGHIST2	SpilSignals
CSSPY	GLOBALS	MAGKONSOLE-VXW	STATE
CYCLER	GlobalsCollector	MAGLOOP-VXW	SynMagBeulen
D2_EHF	GlobalsInfo	MAGMUX-VXW	TargetMover.Cmd
D2ALARMSSTATE	HISTORY	Magnetstrom-VEE	TargetMover.Upd
D2Beam	IEVAC	MAGPOLBIT-VXW	TargetRevolver.CDI
D2BPM.cdi	IEVAC_D2	MAGRS232-VI	TIC-VXW
D2BPMS	IEVAC_L2	MAGSERVICE-VXW	Timing
D2BPMSstatus	IEVAC_OPR	MAGSOLL-VXW	TransferPetra
D2CanM1	IEVAC_STR	MAGTEILER-VXW	TriggerModule_D2
D2CanM2	IEVAC_SV	MAGUNI-VXW	USpannung-VEE
D2CanSerC1	IEVAC_SV2	MHFHISTORY	USpannung-VIE
D2Cool1.CDI	IEVAC_TPG	MHFTrcTranslator	USpannungTrace
D2GRAB.Analogue	IEVAC_TUP	Multiplex-VXW	UTZ-VXW
D2GRAB.Webcam	IEVAC_TW	MultiplexETG-VXW	VAC.ION_PUMP
D2JPEG.Analogue	IEVAC_VD	PandoraM	VAC.SV
D2JPEG.Webcam	IO-VXW	PeakStrp.CDI	VAC.TPG
D2KICKER.CDI	IO2-VXW	PeakStrpCtrl	ZyklusGenerator
D2MAGRMS.CDI	IOEnergie-VXW	PHASE-VXW	ZyklusGenerator.CDI
D2PiloProxy	Kicker	PIAlarm	ZzDoors

Selected FEC: SEKI.5  
 Selected Server [Local Name - on FEC]: Kicker [D2SeK]

Subsystem: INJ  
 Version: 4.3.12:5063  
 OS: JAVA  
 Address: 131.169.154.229  
 Port Offset: 5  
 Host Computer: AccXpD2R4e.desy.de  
 Responsible: M. Walla  
 Description: D2 device Server for SeKi  
 Location: bldg 30 rm 102 IE-R4 (5)  
 Importance: IMPORTANT  
 Server App. Version: 1.00.0000

FECs on this host:  
 D2TIMING.2 (DESY2)  
 ACCXPD2R4E.20 (SERVICE)  
 SEKI.5 (DESY2)  
 D2TRIM.3 (DESY2)

Servers on FEC SEKI.5  
 Kicker [D2SeK]

Report Attach FEC  
 Ping Control Restart

Host computer: alive  
 Server: alive  
 Daemon: alive (windows watchdog server)

Refresh Ping all Active: 199 of 200 (13:52:35)  
 Kicker: Active (13:52:47) Report

Summary: Servers in DESY2 for the selected subsystems

Context: DESY2  
 FEC Importance: ALL

Selected Subsystems

<input checked="" type="checkbox"/> DIAG	<input checked="" type="checkbox"/> HIST	<input checked="" type="checkbox"/> INJ	<input checked="" type="checkbox"/> INSTR
<input checked="" type="checkbox"/> MAG	<input checked="" type="checkbox"/> MEX	<input checked="" type="checkbox"/> MISC	<input checked="" type="checkbox"/> PINTLK
<input checked="" type="checkbox"/> RF	<input checked="" type="checkbox"/> SER	<input checked="" type="checkbox"/> TIM	<input checked="" type="checkbox"/> VAC
<input checked="" type="checkbox"/> VIDEO	<input type="checkbox"/> WDOG	<input type="checkbox"/> TEST	

ALL NONE

OS Color Code  
 Dos Unix VxWorks VMS Win16 Win32 Java

Activity Contracts Clients Alarms Log Files Stats Histories Commands Settings IC

Server: Kicker  
 Nr of alarms: 8  
 Highest severity: 8 at 9  
 Most recent: 8 at Wed Nov 24

	#1	#2	#3	#4	#5
server	Kicker	Kicker	Kicker	Kicker	Kicker
device	Septum26A_R	Septum26A_R	Septum26A_R	Septum26A_R	Septum26B...
almTag	Kuehlwasser	Fuehrung lokal	Kurzschliesser	Personeninterlock	Kuehlwasser
almCode	597	598	599	600	601
timestamp	1385037569	1385037569	1385037569	1385037569	1385037569
timestampUsec	0	0	0	0	0
starttime	1385031564	1385031564	1385031564	1385031564	1385031564
starttimeUsec	605000	605000	605000	605000	605000
almMask	0	0	0	0	0
almData	79,-1,0,0,0,0,0,...	79,-1,0,0,0,0,0,...	79,-1,0,0,0,0,0,...	79,-1,0,0,0,0,0,...	79,-1,0,0,0,...
almDataFormat	0	0	0	0	0
almDataArraySize	0	0	0	0	0
severity	9	9	9	9	9
descriptor	2	2	2	2	2
almSystem	400	400	400	400	400

13:52:46: Normal

# ALARM SYSTEM

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- × The Central Alarm Server (**CAS**)
  - + Central service for *each Context* (facility)
  - + Monitors alarms for *selected servers*
    - × collects alarms from their local alarm system.
    - × sets 'not responding' alarms for missing updates.
  - + *Takes 'action'* for selected alarms
    - × trigger events
    - × send emails
  - + *Archives* alarms
  
  - + *Partner for the alarm viewer*

# ALARM SYSTEM DATABASE MANAGER

Manages CAS Entries !

