

TINE Studio News

June 12, 2019

Archives, Alarms, and other interesting tales ...

Archive Viewer

Self Entries ...

Archive Database Manager: TEST

File Configurations Navigate Options Help

Database Entries

Index	Active	Device Server	Device Name	Device Property
221	ENABLED	STATE	Pnotrunning	ERRCOUNTER.Procedure
222	ENABLED	PETRA/PETRAPLL-VI	#0	ALMWATCHTBL.hiThreshold
223	ENABLED	PETRA/PETRAPLL-VI	#0	ALMWATCHTBL.loThreshold
224	ENABLED	PETRA/BunchCurrents	Bunch-1	BunchCurrents
225	ENABLED	PETRA/BunchCurrents	Bunch-1	BunchCurrents.NAM
228	ENABLED	XFEL/VAC.ION_PUMP_FR	I1#.04GUN.01	AB_NAME
229	ENABLED	PETRA/PE_HF_History	Frequenz01	HOM_RadioLinks2D
230	ENABLED	XFEL/LASER.OPCUA	L2.NEOVAN	OPCUA.PLC1.rDiodeTem...
231	ENABLED	FLASH/FLAPP.GECCO	GECCO0	CrystalTemp
232	ENABLED	MSKLAB4/ZYKGEN-VXW	ZYK	Busy
233	ENABLED	MSKLAB4/ZYKGEN-VXW	ZYK	ProgLoad
234	ENABLED	SineServer	SineGen0	Value
236	ENABLED	PETRA.TEST/COMBIVAC-...	cm52-HEX21.RdPressure...	RECV
237	ENABLED	PETRA.TEST/COMBIVAC-...	cm52-HEX22.RdPressure...	RECV
238	ENABLED	PETRA.TEST/COMBIVAC-...	cm52-HEX23.RdPressure...	RECV
239	ENABLED	PETRA.TEST/COMBIVAC-...	cm52-HEX24.RdPressure...	RECV
240	ENABLED	PETRA.TEST/COMBIVAC-...	cm52-HEX25.RdPressure...	RECV
241	ENABLED	CombiVacTestML	COMBIVAC-CMS2	HXTimeMCArdPressOnly
242	ENABLED	CombiVacTestML	#0	HXTimeMCA.NAM
243	ENABLED	PETRA.TEST/COMBIVAC-...	cm52-HEX26.RdPressure...	RECV
244	ENABLED	PETRA.TEST/COMBIVAC-...	cm52-HEX27.RdPressure...	RECV
245	ENABLED	PETRA.TEST/COMBIVAC-...	cm52-HEX28.RdPressure...	RECV
246	ENABLED	PETRA.TEST/COMBIVAC-...	cm52-HEX29.RdPressure...	RECV
247	ENABLED	PETRA.TEST/COMBIVAC-...	cm52-HEX30.RdPressure...	RECV
248	ENABLED	PETRA.TEST/COMBIVAC-...	cm52-HEX31.RdPressure...	RECV
465	ENABLED	SELF/Self	#0	SELF
549	ENABLED	XFEL/ISOVAC8	*	P
550	ENABLED	XFEL/ISOVAC8	*	P
551	ENABLED	XFEL/ISOVAC9	*	P
552	ENABLED	XFEL/ISOVAC9	*	P
553	ENABLED	XFEL/ISOVAC10	*	P
554	ENABLED	XFEL/ISOVAC10	*	P
555	ENABLED	XFEL/ISO_SENS_PLC	*	SENS1.P_I
556	ENABLED	XFEL/ISO_SENS_PLC	*	SENS1.P_I

Reload DB Write DB Unlock DB DB locked by DUVAL

Index: 465

Apply Cancel

Data Collection Configuration

Context: SELF Server: Self

Device: #0 Property: SELF

Format: FLOAT Array Size: 1 Input Format: NULL Data Input: [Empty]

