

*Workshop on Automatic
X-Ray provision*



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3-4 May 2004

Automation of MX beamlines

- The one-button paradigm
- The sample changer syndrome
- The information centered scheme



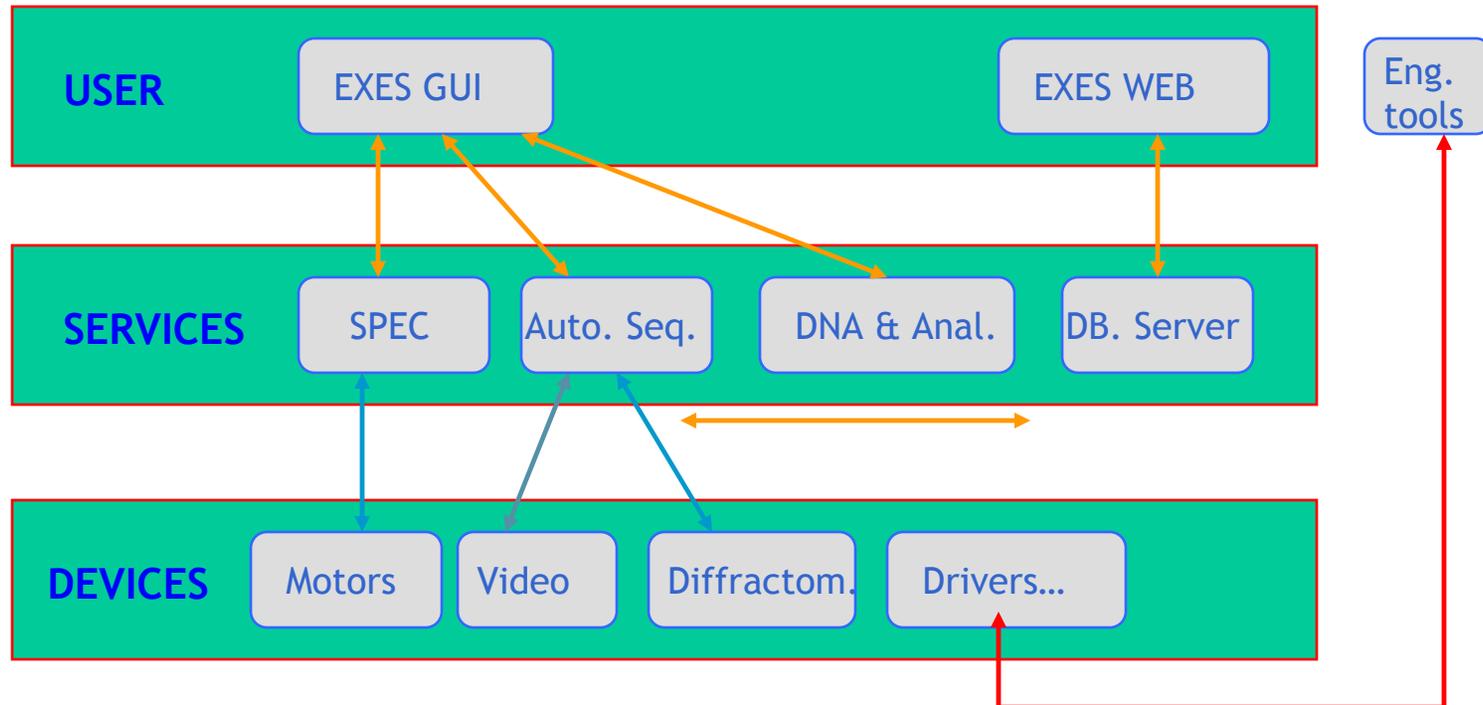
Automation / MX beamlines

■ Fields:

- Beam alignment
- Data collection
- Expert system (DNA)
- Information management (LIMS-Data model)
- Logging / databases



Software structure



What is really difficult

- Crystal alignment
- DNA and decision making / scoring
- Agreeing with other people
 - with external collaborators
 - also within the ESRF