The screenshot displays the 'Alarm Database Manager: LINAC2' application. The interface includes a menu bar (File, Options, Navigate, Help) and a tree view on the left showing a hierarchy of servers under 'Servers in CAS'. The 'Server and Alarm Configuration' panel is active, showing fields for Context (LINAC2), Device Server (ARCHIVER), Alarm System (Kontrollen), and Subsystem (SER). Below this is the 'Action Items' section, which includes a 'Target Alarm Code' dropdown set to '<999> Not Responding', a 'Mail To' field with 'Josef.Wilgen@desy.de', and a list of current action items. The status bar at the bottom indicates '10:35:12: Data loaded.'

**Servers in CAS**

- DESY2
- FLASH
- HASYLAB
- LINAC2
- PETRA
- PITZ
- REGAE
- SITE
- TEST
- TTF2

**Server and Alarm Configuration**

**CAS Device Server List**

Context: LINAC2  
Device Server: ARCHIVER  
Alarm System: Kontrollen  
Subsystem: SER

**Extra Alarm Systems**

**Action Items**

Target Alarm Code: <999> Not Responding  
Mail To: Josef.Wilgen@desy.de  
Event Trigger:

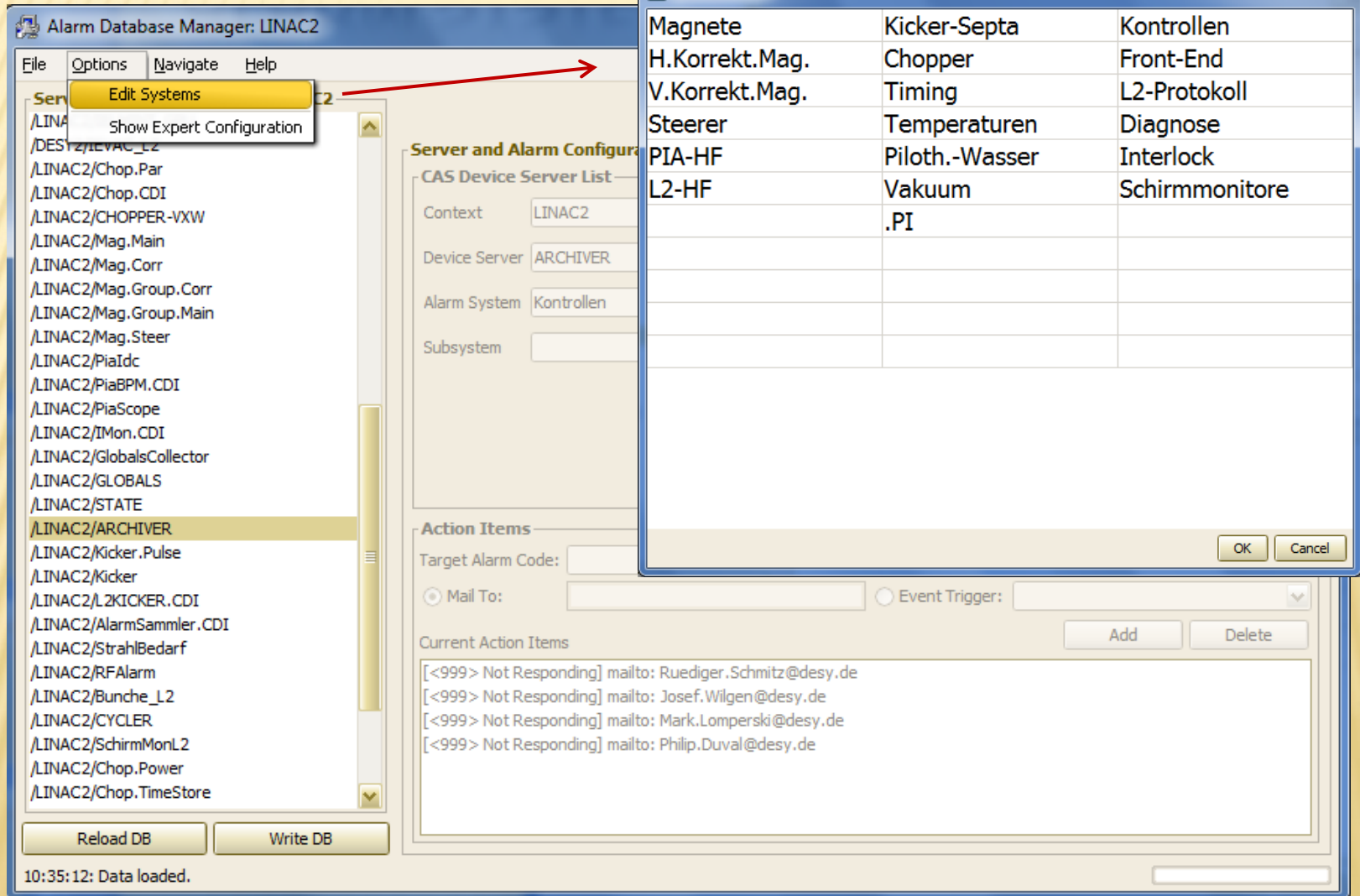
**Current Action Items**

- [<999> Not Responding] mailto: Ruediger.Schmitz@desy.de
- [<999> Not Responding] mailto: Josef.Wilgen@desy.de
- [<999> Not Responding] mailto: Mark.Lomperski@desy.de
- [<999> Not Responding] mailto: Philip.Duval@desy.de

10:35:12: Data loaded.

# ALARM SYSTEM DATABASE MANAGER

## ✘ Alarm Systems manager:



The screenshot shows the 'Alarm Database Manager: LINAC2' application. The 'Edit Systems' menu item is highlighted, and a red arrow points to it. An 'Alarm Systems' dialog box is open, displaying a table of alarm systems and their associated components.

