



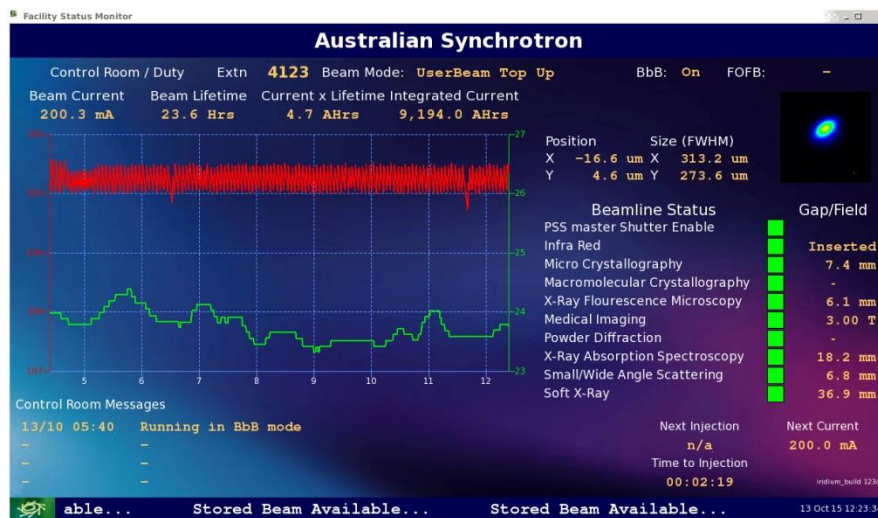
# User focused applications with epicsQt

Andrew Rhyder

Andrew Starritt

# PRESENTATION SUMMARY

- Qt and epicsQt overview
- User focused GUI applications
- Wish list



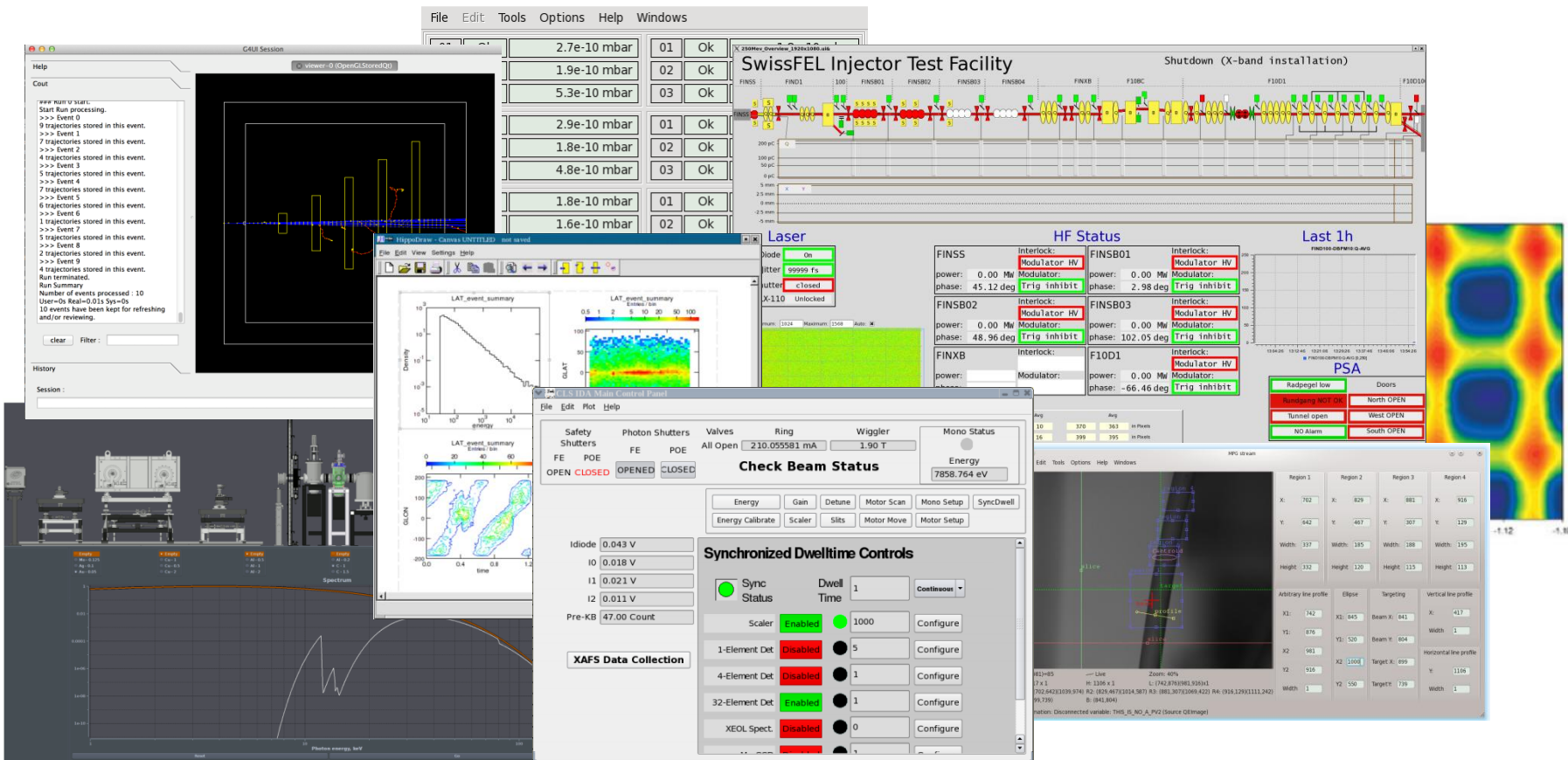
# Qt OVERVIEW



- Qt is a cross-platform application and UI framework for developers using C++.
- It can be used under an open source licence.
- Qt has had a 20 year track record of ongoing development and expanding use.



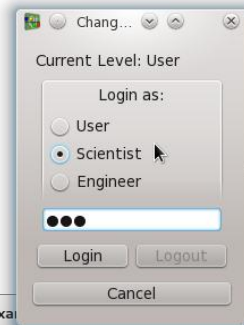
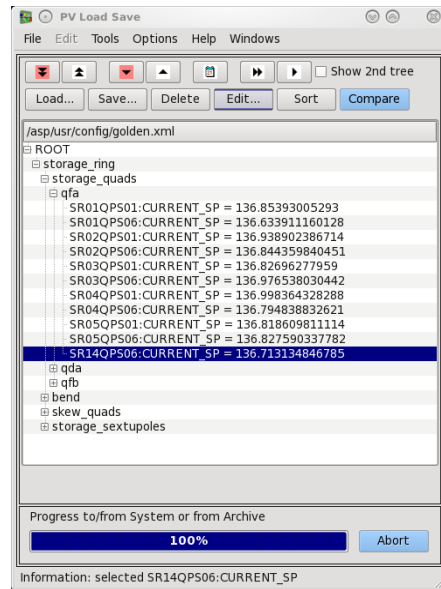
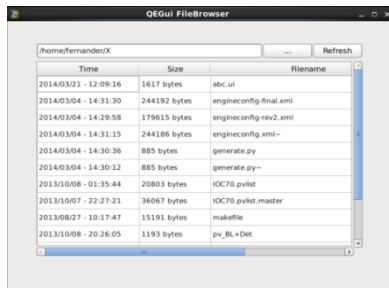
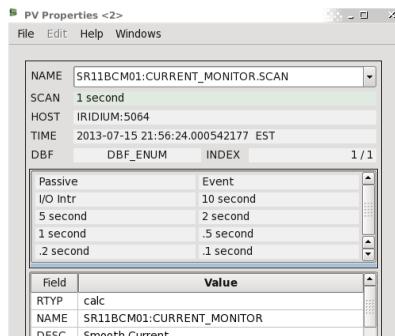
# Qt OVERVIEW



