Sardana at Petra III (DESY)

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- Current status
- Installation
- Sardana implementation
- Configuration and Startup
- Implementation specific procedures
- Taurus GUIs
- Extra features

Current Status

- Sardana installed in all DESY-PETRA beamlines
- Used:
  - primordially at Dynamics, Extreme Conditions, Resonant Scattering and Diffraction, Coherence Applications
  - partially at Variable Polarization XUV, Hard X-ray Micro/Nano-Probe, High Resolution Power Diffraction, HighRes Diffraction
  - none at MINAXS, High Energy Material Science

Installation

Own debian packages merging Sardana develop branch with Sardana-DESY repository with own modifications

Sardana develop

Sardana-DESY:
- nxs/fio recorders
- General hooks
- General on_stop
- Check-condition
- Handling motor limits

Debian package

Sardana Implementation

mot_a1
mot_a2
...
c_a1
c_a2
...
Devices

ca1 (c_a1),
cb1 (c_b1),
...
Theta (mot_a1)

MG: c_a1
c_b1

Pool

ms_device
door1_device
door2_device
door3_device

MS

DB

mot_b1
mot_b2
...
c_b1
c_b2
...
Devices

cb1 (c_b1),
cb2 (c_b2),
...
Theta (mot_b1)

MG: c_b1
c_b2

Pool

ms_device
door1_device
door2_device
door3_device

MS

DB

Beamline

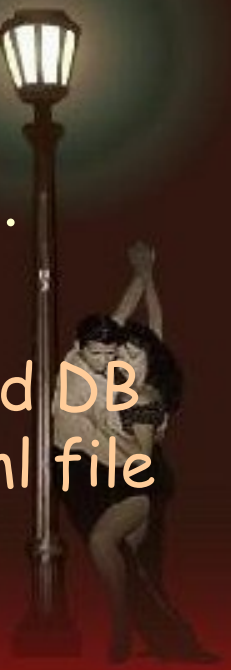
Restricted by naming convention and MG

Configuration and Startup

- Configuration based on xml file:
  - all devices
  - measurement groups
  - diffractometer with initial configuration

- Dedicated tools for starting/stopping Sardana and performing any user required action at startup.

Sardana is started/configured from scratch (related DB info removed and created again) if changes in the xml file



Configuration and Startup

Devices,
Diffractometer,
MGs, ...

Users xml file

Mapping
devices-ctrls

Sardana xml file

Create/Conf
Pool and MS

PoolPath

Pool

MacroPath
PythonPath
EnvironmentDb

MS

Create Pool devices

Configure Pool devices:
- motor limits
- initialize diffractometer, ...

Run python script for user defined actions, ex.:
- set MacroServer environment

Sardana ready to use

Implementation specific procedures

Macros running from Spock

- DESY specific macros:
  - energy macros: escan, me, escanexafs, …
  - hkl macros: hklscan, br, wh, setorn, luppsi, …
  - petra macros: wait_for_petra, wait_for_beam, …
  - motor limits macros: hasy_adjust_lim, …

