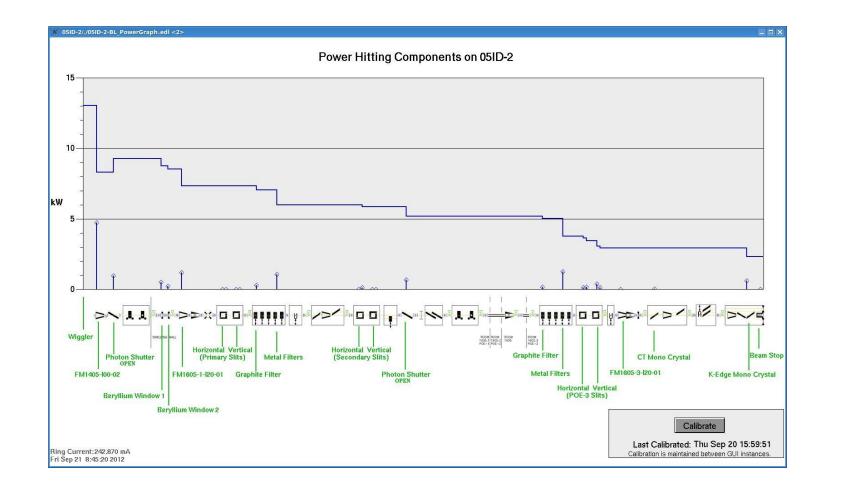


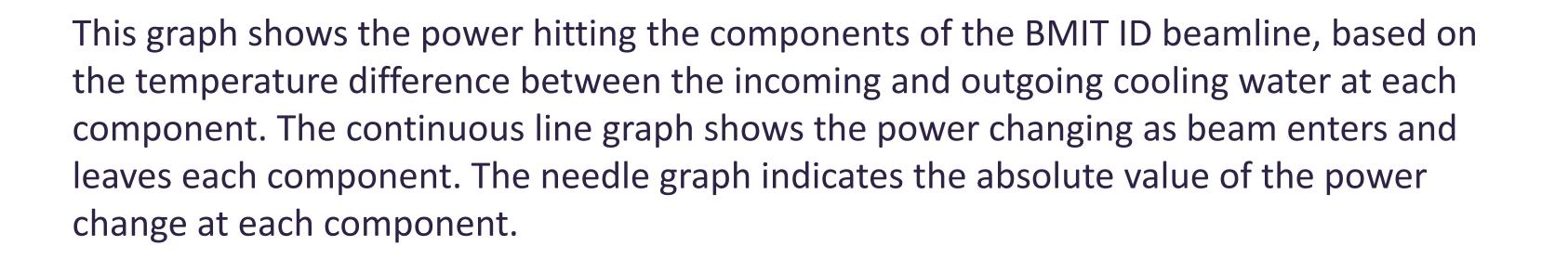
TUPPC100 – Recent Changes to Beamline Software at the Canadian Light Source

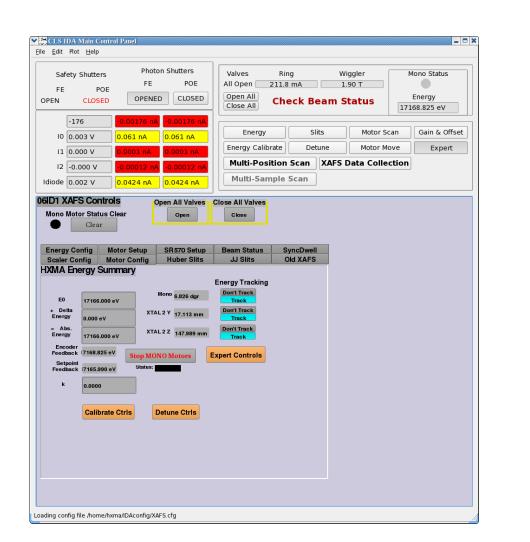
Glen Wright, David Beauregard, Russ Berg, Gillian Black, David K Chevrier, Ru Igarashi, Denise Miller, Elder Matias

MRT Lift Control				- 0			
Micr	obeam Radiatior	n Therapy (N	4RT) Lift Cont	trol			
XYZ _{POS}	Status Movement Allowed	Kirk Keys In Place	E Stops SOE-1 Compared ACIS Lock-up : (Op. Presence Switch :	Hutch SOE-1 Pit Drive Error/Warning: Open Open Pressed Pressed Drive Error/Warning: OK OK Reset			
Rotor	CT Rotation Stage (Phi1)	Drive Status	Enable Drives Disable Drives	CT Stage Operation CT Stage Setup Current Position: 359.999 deg			
Pot O ₁	Not Ready	Not Homed Brake OK Brake Powere Brake Release	Move To: deg Move To Position Move deg Move Relative Relative: deg Move Relative Rotate: turns Rotate x Times Rotate CounterClockwise Rotate Clockwise				
		5V Encoder P	wr STOP	Curr 1.0 rpm Curr 0.5 rad/s² Actual 0.000 rpm Constant Velocity			
	Z Scan Stage	Drive Status	Enable Drives	Z Stage Operation Z Stage Setup Setup Jog			
STOP ALL Park MRT Lift	Not Ready		Disable Drives	Relative: mm Move Relative			
				Curr Velocity: 600.0 mm/min Accel: 20.0 mm/s			