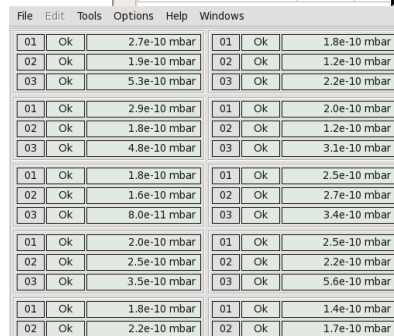
# epicsQt OVERVIEW

## Widgets – 51 of them

- 7 simple monitors
- 13 Controls
- 6 Graphical
- 18 Application support widgets



Time	Type	Message
2013/01/04 - 17:33:52	INFO	The user type was changed from 'User' to 'Scientist'
2013/01/04 - 17:33:54	INFO	The user type was changed from 'Scientist' to 'Engineer'
2013/01/04 - 17:33:56	INFO	The user type was changed from 'Engineer' to 'User'



ng messages

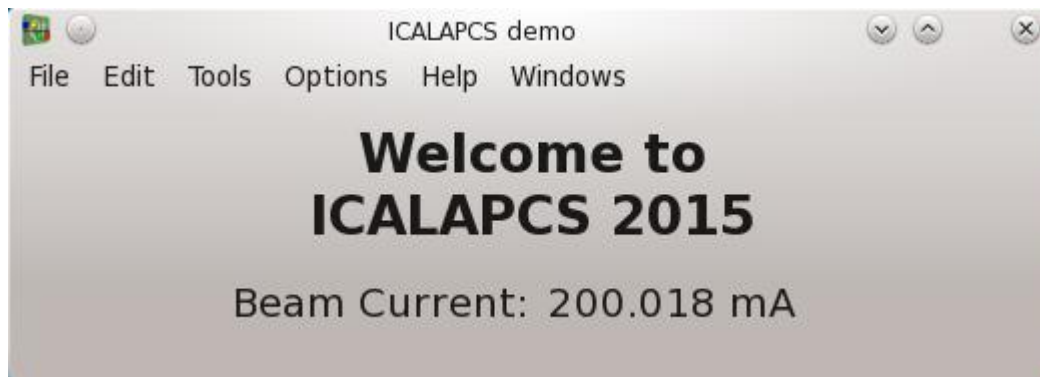
✓ Error messages

Save

om 'Engineer' to 'User'

