

# ArchiveViewer To-Do List

This page tracks issues with ArchiveViewer.

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**Project total: 53 - 80 Man-Days or 11-16 Man-Weeks or 3-4 Man-Months**

MD = Man-Days

## Bugs

1. The dock/un-dock plot panel didn't work well. When un-dock, the window doesn't have title. When dock, the order of the panel tag is changed. **(0.5 MDs)**
2. I just tried a simple X1 - X0 formula for two temperatures in the injector. Errors seem to indicate that the two data sets were of different length (very much expected given the way the archiving works). The program should have an option to interpolate data so that one can do A-B.
  - I haven't been able to get the Formulas to work at all. It shouldn't be offered if it doesn't work reasonably well. I feel I wasted a lot of time trying. **(2-3 MDs)**
3. Various problems with Export Dialog
  - Selecting Matlab (which is default), but not entering a name results in an empty Export Dialog
  - Pushing "Cancel" in the Export Dialog always sets status to "Interrupted" **(0.5 MDs)**
4. After a PV is placed in the input window a CR launches a search window. Almost always, because the PV is dragged into the window, there is no need for a search and it would be more appropriate to have CR add the PV to the plot list, and use the ADD tab for the search dialog.
  - Automate "add" button press when pasting in a PV from another application. **(1 MD)**

Nov. 2012 Update:

2. Fixed
3. Second bullet is fixed

## Requests

1. Inform why a formula failed **(0.5 MDs)**
2. "JFreeChart for Time Plots" etc. tab names are meaningless to me and Correlations and Waveforms functions are not implemented. Please don't use controls jargon on these user displays if nobody gets anything from it. **(0.5 MDs)**
3. Non-intuitive controls (how do I select dots instead of connected lines?)
  - Make adding/manipulating axes easier. When you press the button to add a new axis, you first have to specify a name, then hit enter, then type in limits. Combine this into one pop-up.
  - Make toggling visible/invisible a checkbox on the main page, rather than having to go to deeper displays **(7-10 MDs)**
4. Drag or copy/paste mostly works. It would be nice if Archive viewing were more integrated with EDM displays and not a completely separate application. (EDM Action feature).
  - EDM integration: It would be very useful to have a way to "Send" a PV name to an instance of the archive viewer **(7-10 MDs)**
5. ~~If time range spans multiple Archiver indices, user needs to tell the program where to find the data.~~ (Note: Actually, Bob's implementation changed that, but the index widget is still there- to be removed) **(0.5 MDs)**
6. There is no math in correlation plot (correlation coefficient, polynomial fit, psd, etc...) **(10-15 MDs)**
7. Integrate with live data (e.g. show current PV value, .EGU and .DESC) **(5-8 MDs)**
8. Often values for the data being plotted appear with too large a numbers of displayed digits. For example plotting a quad magnet current, the Title is " QUAD:IN20:651:BACT (-251.2770000:20.4479000kG) ". We don't have any numerical values that have 10 significant digits. Generally if we can't see the least significant digit it doesn't matter. Four or five significant digits is plenty to display. **(1 MD)**
9. The time axis labels are too verbose. A 24 hour plot does not need to have the day month and year at each label. Also "PST" in the Time axis label is unnecessary and distracting. Better (less muddled) labeling of time axis. Right now full calendar date and time are on the same row. Develop an algorithm to omit part of the date/time based on time span. For example, a plot with a 3 hour range only needs to list the day, month and year once. **(1-2 MDs)**
10. Show min, max, std, mean, min-max and std/mean **(3-5 MDs)**
11. Option to show limits scale with lines indicating the limits. **(2-4 MDs)**
12. Option to median filter the data. **(1-2 MDs)**
13. Add ignore flier option. (Decimate the data by plotting only points 3 sigmas away from mean). Ignore flier can then be re-applied to the new data set. (Maybe ignore flier flag should be one per PV plotted). **(1-2 MDs)**
14. Smart Y axis range: look at .EGU for PVs plotted and generate a different axis for each different EGU. (on/off flag for this option). It would be nice if the archive viewer would auto generate and label multiple vertical axes, grouping PVs with similar units (mJ, psi, etc) together on the same scale.
  - Vertical scale improvement. First auto generated axis would be on the left, 2nd on the right, 3rd on the left, 4th on the right. These auto generated axes could then be changed through the normal vertical axis controls. **(3-4 MDs)**
15. Tooltips for controls. **(0.5-1 MD)**
16. Easier printing. Add "to logbook" buttons, rather than having to select printer, click through menus. **(0.5-1.5 MDs)**
17. Data histogram. **(2-3 MDs)**
18. Add 3-4 canned Main Time Axis values. Small single click buttons that set Start and End times (1 WKs, 3WKs, 10WKs Weeks). Create buttons to plot popular time ranges. For example, plot last 8 hours, plot last 24 hours, plot last week. Clicking these buttons would set the time range and display the plot, all in one click.
  - Note: implemented in the time dialogs ("slider") **(2-3 MDs)**
19. Better (clearer) feedback when a signal isn't archived **(0.5 MDs)**

20. Implement a debug console, where every step of the data retrieval is described (1-2 MDs)

## Training

1. When plotting "long" time spans, it seems to make something very strange: Instead of plotting 10000 points / mm, it wants to be "smart" and plots only three points: the middle (or mean) and the max and min during that time bin. This distorts the data, especially when you are looking at phase variation of a few degrees and once in a while there is an erratic measurement of +180 or -180 deg. This show up as a "nicely" colored block with many vertical lines in there making the real data nearly impossible to see.
  - a. Even more annoying is some temperature data. For reasons I don't understand and are not due to the archiver program, some temperature values are reported to be very large numbers that have at least 32 decimals to the left of the decimal point. This really screws up the plot scale. Such numbers should be ignored when setting the plot scale. Better yet these numbers should be purged.
1.
  - Sergei's comment: Right-click on the value => Select "ignore value"
2. Very difficult to arrange different scales for two PVs on the same plot (required months of training)
  - Sergei's comment: Click '...' next to PV => Select an empty range axis
3. Easier axis assignment (toggles maybe?, rather than having to click on each PV's "...")
  - Sergei's comment: Select several PVs => Click on any of the selected '...' buttons => Change the axis for all selected PVs
4. EXPORT limits exported data to 50 hours at 1 per second. This needs to be a lot larger. 1 month of data is a reasonable maximum limit.
  - Sergei's comment: In the Export Dialog, press "...", then "More..."