

TINE Studio (RBE*)

VIEWING ARCHIVE DATA

*Real Best Ever

THE ARCHIVE SYSTEM

- ✘ Trends of relevant Machine Data
 - + *What is happening on a regular basis ...*
 - + **Properties** of Control System Servers
 - + **Local Histories**
 - ✘ Long-term storage on the server's local file system
 - ✘ Archive depth ~ months
 - ✘ Tolerance filters
 - ★ Absolute and/or relative
 - + **Central Archive Server**
 - ✘ Usually **context specific** (PETRA, DESY2, FLASH ...)
 - ✘ Data is never compromised
 - ★ Never removed from disk
 - ★ Never adulterated (averaged, compressed, etc.)
 - ✘ Numerous filters

THE ARCHIVE SYSTEM

× Event Archive System

+ *What happened at some time due to a defined Event ...*

- × Post-mortem (something bad happened)
- × State change
- × User-defined

+ That's **another presentation!**

× DAQ

+ *Save everything all the time!*

- × Data mining to find what you're looking for?
- × The **TINE Archive System can help** you out here!

INTERFACES

× APIs to the Archive System

+ C, C++

× GetArchivedData(), GetArhivedDataAsAny(), ...

```
int GetArchivedDataAsAnyEx ( char *   devsrv,  
                           time_t   start,  
                           time_t   stop,  
                           int       index,  
                           int       sampleRaster,  
                           HstHdr * dataHdr,  
                           BYTE *   data,  
                           int       dataFmt,  
                           char *   dataTag,  
                           int *    num  
                           )
```

Retrieves archive data as requested in the call (extended form).

This call retrieves archive data from the archiver requested in the call. This call retrieves an archived data set according to the data format given. It differs from [GetArchivedDataAsAny\(\)](#) in that it allows a specific array index as well as the desired sampling raster to be input.

Parameters:

devsrv	[in] must be the keyword-appended full device server name for which the archive data is desired.
start	[in] is the start time input (expressed as a UNIX timestamp) for which the archive data are desired.
stop	[in] is the end time input (expressed as a UNIX timestamp) for which the archive data are desired.
index	[in] is the desired array index to be retrieved. This only applied if the value of index is > 0 and the target data record is an array. In case of multi-channel arrays, the device name generally gives the targeted array element index.
sampleRaster	[in] gives the desired sampling raster for the targeted server to use. if <= 0 the sampling raster is determined by the server in order to best honor the desired time range (and insert any points of interest into the returned data set).
dataHdr	[out] is a pointer to an array to hold the history header information. This is an array of HstHdr objects containing a TINE timestamp (UTC double), a system data stamp (32-bit integer) and the user data stamp (32-bit integer) in one-to-one correspondence with the data array returned.
data	[out] is a pointer to an array of data objects to receive the archive data. This should an array of the desired data format (and large enough to hold the requested data).
dataFmt	[in] is the TINE data format code of the requested data. If this doesn't match the stored format, an attempt will be made to reformat the data. However this will not always be possible and could lead to an error.
dataTag	[in] is the TINE tagged structure tag to be used if the stored data is a TINE tagged structure. If the stored data is not a structure, this parameter is ignored.
num	[in/out] is a pointer to an integer giving (as input) the size of the data buffer which is to receive the archive data, and (as output) which contains the amount of archive data actually returned by the call.

Returns:

0 if successful, otherwise a TINE completion code which can be interpreted by a call to [GetLastLinkError\(\)](#).

Example:

INTERFACES

× MatLab

tine_history

Simply typing 'tine_history' at the command prompt will generate the 'usage' message shown below:

```
??? Error using ==> tine_history
tine_history usage:
tine_history('/<context>/<server>/<name>[<property>]', 'stop
time', 'depth'[, sampleInterval, index, 'acquireSystemStamps'])
'ret' contains array of (timestamp,data) or (timestamp,system stamp,data)
```

We see that there are three required input parameters, namely the targeted endpoint, the 'stop time' (i.e. the most recent requested data point) and the depth of the archive trend.

All parameters are strings. The 'stop time' should be given in a string data format ('dd.mm.yyyy hh:mm:ss') or the string 'now' to refer to the current time. The 'depth' is a string beginning with a number and followed by a representative unit of time ('days','hours','minutes', etc.)

Optionally one can specify a 'sampling interval'. If this is '0' or less then the targeted server will determine a suitable sampling raster so that the returned data cover the desired time interval. Internally a maximum of 8000 data points will be returned. Thus for a large time interval it could happen that stored data points are 'skipped' in order to supply data throughout the requested range. If this is not the desired behavior, an explicit sampling interval can be provided. To avoid skipping any points a value of '1' should be passed (default = '0'). One can also optionally specify an array 'index' as the 5th parameter. If this value is greater than '0' then the specific array index will be selected from the any archive record that refers to an array. In the case of multi-channel arrays, this parameter is usually not necessary as the device name will determine the array index (default = '0'). Finally one can optionally indicate in the 6th parameter whether or not to return associated 'system stamps' with the archive data. In most cases one is interested in data versus a timestamp. As most data are also archived along with the accompanying system stamp, it could be useful to retrieve this information as well. The system stamp might refer to a 'cycle number', 'pulse number', or 'shot number' depending on the nature of the accelerator. The timestamp returned is the MatLab time (and not UTC).

The targeted end point can be a specific server, in which case the 'local history' is obtained directly from the server (if it is available!), as in:

```
>> format long
>> tine_history('/PETRA/Idc/Buffer-0[I]', 'now', '1hour')

ans =

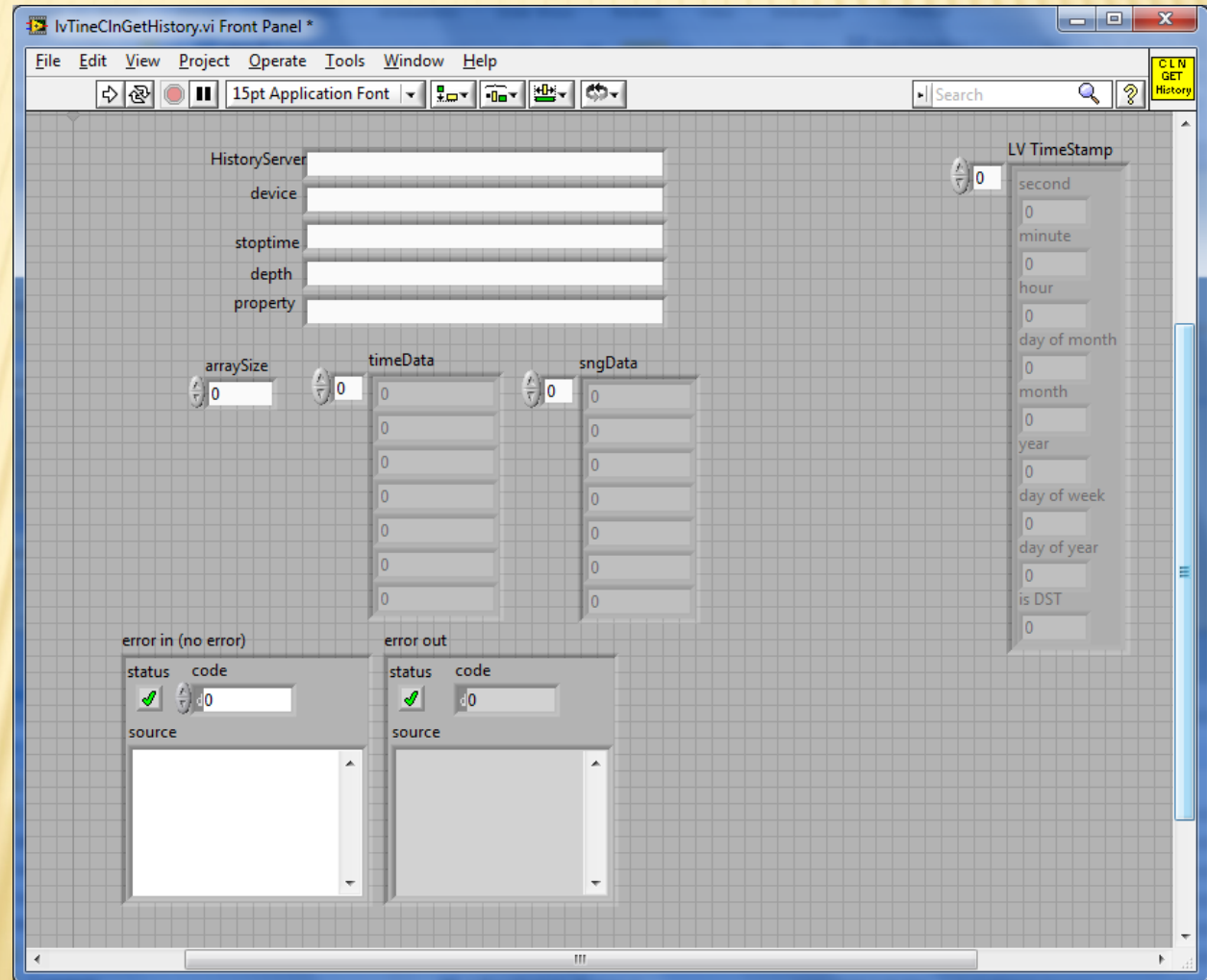
1.0e+005 *

7.354026290012483    0.001006214523315
7.354026290140839    0.001006183395386
7.354026290370469    0.001006119766235
7.354026290498942    0.001006123504639
7.354026290728571    0.001006073532104
7.354026290958316    0.001006025466919
```

Note that as the number involved are large it is frequently useful to make use of the 'format long' specification in MatLab.

INTERFACES

✗ LabView:



INTERFACES

× Command Line:

thistory

Typing 'thistory' at the command line will produce the following output:

Retrieves a stored archive data for the keyword and device specified
Data can be obtained from a central archive server or from a local history,
depending on how the context and keyword are specified.

A simple keyword along with a context will contact the central archive
server for the context.

e.g. thistory thistory HERA HPDCCur now 1hour

The history depth can be specified in hours, days, weeks, or months and
is parsed as

<number><time unit>

The history target time can be 'now', a valid unix timestamp, or a date
and time string in the form

<day>.<month>.<year>_<hour>.<minute>.<second>

where all entries except <day> are optional from right to left.

e.g. thistory HERA HPDCCur 31.05.2006 1day
or thistory HERA HPDCCur 31.05.2006_12:00:00 1hour

A local history can be obtained by specifying the target device server
along with the context (with a leading "/")

e.g. thistory /HERA/HEEKOLLI SOLLWERT HESL66i 31.05.2006 1day

A history snapshot of an array record at a specific time can be obtained
by specifying 'snapshot' as the depth parameter.

e.g. thistory /HERA/HEPBPM ORBIT.X #1 7.06.2006_12:00:00 snapshot

returns the array data record stored at or after noon on June 7th 2006.
The timestamp of the record found is always displayed along with the data.

Usage : thistory <context> <keyword> <device name> <stop time> <depth>

INTERFACES

✘ Java:

+ THistory.getArchiveData() + overloads ...

```
static int de.desy.tine.histUtils.THHistory.getArchiveData ( String context,
String server,
String property,
String device,
double start,
double stop,
TCompoundDataObject[] data,
THistorySource src,
int timeout
) [static]
```

Retrieves an archive data set.

Retrieve an archive data set (value - timestamp pairs) for the target property and device given and over the time range specified. Both the central archive and local archive are queried for the number of stored points over the interval. Data are usually retrieved from the central archive system if there are at least 500 points over the time interval in question. Otherwise the local archive system is used. By examining the THistorySource object one can see which source was chosen and how many points both sources have over the interval. For dedicated retrieval from one source or the other, please use an overloaded method which does not take the THistorySource parameter!