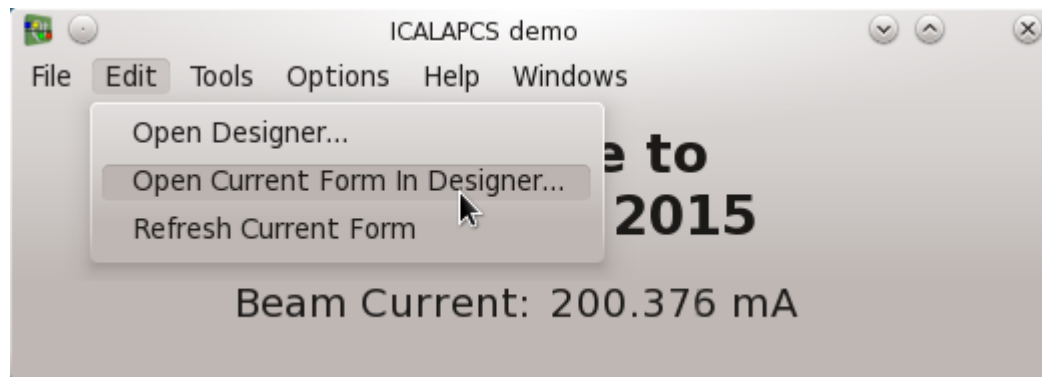


## Modes of use - Codeless



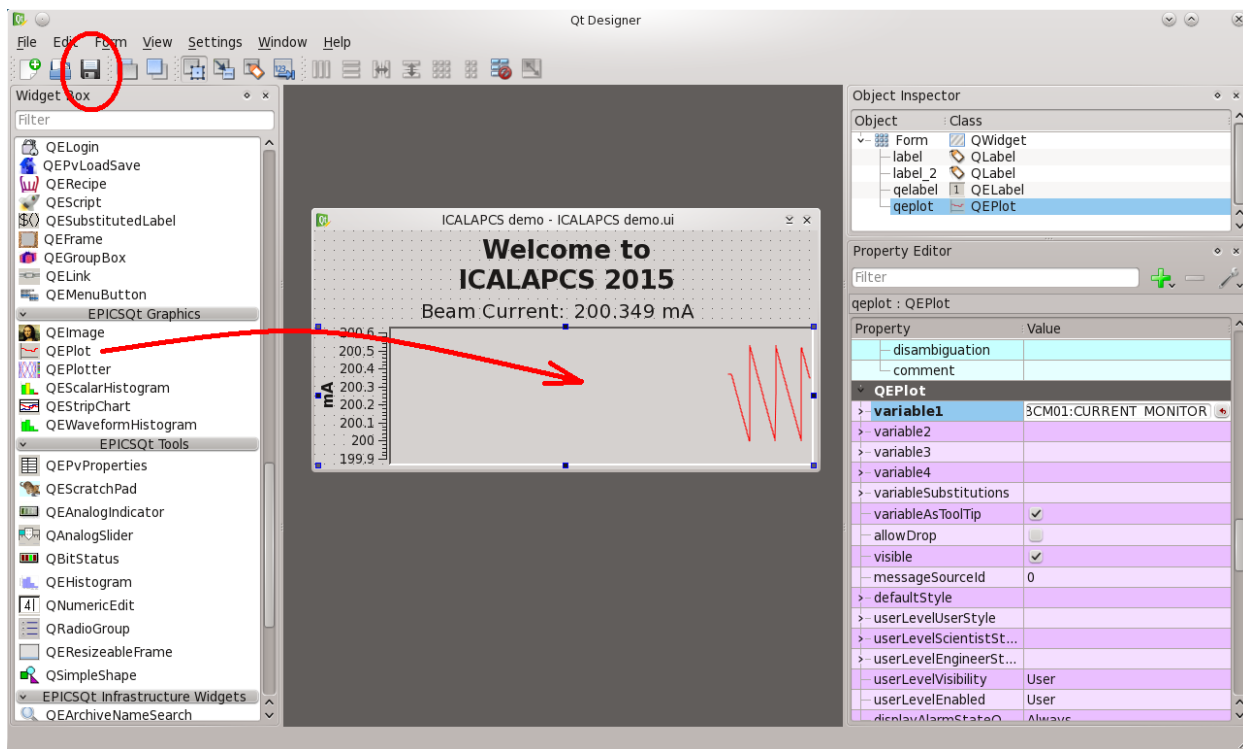


## Modes of use - Codeless



# epicsQt OVERVIEW

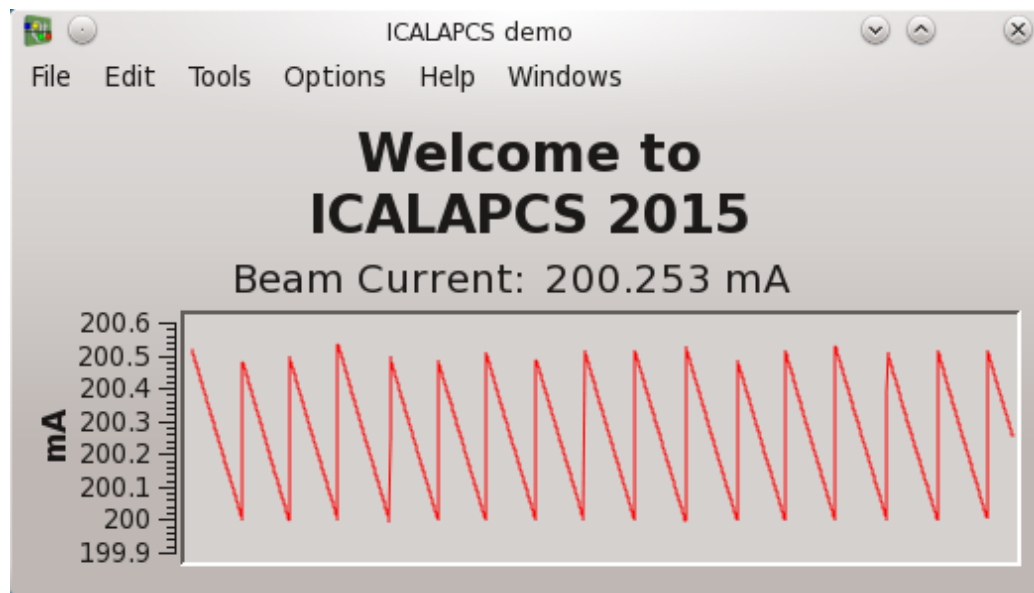
## Modes of use - Codeless



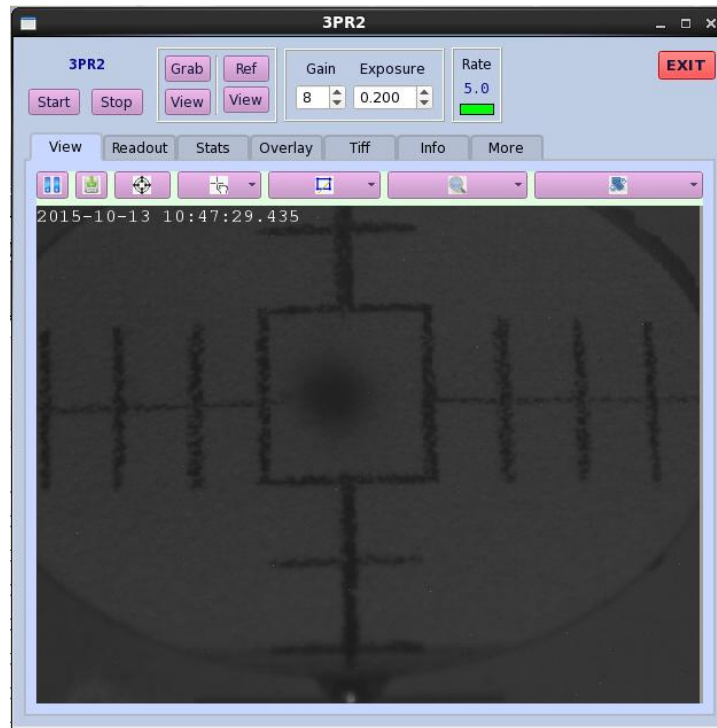
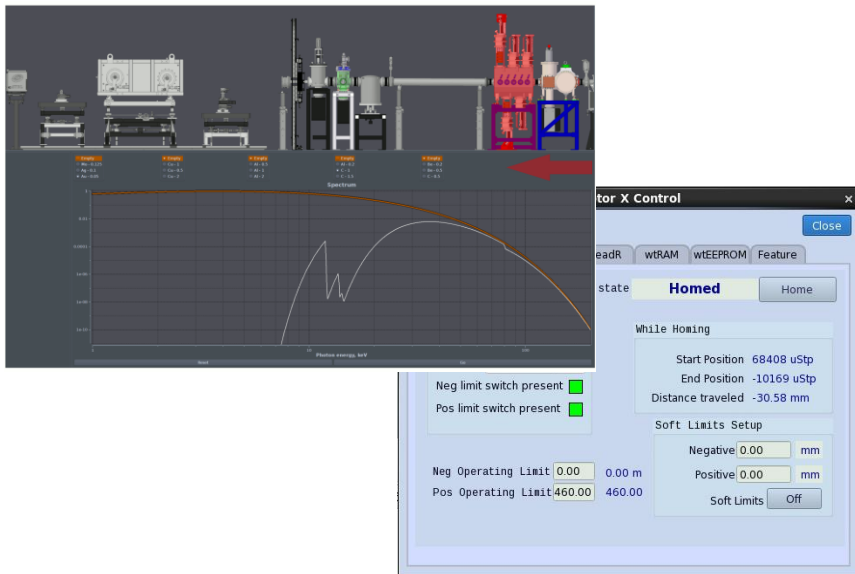




