

Tango at PETRA III / Photon science

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- Past & current status and future projects
- Sardana & Taurus and Lima at Petra
- Integration of high rate detectors
- NeXus data storage
- Data Management -> Data Portal
- Scientific Software
- Migration to Ubuntu ???
- Other projects



Tango Meeting
Alba, 23-05-13

Past & current status and future projects

DORIS III: Shutdown on 22nd October 2012

Petra III : User operation since summer 2010

Petra III extension: Construction starting in September 2013

and

Flash User operation since summer 2005

Flash II Under construction, commissioning in Spring 2014



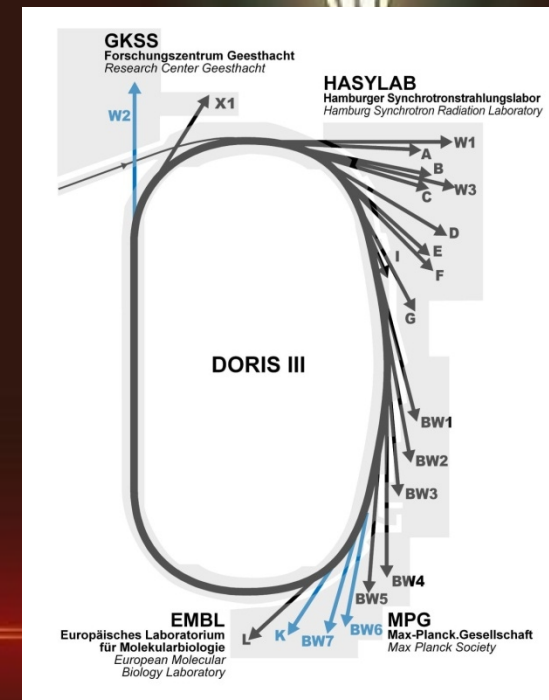
Past & current status and future projects

DORIS/DORIS III: Shutdown on 22nd October 2012

- The first storage ring at DESY
- First synchrotron radiation experiments performed in 1974
- HAmburger SYNchrotonstrahlungsLABor (HASYLAB) inaugurated with 25 beamlines at DORIS in 1981
- Third conversion in 1992, renamed DORIS III
- Since 1993 it was operated exclusively as synchrotron radiation source for 36 beamlines
- Beamlines were partially using Tango



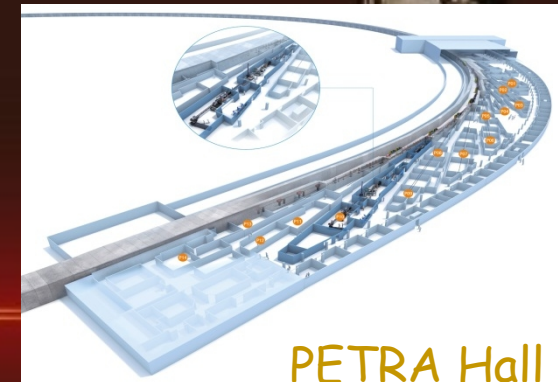
Herzlich willkommen!



Past & current status and future projects

Petra III: user operation since summer 2010

- Total of 14 Beamlines
8 DESY, 1 DESY+GKSS, 1 DESY+EMBL+HZG, 1 GKSS + 3 EMBL
(all beamlines in user operation since end 2012)
- Shutdown from 02.09.13 to spring 2014 for technical construction
(i.e. Petra III extension)
- DESY operated beamlines fully controlled by Tango



Past & current status and future projects

Petra III extension: construction starting in September 2013

- It will provide experimental techniques not covered at PETRA III beamlines (PO1-P11)
- Two new experimental halls with 5+5 beamlines
- Operation planned for 2014
- Beamlines to be controlled by Tango



Sardana & Taurus and Lima at Petra

Sardana & Taurus:

Installed in all experimental computers via own rpm packages

- Trunk svn versions with DESY specific tools for configuring/starting/stopping/control/status.
- Beamline operation:
 - 1 beamline at real experiments (Spock with general and specific macros)
 - 2 beamlines for commissioning with beamline scientists
- Taurus image viewer used at several beamlines



