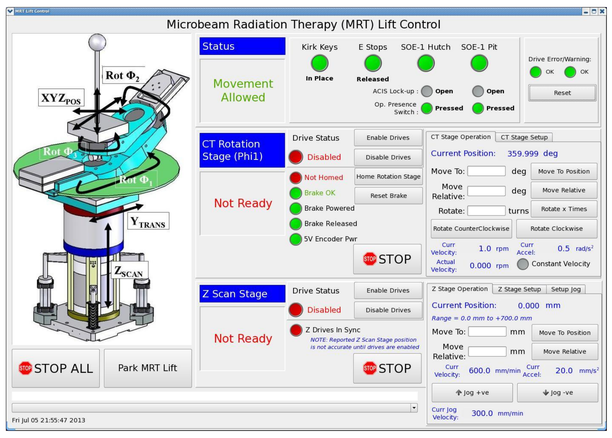
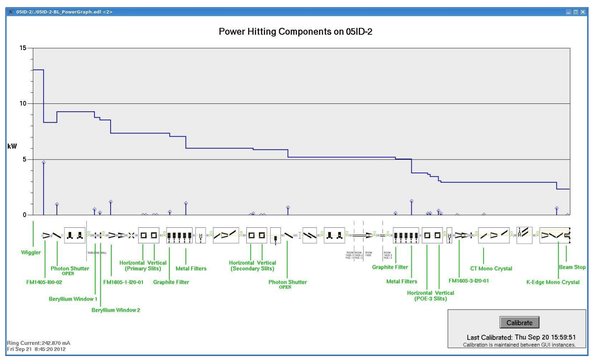
TUPPC100 – Recent Changes to Beamline Software at the Canadian Light Source

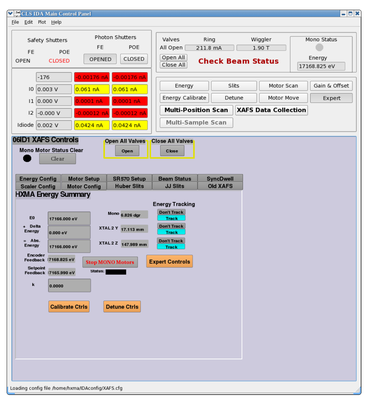
Glen Wright, David Beauregard, Russ Berg, Gillian Black, David K Chevrier, Ru Igarashi, Denise Miller, Elder Matias



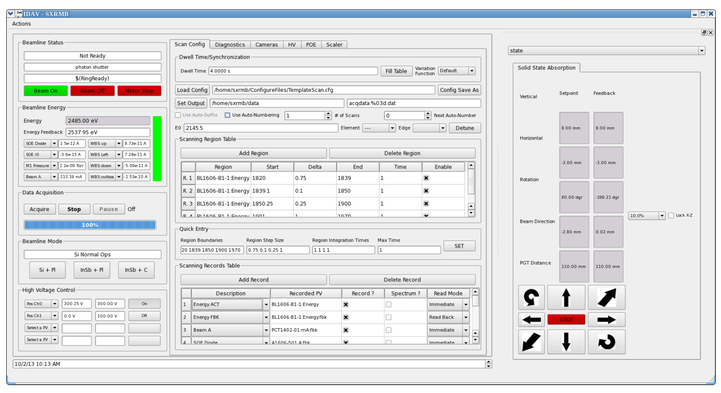
This shows part of the controls for the Microbeam Radiation Therapy lift on the Biomedical ID Beamline. The application is written in C++ using the Qt 4 Widget set. One component is a CLS “Authorization Agent”, which requires the operator to validate with a name and password against the central Active Directory database.