Filtering of Data Storage

NEVER
 ONCE
 ALWAYS
 FAST
 SLOW
 FIXTIME
 HRT
 STATUS
 VOLATILE
 NOPOI
 TEST
 EXTEST

Access Rate: 60000 ms

Archive Heartbeat: 900 sec

Property Viewing Configuration

ExternalValue,FLOAT,1,V,1000.0,-1000.0,0.0,0.0,LIN,1.0,0.0,float value,,,ALL

Maximum size [bytes]: 4 Remaining elements: 0

Keyword	Data Format	Size	Units	Max	Min
ExternalValue	FLOAT	1	V	1000.0	-1000.0

Abs. Tolerance: 0.0 Rel. Tolerance: 0.0 Plot Style: LIN Offset: 0.0 Scale: 1.0

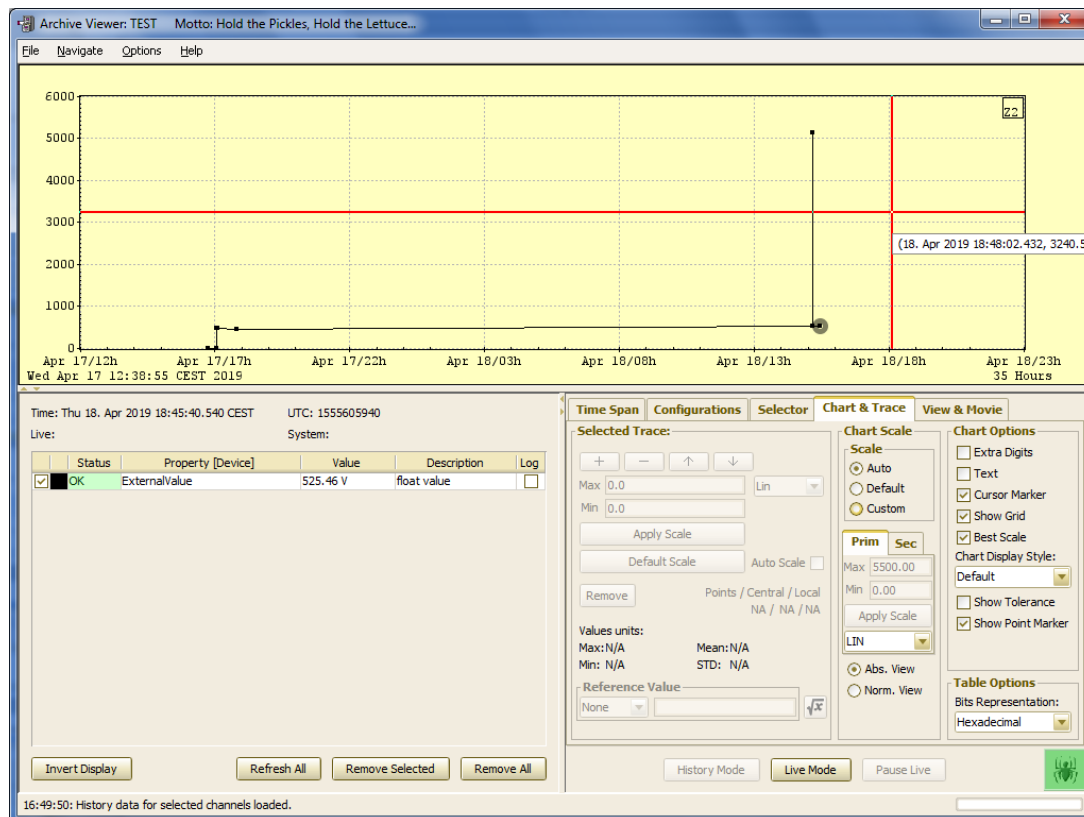
Description: float value Subsystem: ALL Associate: [Empty]

Bind To: [Empty]
 Spectrum Axis: [Empty]

Apply Add Remove

Archive Viewer

- Send 'WRITE' call with property = KEYWORD (here: 'ExternalValue') and with the data, timestamp, and system stamps to archive :



Archive Viewer

```
int PutArchivedData ( char * devsrv,  
                    BYTE * data,  
                    int   dataFmt,  
                    int   num,  
                    double dateTime,  
                    int   sysStamp,  
                    int   usrStamp  
                    )
```

puts data and timestamps into the central archive system for 'SELF' entries

Supported data types for self entries include (arrays of) any numerical type and nothing else.