Sardana & Taurus and Lima at Petra

Lima:

Currently installed on request

- Cameras unter Lima used at experiments:

- Maxipix (5x5 and 2x1 chips)
- Andor (Ikon L)
- PCO Edge
- Prosilica

- Cameras tested:

- Pilatus
- Roper Scientific
- Mythen



Integration of high rate detectors

Modern detectors under development by DESY (and collaborators) to be used at PETRA experiments

- Current developments:

- Percival (2D, 250eV to 1 KeV, user op. 2015)
- Lambda (2D, X-ray scattering, test op. Jun/Aug 2013)
- AGIPD (2D, indiv. imaging mult. frames, user op. 2015)

- Peak data rates up to 8 GB/s or 700 TB/day per detector (deadtimes currently unknown)

- Issues:

- Controlled by Tango
- Data to central storage
- Data processing at DESY (cannot be exported)



NeXus Data Storage

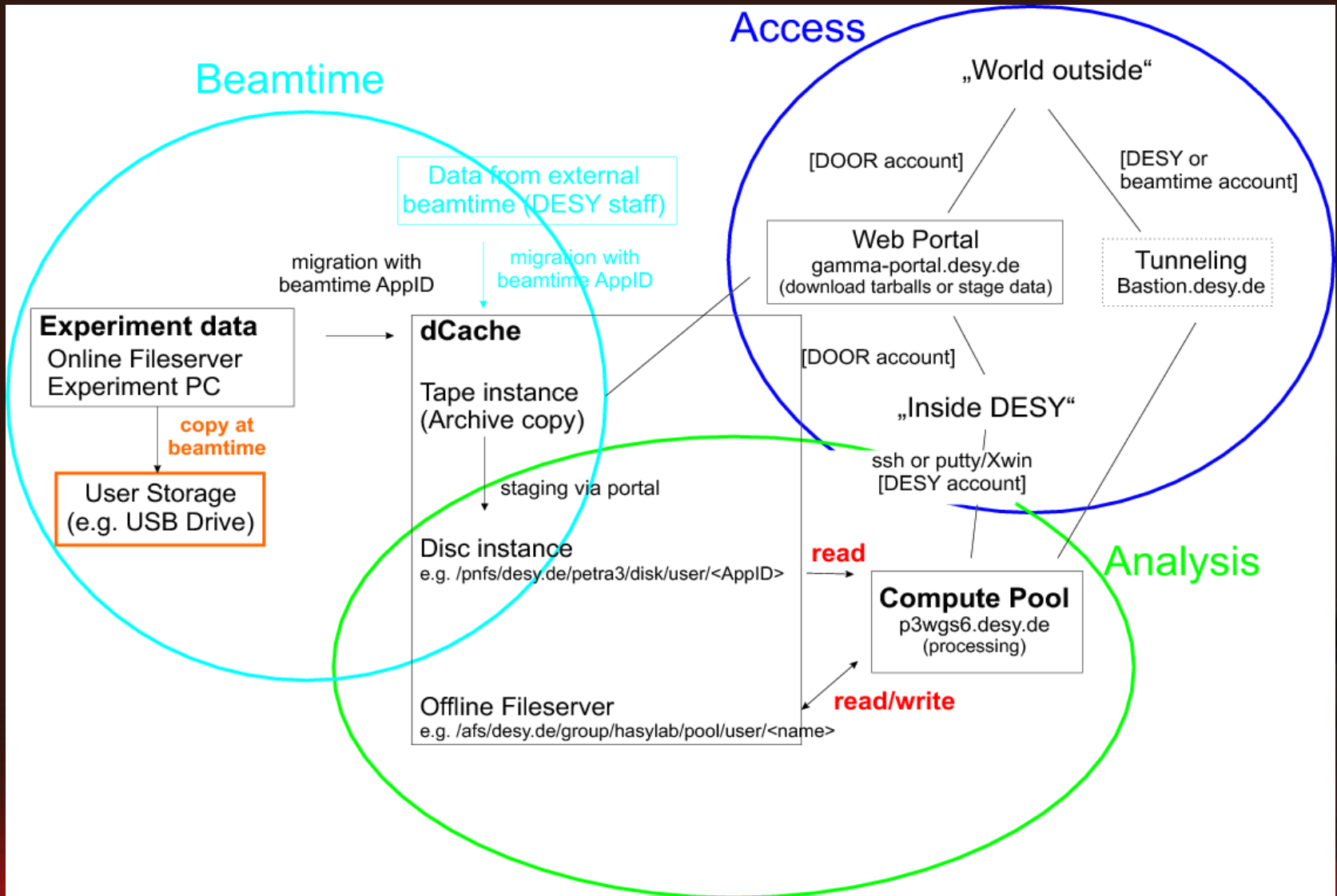
Common data structure for Synchrotron facilities
(PaNdata/HDRI framework)