Alarm System	Subsystem	Component
Magnete	Kicker-Septa	Kontrollen
H.Korrekt.Mag.	Chopper	Front-End
V.Korrekt.Mag.	Timing	L2-Protokoll
Steerer	Temperaturen	Diagnose
PIA-HF	Piloth.-Wasser	Interlock
L2-HF	Vakuum	Schirmmonitore
	.PI	

The dialog box also includes fields for 'Context' (LINAC2), 'Device Server' (ARCHIVER), 'Alarm System' (Kontrollen), and 'Subsystem'. Below the table, there are 'Action Items' with a 'Target Alarm Code' field and radio buttons for 'Mail To' and 'Event Trigger'. The 'Current Action Items' list includes:

- [<999> Not Responding] mailto: Ruediger.Schmitz@desy.de
- [<999> Not Responding] mailto: Josef.Wilgen@desy.de
- [<999> Not Responding] mailto: Mark.Lomperski@desy.de
- [<999> Not Responding] mailto: Philip.Duval@desy.de

The status bar at the bottom left shows '10:35:12: Data loaded.'

# ALARM VIEWER

Display Information from the CAS only!

Alarm Viewer: LINAC2


File View Options Navigate Help

Context

- Add To Watch Table...
- Open Filter Dialog...
- Suspend Display
- Show Active Alarms Only
- Collapse Equal Alarms
- Collapse Alarms Events
- Show Hidden Systems
- Select Alarm Systems
- Sound Notifications (local)
- Test Sound (local)

Thu Nov

Severity >= 0 Selected/Total No. of Alarms: 6/6 Active Alarms Only (134 Disabled)

	Error	Warning	
	<b>1</b>	<b>4</b>	
Mag	0 0 0	Kicker-Septa	0 0 0
H.K	0 0 0	Chopper	1 0 0 0
V.Korrekt.Mag.	0 0 0	Timing	0 0 0
Steerer	0 0 0	Temperaturen	0 0 0
PIA-HF	0 0 0	Piloth.-Wasser	30 0 0 0
L2-HF	2 0 0 2	Vakuum	1 0 0
		Kontrollen	34 0 0 0
		Front-End	34 0 0 0
		L2-Protokoll	33 0 1 2
		Diagnose	0 0 0
		Interlock	0 0 0
		Schirmmonitore	0 0 0

Alarm Display  Live  Archive

System	Device Name	Message	Sev	Alarm Descriptor	Alarm Time	Duration
L2-Protokoll	Modulator09	Shunt Diode (Fehlanpassung)	8	Heartbeat	11:51:50.000 - Nov 21 CET	20.0 min
L2-HF	Modulator09	Shunt Diode (Fehlanpassung)	8	Heartbeat	11:51:50.000 - Nov 21 CET	20.0 min
L2-Protokoll	Modulator08	Modulator Tueren offen	8	Heartbeat	11:44:40.000 - Nov 21 CET	40.0 min
L2-HF	Modulator08	Modulator Tueren offen	8	Heartbeat	11:44:40.000 - Nov 21 CET	40.0 min
Vakuum	Sect2/GP KLY2	GP Schwelle S1 fuer HF Interlock	15	Heartbeat Oscillating	11:39:05.504 - Nov 21 CET	40.0 min
L2-Protokoll	Sect2/GP KLY2	GP Schwelle S1 fuer HF Interlock	9	Heartbeat Oscillating	11:39:05.504 - Nov 21 CET	40.0 min

11:51:41: Alarms loaded.

# ALARM VIEWER

## ✘ Disabling alarms ...

Alarm Viewer: DESY2

File View Options Navigate Help

Context: DESY2

Fatal	Error	Warning	Alarm Display			
<b>8</b>	<b>8</b>	<b>6</b>	<input checked="" type="radio"/> Live <input type="radio"/> Archive			
Wed Nov 20 10:45:24 Warning Severity >= 0 Selected/Total No. of Alarms: 22/22 Active Alarms Only (24 Disabled)						
<b>Magnete</b>	6 0 0	Chopper	0 0 0	Kontrollen	8 0 0	4
Korr.Mag.	0 0 0	Kicker-Septa	5 0 0	Front End	8 0 0	0
LWeg.Mag.	0 0 0	Instrument.	0 0 0	Middag.	0 0 0	0
LWeg.Korr.Mag.	0 0 0	Vakuum	0 0 0	hlung	0 0	1
<b>HF</b>	3 1	Timing	0 0 0	Interlock	1 0	0

Disabled Alarms

- Alarm Analysis
- Deselect All
- Show All Servers in this Subsystem
- Suspend

Disable (Suppress) Active Alarms

Show Disabled (Suppressed) Alarms

Show the Table of Currently Disabled Alarm

System	Device Name	Message	Sev	Alarm Descriptor	Alarm Time	Duration
Magnete	QL 124-126	PS AUS FEHLER	13	Heartbeat Data Changed	10:45:21.470 - Nov 20 CET	51.7 hr
Magnete	DIOLW2	PS AUS FEHLER	13	Heartbeat	10:45:18.469 - Nov 20 CET	51.7 hr
Magnete	Main-LW	> N PS ALARMS	13	Heartbeat	10:43:22.603 - Nov 20 CET	18.6 hr
Magnete	ML 112-123	PS AUS FEHLER	13	Heartbeat Data Changed	10:38:20.039 - Nov 20 CET	51.5 hr
Magnete	QL 113-117	PS AUS FEHLER	13	Heartbeat Data Changed	10:26:45.428 - Nov 20 CET	51.4 hr
Magnete	ML 121	PS AUS FEHLER	13	Heartbeat Data Changed	10:26:02.384 - Nov 20 CET	51.3 hr

09:58:49: Alarms loaded.

# ALARM VIEWER

## ✘ Disabled at the **CAS** !

- + **Note**: the server will still deliver the alarm !
- + And **remember** (!): if the CAS is NOT monitoring a server then the viewer will NOT show the alarm !