Parameters:

devsrv must be the full device server name for the target central archiver. The context is primarily used.
data is a reference to the data array to be sent to the archive server.
dataFmt is the format of the data passed
num is the number of elements in the data array reference
dateTime is the UTC double timestamp of the data passed.
sysStamp is the system stamp of the data passed.
usrStamp is the user stamp of the data passed.

Returns:

0 if successful, otherwise a TINE completion code which can be interpreted by a call to `GetLastError()`.

References `DUNION::bptr`, `DTYPE::dArrayLength`, `DTYPE::data`, `DTYPE::dFormat`, and `ExecLinkEx()`.

```
./tputhistry
```

```
Puts data and timestamps into the central archive system for 'SELF' entries
```

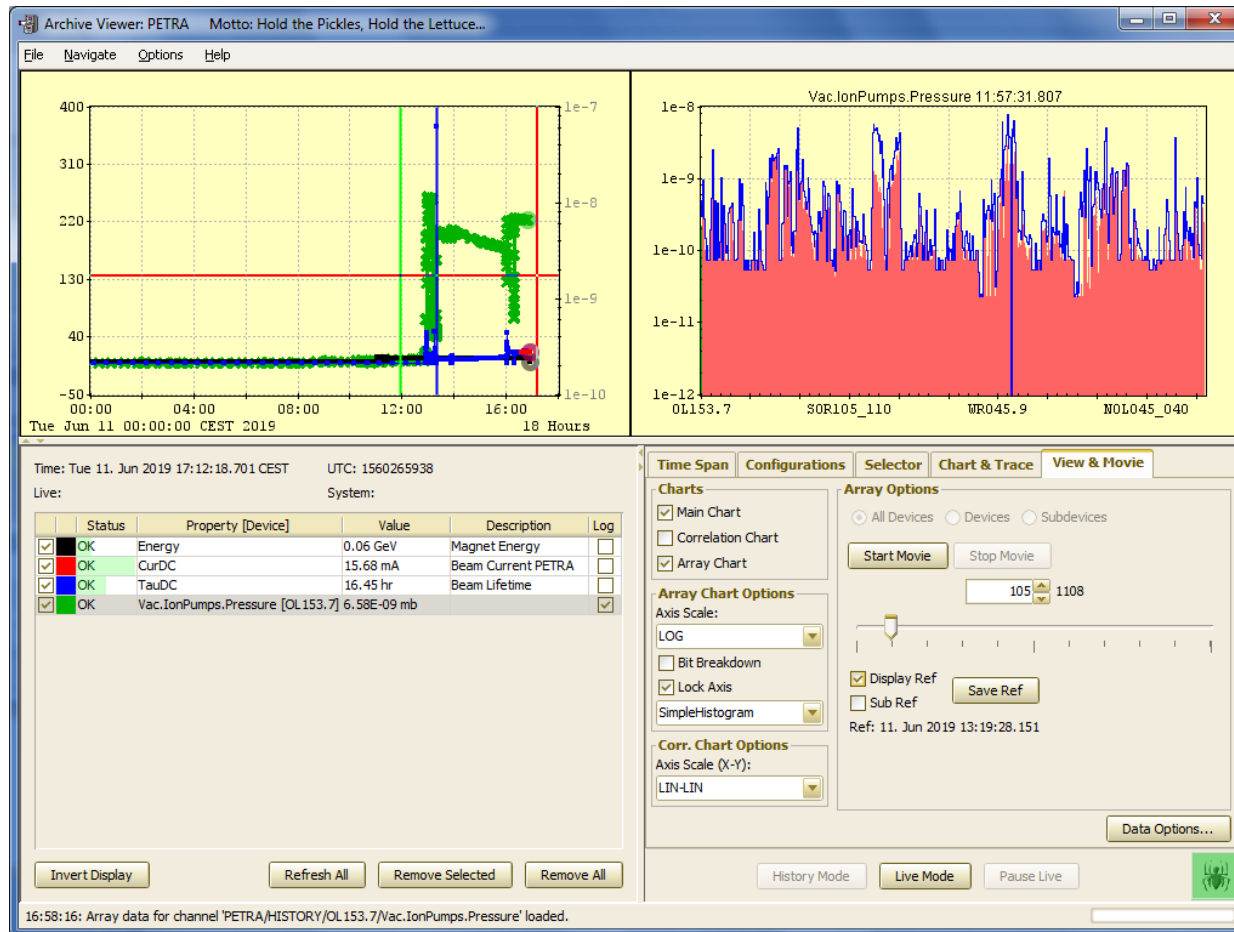
```
Usage :
```

```
    e.g. tputhistry PETRA MySelfEntry 1 2 3 4 5 /t=now /s=42 /u=1
```

```
Usage : tputhistry <context> <keyword> [/t=<timestamp> /s=<systemstamp> /u=<userstamp>]
```