## Modes of use - Codeless

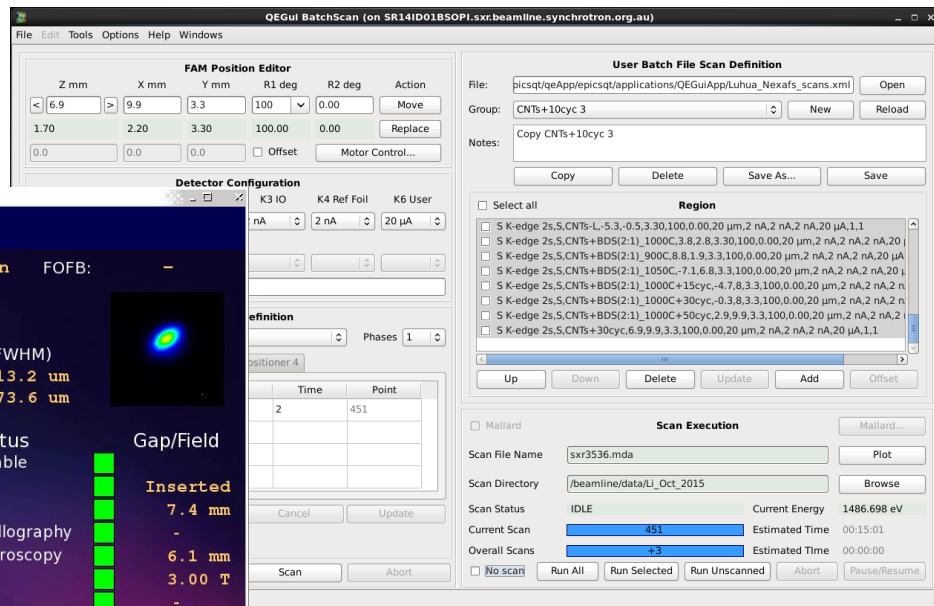
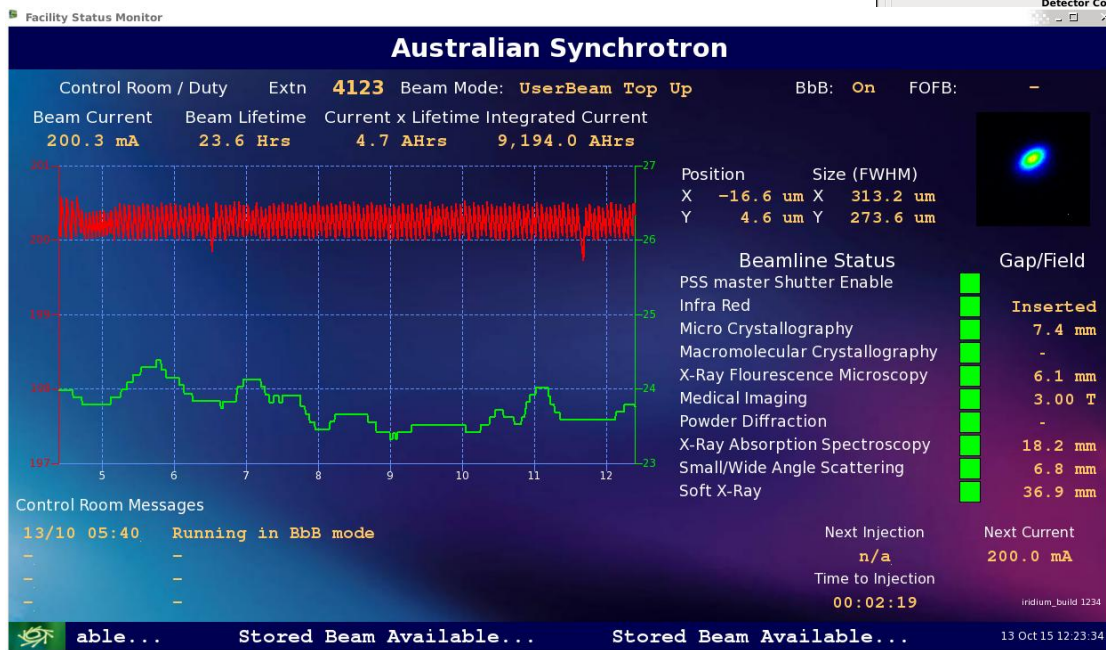


## Modes of use - Produce your own application



# OVERVIEW - epicsQt

## Modes of use – Produce your own widgets





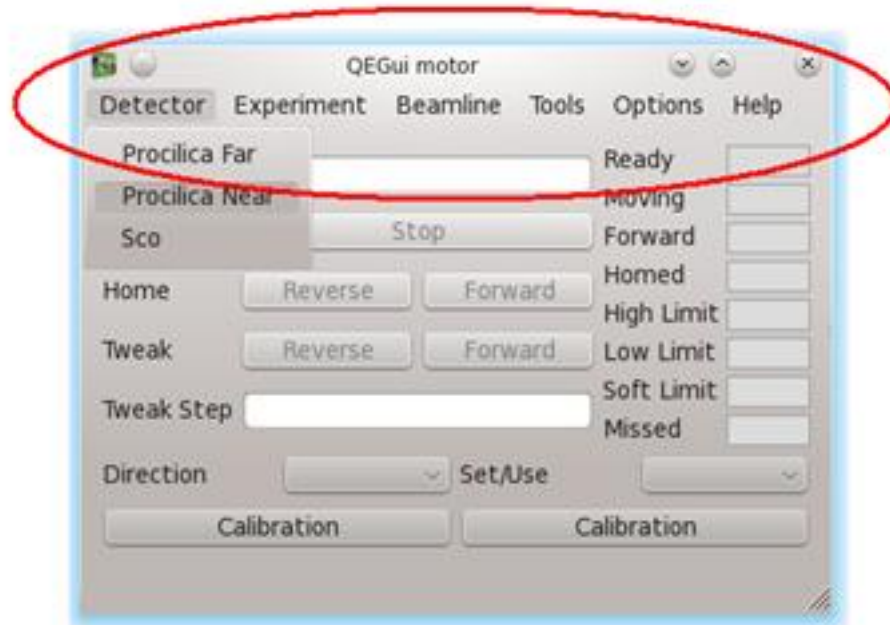
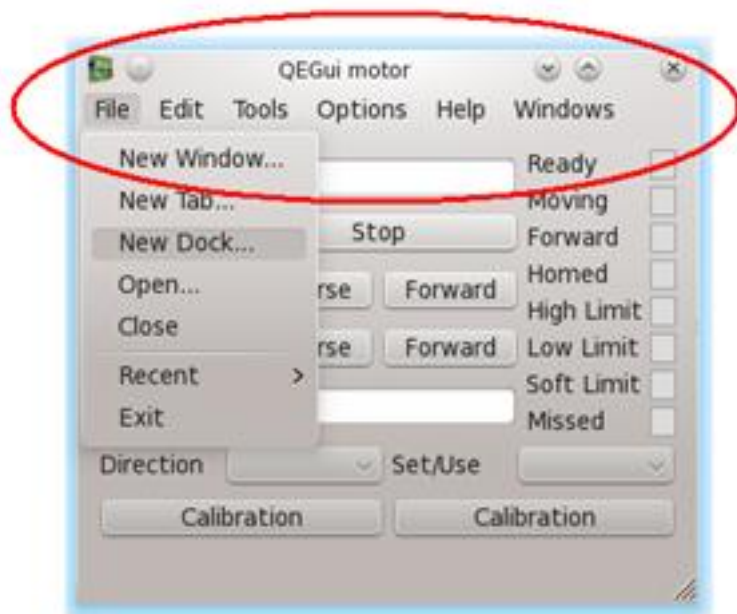
## Application support