Enable	Server	Device Name	Message	Sev	Comment	Disabled By	Disabled At	Active
<input type="checkbox"/>	Kicker	Kicker2_PInj	5V-Netzteil	9	wird nicht gebraucht	HAAR	09:15:03.000 - Nov 07	NOT ACTIVE
<input type="checkbox"/>	Kicker	Kicker2_PInj	Luefter (24V)	9	wird nicht gebraucht	HAAR	09:15:03.000 - Nov 07	NOT ACTIVE
<input type="checkbox"/>	Kicker	Kicker2_PInj	Triggerfrequenz	9	wird nicht gebraucht	HAAR	09:15:03.000 - Nov 07	NOT ACTIVE
<input type="checkbox"/>	Kicker	Kicker2_PInj	Halbleiterschalter	9	wird nicht gebraucht	HAAR	09:15:03.000 - Nov 07	NOT ACTIVE
<input type="checkbox"/>	Kicker	Kicker2_PInj	Kurzschliesser	9	Wird nicht gebraucht	HAAR	09:13:22.000 - Nov 07	NOT ACTIVE

09:13:22.000 - Nov 07

OK Cancel Apply



# ALARM VIEWER (ANALYSIS)

Alarm Analysis

Order By:  Device  Server  Code  Severity

#	Device	Server	Code	Sever...	Tag	Al. Data	Al. Data Text	Descriptor	St. Time	Duration
0	D	Mag.Main-NO1	523	9	PS IST-SOLL ...	-3.0945296	Ist-Soll Amps	Terminated	10:39:52.404 ...	7 sec
1	- -	- -	- -	- -	PS IST-SOLL ...	-592.02563	Ist-Soll Amps	Data Change...	10:49:36.639 ...	11 sec
2	- -	- -	524	4	PS IST-SOLL ...	41.684597	Ist-Soll Amps	Terminated	07:01:28.390 ...	7 sec
3	- -	- -	- -	- -	PS IST-SOLL ...	50.35477	Ist-Soll Amps	Terminated	07:01:58.708 ...	8 sec
4	- -	- -	- -	- -	PS IST-SOLL ...	-0.65918976	Ist-Soll Amps	Data Change...	10:39:54.427 ...	16 sec
5	- -	- -	- -	- -	PS IST-SOLL ...	-50.006866	Ist-Soll Amps	Terminated	10:43:07.417 ...	6 sec
6	- -	- -	- -	- -	PS IST-SOLL ...	50.18082	Ist-Soll Amps	Terminated	10:44:04.046 ...	7 sec
7	- -	- -	- -	- -	PS IST-SOLL ...	-50.492104	Ist-Soll Amps	Terminated	10:45:00.709 ...	7 sec
8	- -	- -	- -	- -	PS IST-SOLL ...	39.972534	Ist-Soll Amps	Terminated	10:45:18.924 ...	6 sec
9	- -	- -	- -	- -	PS IST-SOLL ...	51.151295	Ist-Soll Amps	Terminated	10:45:56.277 ...	8 sec
10	- -	- -	- -	- -	PS IST-SOLL ...	-40.99794	Ist-Soll Amps	Terminated	10:46:21.547 ...	6 sec
11	- -	- -	- -	- -	PS IST-SOLL ...	-51.14214	Ist-Soll Amps	Terminated	10:47:00.959 ...	7 sec
12	- -	- -	- -	- -	PS IST-SOLL ...	49.70474	Ist-Soll Amps	Terminated	10:48:33.942 ...	6 sec
13	- -	- -	- -	- -	PS IST-SOLL ...	-52.030212	Ist-Soll Amps	Terminated	10:48:57.238 ...	7 sec
14	- -	- -	- -	- -	PS IST-SOLL ...	51.050583	Ist-Soll Amps	Terminated	10:50:40.426 ...	7 sec
15	- -	- -	- -	- -	PS IST-SOLL ...	-51.508354	Ist-Soll Amps	Terminated	10:51:44.148 ...	7 sec
16	- -	- -	- -	- -	PS IST-SOLL ...	38.4802	Ist-Soll Amps	Terminated	10:52:08.433 ...	7 sec
17	- -	- -	- -	- -	PS IST-SOLL ...	48.28565	Ist-Soll Amps	Terminated	10:52:48.890 ...	6 sec
18	- -	- -	- -	- -	PS IST-SOLL ...	-41.37331	Ist-Soll Amps	Data Change...	10:55:41.961 ...	12 sec
19	IME186	Mag.Main-EW2	519	13	PS AUS FEHL...	5263360; 103...	Status: Gesamt, PSC, Reg1, Reg2	Data Change...	10:16:51.669 ...	13 sec
20	- -	- -	524	4	PS IST-SOLL ...	75.73816	Ist-Soll Amps	Terminated	07:05:27.783 ...	6 sec
21	- -	- -	- -	- -	PS IST-SOLL ...	-92.17213	Ist-Soll Amps	Terminated	10:41:20.226 ...	7 sec
22	- -	- -	- -	- -	PS IST-SOLL ...	91.32525	Ist-Soll Amps	Terminated	10:42:09.772 ...	8 sec
23	ME005	Mag.Main-EW1	- -	- -	PS IST-SOLL ...	22.255589	Ist-Soll Amps	Data Change...	07:05:02.587 ...	35 sec
24	- -	- -	- -	- -	PS IST-SOLL ...	-22.717022	Ist-Soll Amps	Data Change...	10:40:47.575 ...	39 sec
25	- -	- -	- -	- -	PS IST-SOLL ...	22.35813	Ist-Soll Amps	Data Change...	10:41:38.099 ...	39 sec
26	- -	- -	- -	- -	PS IST-SOLL ...	-22.49485	Ist-Soll Amps	Data Change...	10:55:17.294 ...	37 sec
27	- -	- -	526	- -	PS EIN : WAR...	53512; 13421...	Status: Gesamt, PSC, Reg1, Reg2	Data Change...	10:31:43.660 ...	8.2 min
28	ME163	Mag.Main-EW2	519	13	PS AUS FEHL...	5263360; 103...	Status: Gesamt, PSC, Reg1, Reg2	Terminated	10:16:51.669 ...	10 sec
29	- -	- -	524	4	PS IST-SOLL ...	-88.78462	Ist-Soll Amps	Terminated	10:41:20.226 ...	8 sec
30	- -	- -	- -	- -	PS IST-SOLL ...	87.47997	Ist-Soll Amps	Terminated	10:42:09.772 ...	9 sec
31	- -	- -	- -	- -	PS IST-SOLL ...	-1.9455254	Ist-Soll Amps	Data Change...	10:42:19.854 ...	13 sec
32	Main-W	Mag.Main-W	532	13	> N PS ALAR...	6	Num. PS Alarms	Heartbeat Dat...	07:02:20.178 ...	3.1 hr
33	Main-SL	Mag.Main-SL	- -	- -	> N PS ALAR...	9	Num. PS Alarms	Heartbeat Dat...	07:02:20.828 ...	3.1 hr
34	Main-O	Mag.Main-O	- -	- -	> N PS ALAR...	7	Num. PS Alarms	Heartbeat Dat...	07:02:21.900 ...	3.1 hr
35	- -	- -	- -	- -	> N PS ALAR...	8	Num. PS Alarms	Terminated	10:45:13.381 ...	13 sec
36	Main-NL	Mag.Main-NL	- -	- -	> N PS ALAR...	9	Num. PS Alarms	Heartbeat Dat...	07:02:21.787 ...	3.2 hr
37	Main-NO1	Mag.Main-NO1	- -	- -	> N PS ALAR...	6	Num. PS Alarms	Data Change...	07:01:29.401 ...	35 sec
38	- -	- -	- -	- -	> N PS ALAR...	17	Num. PS Alarms	Heartbeat Dat...	07:02:12.853 ...	1.2 hr
39	- -	- -	- -	- -	> N PS ALAR...	17	Num. PS Alarms	New Terminat...	08:15:48.583 ...	49 sec
40	- -	- -	- -	- -	> N PS ALAR...	9	Num. PS Alarms	Heartbeat Dat...	08:17:08.526 ...	1.9 hr