Archive Viewer

- MCA and Trace Records ...
 - Can save an entire array of something at a given time (and this is more than useful !) ...

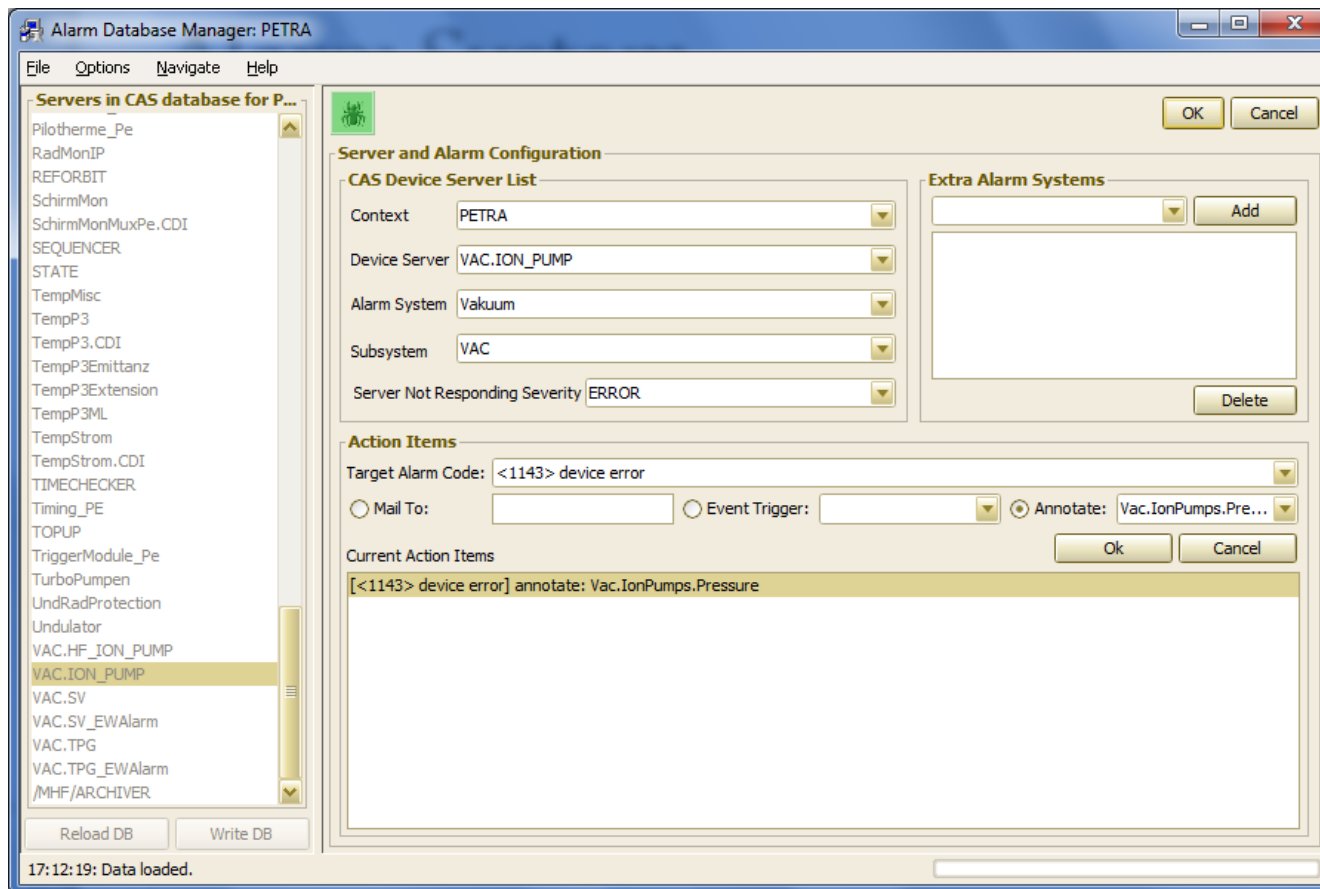


Archive Viewer

- MCA : an array of all devices of some type with the same settings and units.
 - But: need to get the channel names correctly!
 - Common problems:
 - someone removes or adds a BPM, BLM, Vacuum Pump, etc. in the middle. (declare as 'volatile' in the Archive Database Manager).
 - The MCA grows or shrinks in length (add some padding to the record).
 - These issues are easily dealt with
 - The latest twist:
 - New MCA Keyword 'Keyword_A' needs to supersede and map to N previous Keywords (e.g. 'Keyword_1', 'Keyword_2', and 'Keyword_3')
 - Can make use of the 'volatile' mapping logic already in place if the central archive knows how to map 'Device_1A' from 'Keyword_A' to 'some_device' from one of 'Keyword_1', 'Keyword_2', or 'Keyword_3') prior to some date.
 - Implemented and tested!