- Menu customisation
- Save/restore
- Tool tips
- Copy/Paste
- Context menus
- Launching windows and docks
- Data sources
- Integrated logging
- Application support widgets



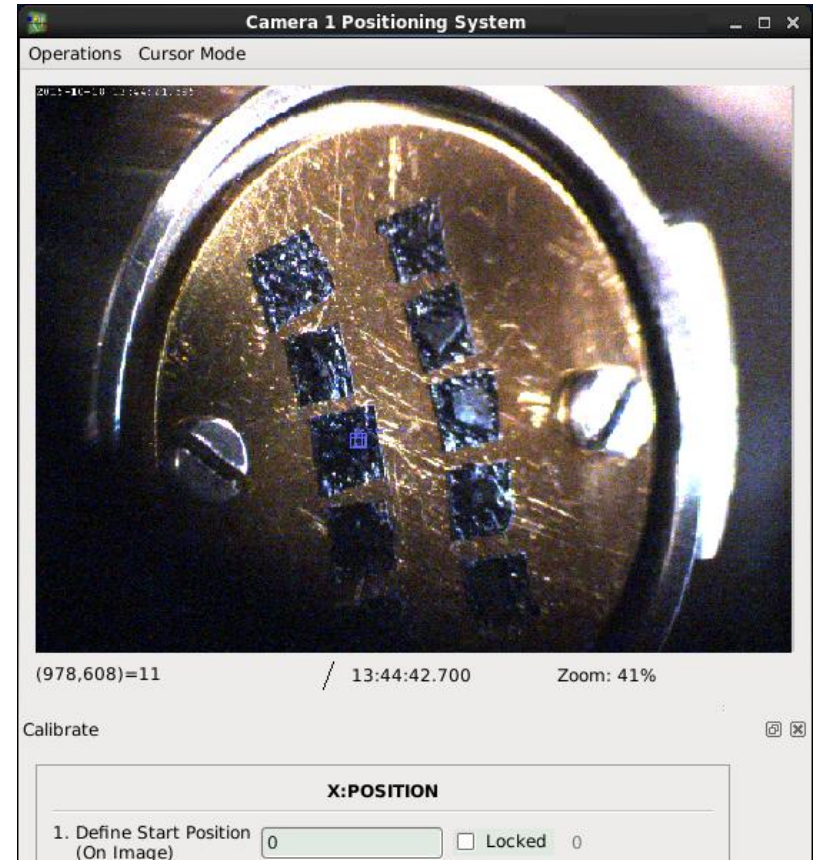
# USER FOCUS

## Custom menu bars



# USER FOCUS

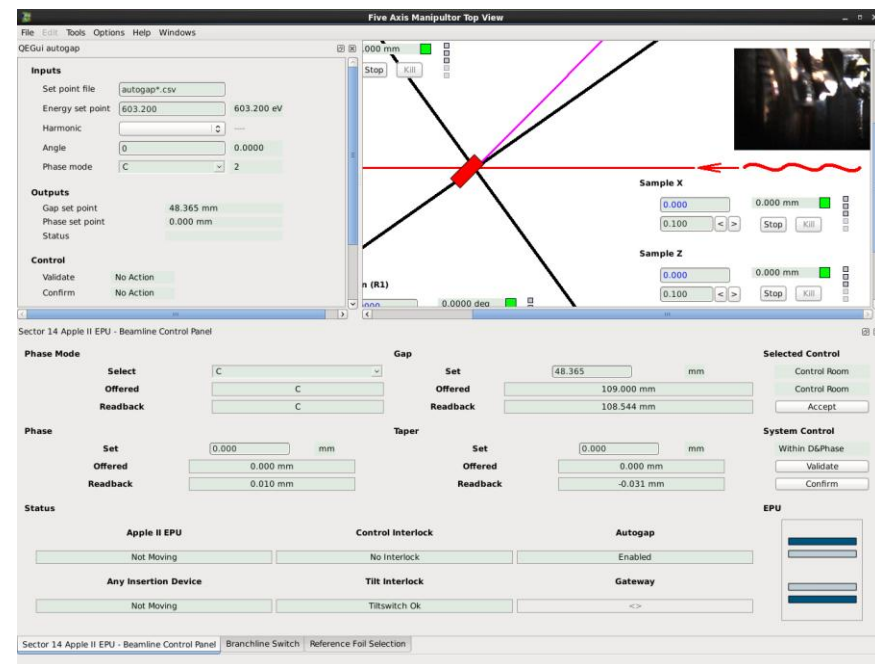
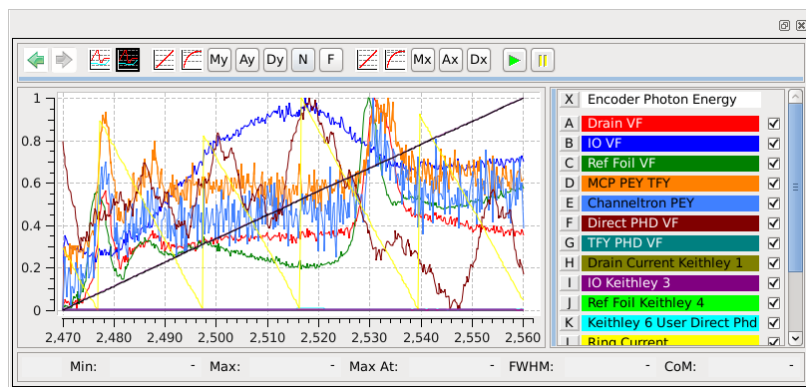
## Custom menu bars