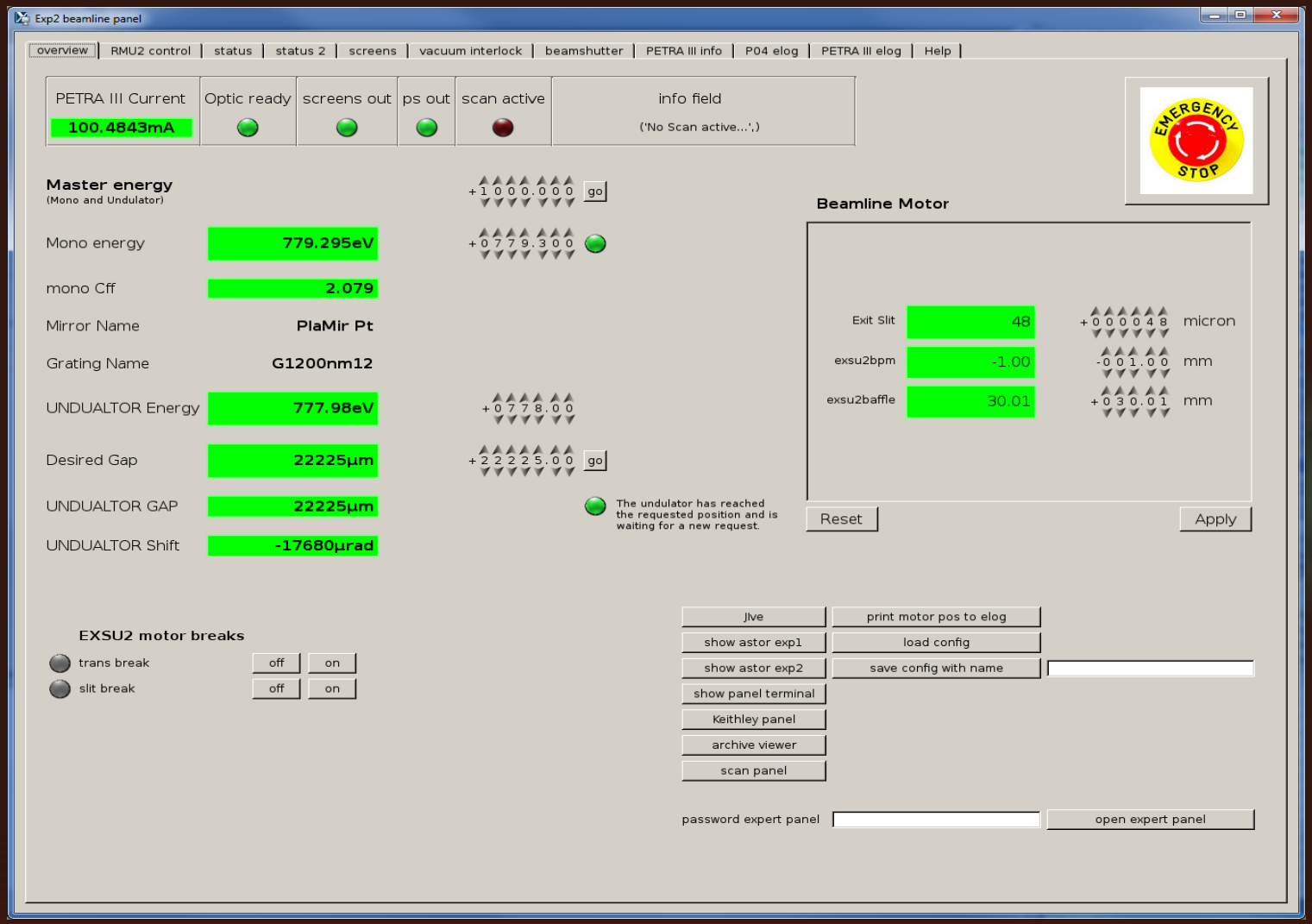
- Beamline specific macros:
  - Maia macros
  - Zebra & XIA macros

