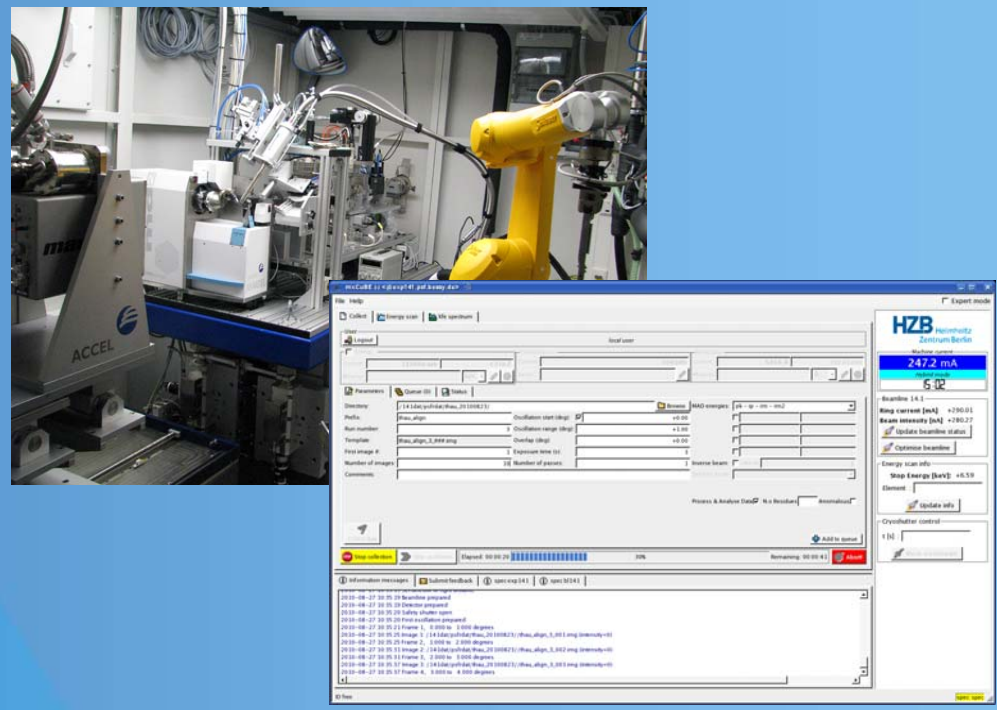
Status of mxCuBE Beamline Control at BESSY II