# USER FOCUS

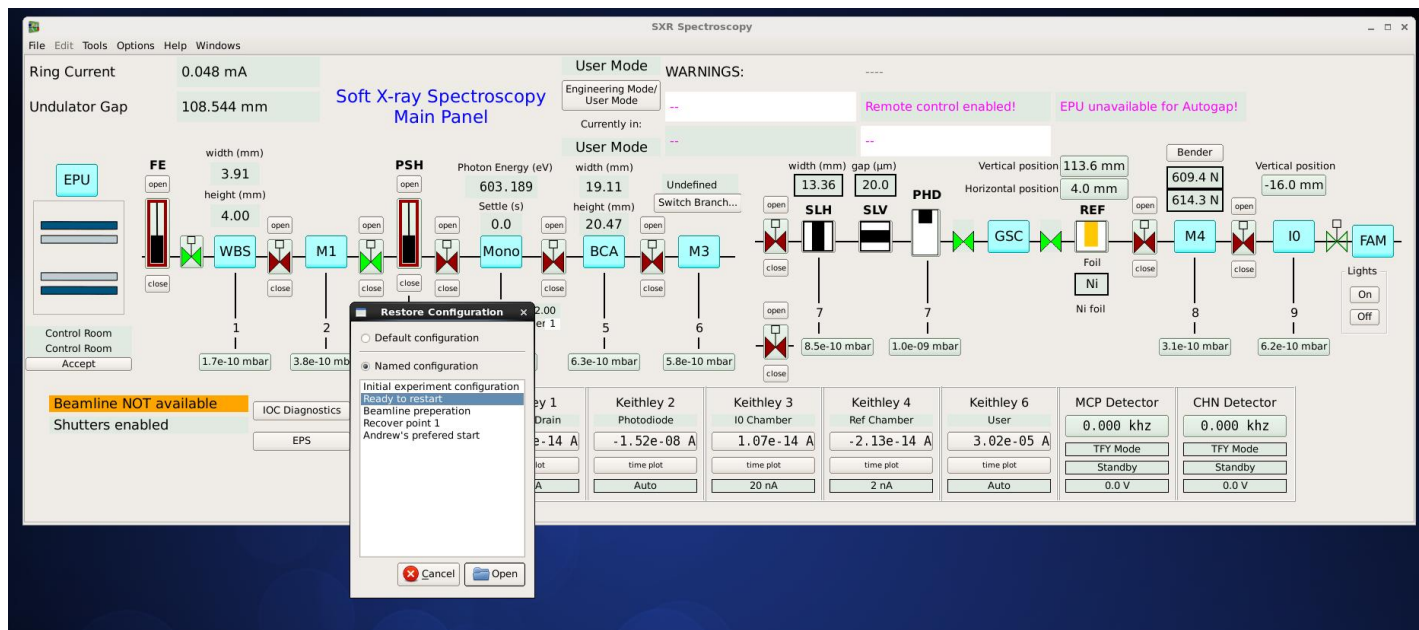
## Windowing system integration



# USER FOCUS

## Configuration manager

- Save / restore

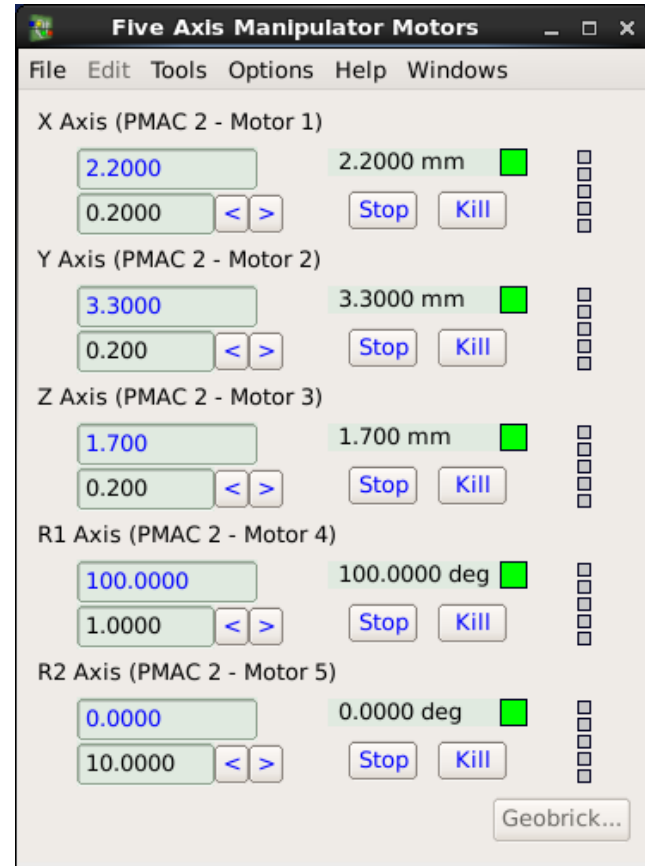
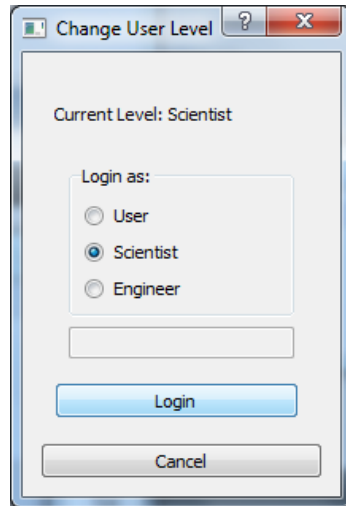




# USER FOCUS

## User levels

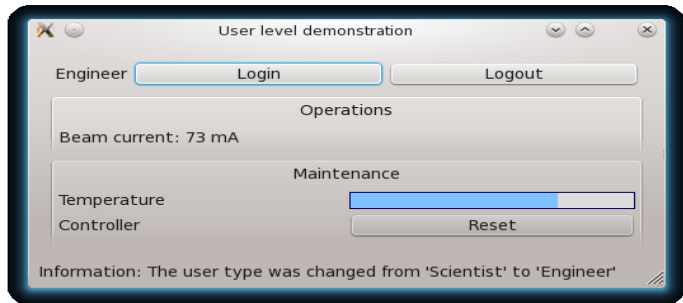
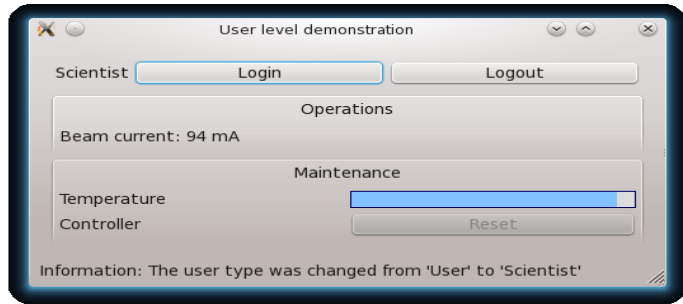
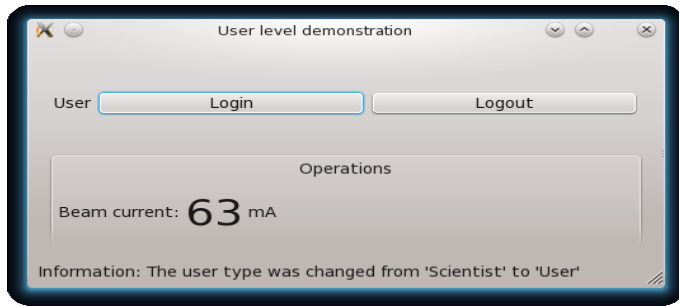
- Simplification – the right information in front of the right person