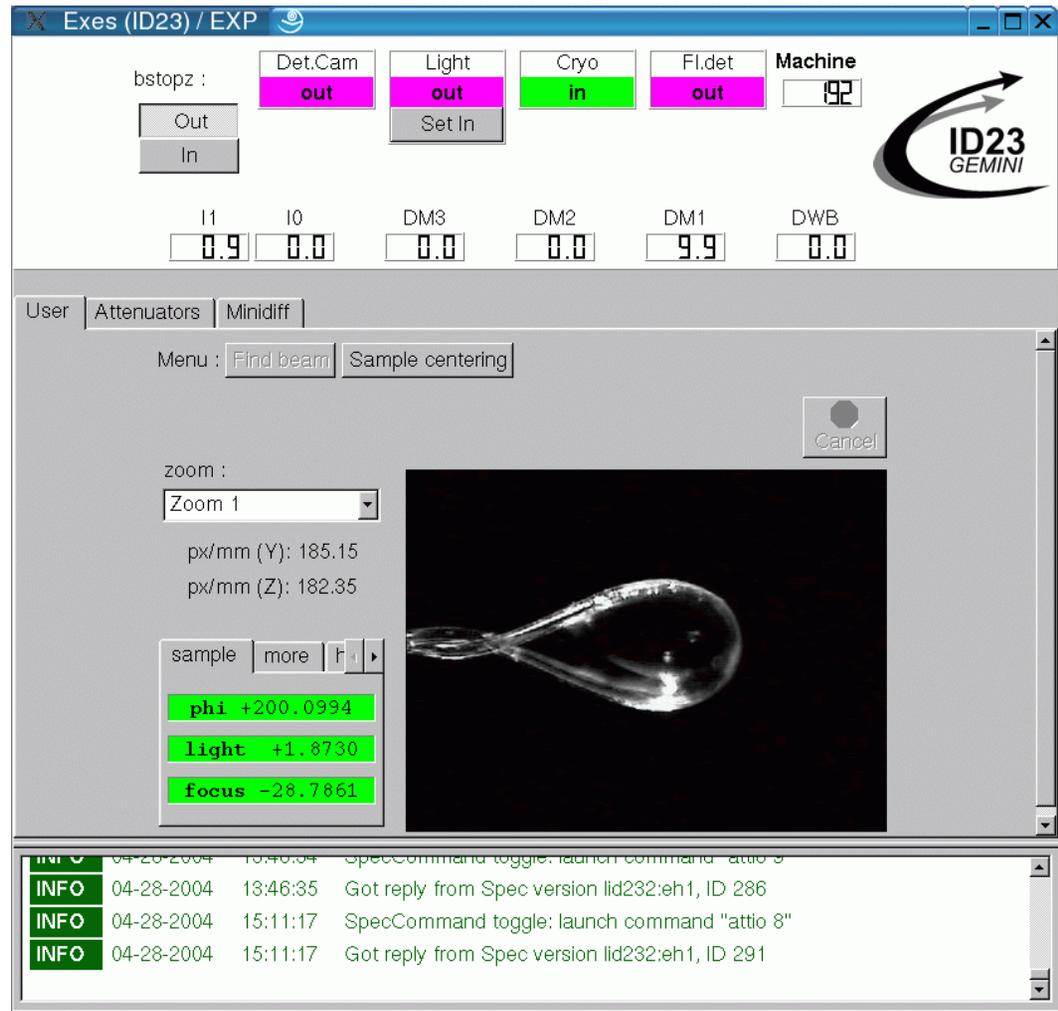


Current status: ID23

- Beamline designed for automation
- Opened to users: 21 April 2004
- The experience will serve for upgrading all the others ESRF MX beamlines



EXES for users



EXES for experts

Exes ID23 (expert)

ESRF ID23 GEMINI

ID23 - Exes Control Panel

exptable minidiff slitbox saf. shut mirror sslit mono pslit Front End

real pseudo mple more

thgt -4.497 txtilt +14.624 tytilt +0.963 ttx +14.037 tztilt -4.769 tftilt -9.000

shutz -1.281 shutz -0.318 shut +0.000 bstopy +0.140 bstopz +0.005 DtoX +995.000

slit1 slit2

s1v +1.000 t1v +0.080 s1h +1.000 t1h -0.020

closed Open

pseudo real

roll +0.593 tory +2.950 yaw +0.027 sben -1.113 torh -0.559 mtt +1.267

pseudo real

savo +0.000 savg +1.000 ssbo +0.000 ssbg +3.000

pseudo real

energy +9.65896

pseudo real automatic Auto Close

psvo +0.000 psvg +1.500 psbo +0.000 psbg +3.500

Scan mirror sslit mono pslit filters exptable slitbox minidiff

Mirror Beam V.	Din In/Out	Mon Beam V1	B.Viewer	Axis 2	Axis 1
● yag	Diode	Pt	PyroC 0.5	● Empty	● Empty
Empty	● Empty	yag	Diamond	Al 0.3	PyroC 0.5
Diode		● Empty	● Empty	Al 0.5	PyroC 1
		Cu	Al 5	Al 0.93	PyroC 2
		Fe	PyroC 5	Al 1.87	PyroC 4
		Zr	PyroC 8	Al 2.71	PyroC 6
		Mo			
		Diode			

INFO 04-26-2004 20:58:08 Got reply from Spec version Id232:eh1, ID 730

INFO 04-26-2004 20:58:22 SpecCommand start: launch command "dscan shutz -2 2 50 0.1"

INFO 04-26-2004 21:04:50 Got reply from Spec version Id232:eh1, ID 732



ATF / Automation Task Force

- Created in 2003 for 18 months to achieve automation for MX beamlines
- Multi-disciplinary: SciSoft, BLISS, CS
- S.Delageniere, J.Meyer, D.Spruce, O.Svensson, V.Rey-Bakaikoa



Workshop goals

- Get to work together.
- Share, co-develop:
 - Routines for automatic alignment of beamline
 - Beamline control module
 - Expertise



Discussion (BCM)

- Scripting / data collection
- Sample alignment / centering
- Automatic edge scans
- Instrumentation
- Common GUI:
 - Just look and feel... more...
- Open discussion: anything goes
- Remote access