- User specific macros

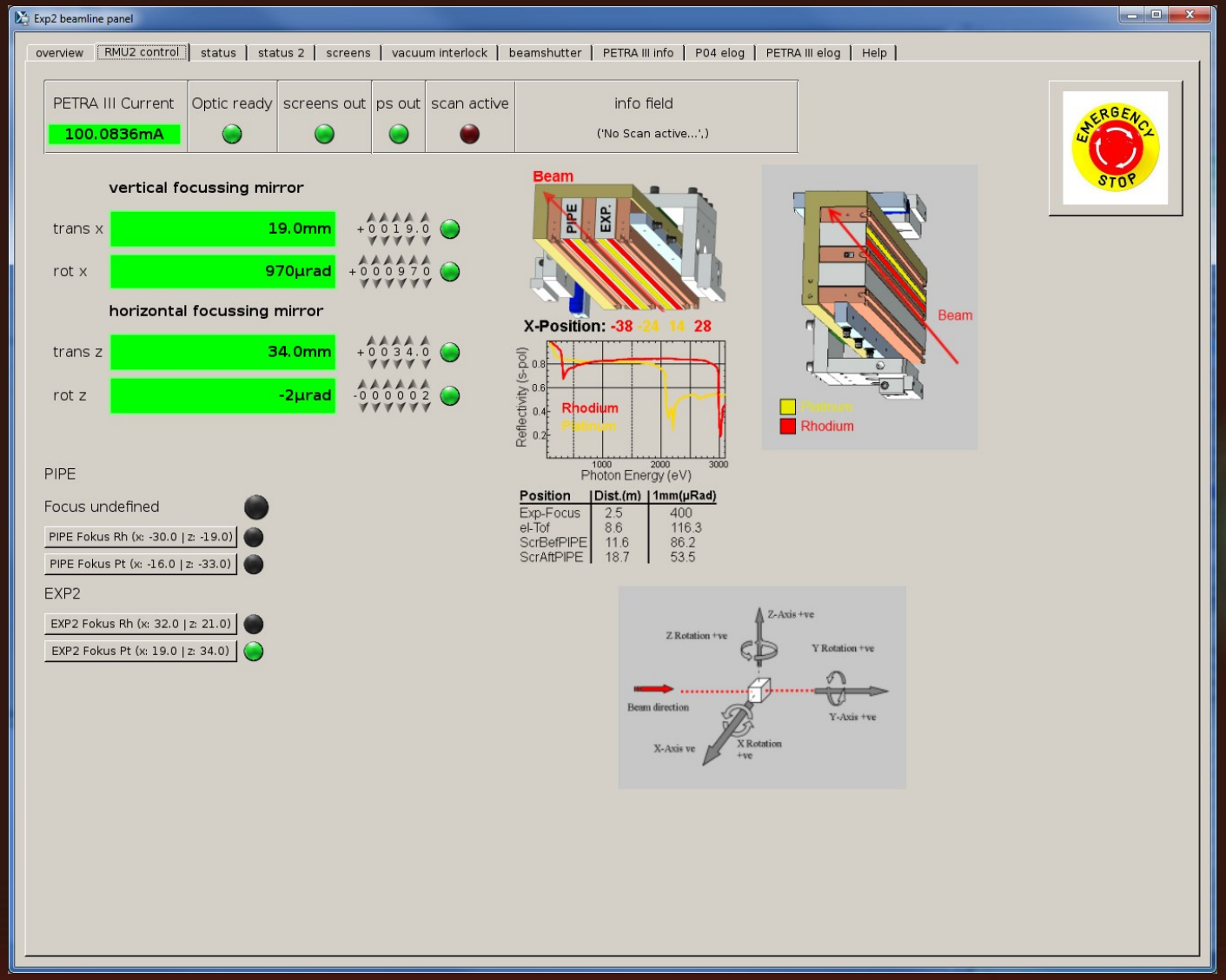
Taurus GUIs

- General GUIs occasionally used:
  - Macrogui (expconf)
  - imagegui