# USER FOCUS

## User levels

- Simplification – the right information in front of the right person



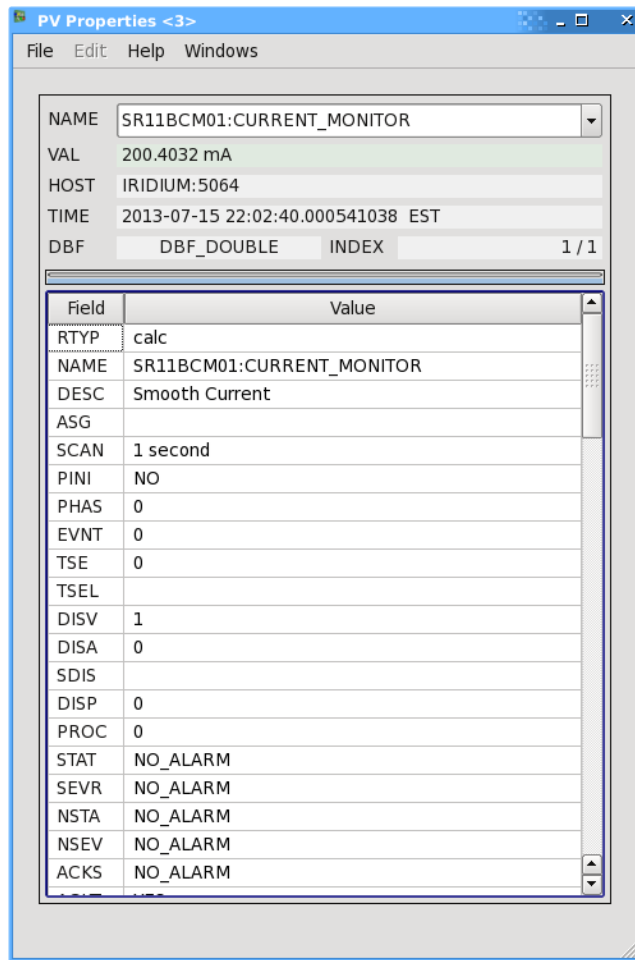


## User Tools

- Built in, but also available as widgets for developers to use.
- Simplifies producing a comprehensive system for the user.
  - PV properties
  - Scratch pad
  - Strip chart and plotter
  - Message log
  - PV load save
  - Archiver status - Currently only talks to 'standard' CA archiver (Andy for version details)
  - Archiver name search

# USER FOCUS

## User Tools - PV Properties

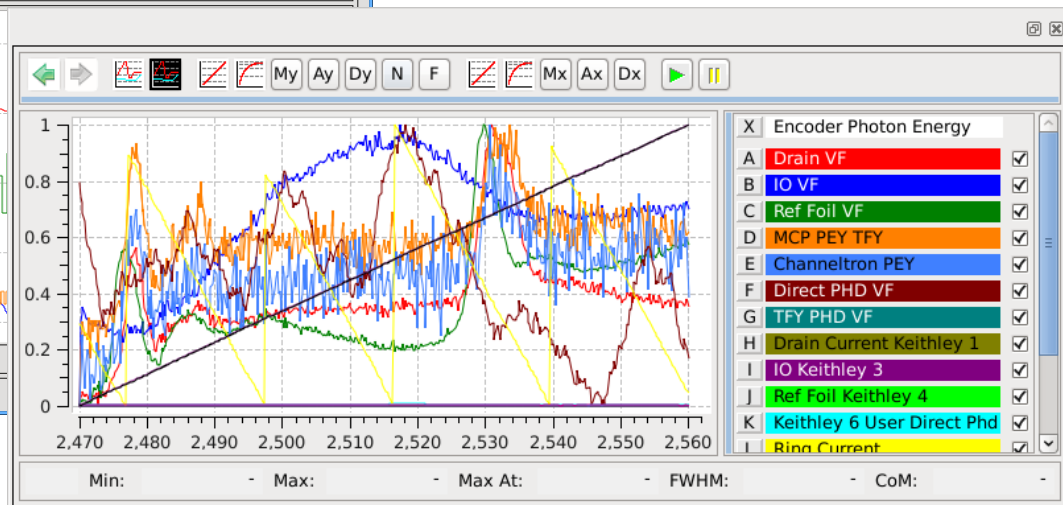
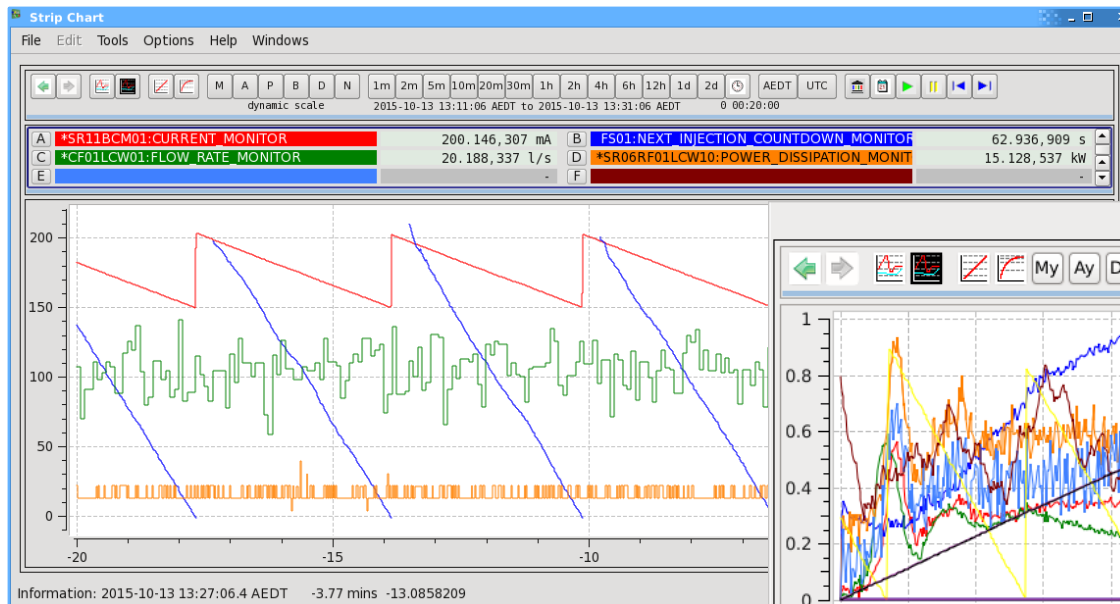


The image shows a software window titled "PV Properties <3>". It contains a menu bar with "File", "Edit", "Help", and "Windows". Below the menu bar, there are several input fields and a table. The fields include "NAME" (SR11BCM01:CURRENT\_MONITOR), "VAL" (200.4032 mA), "HOST" (IRIDIUM:5064), "TIME" (2013-07-15 22:02:40.000541038 EST), and "DBF" (DBF\_DOUBLE, INDEX, 1 / 1). Below these fields is a table with two columns: "Field" and "Value". The table lists various parameters and their values, such as RTYP (calc), NAME (SR11BCM01:CURRENT\_MONITOR), DESC (Smooth Current), ASG, SCAN (1 second), PINI (NO), PHAS (0), EVNT (0), TSE (0), TSEL, DISV (1), DISA (0), SDIS, DISP (0), PROC (0), STAT (NO\_ALARM), SEVR (NO\_ALARM), NSTA (NO\_ALARM), NSEV (NO\_ALARM), and ACKS (NO\_ALARM).