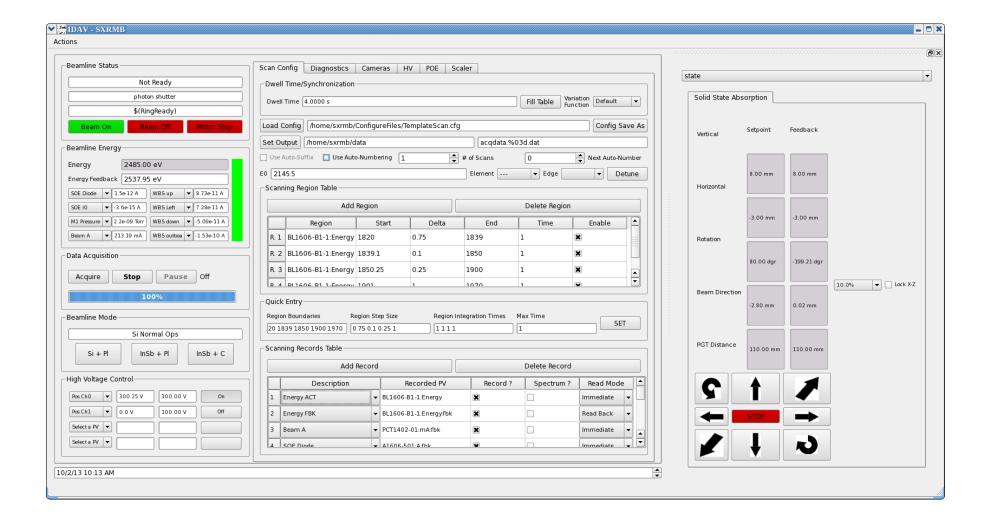
This shows part of the controls for the Microbeam Radiation Therapy lift on the Biomedical ID Beamline. The application is written in C++ using the Qt 4 Widget set. One component is a CLS "Authorization Agent", which requires the operator to validate with a name and password against the central Active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







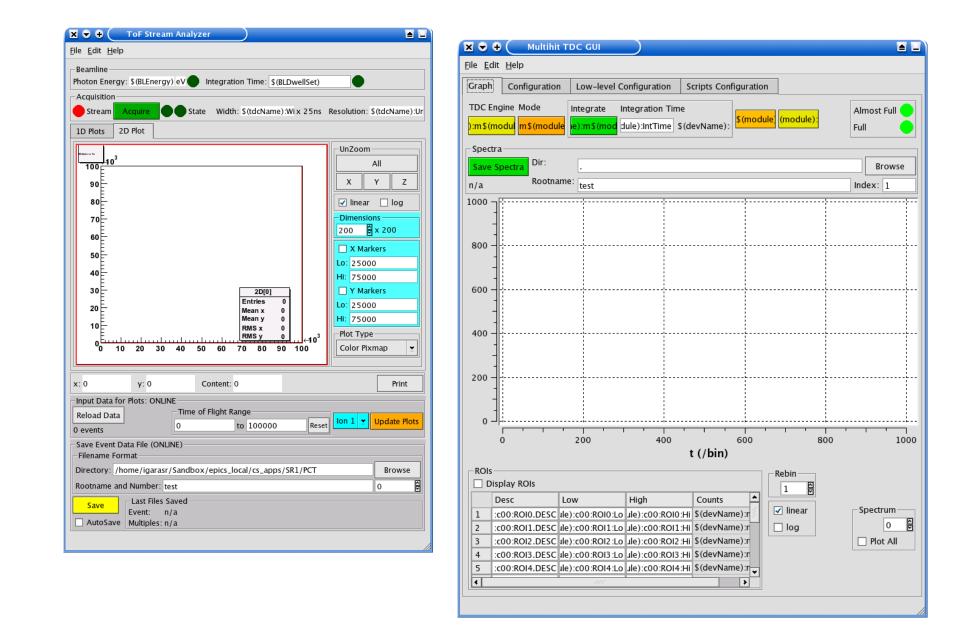
IDA at the HXMA beamline. This screen shot was taken when the beamline was inactive, causing the "Check Beam Status" message. The red and yellow boxes in the upper left are read-backs from different detectors, the coloring intended to warn the user when data being collected is outside the optimal range. 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.

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ts		• Q >			▼ ×					
1.00 🖶 ple Size 4010943		4	Comment Canadian Light Source XSR Diagnostic Beamline Dg X/M 1.046e+03 um							
Power/Energy *			Dg Y/m 4.613e+02 um Orientation 9.07 deg		and a straight straig					
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Centroid Y ISO Orientation ISO	 3.029907e+03 9.07 	um deg						-		
Ellipticity ISO	· 0.476	acy		Power/Energ	gy Spatial	Divergence	Gaussian	TopHat	Frame Info	Stability
,	- 0.879	,		Spatial						
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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.

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