Refresh Save Close

# ALARM MESSAGE VIEWER

Alarm Message Viewer: LINAC2/L2-Protokoll

File Options Help

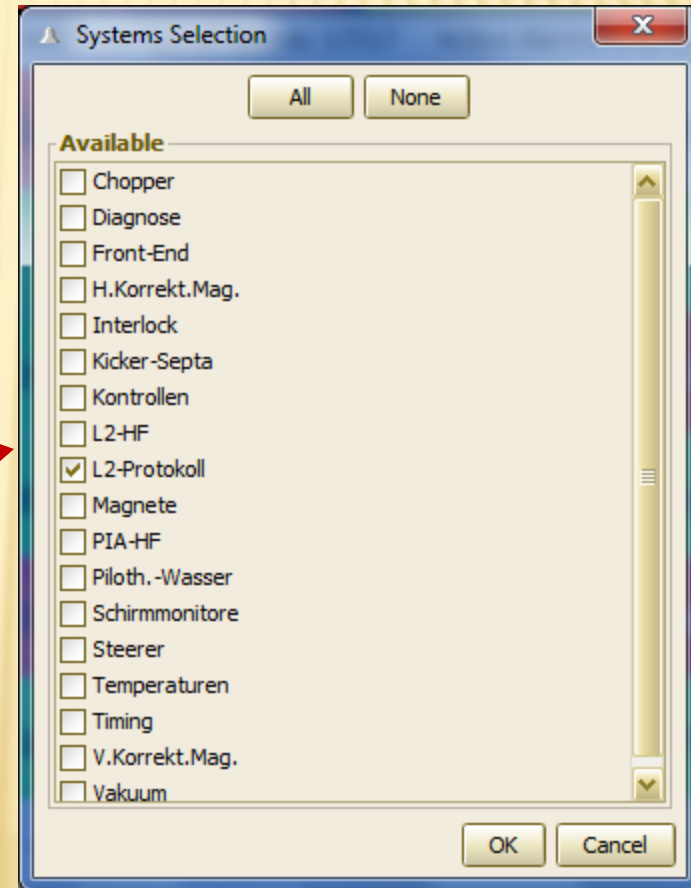
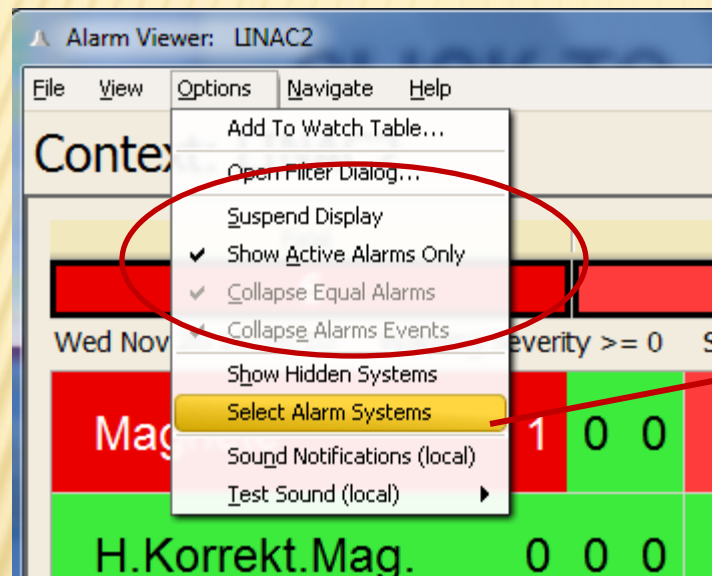
Last: 20.11.2013-10:09:47 Active/All: 7/265