Field	Value
RTYP	calc
NAME	SR11BCM01:CURRENT_MONITOR
DESC	Smooth Current
ASG	
SCAN	1 second
PINI	NO
PHAS	0
EVNT	0
TSE	0
TSEL	
DISV	1
DISA	0
SDIS	
DISP	0
PROC	0
STAT	NO_ALARM
SEVR	NO_ALARM
NSTA	NO_ALARM
NSEV	NO_ALARM
ACKS	NO_ALARM

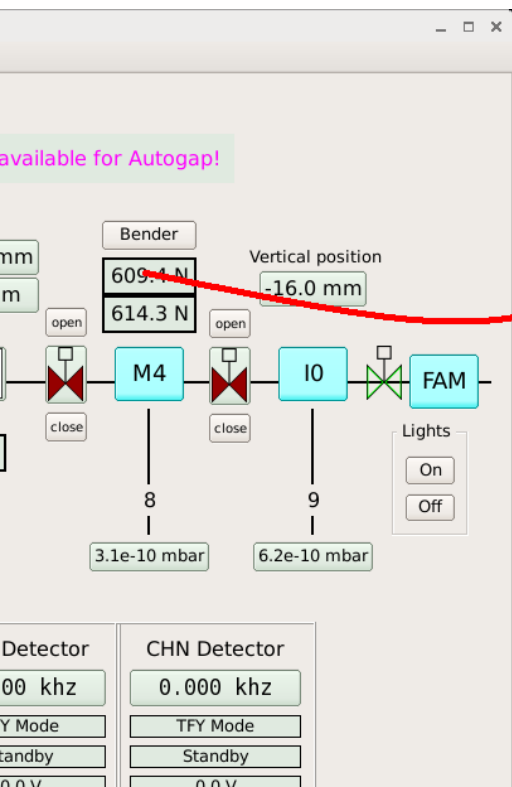
# USER FOCUS

## User Tools - Stripchart and Plotter



# USER FOCUS

## Tools - Scratch pad



File Edit Tools Options Help Windows		
PV Name	Description	Value
SR11BCM01:CURRENT_MONITOR	BCM Smooth Current	6.679 mA
SR11BCM01:LIFETIME_MONITOR	BCM Lifetime	18.29 Hrs
SR11BCM01:LIFETIME_MONITOR.EGU	BCM Lifetime	Hrs



## User Tools - Message log

Simple logging example

User

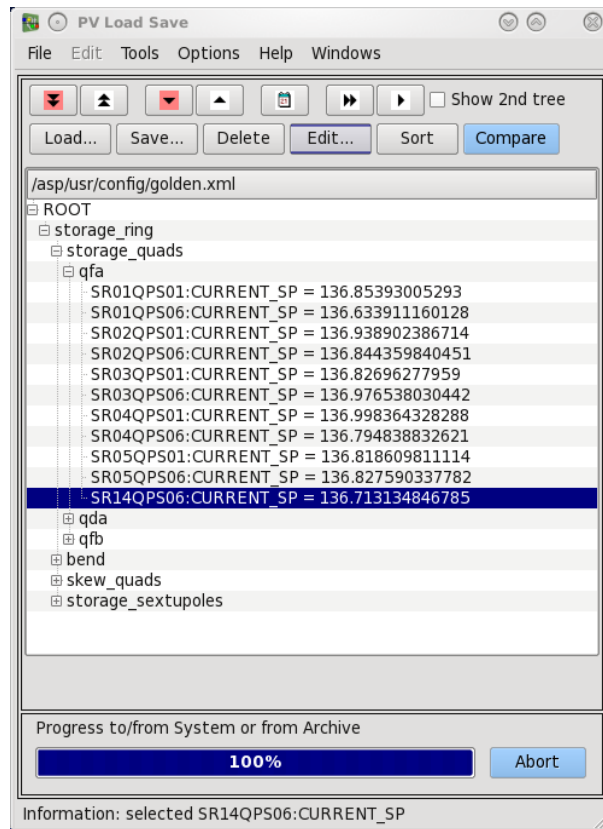
Time	Type	Message
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2013/01/04 - 17:33:54	INFO	The user type was changed from 'Scientist' to 'Engineer'
2013/01/04 - 17:33:56	INFO	The user type was changed from 'Engineer' to 'User'

☒ Info messages ☒ Warning messages ☒ Error messages

Information: The user type was changed from 'Engineer' to 'User'

# USER FOCUS

## User Tools - PV load / save

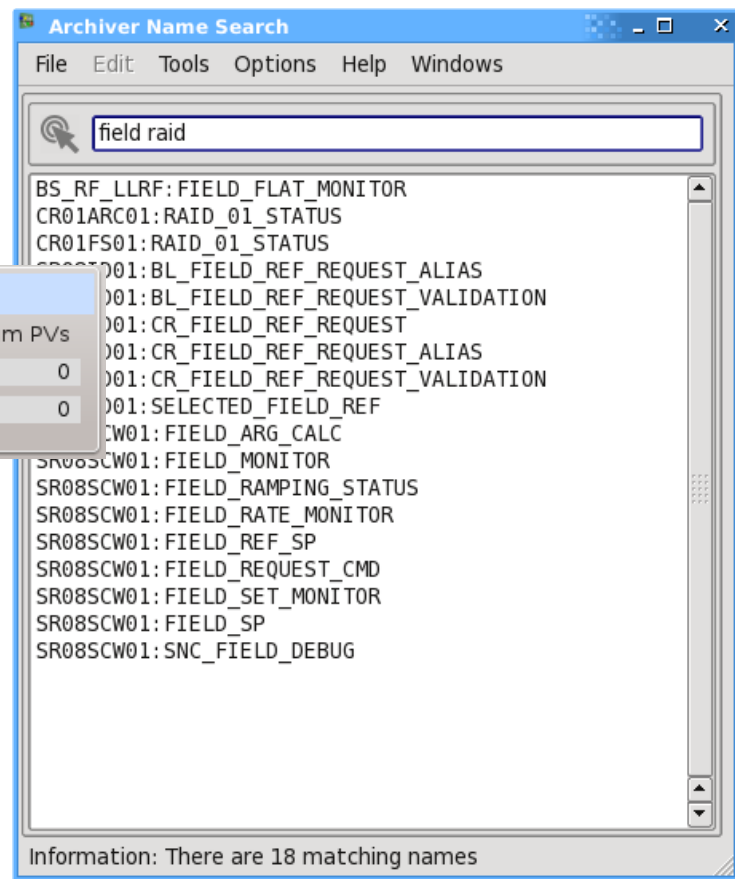




# USER FOCUS

## User Tools - Archiver status and name search

Archive Status Summary					
Host:Port	End Point	Status	Available	Read	Num PVs
cr01arc01:80	/cgi-bin/ArchiveDataServer.cgi	Unknown	0	0	0
cr01arc02:80	/cgi-bin/ArchiveDataServer.cgi	Unknown	0	0	0



# WISH LIST

- Python wrappers
- Stronger integration with caQtDM
- Collaboration



<http://sourceforge.net/projects/epicsqt/>

Questions?