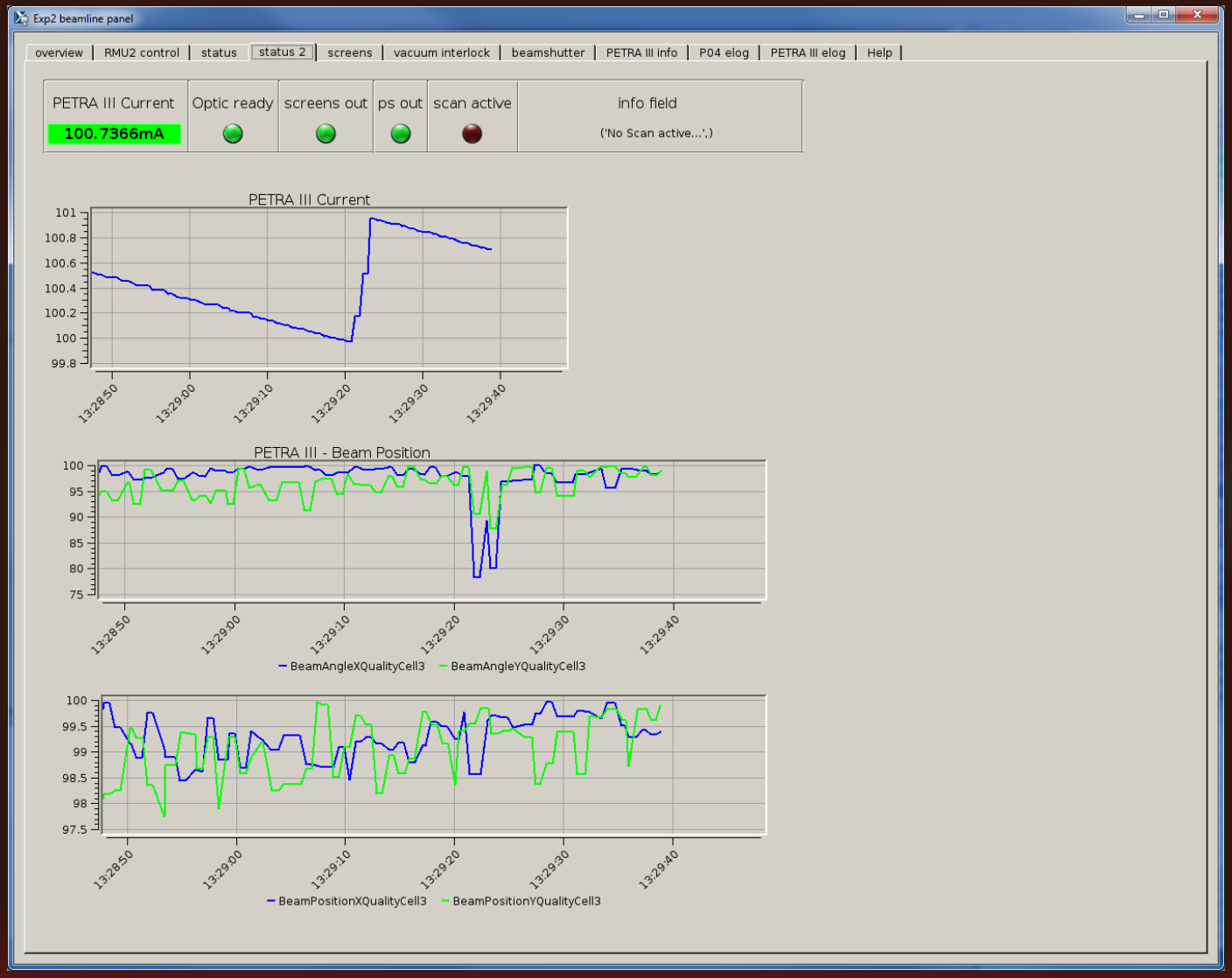
- Beamline specific GUIs:
  - motor display
  - full beamline control (Variable polarization XUV)