Generated	Device	Message	Code	Cleared	Duration
20.11.2013-10:09:47 CET	AlgDuntrgAusWgVakVtl	Guntr. aus wegen Vakuumventil	559	20.11.2013-10:10:19 CET	32 sec
20.11.2013-10:09:43 CET	V10/L2	Schieberventil geschlossen	614	20.11.2013-10:10:32 CET	49 sec
20.11.2013-10:09:42 CET	V10/L2	Schieberventil undefiniert	615	20.11.2013-10:11:18 CET	1.5 min
20.11.2013-10:08:17 CET	AlgDuntrgAusWgVakVtl	Guntr. aus wegen Vakuumventil	559	20.11.2013-10:09:00 CET	43 sec
20.11.2013-10:08:12 CET	V10/L2	Schieberventil geschlossen	614	20.11.2013-10:09:13 CET	1.0 min
20.11.2013-09:30:25 CET	Modulator09	Modulator Tueren offen	702		1.4 hr
20.11.2013-09:29:25 CET	Modulator10	Modulator Tueren offen	704	20.11.2013-09:30:13 CET	47 sec
20.11.2013-09:28:03 CET	Modulator11	Modulator Tueren offen	702	20.11.2013-09:29:02 CET	58 sec
20.11.2013-09:27:50 CET	Modulator12	Vorheizen laeuft	752	20.11.2013-09:43:01 CET	15.1 min
20.11.2013-09:27:27 CET	Modulator12	Modulator Tueren offen	704	20.11.2013-09:37:34 CET	10.1 min
20.11.2013-09:26:52 CET	Modulator12	Thyatronheizung ist aus.	779	20.11.2013-09:27:48 CET	55 sec
20.11.2013-09:24:28 CET	Modulator11	Wasserfehler HVPS	550	20.11.2013-09:24:56 CET	27 sec
20.11.2013-09:23:03 CET	Modulator11	Wasserfehler Klystron-Collector	538	20.11.2013-09:24:56 CET	1.8 min
20.11.2013-09:21:24 CET	Modulator11	Wasserfehler Klystr. Tank+Mag...	606	20.11.2013-09:24:56 CET	3.5 min
20.11.2013-09:21:24 CET	Modulator11	Interlock Focus 3	574	20.11.2013-09:24:56 CET	3.5 min
20.11.2013-09:21:04 CET			562	20.11.2013-09:24:56 CET	3.5 min
20.11.2013-09:21:04 CET			546	20.11.2013-09:24:56 CET	3.5 min
20.11.2013-09:21:04 CET			542	20.11.2013-09:24:56 CET	3.5 min
20.11.2013-09:21:04 CET			552	20.11.2013-09:21:04 CET	27 sec
20.11.2013-09:21:04 CET			540	20.11.2013-09:21:04 CET	2.3 min
20.11.2013-09:21:04 CET			608	20.11.2013-09:21:04 CET	4.0 min
20.11.2013-09:21:04 CET			576	20.11.2013-09:21:04 CET	4.0 min
20.11.2013-09:21:04 CET			564	20.11.2013-09:21:04 CET	4.0 min
20.11.2013-09:21:04 CET			548	20.11.2013-09:21:04 CET	4.0 min
20.11.2013-09:21:04 CET			544	20.11.2013-09:21:04 CET	4.0 min
20.11.2013-09:16:40 CET			550	20.11.2013-09:16:40 CET	58 sec
20.11.2013-09:16:40 CET	Modulator09	Wasserfehler Klystron-Collector	538	20.11.2013-09:16:40 CET	2.7 min
20.11.2013-09:09:27 CET	RF104	Fehlfunktion des Senderstatus	516	20.11.2013-09:09:33 CET	6 sec
20.11.2013-08:46:09 CET	Modulator12	Wasserfehler Klystron-Body	544	20.11.2013-09:26:50 CET	40.6 min
20.11.2013-08:45:50 CET	Modulator12	Wasserfehler HVPS	552	20.11.2013-09:26:50 CET	40.9 min
20.11.2013-08:45:46 CET	Modulator12	Wasserfehler Klystr. Tank+Mag...	608	20.11.2013-09:26:50 CET	41.0 min
20.11.2013-08:45:46 CET	Modulator12	Interlock Focus 3	576	20.11.2013-09:26:50 CET	41.0 min
20.11.2013-08:45:46 CET	Modulator12	Interlock Focus 2	564	20.11.2013-09:26:50 CET	41.0 min

10:58:57: Alarm messages loaded successfully.

- Shows all alarms (terminated as well) for an alarm subsystem.
  - Live alarms in 'their color'.
- Sorted according to alarm 'start time'.