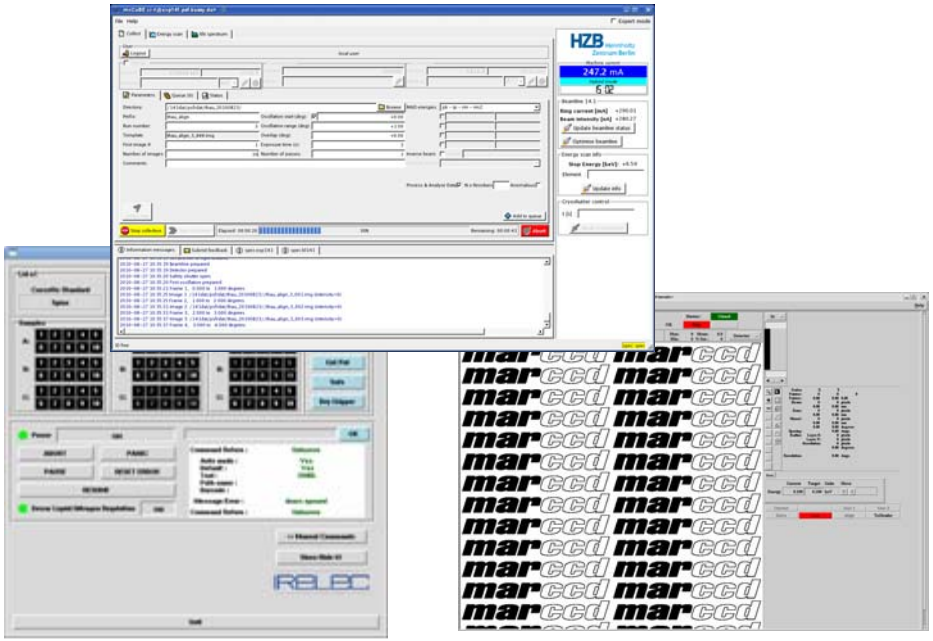
Michael Hellmig & Uwe Mueller

mxCuBE work shop,
12./13.January 2012, SOLEIL

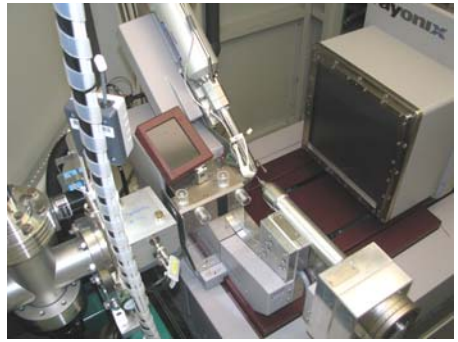


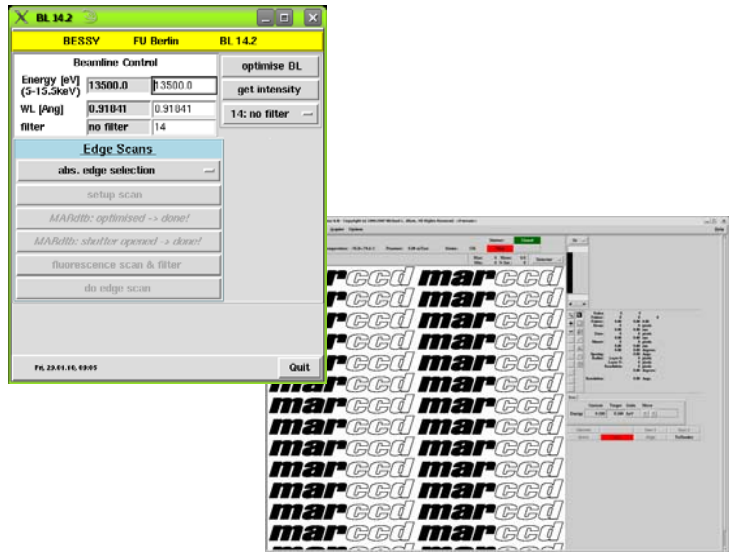
CONTROL-SOFTWARE SETUP

BL14.1



BL14.2 and 14.3





Current mxCuBE functionality:

Beamline control	Data collection	Energy scan, Xfe spectrum	Automated cryo-stream shutter

Planned mxCuBE extensions:

MD2 sample centring	Helical scan	EDNA support	Remote data collection

Current mxCuBE functionality:

- Beamline control
- Data collection (SPINE & plate screening)
- Energy scan, Xfe spectrum
- Automated cryo-stream shutter
- EDNA support
- Automatic hutch trigger

mxCUBE development version:

- MD2 sample centring
- Helical scan
- Remote data collection

Planned integration:

- CATS sample changer

mxCuBE development version:

MD2 sample centring

Helical scan

Remote data collection

- Sample-video display: Falcon frame grabber + Tango device server
- Control of MD2 organ devices (OAM, Lights, Beamstop, …) inside mxCuBE: MD2-specific hardware objects + MD2 v4 application (new API + Tango events)
- Sample centring: new Bliss hardware object using MD2‘s built-in routine for remotely-controlled sample-centring

mxCuBE development version:

MD2 sample centring

Helical scan

Remote data collection

- Re-configuration of spec: use of udiff_mot motor controller + integration of configuration macro
- Calculation of sample translation during data collection: MD2 v4 applications (API extensions)

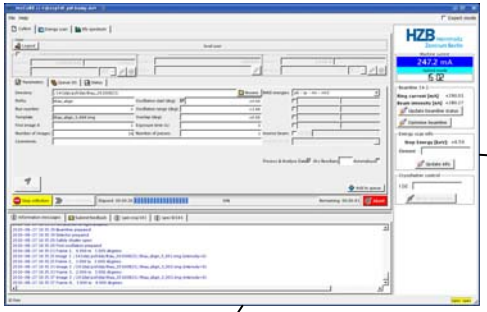
mxCuBE development version:

MD2 sample centring

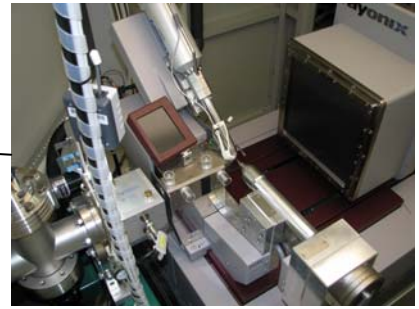
Helical scan

Remote data collection

- Implementation of dummy Bliss hardware objects to mimic ISPyB and LDAP functionality
- Session management (InstanceListBrick/InstanceServer) currently under testing to assess remote-access applicability and required setup changes at BESSY

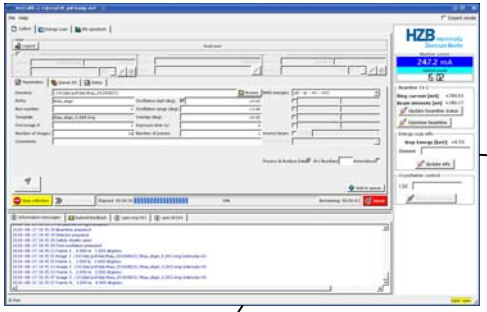


DTB functions ⇨ spec/Rayonix

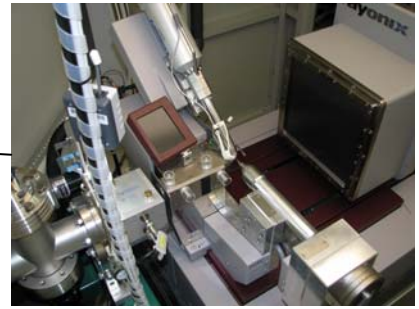


CCD functions ⇨ spec/Rayonix

- mxCuBE-compatible implementation:
  extended remote interface from Rayonix
- Support for CCD functionality + all DTB motors,
  beam optimisation, shutter, exposure, …
- August 2010:
  first mxCuBE-controlled data collection on BL14.2
- Spring 2011:
  testing with friendly users during user operation
- BUT:
  stopped mxCuBE usage due to software instabilities



DTB functions ⇨ spec/Rayonix



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