Parameters:

- context** is the desired context
- server** is the device server which manages the archived parameter. If null then the central archive will be queried for the property and device
- property** is the desired archived property
- device** is the desired device name
- start** is the start time in seconds (UTC double, a TINE timestamp)
- stop** is the stop time in seconds (UTC double, a TINE timestamp)
- data** is a reference to a (doublet) data array object to contain the returned data. This can be one of FLTINT[], DBLDBL[], NAME64I[], and so on. The array should be dimensioned to the maximum number of points desired (effectively determining a raster over which the archived data will be distributed). The reference object can also be an array of HISTORY[] object instances, which have been constructed with the desired data type (usually a compound data type) to be returned. The src parameter will give the exact number of points actually stored over the interval specified. The number of points returned in the call will often be less than array dimension and less than the exact number of points stored over the interval.
- src** is a reference to a THistorySource object to receive the history source information.
- timeout** gives the number of milliseconds to wait for the call to complete (usually 1000 is sufficient).

Returns:

0 upon success or a TINE error code.

ARCHIVE VIEWER USES JAVA API

- ✗ Always checks 2 data sources
 - + Local and central archives
 - ✗ Check number points in interval
 - ✗ If Central has > 500 points use it !
 - ✗ Else use source with most points.
- ✗ Optical zooming
 - + There's a raster !
 - + BUT: there are points of interest !
 - + n.b. The archive API also allow a 'fill and increment' strategy (where sample raster = 1).
- ✗ Array Records and Snapshots
 - + Waveforms (Spectra) and Multi-Channel Arrays
 - + Snapshots: history of record at a specific time

DATA ACQUISITION

× Central archive:

- + Monitors data in **TIMER** mode (default)
- + BUT can receive '*scheduled*' data.
- + A Record can be **bound** to another Record
 - × *“archive me too, when you archive him”*
- + Meta Info can be **associated**
 - × *Device names for Record A are the same for Record B.*

× Local archive:

- + Monitors data in **TIMER** mode
- + Can be *scheduled!*
- + Equipment Module always sees the **CA_HIST** access flag.

ARCHIVE DATABASE MANAGER

Archive Database Manager: PETRA

File Configurations Navigate Options Help

Database Entries

Index	Active	Device Server	Device Name	Device Property
59	ENABLED	Cms.PsGroup	PeMain	Strom.Soll
60	ENABLED	Cms.PsGroup	EwCorr	GroupDevices
61	ENABLED	Cms.PsGroup	EwCorr	Strom.Ist
62	ENABLED	Cms.PsGroup	EwCorr	Strom.Ims
63	ENABLED	Cms.PsGroup	EwCorr	Strom.Soll
64	ENABLED	Cms.PsGroup	EwMain	GroupDevices
65	ENABLED	Cms.PsGroup	EwMain	Strom.Ist
66	ENABLED	Cms.PsGroup	EwMain	Strom.Ims
67	ENABLED	Cms.PsGroup	EwMain	Strom.Soll
74	ENABLED	NEG.ABSCHNITTE	#0	GpDruck.NAM
75	ENABLED	NEG.ABSCHNITTE	#0	GpDruck
76	ENABLED	NEG.STROMKREISE	#0	CAct.NAM
77	ENABLED	NEG.STROMKREISE	#0	CAct
78	ENABLED	NEG.STROMKREISE	#0	VAct
81	ENABLED	LBRENV.RPT	BPM_SWR_13	SA_X
82	ENABLED	LBRENV.RPT	BPM_SWR_13	SA_Y
83	ENABLED	LBRENV.RPT	#0	DEVICES
84	ENABLED	TermoLogger	#0	TERMOLOG_ARRAY
85	ENABLED	TermoLogger	#0	DEVICES
86	ENABLED	VAC.ION_PUMP	SEK.*	P.MEAN
87	ENABLED	VAC.ION_PUMP	SEK.*	P.MEAN
88	ENABLED	Kicker	Kicker1_Inj	DelayAllARC
89	ENABLED	Kicker	#0	DEVICES
90	ENABLED	Kicker	Kicker1_Inj	HVall
91	ENABLED	P3PiloProxy	#0	Status
92	ENABLED	P3PiloProxy	#0	Name
93	ENABLED	EwPiloProxy	#0	Status
94	ENABLED	EwPiloProxy	#0	Name
95	ENABLED	P3WdwProxy	#0	Status
96	ENABLED	P3WdwProxy	#0	Name
97	ENABLED	EwWdwProxy	#0	Status
98	ENABLED	EwWdwProxy	#0	Name
119	ENABLED	P3MagTempProxy	#0	Temperature
120	ENABLED	P3MagTempProxy	#0	Name
121	ENABLED	P3MDTTempProxy	#0	Temperature

Reload DB Write DB

Index: 82 Tweak Clone New Add MCA Names

Data Collection Configuration

Device Context: PETRA **Device Server:** LBRENV.RPT

Device Name: BPM_SWR_13 **Device Property:** SA_Y

Format: FLOAT **Array Size:** 227 **Input Format:** NULL **Data Input:**

Filtering of Data Storage:

NEVER ONCE ALWAYS FAST

SLOW FIXTIME HRT STATUS

VOLATILE NOPOI BEAM RUNNING

Access Rate: 1000 ms

Archive Heartbeat: 900 sec

Property Viewing Configuration archive only when machine is running

Orbit.Y, FLOAT, 227, nm, 2000000.0, -2000000.0, 25000.0, 0.0, LIN, 1.0, 0.0, Orbit.X.NAM, Diagnostics

Maximum size [bytes]: 908 Remaining elements: 0

Keyword	Data Format	Size	Units	Max	Min
Orbit.Y	FLOAT	227	nm	2000000.0	-2000000.0

Abs. Tolerance: 25000.0 **Rel. Tolerance:** 0.0 **Plot Style:** LIN **Offset:** 0.0 **Scale:** 1.0

Description: **Subsystem:** Diagnostics Associate: Orbit.X.NAM

Bind To: Spectrum Axis:

Apply Add Remove

ARCHIVE DATABASE MANAGER

Archive Database Manager: PETRA

File Configurations Navigate Options Help

Database Entries

Index	Active	Device Server	Device Name	Device Property
571	ENABLED	UNDBPOS	Zelle0	Yangle.NAM
572	ENABLED	UNDBPOS	Zelle0	Yangle
575	ENABLED	Petra3_P09vil.CDI	KW_FROND_1_E	DURCHFLUSS_OUT.NAM
612	ENABLED	Undulator	PU00	Gap
613	ENABLED	Undulator	PU00	Gap.NAM
614	ENABLED	Undulator	PU00	Taper
615	ENABLED	Petra3_P10vil.CDI.SRV	BS_0_S_V	P10
616	ENABLED	Petra3_P10vil.CDI.SRV	#0	P10.NAM
617	ENABLED	MPU_FEC	#0	Output_ARV
618	ENABLED	MPU_FEC	#0	Output_ARV.NAM
619	ENABLED	MPU_FEC	#0	Output_MIN
620	ENABLED	MPU_FEC	#0	Output_MAX
623	ENABLED	Petra3_P08vil.CDI.SRV	#0	P08
624	ENABLED	Petra3_P08vil.CDI.SRV	#0	P08.NAM
626	ENABLED	Petra3_P03vil.CDI.SRV	#0	STELLUNG.NAM
630	ENABLED	SpsInfo	P00	BufferPressureBandAlarm
632	ENABLED	SpsInfo	P00	HeaterPowerOutput
634	ENABLED	SpsInfo	P00	HPBufferNitrogenLevel
636	ENABLED	SpsInfo	P00	IonPumpsControlReset
637	ENABLED	SpsInfo	P01	IonPumpsControlVoltage
638	ENABLED	SpsInfo	P00	MainVesselNitrogenLevel
640	ENABLED	SpsInfo	P00	MeasuredCoolingPower
642	ENABLED	SpsInfo	P00	NitrogenBufferPressure
644	ENABLED	SpsInfo	P00	NitrogenFeedPressure
646	ENABLED	SpsInfo	P00	NitrogenFeedTemperature
648	ENABLED	SpsInfo	P00	NitrogenFlowRate
650	ENABLED	SpsInfo	P00	NitrogenPumpSpeedSetting
652	ENABLED	SpsInfo	P00	NitrogenReturnTemperat...
654	ENABLED	SpsInfo	P00	ObjectiveTemperature
656	ENABLED	SpsInfo	P00	ObjectiveTemperatureSP
658	ENABLED	SpsInfo	P00	PressureDifference
660	ENABLED	SpsInfo	P01	PrUsvBatAlarm
661	ENABLED	SpsInfo	P01	PrUsvBatCharge
662	ENABLED	SpsInfo	P01	PrUsvNormalOperation
663	ENABLED	SpsInfo	P00	PumpMotorSpeedOutput

Reload DB Write DB

Index: 612 Tweak Clone New Add MCA Names

Data Collection Configuration

Device Context: PETRA **Device Server**: Undulator

Device Name: PU00 **Device Property**: Gap

Format: FLOAT **Array Size**: 16 **Input Format**: NULL

Filtering of Data Storage

NEVER ONCE ALWAYS FAST

SLOW FIXTIME HRT STATUS

VOLATILE NOPOI BEAM RUNNING

Data Input

Access Rate: 1000 ms

Archive Heartbeat: 900 sec

Property Viewing Configuration

Undulator.Gap.Test,FLOAT,1,mm,220.0,9.5,1.0,0.0,LIN,1.0,0.0,Gap Width in mm,,Experiments

Undulator.Gap,FLOAT,15,mm,220.0,9.5,0.01,0.0,LIN,1.0,0.0,Gap Width,,Experiments

Maximum size [bytes]: 64 Remaining elements: 0

Keyword	Data Format	Size	Units	Max	Min
Undulator.Gap	FLOAT	15	mm	220.0	9.5

Abs. Tolerance: 0.01 **Rel. Tolerance**: 0.0 **Plot Style**: LIN **Offset**: 0.0 **Scale**: 1.0

Description: Gap Width **Subsystem**: Experiments Associate:

Bind To: Spectrum Axis:

Apply Add Remove

ARCHIVE DATABASE MANAGER

Archive Database Manager: PETRA

File Configurations Navigate Options Help

Data Indx

Filters Editor

- Archive Viewer Config Editor
- Multi-Channel Config Editor
- Trace Config Editor

Indx	Device Name	Description
#0		
#0		
3	ENABLED Idc	#0
12	ENABLED BunchScope	#0
13	ENABLED BunchScope	#0
19	ENABLED ALARMSTATE	#0
20	ENABLED ALARMSTATE	#0
21	ENABLED ALARMSTATE	#0
22	ENABLED ALARMSTATE	#0
23	ENABLED BunchScope	#0
24	ENABLED Bunche_EWeg	IMA-E03
26	ENABLED Bunche_EWeg	#0
28	ENABLED GlobalsCollector	keyword
29	ENABLED GlobalsCollector	keyword
30	ENABLED GlobalsCollector	keyword
38	ENABLED BunchScope	#0
39	ENABLED GlobalsCollector	#0
40	ENABLED VAC.ION_PUMP	*
41	ENABLED VAC.ION_PUMP	*
47	ENABLED Idc	#0
48	ENABLED Cms.PsGroup	PeCorH
49	ENABLED Cms.PsGroup	PeCorH
50	ENABLED Cms.PsGroup	PeCorH
51	ENABLED Cms.PsGroup	PeCorH
52	ENABLED Cms.PsGroup	PeCorV
53	ENABLED Cms.PsGroup	PeCorV
54	ENABLED Cms.PsGroup	PeCorV
55	ENABLED Cms.PsGroup	PeCorV
56	ENABLED Cms.PsGroup	PeMain
57	ENABLED Cms.PsGroup	PeMain
58	ENABLED Cms.PsGroup	PeMain
59	ENABLED Cms.PsGroup	PeMain
60	ENABLED Cms.PsGroup	EwCorr
61	ENABLED Cms.PsGroup	EwCorr
62	ENABLED Cms.PsGroup	FwCorr

Reload DB Write DB

Editable Filters

PETRA

archive only with beam in the machine
archive only when machine is running

Tag: BEAM

Description: archive only with beam in the machine

Keyword: CurDC

Valid min: 0.05 Valid max: 1.0E10

Valid text: MATCH

New Edit

Remove Close

NEVER ONCE ALWAYS FAST

SLOW FIXTIME HRT STATUS

VOLATILE NOPOI BEAM RUNNING

Access Rate
1000 ms

Archive Heartbeat
900 sec

Property Viewing Configuration

Maximum size [bytes]: 0 Remaining elements: 0

Keyword	Data Format	Size	Units	Max	Min
	NULL	1		1	0

Abs. Tolerance Rel. Tolerance Plot Style Offset Scale

Description Subsystem

Associate:

Bind To: Spectrum Axis: Min Max Units

Apply Add Remove

LOCAL HISTORY CONFIGURATIONS

Archive Viewer: DESY2 Motto: Hold the Pickles, Hold the Lettuce...