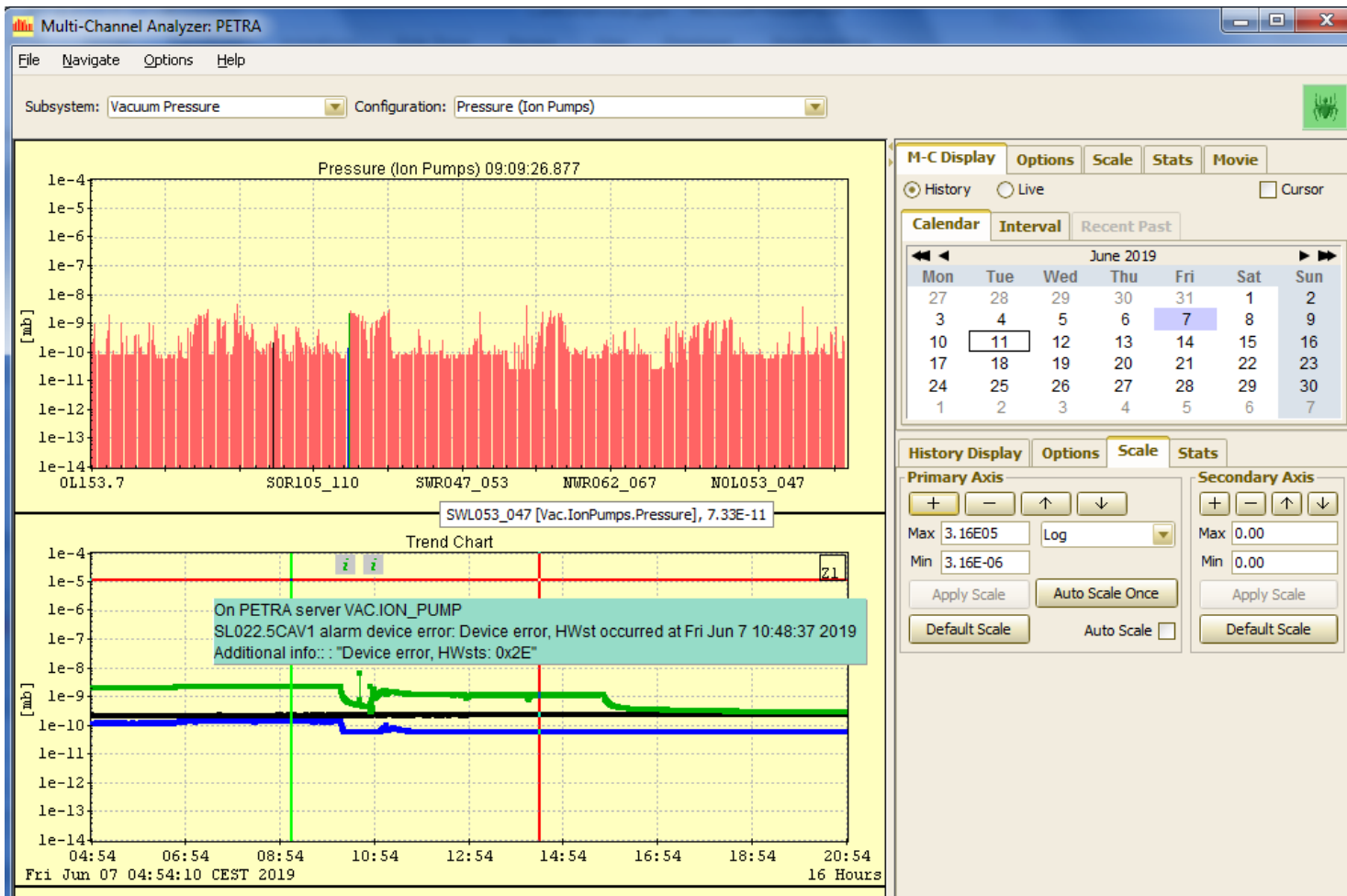
Alarm System

- (We should have thought of this years ago !)
- New Action Item for a particular alarm : **Archive Annotations !**



Alarm System

- Multi-Channel Analyzer now features 'annotations' :



Alarm System

- Brief review of things which often get forgotten ...
 - An Alarm belongs to a registered device !
 - Each server maintains a 'local alarm server'
 - So if you set alarms you can see them in e.g. the instant client or the FEC Remote panel.
 - BUT: the central alarm server must be instructed to acquire alarms from a server
 - option: the CAS can automatically check form any new 'important' server when it starts up.
 - Alarms can be set and cleared by the server programmer
 - ClearAlarm() increments a 'clear counter' but does NOT immediately remove an alarm
 - RemoveAlarm() DOES immediately remove an alarm.
 - An alarm 'watch' file can be configured to regularly check readback values of a given property against a given threshold.
 - Some alarms are automatic (can optionally turn off automatic alarms)