# ALARM VIEWER



# ALARM VIEWER

Alarm Viewer: LINAC2

File View Options Navigate Help

Context: LINAC2

System	Device Name	Message	Sev	CAS Code	Alarm Descriptor	Alarm Time	Duration
L2-Protokoll	Modulator09	Modulator Tueren offen	8	702	Heartbeat	11:10:30.000 - Nov 20 CET	1,6 hr
L2-Protokoll	Modulator02	Modulator Tueren offen	8	702	Heartbeat	11:08:46.000 - Nov 20 CET	26,0 hr
L2-Protokoll	Keyword	Keine Strahlfreigabe	15	526	Heartbeat	11:07:46.000 - Nov 20 CET	47,7 hr
L2-Protokoll	Modulator01	Modulator Tueren offen	15	704	Heartbeat	11:06:34.000 - Nov 20 CET	47,7 hr
L2-Protokoll	Main	> N PS ALARMS	13	660	Heartbeat	11:03:23.404 - Nov 20 CET	19,0 hr
L2-Protokoll	Modulator02	Temperatur Klystr. Foku...	8	666	Terminated	11:02:09.000 - Nov 20 CET	47,6 hr
L2-Protokoll	LncSumMldgModTank	Modulator Tank	9	521	Heartbeat Oscillating	11:01:30.159 - Nov 20 CET	47,4 hr
L2-Protokoll	LncSumMldgKlystFoc	Klystron Focus	9	522	Heartbeat Oscillating	10:59:09.009 - Nov 20 CET	5,0 hr
L2-Protokoll	AlgFODOKnDiv	FODO K. Leckw./Juebert...	9	560	Heartbeat Oscillating Ter...	10:22:31.654 - Nov 20 CET	2,0 hr
L2-Protokoll	V10/L2	Schieberventil undefiniert	7	615	Terminated	10:11:18.541 - Nov 20 CET	1,5 min
L2-Protokoll	V10/L2	Schieberventil geschlossen	15	614	Terminated	10:10:32.526 - Nov 20 CET	49 sec
L2-Protokoll	AlgDuntrgAusWgVakVtl	Guntr. aus wegen Vakuu...	9	559	Terminated	10:10:19.859 - Nov 20 CET	32 sec
L2-Protokoll	Modulator 12	Vorheizen laeuft	15	752	Terminated	09:43:01.000 - Nov 20 CET	15,1 min
L2-Protokoll	Modulator 12	Modulator Tueren offen	15	704	Terminated	09:37:34.000 - Nov 20 CET	10,1 min
L2-Protokoll	Modulator 10	Modulator Tueren offen	15	704	Terminated	09:30:13.000 - Nov 20 CET	47 sec
L2-Protokoll	Modulator 11	Modulator Tueren offen	8	702	Terminated	09:29:02.000 - Nov 20 CET	58 sec
L2-Protokoll	Modulator 12	Thyratronheizung ist aus.	15	779	Terminated	09:27:48.000 - Nov 20 CET	55 sec
L2-Protokoll	Modulator 12	Wasserfehler Klystron-B...	15	544	Terminated	09:26:50.000 - Nov 20 CET	40,6 min
L2-Protokoll	Modulator 12	Wasserfehler HVPS	15	552	Terminated	09:26:50.000 - Nov 20 CET	40,9 min
L2-Protokoll	Modulator 12	Interlock Focus 1	15	548	Terminated	09:26:50.000 - Nov 20 CET	41,0 min
L2-Protokoll	Modulator 12	Interlock Focus 2	15	564	Terminated	09:26:50.000 - Nov 20 CET	41,0 min
L2-Protokoll	Modulator 12	Interlock Focus 3	15	576	Terminated	09:26:50.000 - Nov 20 CET	41,0 min
L2-Protokoll	Modulator 12	Wasserfehler Klystr. Tan...	15	608	Terminated	09:26:50.000 - Nov 20 CET	41,0 min
L2-Protokoll	Modulator 12	Interlock Klystron Heizung	15	526	Terminated	09:26:50.000 - Nov 20 CET	1,0 hr
L2-Protokoll	Modulator 12	Wasserfehler Klystron-C...	15	540	Terminated	09:26:50.000 - Nov 20 CET	1,5 hr
L2-Protokoll	Modulator 11	Wasserfehler HVPS	8	550	Terminated	09:24:56.000 - Nov 20 CET	27 sec
L2-Protokoll	Modulator 11	Wasserfehler Klystron-C...	8	538	Terminated	09:24:56.000 - Nov 20 CET	1,8 min
L2-Protokoll	Modulator 11	Wasserfehler Klystron-B...	8	542	Terminated	09:24:56.000 - Nov 20 CET	3,5 min
L2-Protokoll	Modulator 11	Interlock Focus 1	8	546	Terminated	09:24:56.000 - Nov 20 CET	3,5 min
L2-Protokoll	Modulator 11	Interlock Focus 2	8	562	Terminated	09:24:56.000 - Nov 20 CET	3,5 min
L2-Protokoll	Modulator 11	Interlock Focus 3	8	574	Terminated	09:24:56.000 - Nov 20 CET	3,5 min
L2-Protokoll	Modulator 11	Wasserfehler Klystr. Tan...	8	606	Terminated	09:24:56.000 - Nov 20 CET	3,5 min
L2-Protokoll	Modulator 10	Wasserfehler HVPS	15	552	Terminated	09:21:04.000 - Nov 20 CET	27 sec
L2-Protokoll	Modulator 10	Wasserfehler Klystron-C...	15	540	Terminated	09:21:04.000 - Nov 20 CET	2,3 min
L2-Protokoll	Modulator 10	Wasserfehler Klystron-B...	15	544	Terminated	09:21:04.000 - Nov 20 CET	4,0 min
L2-Protokoll	Modulator 10	Interlock Focus 1	15	548	Terminated	09:21:04.000 - Nov 20 CET	4,0 min
L2-Protokoll	Modulator 10	Interlock Focus 2	15	564	Terminated	09:21:04.000 - Nov 20 CET	4,0 min

11:00:45: Alarms loaded.

# ALARM SYSTEM

## ✘ Availability

- + server : “/*<context>*/ALARMSTATE”
- + monitor *fatal alarms* for all alarm systems from CAS.
- + At least 1 alarm => system *NOT AVAILABLE*

The screenshot shows the Java Instant Client interface. The title bar reads "Java Instant Client". The menu bar includes "File", "Options", "Data Access", "Monitor Options", "Debug Options", and "Help".

Configuration fields include:

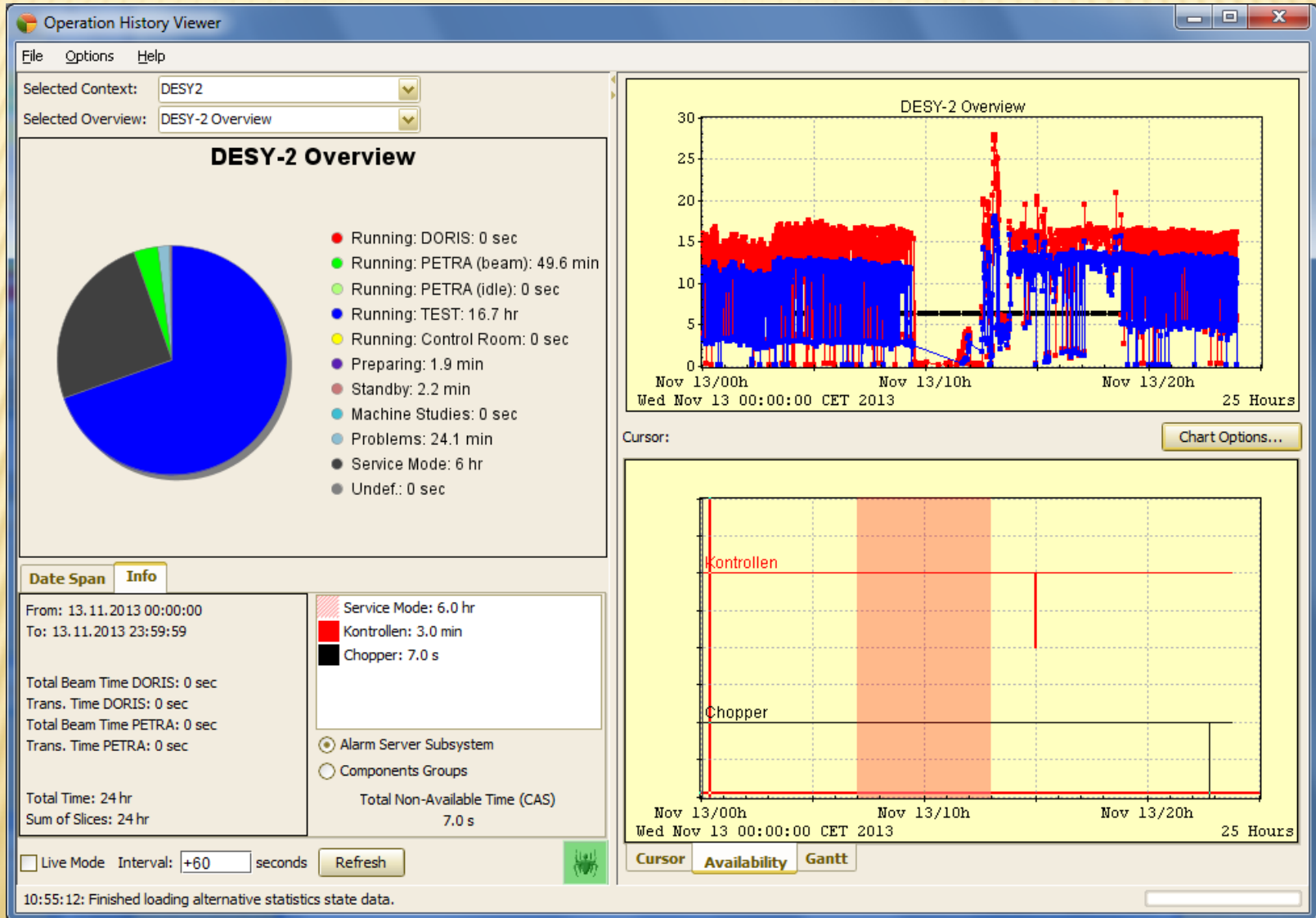
- Device Context: PETRA
- Device Subsystem: ALL
- Device Server: ALARMSTATE
- Device Name: Magnete
- Data Size: 100
- Data Type: INT32
- Device Property: NOTREADYCOUNT
- Device Property dropdown menu items: GROUPS, ISREADY, MEMBERS, NOTREADYCOUNT (selected), NOTREADYRUNNING, NUMALARMS

The main display area shows the following data:

```
/PETRA/ALARMSTATE/Magnete NOTREADYCOUNT @ 16:34:35.0  
(0,0) Magnete: 435494  
(0,1) H.Korrekt.Mag.: 2653243  
(0,2) V.Korrekt.Mag.: 2317531  
(0,3) e-Weg Korr.Mag.: 0  
(0,4) HF: 0  
(0,5) Piloth.-Wasser: 0  
(0,6) Temperaturen: 429  
(0,7) Kicker-Septa: 0  
(0,8) Orbit Feedback: 0  
(0,9) Feedback: 0  
(0,10) PIT: 0  
(0,11) Timing/TopUp: 0
```

Additional controls on the right include "Draw Mode" (set to Textbox), "Autoscale" (checked), "Log Scale" (unchecked), "History" (unchecked), "Suggest Decorations" (checked), and "Input Pane" (unchecked).

# ALARM SYSTEM (AVAILABILITY)



# ALARM SYSTEM REGIONS

Coming Soon to a Theater Near You!

Alarm Viewer: FLASH

File View Options Navigate Help

Context: FLASH

Fatal	Error	Warning
<b>3</b>	<b>0</b>	<b>0</b>

Thu Nov 21 08:57:04 Warning Severity >= 0 Selected/Total No. of Alarms: 3/3 Active Alarms Only

**Alarm Display**

Live  Archive

<b>Magnets</b>	<b>3</b>	0 0 0	Feedbacks	0 0 0	System	0 0 0
Kly + Mod	0 0 0	0 0 0	Timing	0 0 0	Hardware	0 0 0
LLRF	0 0 0	0 0 0	BPMs	0 0 0	Services	0 0 0
Kickers	0 0 0	0 0 0	BLMs	0 0 0	Alarm Server	0 0 0
Vacuum	0 0 0	0 0 0	Collimators	0 0 0	Archive Server	0 0 0
BIS	0 0 0	0 0 0	Infrastructure	0 0 0	Radiation	0 0 0

System	Device Name	Message	Sev	Alarm Descriptor	Alarm Time	Duration
Magnets	DIOTTF01	PS AUS FEHLER	13	New	08:57:00.685 - Nov 21 CET	3 sec
Magnets	D1FL2EXTR	PS AUS FEHLER	13	New	08:57:00.685 - Nov 21 CET	3 sec
Magnets	DIOTTF02	PS AUS FEHLER	13	New	08:57:00.685 - Nov 21 CET	3 sec

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
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08:56:42: Alarms loaded.