File Navigate Options Help

Add To Local History

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

Context: DESY2

Server: D2BPMs

Device: MON1

Property: liveSynchCntInt

Data Size: 24

Format: INT32

Depth Long (months): 1

Depth Short (ring buffer): 600

Heart Beat (seconds): 1800

Polling Interval (msec): 1000

Archiving Interval (msec): 1000

Relative Tolerance: 0

Absolute Tolerance: 0

OK Cancel

Time: UTC: System: Live: System:

Status	Property [Device]	Value
--------	-------------------	-------

Device Name: MON1

Selected Bit: ALL

Add Selected Add All

Add Devices Add Subdevices

Add To History

Refresh All Remove Selected Remove All

History Mode Live Mode

16:33:36: Devices loaded.

This will dump the new history manifest file, hstmf.csv, at the server !

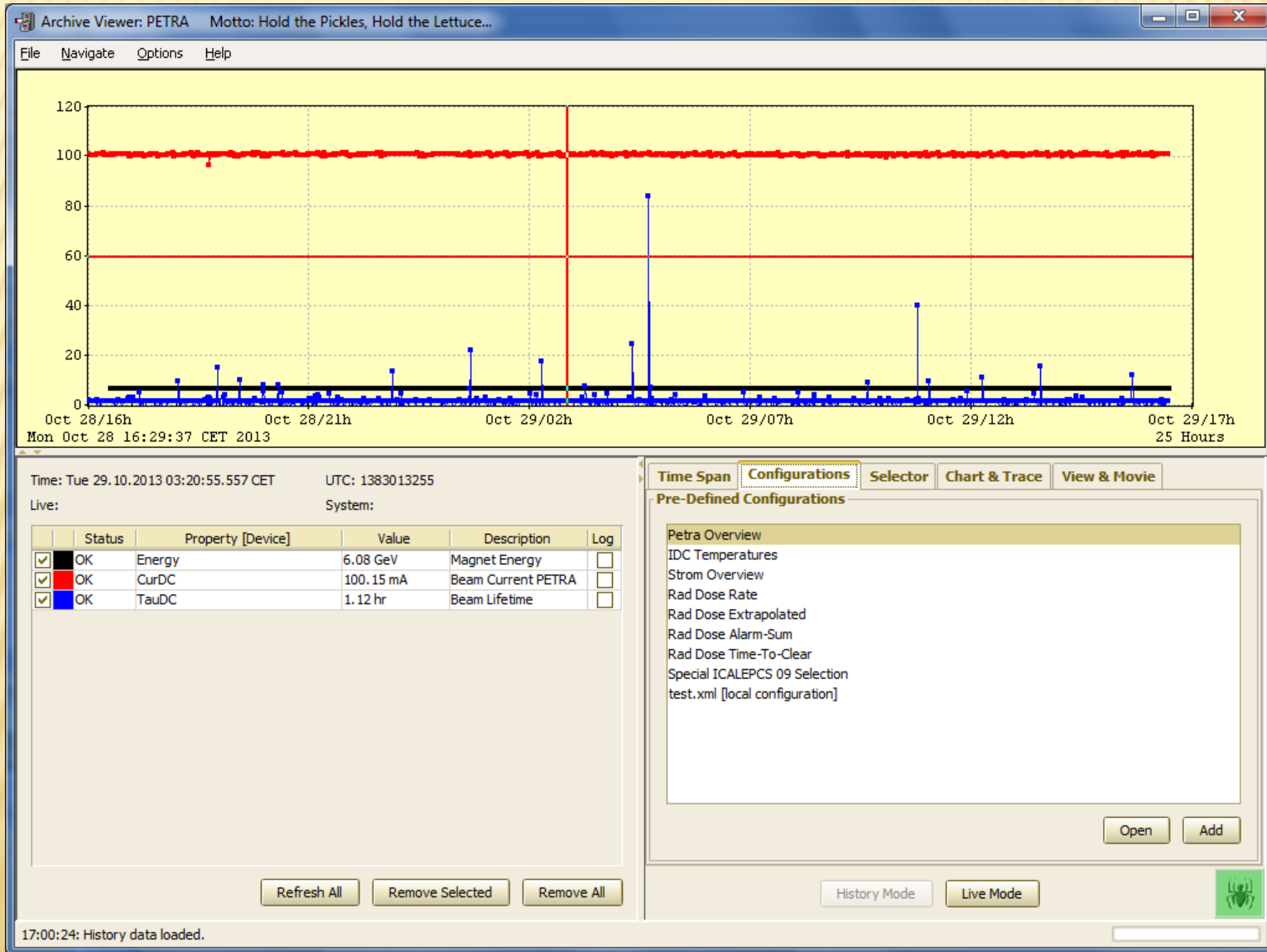
Then: copy hstmf.csv -> history.csv !
(if the server uses 'history.csv' configuration)

ARCHIVE VIEWER

× Feature Rich !!!

- + The application with 1 and only 1 feature can probably be made '*bug free*'
 - × `printf("hello world\n");`
- + The application with N features has at least 2^N ways of introducing bugs even if each feature has been fully tested individually.
 - × Probably more like $N! * 2^N$
- + => we will probably find a few things to report to **cosylab** !

ARCHIVE VIEWER



ARCHIVE DATABASE MANAGER

The screenshot displays the 'Archive Database Manager: PETRA' application. A menu is open over the 'Configurations' tab, highlighting 'Archive Viewer Config Editor'. The main window is titled 'Archive Viewer Configuration Editor' and is divided into several sections:

- Petra Overview:** A list of system components including IDC Temperatures, Strom Overview, Rad Dose Rate, Rad Dose Extrapolated, Rad Dose Alarm-Sum, Rad Dose Time-To-Clear, and Special ICALEPCS 09 Selection. A 'Reload Configuration' button is located below this list.
- Configuration Navigation:** Includes a 'Context' dropdown set to 'PETRA' and a 'Selected Configuration' field containing 'Petra Overview'. Below these are 'Archive Group' and 'Reload All', 'New', 'Remove', and 'Rename' buttons.
- Configuration Settings:** A detailed form for configuring a specific data point. It includes:
 - Device Context:** 'PETRA' (dropdown)
 - Device Server:** 'HISTORY' (dropdown)
 - Device Name:** '#0' (dropdown)
 - Property Name:** 'Energy' (dropdown)
 - Index:** '0' (input)
 - Sub Index:** '0' (input)
 - Scale:** '0.0' (input)
 - Offset:** '0.0' (input)
 - Max:** '0' (input)
 - Min:** '0' (input)
 - Units:** (empty input)
 - Description:** (empty input)
 - Plot Style:** 'LIN' (dropdown)
 - Draw Mode:** 'PolyLine' (dropdown)
- Buttons:** 'Save Changes', 'Re-Initialize Server', 'Edit', 'New', and 'Remove' buttons are positioned around the settings area.

At the bottom of the main window, there are 'Reload DB' and 'Write DB' buttons. A table of system parameters is visible in the background, showing columns for 'Maximum size [bytes]', 'Remaining elements', 'Keyword', 'Data Format', 'Size', 'Units', 'Max', and 'Min'.

Keyword	Data Format	Size	Units	Max	Min
Undulator.Gap	FLOAT	15	mm	220.0	9.5

Additional table headers visible at the bottom of the interface include 'Abs. Tolerance', 'Rel. Tolerance', 'Plot Style', 'Offset', 'Scale', 'Description', 'Subsystem', 'Min', 'Max', 'Units', 'Bind To', and 'Spectrum Axis'.

ARCHIVE VIEWER

The screenshot displays the 'Archive Viewer: PETRA' application window. The title bar includes the motto 'Motto: Hold the Pickles, Hold the Lettuce...'. The 'File' menu is open, showing options like 'Default Printer', 'Logbook print...', 'Print...', 'TCP', 'UDP', 'Console', 'Save Visible Data...', 'Save Interpolated Data...', 'Save Array Data...', 'Open Configuration File...', 'Save Configuration File...' (highlighted), 'Open Visual Configuration File...', 'Save Visual Configuration File...', 'Save Settings...', 'Default Settings', 'Abort Activity', and 'Exit'. A 'Save' dialog box is overlaid on the main window, showing the file name 'test.xml' and the file type 'Configuration file (.xml)'. The main window features a 'Live:' section with a system status table and a 'Selected Bit' section with a list of beam parameters.

Status	Property [Device]	Value	Description
OK	CurDC	100.48 mA	Beam Current PE
Error	IDC.Cur.OR08 [Bunch-1]	101.66	
Error	IDC.Cur.OR19 [Bunch-1]	100.77	
OK	CurBunch.Sum	96.53 mA	
OK	NBunches	40.00	Number of Bunch
Error	BunchFill.IThreshold [Bunch-1]	41.43	
OK	Temps.MDI.Strom [IMD-OR-08-...	104.01 C	Temps
OK	Temps.MDI.Strom [IMD-OR-08-...	67.92 C	Temps
OK	Temps.MDI.Strom [IMD-OR-19-...	107.55 C	Temps
OK	Temps.MDI.Strom [IMD-OR-19-...	50.92 C	Temps

Selected Bit: ALL

Beam Emission: OK

BeamPositionDelta.X

BeamPositionDelta.Y

BeamPositionQuality.X

BeamPositionQuality.Y

BL_1_Alarms.Concentration

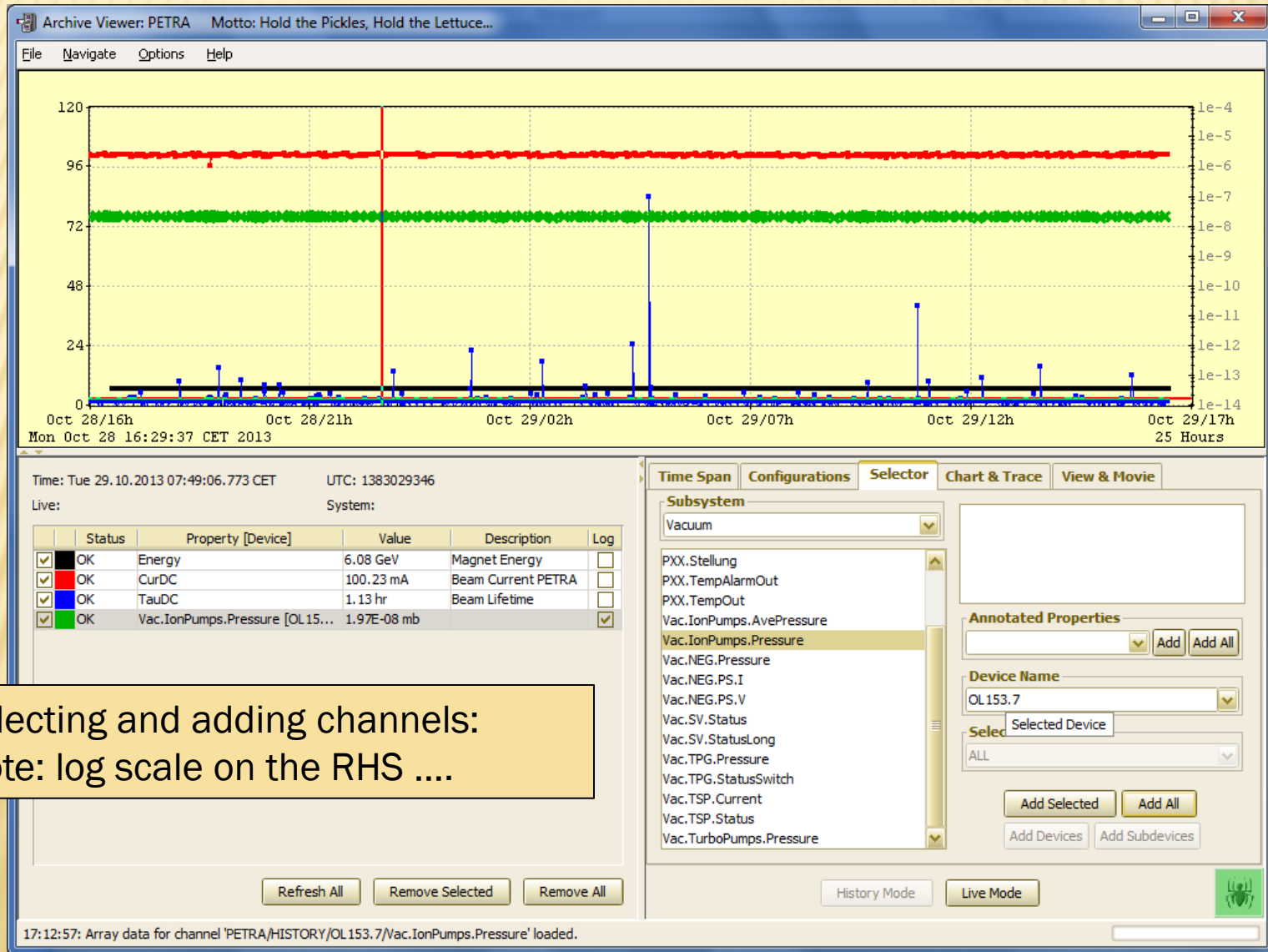
BL_2_Alarms.Concentration

Refresh All Remove Selected Remove All

History Mode Live Mode

17:03:04: History data loaded.