- C++ high I/O rate API developed
- Python bindings available
- I/O performed by Tango Server
- First tests at a Petra beamline with Sardana data

(J. Kotanski talk for details)



Petra III Data Management



Petra III Data Management -> Data Portal

- Data is stored in DESY dCache
- Logging via DOOR account
- Browsing beamtimes
- Download or stage data from tape
- Staged data is put to dCache disk-only instance
- Partial data access management by user



SearchDataAdmin - Mozilla Firefox

https://gamma-portal.desy.de/.../NO...

SearchDataAdmin

gamma - portal

HASYLAB

Browse archive

Home
Browse archive
Staging status
Migration status
Migration Status

Browse archive

Row text contains 'g3'

Beamtime	Facility	Beamline	Proposal Id	Evtstart	Evtend	Local contact	Size in Gb	Files	Users ACLs
10009200	DORIS	G3	20000019	11-OCT-12	18-OCT-12	-	54.13		

click for details

click for ACL management

List of archived data (here results from keyword search)

Files - Mozilla Firefox

https://gamma-portal.desy.de/.../NO...

Browse archive / Files

Home
Browse archive
Files
Staging status
Migration status

Browse Archive / Files

Period: from 11-OCT-12 to 18-OCT-12
Beamtime: 10009200

Archived Directory	Format	Size in Gb	Archived Date	Version	Last Changed	On Disk
<input type="checkbox"/> hasg3	tar	54.13	20-NOV-2012 11:01	0	20-NOV-2012 11:01	no

select

Stage Download

* Stage means to copy multiple datasets to DESY disk space

detailed view

- displays users having access to dataset
- allows downloading (single tarball at once)
- allows staging

Note: Portal update will introduce new entry ,collab.' which can be modified by the applicant. this list will set the ACLs.

edit_door_users - Mozilla Firefox

https://gamma-portal.desy.de/.../NO...

edit_door_users

Home
Browse archive
Users/ACLs
Staging status
Migration status

Browse Archive / Users

Period: from 11-OCT-12 to 18-OCT-12
Beamtime: 10009200

Door Account	Lastname	Firstname	User Role	Access Permission	Create Date	Change Date
<input checked="" type="checkbox"/>	rothkirc	Rothkirc	Andre	applicant	download/stage	27-FEB-2013 15:14
<input type="checkbox"/>	wroblewt	Wroblewski	Thomas	leader	download/stage	27-FEB-2013 15:14

Select account

Set role

ADD DOOR USER TO EXPERIMENT FOR DATA ACCESS

Door account:

Add User

ACL MANAGEMENT

Update Acis Show Acis

ROTHKIRC ADMIN en

Add DOOR account for access (depending on User role: Applicant or leader)

Scientific Software

Development/Evaluation of tools for Data Analysis

- New group member starting in July 2013
- Evaluation of existing data analysis tools:
 - DAWN (Diamond, ESRF, EMBL)
- Implementation of existing tools or/and development of new ones
- Provision of tools to users



Migration to Ubuntu ???

Evaluation of the migration from Scientific Linux to Ubuntu

- Currently in use SL 5 (32 bit) and SL 6 (64 bit)
- Software & library versions available for SL always far from the new ones
- Ubuntu simplifies the collaboration with the other Tango Collaborators
- Migration still under evaluation



Other projects

- Continuous scans: hw and sw (Sardana)
- hkl implementation in Sardana (replace Diffractometer Tango device)

