

DESY Site Report

News from the Zeuthen and Hamburg sites



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DESY - IT

HEPiX Fall 2010, Ithaca, USA

Directions for DESY

Redefining our role as a center for

- > accelerator research and development
- > particle physics
- > photon physics

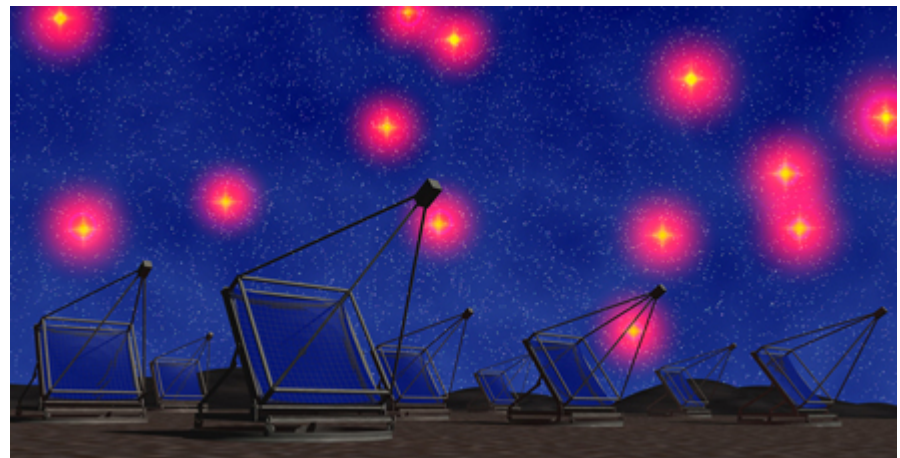
Resulting in

- > new science programme for machine physics in Helmholtz Assoc. with -among others- GSI and KIT
- > intensified outreach into universities
- > continued efforts at PITZ, new efforts with REGAE
(Relativistic Electron Gun for Atomic Exploration)



Directions for DESY (cont'd)

- > Operation of a „Großgerät“ Tier2 and Analysis Center for LHC data
- > Operation of Tier0 and Tier1 for HERA, IceCube, ...
- > Involvement in the programme 'Physics at the Terascale'
- > Preparations for a future linear collider project
- > Intensified efforts in astroparticle physics at Zeuthen site together with Potsdam University
 - IceCube data management and analysis
 - Future Cherenkov Telescope Array