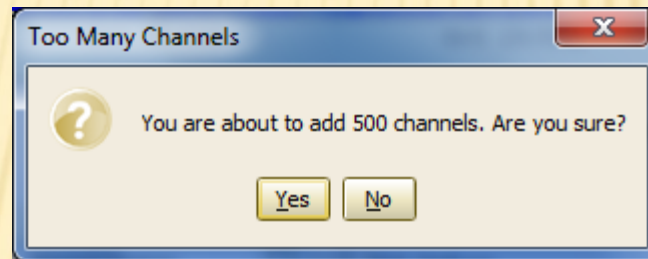
ARCHIVE VIEWER



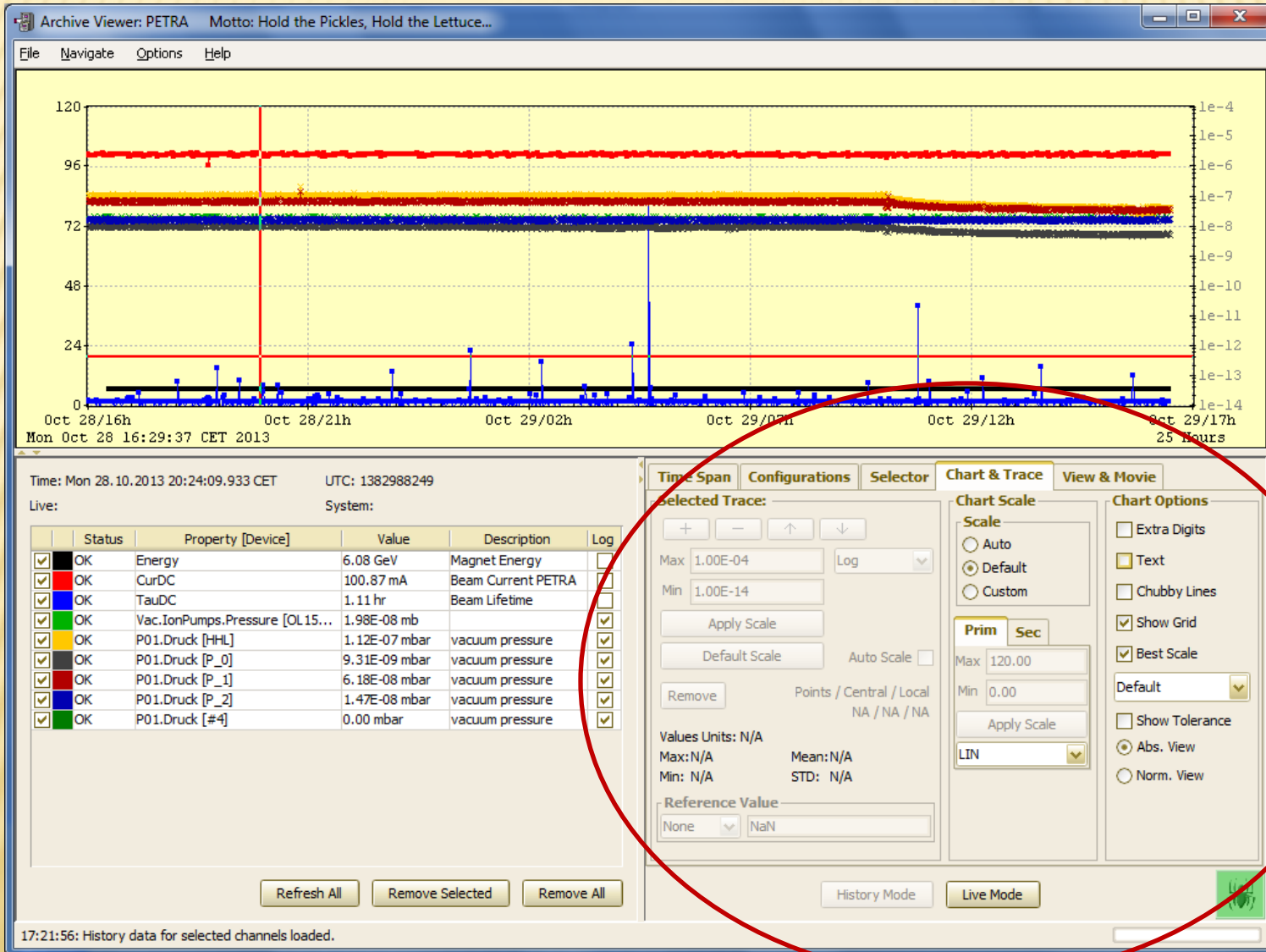
selecting and adding channels:
Note: log scale on the RHS

ARCHIVE VIEWER

- ✘ And if you hit that 'Add All' button and there are more than 10 channels:



ARCHIVE VIEWER



ARCHIVE VIEWER

The screenshot displays the Archive Viewer software interface. At the top, a window titled "Annotation Message" is open, showing a text area for an annotation and a checkbox labeled "Is Active". A red circle highlights a context menu on the chart, with a red arrow pointing to the "Add Annotation..." option. The chart shows a red line at 100 and a blue line with spikes. Below the chart, a table displays system status information.

Status	Property [Device]	Value	Description	Log
OK	Energy	6.08 GeV	Magnet Energy	<input type="checkbox"/>
OK	CurDC	-0.36 mA	Beam Current PETRA	<input type="checkbox"/>
OK	TauDC	1.14 hr	Beam Lifetime	<input type="checkbox"/>

Annotations

ANNOTATING FROM THE LOGBOOK

PETRA - Logbuch
Energy 6.1 GeV Status Fehler
Current 0.0 mA News Betriebsparameter: In jeder Schicht dokumentieren
Schichtauswahl | Schnellübersicht | Suchen | Kalender | Hilfe 30.10.2013 10:06 --Logbuch--

eLogBook Eintrag

Autor Sahoo **Kennung** Keine
Datum Zeit 30.10.2013 09:23:22 **Rubrik** Sonstiges
Titel Cherenkov detector

No signal is detected. Only noise. Single bunch with 2.5mA at 6.0GeV

I (mA)	RF (MV)	T (h)
2.61	14.0	1.183
2.32	8.2	0.137
1.63	7.6	0.025
1.12	7.0	0.002

Text
beam loss No cherenkov signal
2.05 13.0 0.94
1.97 9.1 0.250
1.88 7.2 0.001 Beam loss No cherenkov signal seen
2.18mA no cherenkov signal seen with regular beam dump

Datei upload
Wähle Bilddatei
(standard Bidtypen wie: jpg, ps, png, ...)
Browse...
 Annotate in TINE Archive

Mail an Experten
Bereich: Koordinatoren Experten: -----
clear
Anderer Empfänger: add

Wiki Formatierung Hilfe **Eintrag speichern**

ARCHIVE VIEWER

The screenshot displays the Archive Viewer software interface. At the top, the title bar reads "Archive Viewer: PETRA" with the motto "Motto: Hold the Pickles, Hold the Lettuce...". The main window contains a large plot area showing data over a 12-hour period. The plot has a red line at the top (around 100) and several blue lines with spikes. A red arrow points to a vertical dashed line at approximately 10:00, which has a small box containing a question mark next to it. A callout box with the text "A 'Context' Annotation !" points to this line.

Below the plot, the time is shown as "Wed Oct 30 00:00:00 CET 2013" and "12 Hours".

On the left side, there is a table with the following data:

Status	Property [Device]	Value	Description	Log
<input checked="" type="checkbox"/> OK	Energy	6.08 GeV	Magnet Energy	<input type="checkbox"/>
<input checked="" type="checkbox"/> OK	CurDC	1.72 mA	Beam Current PETRA	<input type="checkbox"/>
<input checked="" type="checkbox"/> OK	TauDC	0.53 hr	Beam Lifetime	<input type="checkbox"/>

At the bottom left, there are buttons for "Refresh All", "Remove Selected", and "Remove All".

On the right side, there are several panels:

- Time Span**: A dropdown menu set to "ALL".
- Configurations**: A list of subsystems including HCor.Im, HCor.Ist, HCor.Soll, HCor.Status, HCor.StatusRegs, HorizontalTune, InjektionPhase, Kicker.Delay, Kicker.HVSoll, Kicker.HVStatus, Kicker.PulseAmplitudes, Kollimator.IstPosition, LFBCarrierPhase, MachineState, and MachineStateText.
- Selector**: A dropdown menu set to "ALL".
- Chart & Trace**: A section for "Machine State Text" with "Annotated Properties" (MachineStateText) and "Device Name" (keyword).
- View & Movie**: A section for "Selected Bit" (ALL) with buttons for "Add Selected", "Add All", "Add Devices", and "Add Subdevices".

At the bottom right, there are buttons for "History Mode" and "Live Mode", and a small green icon of a robot.

At the very bottom, a status bar reads: "10:09:30: History data for selected channels loaded."

ARCHIVE VIEWER

Archive Viewer: PETRA Motto: Hold the Pickles, Hold the Lettuce...

File Navigate Options Help

Cherenkov detector
No signal is detected. Only noise. Single bunch with 2.5mA at 6.0GeV I(ma) RF(MV) T(h) 2.61 14.0 1.183 2.32 8.2 0.137 1.63 7.6 0.025 1.12 7.0 0.002 beam loss No cherenkov signal 2.0
(link)

80
60
40
20
0

00:00 02:00 04:00 06:00 08:00 10:00 12:00
Wed Oct 30 00:00:00 CET 2013 12 Hours

Time: Wed 30.10.2013 01:59:03.307 CET UTC: 1383094743
Live: System:

Status	Property [Device]	Value	Description	Log
<input checked="" type="checkbox"/> OK	Energy	6.08 GeV	Magnet Energy	<input type="checkbox"/>
<input checked="" type="checkbox"/> OK	CurDC	100.36 mA	Beam Current PETRA	<input type="checkbox"/>
<input checked="" type="checkbox"/> OK	TauDC	1.13 hr	Beam Lifetime	<input type="checkbox"/>

Refresh All Remove Selected Remove All

Time Span Configurations **Selector** Chart & Trace View & Movie

Subsystem
ALL

Machine State Text

Annotated Properties
MachineStateText Add Add All

Device Name
keyword

Selected Bit
ALL

Add Selected Add All
Add Devices Add Subdevices

History Mode Live Mode

10:09:30: History data for selected channels loaded.

ARCHIVE VIEWER

Archive Viewer: PETRA Motto: Hold the Pickles, Hold the Lettuce...

File Navigate Options Help

Time range selection

Time: Wed 23.10.2013 21:22:20.382 CEST UTC: 1382556140
Live: System:

Status	Property [Device]	Value	Description	Log
--------	-------------------	-------	-------------	-----

Refresh All Remove Selected Remove All

09:47:26: Devices loaded.