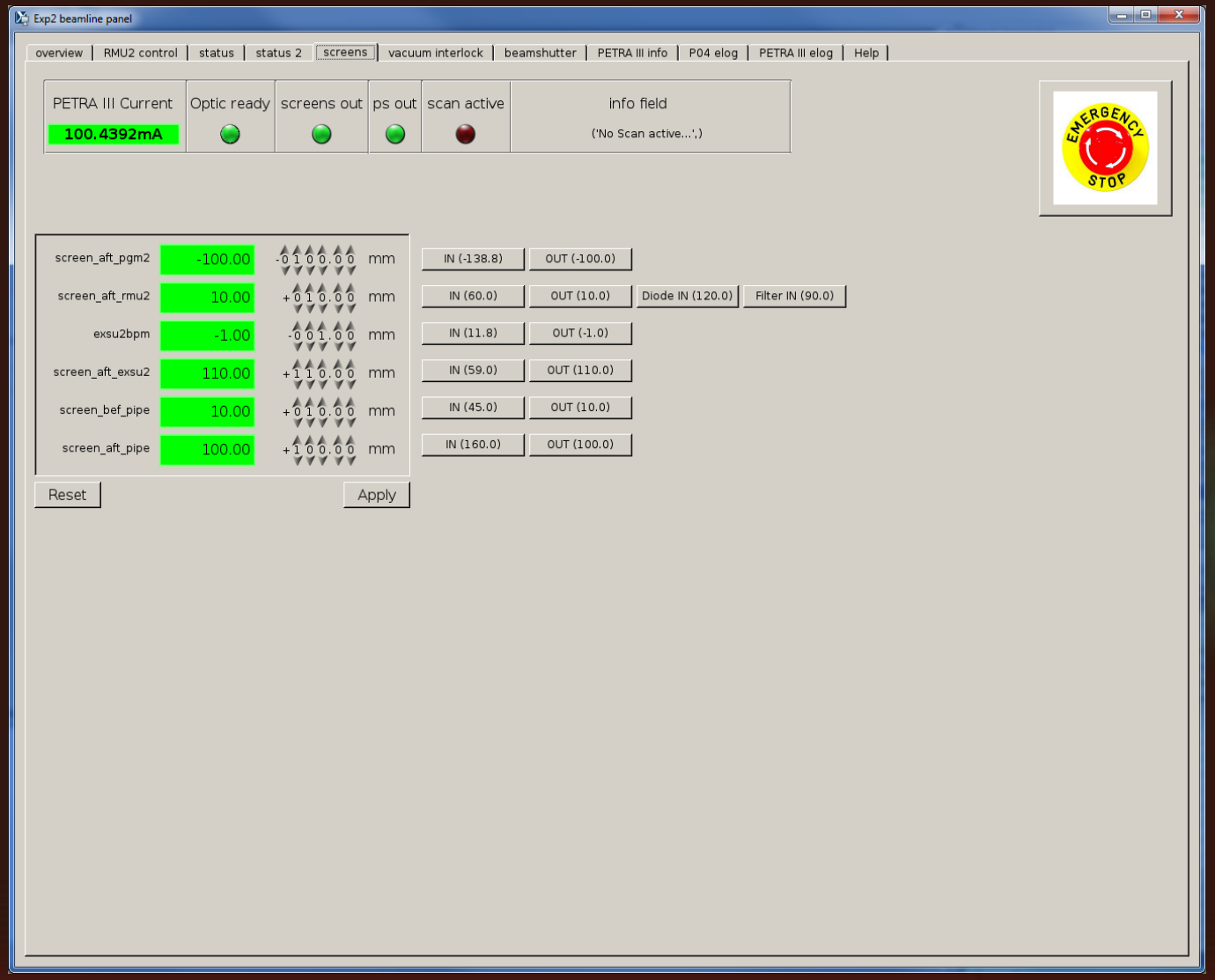
Beamline Control with Taurus (p04- F. Scholz)