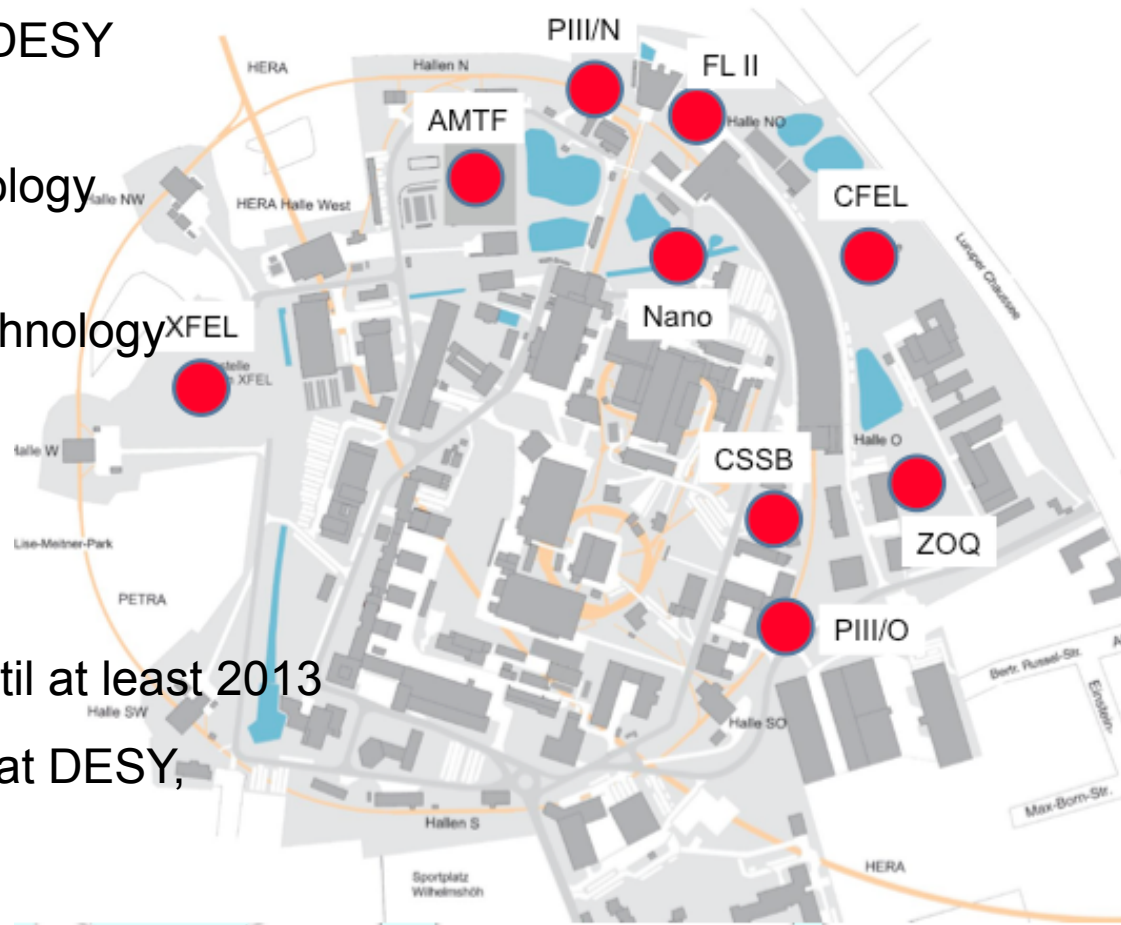
New centers at DESY

many new collaborations and fields of study planned and installed

- > CFEL
Max Planck, Univ. Hamburg, DESY
- > CSSB
center for structural system biology
- > ZOQ
center for optical quantum technology
- > EXFEL, Nano, ...

many new buildings for photon science efforts

- > Ongoing construction work until at least 2013
- > Many more scientists staying at DESY, using DESY infrastructures



Consequences for DV and IT groups

> New user groups with new requirements

- OS == MacOS
- „my computing platform is Windows“
- „our new server needs some RAM; 500 GB should do – for now“
- „our analysis I/O is too slow – can't we use Lustre?“



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> Data management requirements

- PETRAIII will have some 1-2 PB of raw data p.a.,
some detectors capable of delivering 300MB/s sustained for some hours
- XFEL will be between 20 and 100 PB p.a. from 2015,
only 10-20% of that from 2012/2013
- analysis looks like sequential scanning of 100.000s of 'small' files - repeatedly
- newer groups have not delivered firm estimates yet



Consequences for DV and IT groups

- > computing requirements
 - Cluster computing on the rebound – IB based interconnects
 - NUMA architectures coming back into CC: SGI is being delivered this week
 - MPI code is reappearing
 - GPU computing is being implemented

- > complexity in systems landscape goes up

- > most likely, costs of procurement and operations will also go up



Consequences (cont'd)

A lot of these requirements are not unfamiliar,
but instead of having some handful of VOs with hundreds of members
we have some hundred VOs with a handful of members

- > as most photon groups have very different basic setups, we are looking into virtualisation and cloud environments
 - very much like some of yesterday's talks
- > unfortunately, we have heavy duty I/O and large local filesystems to worry about
- > and however much we try, systems diversity will increase on account of many system architectures



Microsoft Themes (1)

- > Windows domain transitioned to server 2008R2 mode
- > most of the servers are running W2008 R2
 - some problems with LDAP trusts for e.g. Samba and Mail Services
- > most workstations still run WindowsXP, although new laptops introduce Windows7 in the domain
 - no site wide rollout of Windows7 yet; we prefer waiting for SP1
 - field tests for group admins are possible now – license server and basic services in place
- > Office 2010 rollout will start at the end of October for Windows XP
- > application deployment with Netinstall 5.86, some work still to be done for full Windows7 support



Microsoft Themes (2)

- Storage virtualization with Datacore SAN melody 3.0 - 64 bit in Zeuthen
 - 4 TB of highly available storage for home- and group directories
 - SAN melody in production since April 2010: good performance, stable
 - will be the basis for other virtualization projects
- NetApp in Hamburg
 - some 40 TB in Hamburg for home- and group directories
 - has been in operation for more than 4 years –
only HW errors were IB and spring related
 - for virtualisation, a combination of iSCSI and FC-SAN is currently in use.
Moving to full FC to separate IP and SCSI traffic.



Computing Centers

- > three CCs in Hamburg, two in Zeuthen
- > newer installations using water cooled racks
- > after upgrades to power supply and UPS, the need for increased cooling is coming - fast
- > planning additional cooling by using renovated HERA cooling installations in preparation of XFEL operations
- > will allow for MW-cooling capacity in the first iteration
- > looking at ways of increasing CC space –
possibly with other cooling concepts



Thanks for your attention -

Questions anyone?

further DESY talks:

Patrick Fuhrmann on NFS4.1/pNFS

Thomas Finner on our BIRD batch

Wolfgang Friebe on rapid web design

today in storage session

first thing Thursday

first thing Friday