Time Span Configurations Selector Chart & Trace View & Movie

Calendar Interval Recent Past

October 2013

Mon	Tue	Wed	Thu	Fri	Sat	Sun
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

Today

History Mode Live Mode

Time Span Configurations Selector Chart & Trace View & Movie

Calendar Interval Recent Past

October 2013

Mon	Tue	Wed	Thu	Fri	Sat	Sun
30	1	2	3			
7	8	9	10			
14	15	16	17			
21	22	23	24			
28	29	30	31			
4	5	6	7			

Log

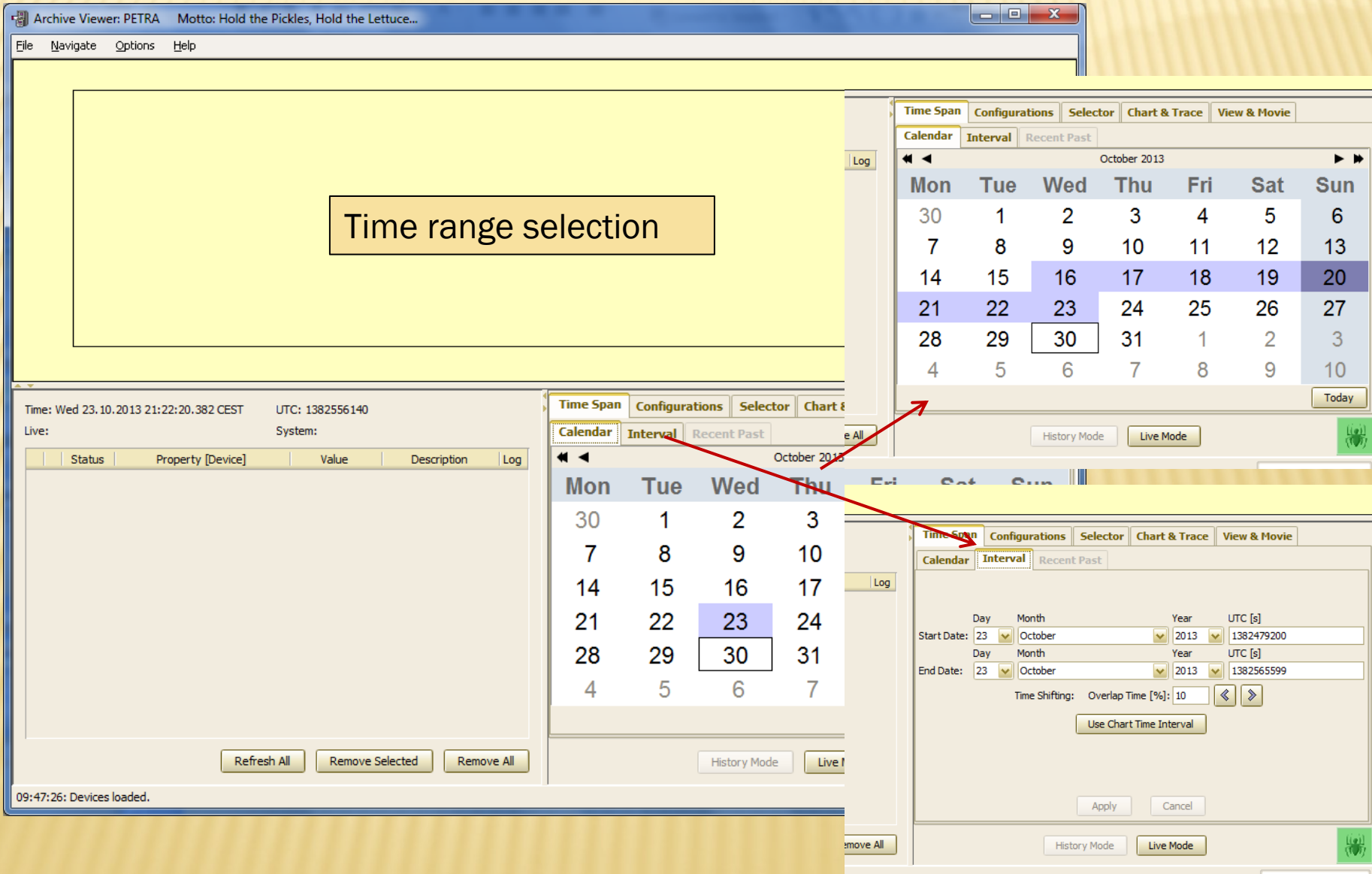
Day Month Year UTC [s]
Start Date: 23 October 2013 1382479200
End Date: 23 October 2013 1382565599

Time Shifting: Overlap Time [%]: 10

Use Chart Time Interval

Apply Cancel

History Mode Live Mode



ARCHIVE VIEWER

Archive Viewer: PETRA Motto: Hold the Pickles, Hold the Lettuce...

File Navigate Options Help

Which records have been annotated ?

Time: Wed 23. 10. 2013 21:22:20.382 CEST UTC: 1382556140
Live: System:

Status	Property [Device]	Value	Description	Log
--------	-------------------	-------	-------------	-----

Refresh All Remove Selected Remove All

Time Span Configurations **Selector** Chart & Trace View & Movie

Subsystem: ALL

- AlarmsCount
- AlarmsCountALL
- AlarmsISREADY
- BeamAngleDelta.X
- BeamAngleDelta.Y
- BeamAngleQuality.X
- BeamAngleQuality.Y
- BeamLoss
- BeamPermissionText
- BeamPositionDelta.X
- BeamPositionDelta.Y
- BeamPositionQuality.X
- BeamPositionQuality.Y
- BL_1_Alarms.Concentration
- BL_2_Alarms.Concentration

Inst.Ave Beam Loss (all BLMs)

Annotated Properties

- BeamLoss
- BeamLoss
- CurDC
- POV11

Selected Bit: ALL

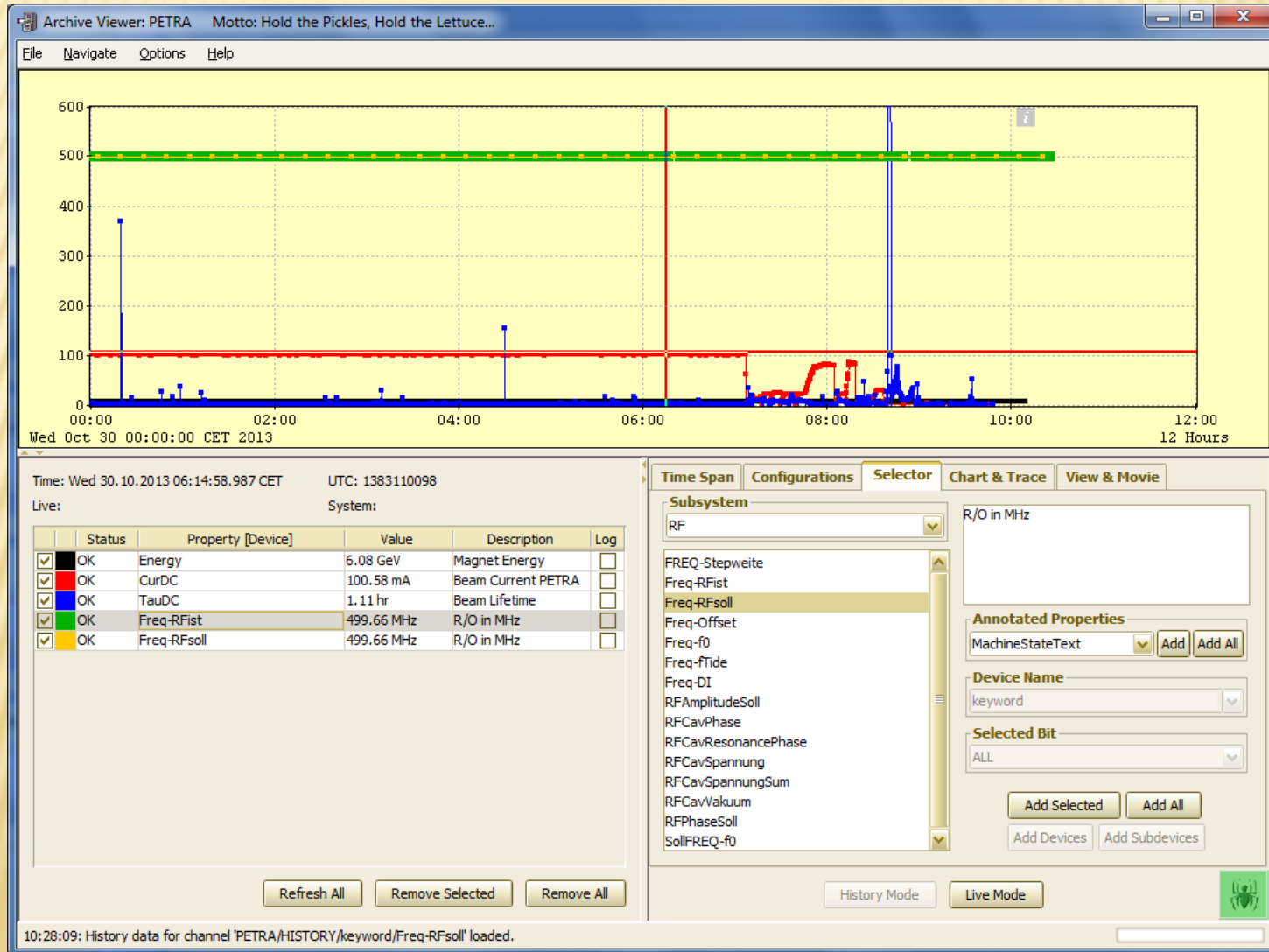
Add Selected Add All

Add Devices Add Subdevices

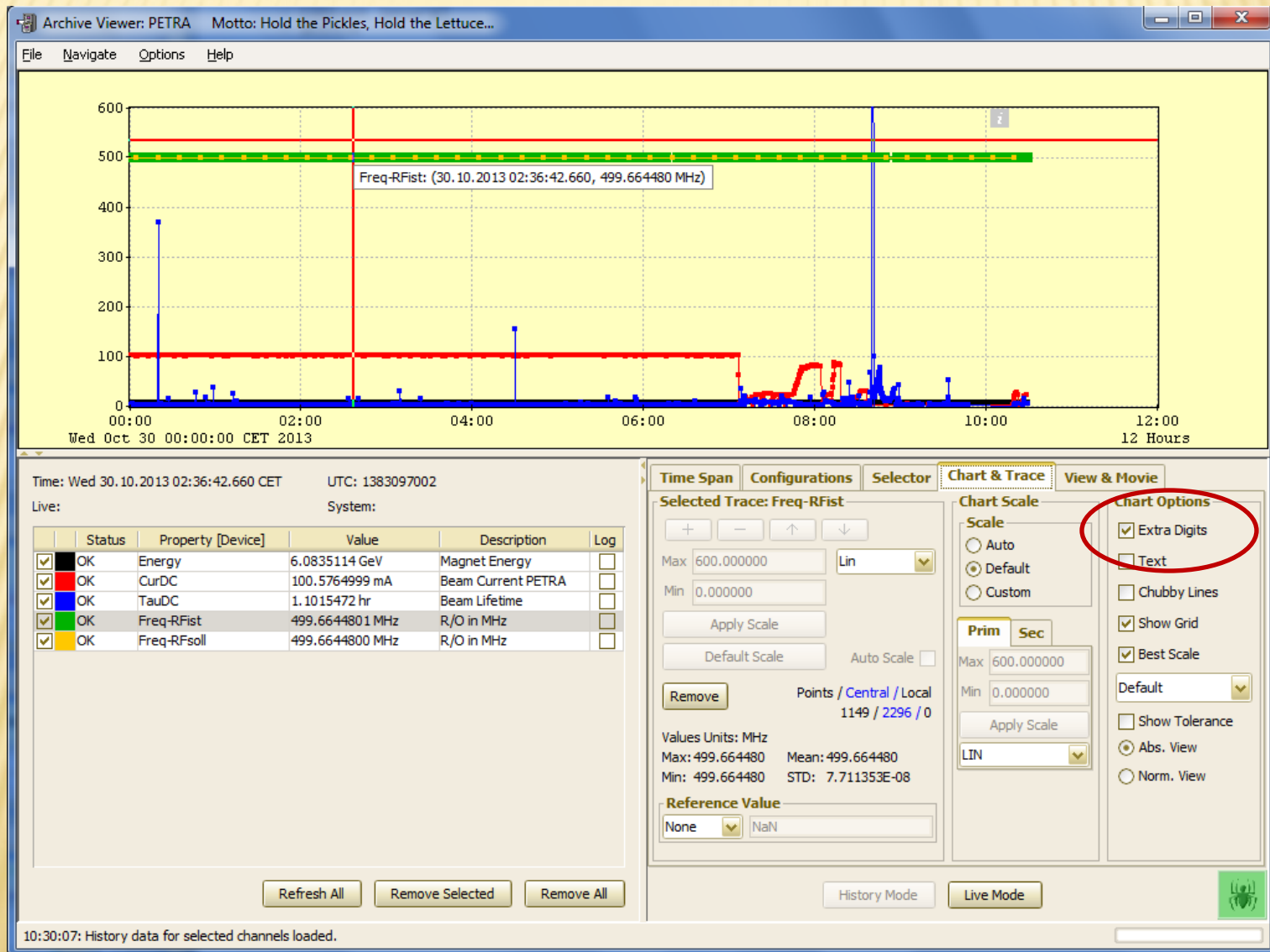
History Mode Live Mode

09:54:32: No history data available for selected channels.