 - Link Error alarms (severity = 'information')
 - Disk full alarms (severity = 'information')

Alarm System

- Alarms require a lot of feedback between those who set them and those who have to look at them ...

Alarm Viewer: PETRA

File View Options Navigate Help

Alarms for: PETRA

CENTRAL 0/0/0
 TRANSPORT 0/0/1
 EAST 0/0/0
 SOUTH 0/0/0
 WEST 0/0/0
 NORTH 0/0/0

Fatal: 0
 Error: 0
 Warning: 1

Tue Jun 11 17:32:26
 Warning Severity >= 0
 Selected/Total No. of Alarms: 1/1
 Active Alarms Only (71 Disabled)

Alarm Name	Fatal	Error	Warning	Alarm Name	Fatal	Error	Warning
Magnete	1	0	0	Kicker-Septa	3	0	1
H.Korrekt.Mag.	0	0	0	F.Orbit FB	0	0	0
V.Korrekt.Mag.	0	0	0	Multibunch FB	0	0	0
e-Weg Korr.Mag.	0	0	0	Bunch Marker	0	0	0
HF	0	0	0	Timing+TopUp	0	0	0
Piloth.-Wasser	0	0	0	Machine Prot.	0	0	0
Temperaturen	16	0	0	Vakuum	1	0	0
				ulatoren	0	0	0
				Schirmmonitore	0	0	0

Disabled Alarms
 Disable (Suppress) Active Alarms
 Show Disabled (Suppressed) Alarms
 Show the Table of Currently Disabled Alarm Types

17:32:24: Alarms loaded.