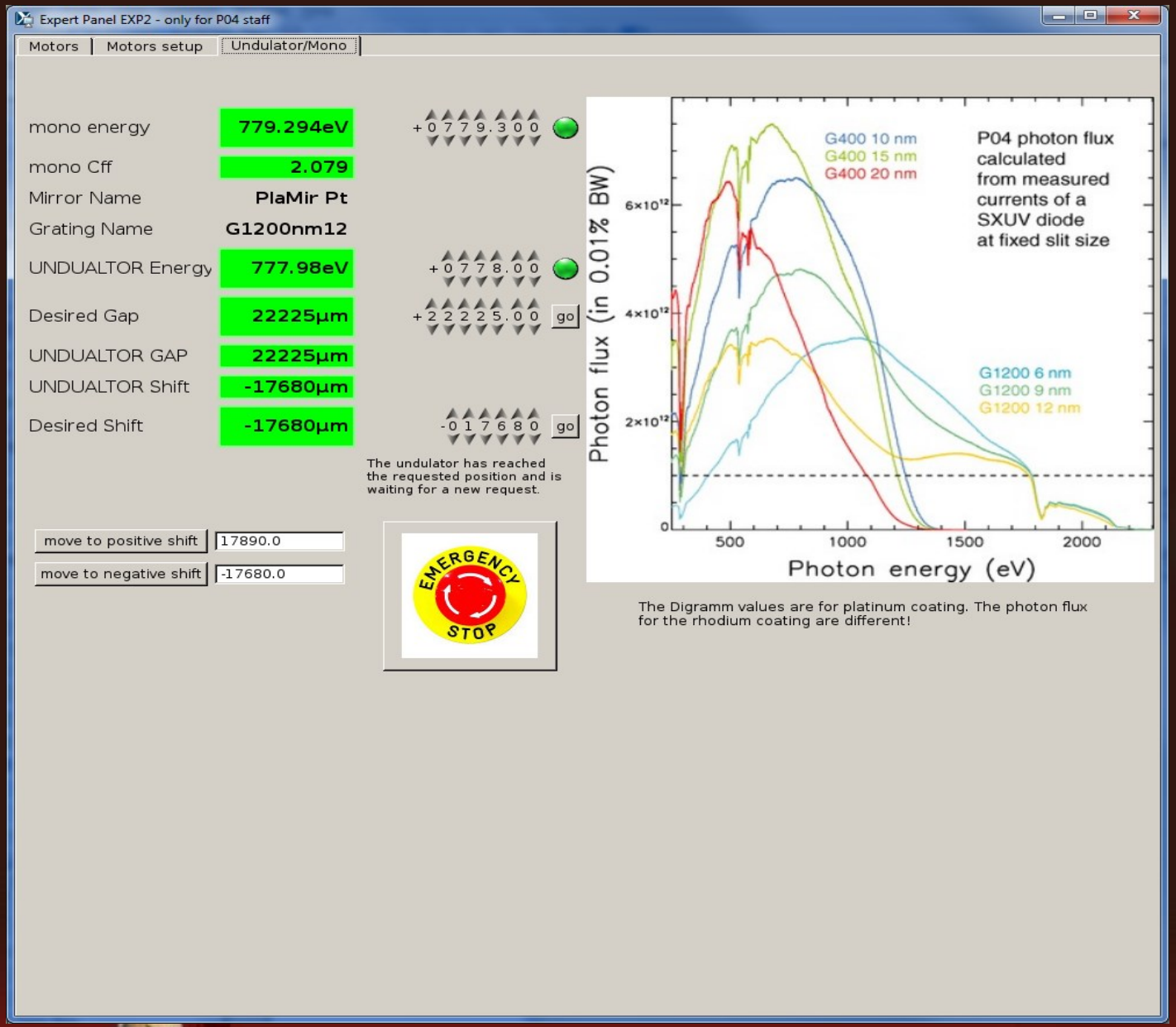
Beamline Control with Taurus (p04- F. Scholz)



Beamline Control with Taurus (p04- F. Scholz)



Beamline Control with Taurus (p04- F. Scholz)



Beamline Control with Taurus (p04- F. Scholz)

Extra features

Requested and in use at DESY

- General scan hooks
- General macro abort function
- General condition for repeating scan points

Add flexibility to scans without defining new macros