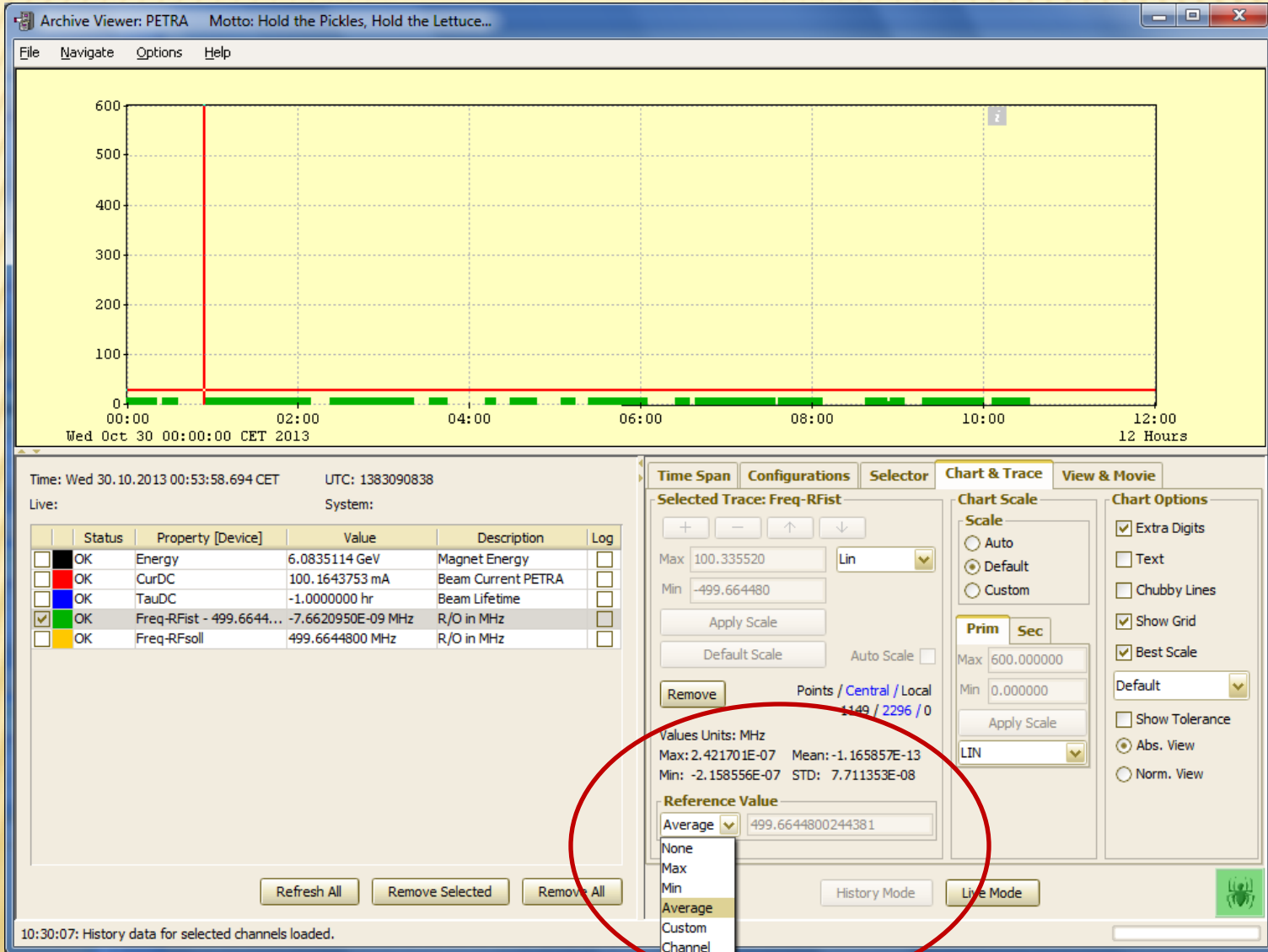
ARCHIVE VIEWER



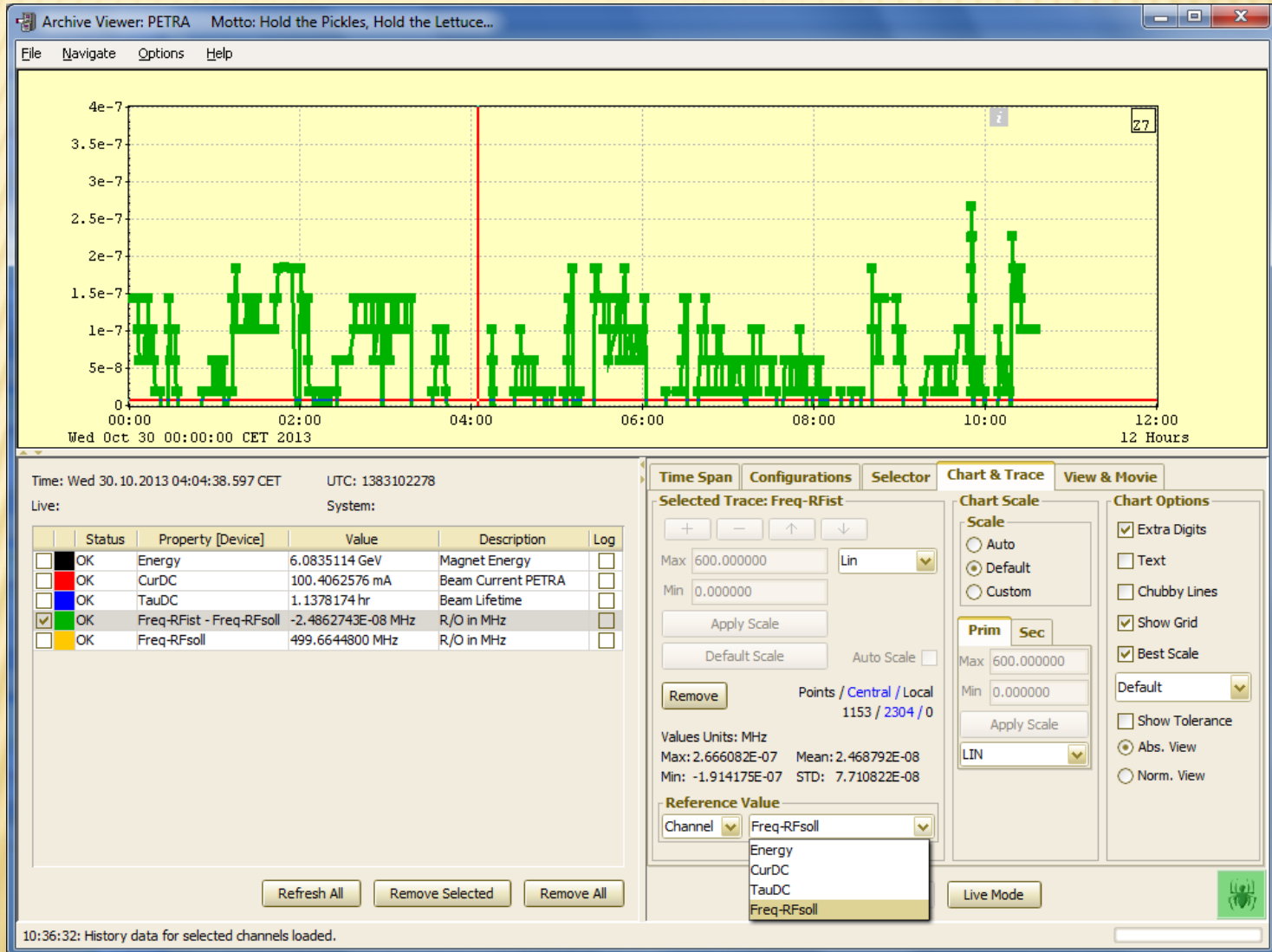
ARCHIVE VIEWER



ARCHIVE VIEWER



ARCHIVE VIEWER



ARCHIVE VIEWER

Archive Viewer: PETRA Motto: Hold the Pickles, Hold the Lettuce...

File Navigate Options Help

Time: Wed 23.10.2013 13:05:17.775 CEST UTC: 1382526317

Live: System:

Status	Property [Device]	Value	Unit
<input type="checkbox"/>	OK Energy		
<input type="checkbox"/>	OK CurDC		
<input type="checkbox"/>	OK TauDC		
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 0}	1	0=...
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 1}	1	0=...
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 2}	0	0=...
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 3}	0	0=...
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 4}	0	0=...
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 5}	0	0=...
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 6}	0	0=...
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 7}	0	0=...
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 8}	0	0=...
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 9}	0	0=...
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 10}	0	0=...
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 11}	0	0=...
<input checked="" type="checkbox"/>	OK PI.ExpS2.displayState [ABS02_0_Auffahren] {Bit 12}	0	0=...