Alarm System

Disabled alarm list for Temperaturen in context PETRA

Enable	Server	Device Name	Message	Sev	Comment	Disabled By	Disabled At	Active
<input type="checkbox"/>	TempStrom	IMD-OL-16-PCT	Temperatur ueber max. ...	12	Falsche Werte	DESYCON	10:00:00.000 - Nov 02	NOT ACTIVE
<input type="checkbox"/>	TempStrom	IMD-OL-16-GAP	Temperatur ueber max. ...	12	Falsche Werte	DESYCON	09:59:44.000 - Nov 02	NOT ACTIVE
<input type="checkbox"/>	TempStrom	IMA-OR-25-FCT	Temperatur ueber max. ...	12	Diese Temperatursensoren sind nicht in Benutzung In der Serverkonfig (inputs.csv) sind diese devcies mit der "usages" 0 bzw. 2 gekennzeichnet. Im Gegensatz dazu sind die aktiven Sensoren mit einer Usage 1 definiert G. Kube / A. Labudda	PETRACON	18:11:54.000 - Jun 01	NOT ACTIVE
<input type="checkbox"/>	TempStrom	IMD-OR-08-GAP	Temperatur ueber max. ...	12	Diese Temperatursensoren sind nicht in Benutzung In der Serverkonfig (inputs.csv) sind diese devcies mit der "usages" 0 bzw. 2 gekennzeichnet. Im Gegensatz dazu sind die aktiven Sensoren mit einer Usage 1 definiert G. Kube / A. Labudda	PETRACON	18:11:54.000 - Jun 01	NOT ACTIVE
<input type="checkbox"/>	TempStrom	IMD-OR-08-PCT	Temperatur ueber max. ...	12	Diese Temperatursensoren sind nicht in Benutzung In der Serverkonfig (inputs.csv) sind diese devcies mit der "usages" 0 bzw. 2 gekennzeichnet. Im Gegensatz dazu sind die aktiven Sensoren mit einer Usage 1 definiert G. Kube / A. Labudda	PETRACON	18:11:54.000 - Jun 01	NOT ACTIVE
<input type="checkbox"/>	TempStrom	IMD-OR-19-1-Gap	Temperatur ueber max. ...	12	Diese Temperatursensoren sind nicht in Benutzung In der Serverkonfig (inputs.csv) sind diese devcies mit der "usages" 0 bzw. 2 gekennzeichnet. Im Gegensatz dazu sind die	PETRACON	18:11:54.000 - Jun 01	NOT ACTIVE

OK Cancel Apply

Alarm Viewer

- Or how about :

Enable	Server	Device Name	Message	Sev	Comment	Disabled By	Disabled At	Active
<input type="checkbox"/>	Mag.Corr	YAS0.9	PS IST-SOLL WARNUNG	4	fgghhh	DESYCON	01:52:26.000 - May 23	NOT ACTIVE
<input type="checkbox"/>	Mag.Corr	YAS0.9	PS IST-SOLL FEHLER	9	nervt	DESYCON	15:54:09.000 - May 18	NOT ACTIVE
<input type="checkbox"/>	Mag.Corr	YAS0.9	PS IST-SOLL FEHLER	9	nervt	DESYCON	15:53:36.000 - May 18	NOT ACTIVE
<input type="checkbox"/>	Mag.Corr	YAS0.9	PS EIN FALSCH	8	nervt	DESYCON	08:31:29.000 - May 06	NOT ACTIVE
<input type="checkbox"/>	Mag.Corr	YAS0.9	PS EIN FALSCH	8	nervt	DESYCON	16:30:25.000 - Apr 25	NOT ACTIVE
<input type="checkbox"/>	Mag.Corr	GT_LINSE1a	PS AUS	13	wie oft muss ich die Dinger noch disablen???	JON	13:37:39.000 - Nov 05	NOT ACTIVE
<input type="checkbox"/>	Mag.Corr	GT_LINSE1b	PS AUS	13	wie oft muss ich die Dinger noch disablen???	JON	13:37:17.000 - Nov 05	NOT ACTIVE
<input type="checkbox"/>	Mag.Corr	GT_LINSE1b	PS AUS	13	Was sollen diese Dinger im Alarmsystem????	JON	13:36:09.000 - Nov 05	NOT ACTIVE
<input type="checkbox"/>	Mag.Corr	GT_LINSE1a	PS AUS	13	Diese Linsen haben ueberhaupt nichts mit dem Strahlbetrieb zu tun!!	JON	13:35:30.000 - Nov 05	NOT ACTIVE

The operators want to 'get to green' but they are giving us feedback !