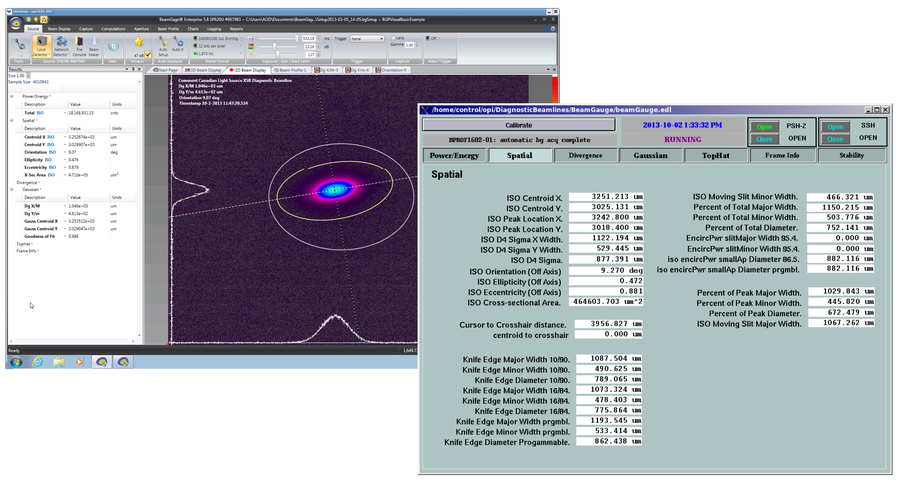
This graph shows the power hitting the components of the BMIT ID beamline, based on the temperature difference between the incoming and outgoing cooling water at each component. The continuous line graph shows the power changing as beam enters and leaves each component. The needle graph indicates the absolute value of the power change at each component.



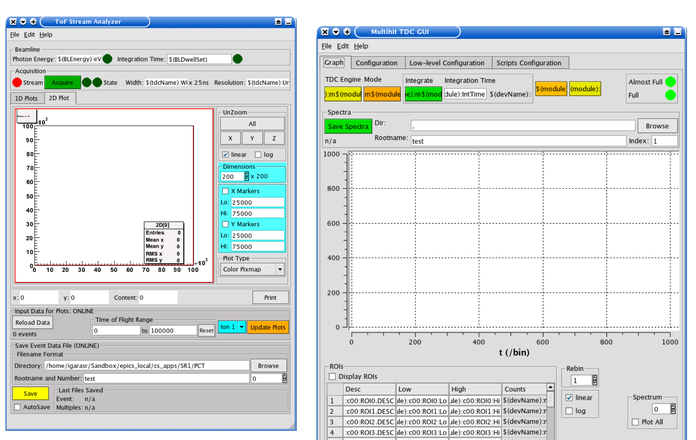
IDA at the HXMA beamline. This screen shot was taken when the beamline was inactive, causing the “Check Beam Status” message. The red and yellow boxes in the upper left are read-backs from different detectors, the coloring intended to warn the user when data being collected is outside the optimal range. In the lower part of the screen, an embedded EDM window saves on re-development effort.



IDAV on the SXRMB Beamline. The screenshot was taken while the monochromator was in motion, shown by the green vertical bar. The fixed portion of the display shows beamline status and feedback from a pull-down list of Process Variables. The middle tabbed section currently shows the data acquisition setup screen, and the right section shows the positioning controls for the solid state detector endstation.



A diagnostic system for profiling the synchrotron light on the XSR beam line was put together consisting of BeamGage software and camera from Ophir. A custom software application which acts as a server connects the industry standard measurements and statistics that are generated by the BeamGage software and pushes those values out to process variables that are hosted from an EPICS application. The EPICS process variables are visible on an EDM screen located in the control room.



VLS-PGM Time-of-Flight windows. The primary window provides general control of the TDC and displays an MCA. A second window was added to display single and 2-dimensional results of preliminary post-processing of the event-by-event data.
The software is a combination of EPICS to interface with a CAEN V1290N VME TDC, and a GUI based on the Qt toolkit and the CERN ROOT toolkit, both running on Linux OS.

Our Operating Funding Partners

INNOVATION.CA CANADA FOUNDATION FOR INNOVATION | FONDATION CANADIENNE POUR L'INNOVATION

NSERC CRSNG

Canada National Research Council Canada | Conseil national de recherches Canada

UNIVERSITY OF SASKATCHEWAN

CIHR IRSC Canadian Institutes of Health Research | Instituts de recherche en santé du Canada

Government of Saskatchewan

Canada Western Economic Diversification Canada | Diversification de l'économie de l'Ouest Canada