Refresh All Remove Selected Remove All

Time Span Configurations Selector Chart & Trace View & Movie

Subsystem: Interlock

0=OK 3=MISSING 2=ERROR 1=COUNTDOWN

Annotated Properties: BeamLoss Add Add All

Device Name: ABS02_0_Auffahren

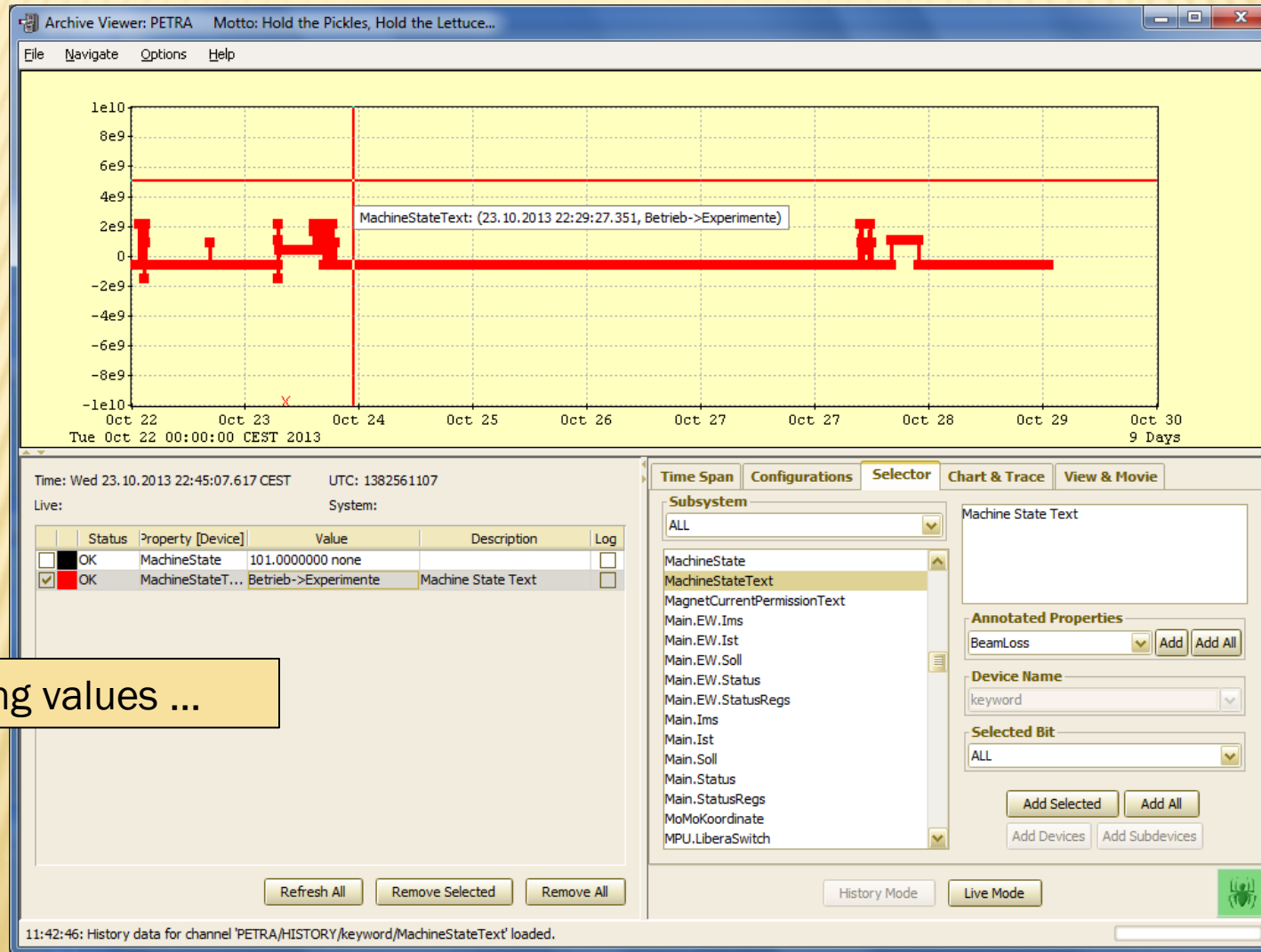
Selected Bit: Bit 0 {1}

Add Selected Add All Bits Add Devices Add Subdevices

History Mode Live Mode

11:39:55: Devices loaded.

ARCHIVE VIEWER



String values ...

ARCHIVER VIEWER

The screenshot displays the Archive Viewer software interface. The main window is titled "Archive Viewer: PETRA" with the motto "Hold the Pickles, Hold the Lettuce...". It features a menu bar with "File", "Navigate", "Options", and "Help".

The interface is divided into several sections:

- Top Left:** A time-series plot showing data from October 22 to 29, 2013. The y-axis ranges from $-1e10$ to $1e10$. The plot shows a signal fluctuating around a baseline, with several sharp peaks and troughs. A vertical green line is at approximately Oct 25, and a vertical red line is at approximately Oct 27.
- Top Right:** A histogram titled "P01.Druck 01:34:23.108". The x-axis has categories: HHL, P_0, P_1, P_2, and #4. The y-axis ranges from $1e-10$ to $1e-4$. The bars are colored black and red.
- Bottom Left:** A table showing system status and properties.
- Bottom Center:** A control panel with tabs for "Time Span", "Configurations", "Selector", "Chart & Trace", and "View & Movie". The "Chart & Trace" tab is active, showing options for "Main Chart", "Correlation Chart", and "Array Chart". The "Main Chart" and "Array Chart" options are checked and circled in red. Other options include "Array Chart Options" (Axis Scale: LOG, Lock Axis checked, Simple-Histogram) and "Corr. Chart Options" (Axis Scale (X-Y): LIN-LIN).
- Bottom Right:** A "View & Movie" section with "Start Movie" and "Stop Movie" buttons, a slider for a value (448/1050), and "Display Ref" and "Sub Ref" checkboxes.

At the bottom of the window, there are buttons for "Refresh All", "Remove Selected", and "Remove All". A status bar at the very bottom reads: "11:46:28: Array data for channel 'PETRA/HISTORY/HHL/P01.Druck' loaded."

Multi-Channel Arrays ...

ARCHIVE VIEWER

Archive Viewer: PETRA Motto: Hold the Pickles, Hold the Lettuce...

File Navigate Options Help

1e10
6e9
2e9
-2e9
-6e9
-1e10

1e-4
1e-5
1e-6
1e-7
1e-8
1e-9
1e-10
1e-11
1e-12
1e-13
1e-14

Oct 22 Oct 24 Oct 26 Oct 27 Oct 29
Tue Oct 22 00:00:00 CEST 2013 9 Days

Vac.IonPumps.Pressure 07:06:34.990

1e-4
1e-5
1e-6
1e-7
1e-8
1e-9
1e-10
1e-11
1e-12
1e-13
1e-14

OL153.7 SL020.1CAV2 NWL089_083 NORPU5V0

Time: Tue 29.10.2013 23:35:39.938 CET UTC: 1383086139

Live: System:

	Status	Property [Device]	Value	Description	Log
<input checked="" type="checkbox"/>	OK	MachineStateT... Betrieb->Experimente		Machine State Text	<input type="checkbox"/>
<input checked="" type="checkbox"/>	OK	P01.Druck [HHL]	3.8603506E-08 mbar	vacuum pressure	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	OK	Vac.IonPumps....	1.9936762E-08 mb		<input checked="" type="checkbox"/>

Time Span Configurations **Selector** Chart & Trace View & Movie

Subsystem
Vacuum

- P01.Druck
- P06.Druck
- P09.Druck
- P13vil.Temps
- PXX.Stellung
- PXX.TempAlarmOut
- PXX.TempOut
- Vac.IonPumps.AvePressure
- Vac.IonPumps.Pressure
- Vac.NEG.Pressure
- Vac.NEG.PS.I
- Vac.NEG.PS.V
- Vac.SV.Status
- Vac.SV.StatusLong
- Vac.TPG.Pressure

Annotated Properties

BeamLoss

Device Name
OL153.7

Selected Bit
ALL

11:48:40: Array data for channel 'PETRA/HISTORY/OL153.7/Vac.IonPumps.Pressure' loaded.

ARCHIVE VIEWER

The screenshot displays the 'Archive Viewer: LINAC2' application window. The title bar includes the motto 'Motto: Hold the Pickles, Hold the Lettuce...'. The interface is divided into several sections:

- Top Left Plot:** A time-series plot with a y-axis from -5 to 1 and an x-axis from 'Aug 09/00h' to 'Aug 09/20h'. It shows a thick black horizontal bar at y=0 and a red horizontal line at y=-4.5. A green vertical line is positioned at approximately 10h on Aug 09, and a red vertical line is at 20h.
- Top Right Plot:** A waveform plot titled 'I4.1-Pulse-Fcup 11:50:17.685'. The y-axis ranges from -5 to 1, and the x-axis ranges from -0.5 to 999.5. It shows a red signal with a small pulse around x=500.
- Bottom Left Panel:** Contains system information: 'Time: Tue 13.08.2013 00:32:08.173 CEST', 'UTC: 1376346728', 'Live:', and 'System:'. Below this is a table with columns for Status, Property [Device], Value, and Description.
- Table:**

Status	Property [Device]	Value	Description	Log
<input checked="" type="checkbox"/>	OK	I4.1-Pulse-Fcu... 0.0137749 V	Digitizer Trace - I4.1 Fara...	<input type="checkbox"/>
- Bottom Right Panel:** A control panel with tabs for 'Time Span', 'Configurations', 'Selector', 'Chart & Trace', and 'View & Movie'. It includes sections for 'Charts' (Main Chart, Correlation Chart, Array Chart), 'Array Chart Options' (Axis Scale: LIN, Bit Breakdown, Lock Axis, PolyLine), and 'Corr. Chart Options' (Axis Scale (X-Y): LIN-LIN). It also features 'Array Options' with radio buttons for 'All Devices', 'Devices', and 'Subdevices', 'Start Movie' and 'Stop Movie' buttons, a range selector (998 to 1997), 'Display Ref', 'Sub Ref', and 'Save Ref' buttons. At the bottom are 'History Mode' and 'Live Mode' buttons, and a 'Data Options...' button.

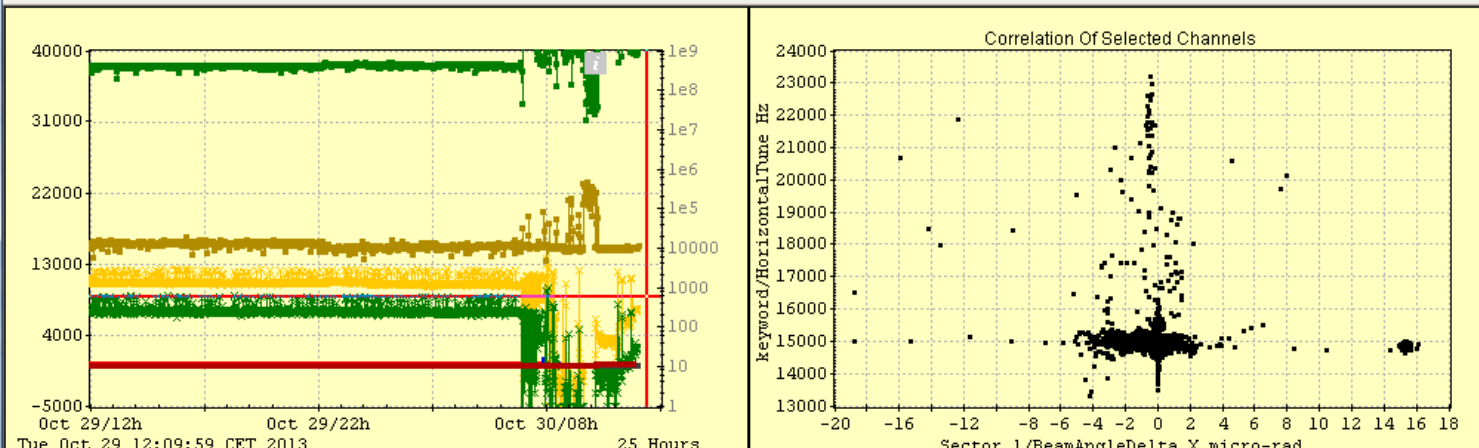
At the bottom of the window, a status bar reads: '12:02:40: Array data for channel 'LINAC2/HISTORY/#0/I4.1-Pulse-Fcup' loaded.'

Waveforms (aka: Spectra)

ARCHIVE VIEWER

Archive Viewer: PETRA Motto: Hold the Pickles, Hold the Lettuce...

File Navigate Options Help



Time: Wed 30.10.2013 12:34:55.604 CET UTC: 1383132895
Live: System:

Status	Property [Device]	Value	Description	Log	X
OK	Energy	6.08 GeV	Magnet Energy		
OK	CurDC	49.94 mA	Beam Current PE...		
OK	TauDC	-1.00 hr	Beam Lifetime		
OK	BeamAngleDelta.X [Sector 1]	0.03 micro-rad	Beam Angle delta...		
OK	BeamLoss [PU01I]	241.00 cnts/sec	Inst.Ave Beam Lo...		
OK	BeamLoss [PU10I]	25.00 cnts/sec	Inst.Ave Beam Lo...		
OK	Temps.Magnets [NL_151DKs]	35.66 C	NL_151DKs 457.0...		
OK	Undulator.Gap [PU01a]	217.00 mm	Gap Width		
OK	VerticalTune	3.96E04 Hz	Tune Peakfind au...		
OK	HorizontalTune	1.51E04 Hz	Tune Peakfind au...		

Refresh All Remove Selected Remove All

12:16:08: History data for channel 'PETRA/HISTORY/keyword/HorizontalTune' loaded.

Time Span Configurations Selector Chart & Trace View & Movie

Charts

- Main Chart
- Correlation Chart
- Array Chart

Array Options

All Devices Devices Subdevices

Start Movie Stop Movie

1

Axis Scale:

LIN

Bit Breakdown

Lock Axis

SimpleHistogram

Corr. Chart Options

Axis Scale (X-Y):

LIN-LIN

Display Ref

Sub Ref

Ref:

Save Ref

Data Options...

History Mode Live Mode

ARCHIVE VIEWER

Archive Viewer: PETRA Motto: Hold the Pickles, Hold the Lettuce...

File Navigate Options Help

Time: Wed 30.10.2013 12:46:36.903 CET UTC: 1383133596
 Live: System:

Status	Property [Device]	Value	Description	Log	X	Y
OK	Energy	6.08 GeV	Magnet Energy			
OK	CurDC	49.94 mA	Beam Current PE...			
OK	TauDC	-1.00 hr	Beam Lifetime			
OK	BeamAngleDelta.X [Sector 1]	0.03 micro-rad	Beam Angle delta...			
OK	BeamLoss [PU01I]	241.00 cnts...	Inst.Ave Beam Lo...			
OK	BeamLoss [PU10I]	25.00 cnts/sec	Inst.Ave Beam Lo...			
OK	Temps.Magnets [NL_151DKs]	35.66 C	NL_151DKs 457.0...			
OK	Undulator.Gap [PU01a]	217.00 mm	Gap Width			
OK	VerticalTune	3.96E04 Hz	Tune Peakfind au...			
OK	HorizontalTune	1.51E04 Hz	Tune Peakfind au...			

Time Span Configurations

Charts

- Main Chart
- Correlation Chart
- Array Chart

Array Chart Options

Axis Scale: LIN

Bit Breakdown
- Lock Axis

Simple Histogram

Corr. Chart Options

Axis Scale (X-Y): LIN-LIN

Function: $Y^2 + Y^3$

History: $Y^2 + Y^3$, Y^2

Available functions: abs, acos, asin, atan, cbrt, ceil, cos, cosh, exp, floor, log, pi, sin, sinh, sqrt, tan, tanh, pi: 3.14159265358979323846

Available operators: Addition: 'x + 2', Subtraction: 'x - 2', Multiplication: 'x * 2', Division: 'x / 2', Exponentiation: 'x ^ 2', Unary Minus, Plus (Sign Operators): '+x - (-2)', Modulo: 'x % 2'

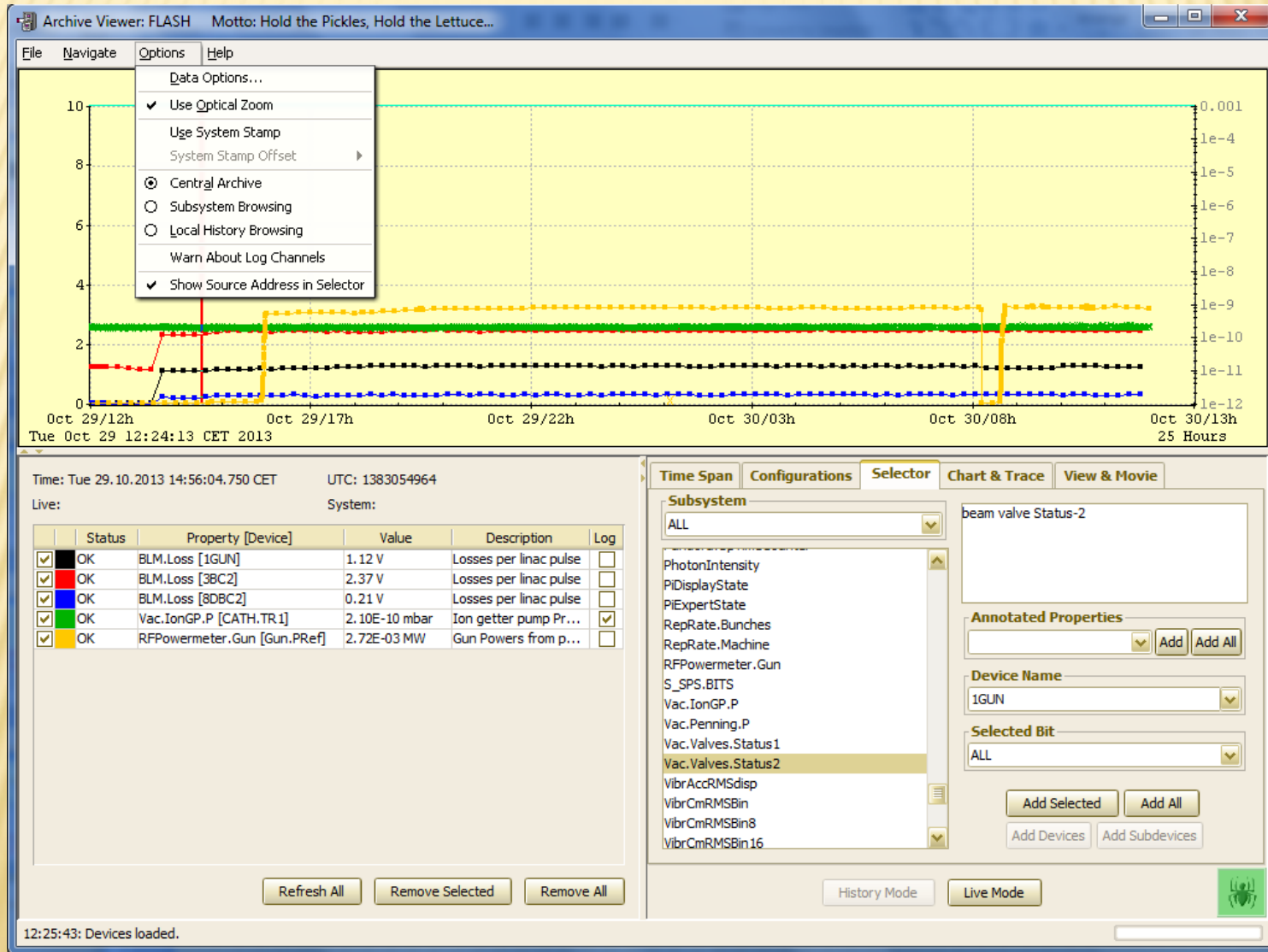
Clear Apply OK Close

Data Options...

History Mode Live Mode

12:16:08: History data for channel 'PETRA/HISTORY/keyword/HorizontalTune' loaded.

ARCHIVE VIEWER



ARCHIVE VIEWER

Archive Viewer: FLASH Motto: Hold the Pickles, Hold the Lettuce...

File Navigate Options Help

Time: Wed 30.10.2013 06:39:16.426 CET UTC: 1383111556
 Live: System:

Status	Property [Device]	Value	Description	Log
<input checked="" type="checkbox"/>	OK BLM.Loss [1GUN]	1.24 V	Losses per linac pulse	<input type="checkbox"/>
<input checked="" type="checkbox"/>	OK BLM.Loss [3BC2]	2.45 V	Losses per linac pulse	<input type="checkbox"/>
<input checked="" type="checkbox"/>	OK BLM.Loss [8DBC2]	0.29 V	Losses per linac pulse	<input type="checkbox"/>
<input checked="" type="checkbox"/>	OK Vac.IonGP.P [CATH.TR 1]	2.10E-10 mbar	Ion getter pump Pr...	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	OK RFPowermeter.Gun [Gun.PRef]	3.19 MW	Gun Powers from p...	<input type="checkbox"/>

Refresh All Remove Selected Remove All

12:27:45: Devices loaded.

Time Span Configurations Selector Chart & Trace View & Movie

Subsystem: ALL Gun Powers from power meter

PhotonIntensity
 PIDisplayState
 PIExper Source Address for **VibrAccRMSdisp** (right mouse click to pin)
 RepRate.Gun.PRef: /TTF2/VibrCM.Data/Acc1QuadHoriz[RMSdisp]
 RepRate.Machine
 RFPowermeter: **RFPowermeter.Gun**
 S_SPS.BITS Gun.PRef: /TTF2.RF/POWERMETER/GUN.PREF[CH00.CALC]
 Vac.IonGP.P Gun.PFor: /TTF2.RF/POWERMETER/GUN.PFOR[CH00.CALC]
 Vac.Penning.P
 Vac.Valves.Status1
 Vac.Valves.Status2
 VibrAccRMSdisp
 VibrCmRMSBin
 VibrCmRMSBin8
 VibrCmRMSBin16

Selected Bit: ALL

Add Selected Add All
 Add Devices Add Subdevices

History Mode Live Mode

ARCHIVE VIEWER

Plotting vs. 'system stamp':
e.g. PETRA/DESY2/LINAC2 : cycle number
FLASH: pulse number

The screenshot displays the Archive Viewer software interface. At the top, the title bar reads "Archive Viewer: PETRA Motto: Hold the Pickles, Hold the Lettuce...". The main window is divided into several sections:

- Plot Area:** A large graph showing data over time. The x-axis is labeled "23 Hours" and ranges from $3e5$ to $9e5$. The y-axis ranges from 0 to 120. A red line represents the "System Stamp", which is mostly constant at 100 but has several sharp downward spikes. A green dashed line is at approximately 25, and a blue line is near 0. A menu is open over the plot, with "Use Optical Zoom", "Use System Stamp", and "System Stamp Offset" highlighted.
- Metadata:** Below the plot, it shows "Mon Oct 28 00:00:00 CET 2013 (offset = 1.29E8)".
- System Information:** A section showing "Time: Mon 28.10.2013 02:34:44.878 CET UTC: 1382924084" and "Live: System: 129371541".
- Channel List:** A table with columns for Status, Property [Device], Value, Description, and Log. It lists several channels with their current values and descriptions.
- Calendar:** A calendar for October 2013, with the 30th highlighted. It includes navigation arrows and a "Today" button.
- Buttons:** "Refresh All", "Remove Selected", and "Remove All" buttons are located at the bottom left.
- Mode Selection:** "History Mode" and "Live Mode" buttons are at the bottom right.

Status	Property [Device]	Value	Description	Log
<input checked="" type="checkbox"/>	OK Energy	6.08 GeV	Magnet Energy	<input type="checkbox"/>
<input checked="" type="checkbox"/>	OK CurDC	100.16 mA	Beam Current PETRA	<input type="checkbox"/>
<input checked="" type="checkbox"/>	OK TauDC	1.14 hr	Beam Lifetime	<input type="checkbox"/>
<input checked="" type="checkbox"/>	OK InjektionPhase	25.00 Grad	Timing Injection Phase	<input type="checkbox"/>
<input checked="" type="checkbox"/>	OK Kicker.HVSoll [Kicker1_Inj]	5.22 kV	HV Sollwert	<input type="checkbox"/>

12:34:21: History data for selected channels loaded.

ARCHIVE VIEWER

The screenshot displays the Archive Viewer application window titled "Archive Viewer: PETRA" with the motto "Motto: Hold the Pickles, Hold the Lettuce...". The main window features a menu bar with "File", "Navigate", "Options", and "Help". The "Options" menu is open, showing several settings. A red circle highlights the "Options" menu, and a red arrow points from it to the "Data Options" dialog box.

The "Data Options" dialog box is open, showing the following settings:

- Horizontal Axis Window Size:** Automatic (+/- heartbeat), No Extra Time
- Use Absolute X Scale:**
- Autoscale X:** [Button]
- Live Mode Time Offset [ms]:**
- Plot Bit Channels At Zero:**
- Live Data Append Buffer Size:**
- Number of History Points:**
- A large number of points could result in truncation unless the targeted server is known to have increased its transport buffer size*
- Connection Timeout [ms]:**
- Default Time Span [days]:**
- Filters...:** [Button]
- Close:** [Button]

The "Filter Settings" dialog box is also open, showing the following settings:

- Display Conditions:**
 - CurD2: 1.0 <= (value) <= 100.0
 - PartidesD2: 1.0 <= (value) <= 1.0
- PartidesD2:**
- Add:** [Button] **Remove:** [Button] **Clear:** [Button] **Apply:** [Button]
- Close:** [Button]

The main window displays a plot with a red line and a green dashed line. A red arrow points from the "Data Options" dialog box to the "Filter Settings" dialog box.

The bottom right corner of the application shows a calendar for the month of August, with the date 30 highlighted. The calendar is titled "Sun" and shows the following dates:

30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

At the bottom of the application, there are buttons for "History Mode" and "Live Mode", and a "Today" button.

ARCHIVE VIEWER

✘ Coming soon ...

+ Save all data in range option

✘ Now only saves data shown in chart(s)

+ ???